

Education Applications & Developments IV
Advances in Education and Educational Trends Series

Edited by: Mafalda Carmo



Edited by:

Mafalda Carmo,
World Institute for Advanced Research and Science, WIARS
Portugal

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FOREWORD

InScience Press is delighted to publish this book entitled *Education Applications & Developments IV* as part of the Advances in Education and Educational Trends series. These series of books comprise authors' and editors' work to address generalized research, albeit focused in specific sections, in the Education area.

In this forth volume, a dedicated set of authors explore the Education field, contributing to the frontlines of knowledge. Success depends on the participation of those who wish to find creative solutions and believe their potential to change the world, altogether to increase public engagement and cooperation from communities. Part of our mission is to serve society with these initiatives and promote knowledge, therefore it requires the reinforcement of research efforts, education and science and cooperation between the most diverse studies and backgrounds.

The contents of this edition show us how to navigate in the most broadening issues in contemporary education and research. In particular, this book explores four major topics within the broad theme, which is Education, corresponding to four sections: "Teachers and Students", "Teaching and Learning", "Organizational Issues" and "Projects and Trends". Each section comprises chapters that have emerged from extended and peer reviewed selected papers, originally published in the proceedings of the International Conference on Education and New Developments (END) conference series (<http://end-educationconference.org/>). This meeting occurs annually with successful outcomes. Original papers have been selected and its authors were invited to extend them to once again undergo a new evaluation's process, afterwards the authors of the accepted chapters were requested to make the necessary corrections and improve the final submitted chapters. This process has resulted in the final publication of 26 high quality chapters organized into 4 sections. The following sections' and chapters' abstracts provide some information on this book's contents.

Section 1, entitled "Teachers and Students", provides studies within educational programs and pedagogy for both teachers and students.

Chapter 1: *Live2Work Project: Increasing The Chances for Successful Integration of People in Situations of Professional Vulnerability*; by Joana Carneiro Pinto & Helena Rebelo Pinto. The Live2Work Project is an ERASMUS+ Key Action 2 Strategic Partnership for cooperation and the exchange of good practices involving four countries (Portugal, France, Denmark and the Czech Republic). Its purpose is to develop an intervention methodology for end-users working with young adults (18-30 years) in situations of professional vulnerability, including migrants and refugees. Throughout this work, we intend to briefly present the six outputs that constitute the project, namely, the conceptual framework, the toolbox, the course guide, the in-service training courses, the online audio-visual learning scenarios, and

the Moodle courses and learning platform on website. Particular attention will be given to the challenge of refugees' integration on a global scale, and to the theoretical rationale of the project. In particular, we will explain the contributions from career normative models, career design, construction and management models, career systemic models, and career culturally adequate models to the development of the theoretical rationale that sustains the project.

Chapter 2: *Socialization and the Construction of a Professional Identity among Public Relations Students in the United Arab Emirates*; by Sandra L. Braun, Mohamed Ben Moussa, Wided Dafri, & Ana Stranjančević. In the United Arab Emirates, economic and cultural forces are affecting the development of public relations. A high imbalance of expatriates to locals (Emiratis) in the population has left the field of public relations lacking in local representation. Without adequate representation across the major sectors of the society, Emirati can lose influence and control over their own homeland where they are a significant minority. A contributing factor to success in any field is the development of professional socialization and construction of a professional identity in the post-secondary environment. This is an exploratory study examining Emirati public relations students and their professional development. It is a qualitative study of semi-structured interviews of 10 Emirati public relations students, utilizing a grounded theory approach. Findings reveal that Emirati public relations students are developing in their professional identities at institutional and relational levels, but there is more that can be done by the students, themselves, to support the construction of their professional identities in their post-secondary environment. This would likely increase their chances for career placement and success in the area of public relations, and further greater representation of locals in the society.

Chapter 3: *Challenges Confronting Kindergarten Teachers in their First Year of Teaching in Israel*; by Eitan Simon & Aviva Dan. Novice teachers' first year in teaching arouses great expectations, but it also engenders anxiety and lack of confidence. Research indicates that novice school teachers' induction processes entails a period of challenges, dilemmas and difficulties. However, little has been written about the first-year experiences of novice kindergarten teachers. This research took place in a teachers' training college in the North of Israel where as part of the student's professional development they are obligated to attend a professional development workshop. The workshop aims to provide a significant support system for the novice teacher. The research described here examined the novice kindergarten teacher's dilemmas and challenges during this critical first year, their attitudes towards the professional development workshop, including the relevance of the workshop in assisting them to cope with dilemmas arising from the field. The findings indicate that the novice kindergarten teachers experience similar dilemmas in their first year in the field to those experienced by school teachers. The workshop was not a significant factor in helping the novice kindergarten teachers cope with this challenging experience. It is concluded that the workshop framework should be re-evaluated to make it a significant place for the novice kindergarten teacher.

Chapter 4: *Physical Education Teacher's Beliefs and Classroom Management Practices: Depicting Convergences, Divergences and Inconsistencies*; by Sacha Stoloff, Claudia Verret, Jean-Christophe Couturier Cormier, & Jean Lemoyne. Teaching practices changed significantly in the wake of the 2001 school reform in Québec. In the past decade, teachers have struggled to adapt to new orientations, particularly as regards the educational approach promoting student responsibility and its effects on classroom management practice. In physical education and health (PE), a complex discipline with varied environments, few studies examine the appropriate practices to adopt. This project aims to better portrait current practice and compare with program expectations. The research objective is to describe PE teachers' beliefs and practices. The methodology was based on the Q-PEPS questionnaire, comprised of three sections: sociodemographic characteristics (8 items); beliefs (8 items); and instructional practices (43 items). A sample of 328 respondents (205 men, 123 women, age = 41.3 ± 9.4 years) enabled a descriptive analysis per item. The findings describe 1) convergent and divergent beliefs among teachers, and 2) convergent and divergent practices regarding classroom management. These findings highlight an inconsistency in the responses to similar items, which could be owed to social desirability bias or a gap between the ideal, desired and actual practices perceived by teachers. Also, findings demonstrate a current gap between actual practice and program expectations.

Chapter 5: *Learners' Views of the Teacher Attributes in Contributing to Meeting the Challenges of the South African Curriculum in Physical Science*; by Leelakrishna Reddy. A decline in learner performance in South Africa over the years in Physical Sciences at grade 12, in the transition from National Senior Certificate (NSC) to Curriculum and Assessment Policy Statement (CAPS), have implored us to do an investigation of the perceived attributes of the teacher in meeting the challenges imposed by the new CAPS curriculum. 150 university students participated in the study. Learners were requested to give their views about their teachers on a questionnaire designed to elicit characteristics of a successful teacher. Learners were requested to indicate their degree of agreement or disagreement to each of the items of the questionnaire. The data was subjected to the Principal Component Analysis (PCA) procedure by use of the SPSS program, which revealed three broad clustered characteristics of the teacher. These characteristics are Teacher efficacy, Teachers' efficiency, effectiveness, and Teachers' understanding of CAPS curriculum. The results reveal that the teachers' frequent and immediate feedback on the quality of their assessments is considered the most important attribute about a successful teacher, while the use of active forms of learning is an area of concern for the present day teacher in meeting the challenges imposed by the CAPs curriculum for Physical Science.

Chapter 6: *Living Abroad: Irish Erasmus Students Experiences' of Integration in Spain*; by Rosario Hernández. Living and studying in another country requires students to pursue a process of integration into a number of areas of life, among them university itself, as well as social and cultural events and day-to-day activities, all of which require the building of relationships. As English has become the *lingua franca* in many countries, English-speaking students nowadays face increased challenges to using Spanish as a means of communication to fully integrate into the host country. This paper identifies the strategies employed by a cohort of students from an Irish university during their year abroad in Spain with the aim of explaining their process of integration into the host country. The data used for this study were an integral part of a module completed by the students during their study abroad, where students wrote two reflective assignments in Spanish to analyse their experiences during study abroad. Results show that students who made efforts to move out of their comfort zone had a positive experience of integration. The experiences of students who did not integrate so successfully are discussed and recommendations that may be relevant for students and institutions in their preparation for study abroad are provided.

Chapter 7: *Plurilingual and Intercultural Awareness and its Integration into Practical Domains of Teacher Education*; by Anne Julia Fett & Peter Grüttner. Dealing with cultural heterogeneity has become one of the most crucial challenges for teachers making it necessary to linguistically and culturally diversify teacher education (HRK, 2015). The project “Intercultural Ambassadors at Schools and in Teacher Education” aims precisely at this kind of diversification. It has been initiated at the Centre for Teacher Education of the University of Halle as a measure of professionalization. The project has the intention to raise prospective teachers' awareness of different beliefs and values in culturally heterogeneous teaching/learning environments. In so doing, it defines the dimension of plurilingualism as a vital component of cultural diversity, which is inseparably linked to culturally heterogeneous interpretive schemes. Accordingly, the immediate experience of cultural as well as linguistic differences is at the centre of the project: future teachers are put into an international Co-Teaching-situation in a culturally mixed team. Together with foreign teachers and students, they enter a teaching/learning setting in which they first experience and later reflect on the cultural dimension of their individual idea of school and teaching.

Chapter 8: *Undergraduate Physics Practicals at the University of Johannesburg: A Survey on Students' Perceptions*; by Leelakrishna Reddy. For the conductance of physics, practical use was made of one of the seven technologically enhanced laboratories. These laboratories are designed to offer some 350 undergraduate experiments. A unique software-embedded system, the first of its kind in South Africa, was used to assess the students' results. Once the students submit their results, these are captured by the data capturer, fed into the software system, and simulated for comparison with the background readings. To appreciate the scientific

value of these experiments and its offerings, a modified questionnaire, developed by Deacon & Hajek (2011) has been used. The questionnaire survey has been administered to 100 first year university students. A Likert-type scale from Strongly Disagree to Strongly Agree was used to analyze the results. The framework used for this study was taken from the work developed by the American Association of Physics Teachers (AAPT), which highlights goals to be achieved in a physics laboratory. The results of the survey revealed at least four factors that contributed to a positive perception to the value of the lab practicals. They ranged from the labs contributing to their knowledge, understanding, skills and enjoyment of the practicals.

Section 2, entitled “Teaching and Learning”, offers research about foundations in the education process itself, in various contexts, both for tutors and students.

Chapter 9: *Sensitization Sessions for Healthy Environments - Stakeholders' Point of View*; by Marie-Claude Rivard, Maude Boulanger, Sacha Stoloff, François Trudeau, & Sylvie Ngopya Djiki. Healthy food choices and regular physical activity are two key behaviours that help prevent the premature development of chronic diseases, obesity and their complications. To raise awareness on the issue, numerous sensitization sessions were held across Quebec to sensitize stakeholders on ways of facilitating healthy environments (physical, economic, sociocultural and political) that promote healthy food choices and active lifestyle. The objectives were to 1) explore the knowledge and skills acquired during the sessions and 2) examine the transfer from sessions toward concrete actions for fostering environments conducive to healthy lifestyles. Individual interviews were conducted with 52 stakeholders (F=41; M=11). The results reveal, first, that most of the stakeholders consolidated or even improved their knowledge and skills and were better able to recognize the four types of environments in their respective workplaces. They also developed a common vocabulary and a better understanding of the the influence of environments on lifestyles. Second, the transfer into action, although possible, was more problematic because the concerted actions needed to facilitate healthy environments are complex. These results will be discussed in light of Kirkpatrick and Kirkpatrick's four-level pyramid model. Sensitization sessions can be viewed as a societal project encouraging influential stakeholders to develop environments conducive to healthy lifestyles.

Chapter 10: *Difficulties with the Academic Writing: What do the Students from the First Year of the Pedagogy Course Reveal*; by Ana Luzia Videira Parisotto, Michelle Mariana Germani, Zizi Trevizan, Andréa Ramos de Oliveira, & Adriana Locatelli França. In spite of undergraduates having passed exams to enter higher education, this does not necessarily imply that they can read and write proficiently. In light of this situation, it is important to reflect on the initial education of teachers. This text presents some results of a broader research project investigating the socioeconomic-cultural profile of first-semester student teachers' reading and

writing skills via questionnaire at a state university in São Paulo State, Brazil. This text aims to describe the reasons they give for their writing difficulties or insecurities. The research participants are 79 first-semester undergraduates in Pedagogy — 36 and 43 students from the afternoon and evening shifts of the program, respectively. Participation was made available to those interested in collaborating with the research — all of the students enlisted to participate. This research is of a qualitative nature with a descriptive-analytical approach. The data were analyzed in light of the content analysis, with categories created *a posteriori*. When asked about the reasons for their writing difficulties or insecurities, the participants indicated low self-confidence and increased anxiety, lack of knowledge about the topic/subject, deficient knowledge of standard language, no writing training/habit/practice and difficulty in organizing ideas.

Chapter 11: *A Qualitative Study on the Perception of Undergraduate Student's Cooperative Learning Experience in the Case of Roleplay*; by Youngsoon Kim, Gi Hwa Kim, & Youngsub Oh. The aim of this study is to investigate the perception of cooperative learning experience through the roleplay among undergraduate students participating in a liberal arts course related to multicultural education of 'I' university in Korea. In this study, we adapted qualitative research method, including participatory observation and focus group interview. We collected reports, questionnaires, journals, and roleplay scripts. We analyzed the implications of experiences of students in terms of interdependence and individual responsibility as core elements of cooperative learning. Results are as follows: First, interdependence was experienced by students in dealing with conflicts in the cooperative learning process. It reflected their own will to pursue and practice a strategy for harmony and coexistence among members. Moreover, interdependence meant positive trust among members, formation of human relationship, and expression of interest and praise for members. Second, recognizing that one's role in a team influences on other members and team achievement, students seriously took individual responsibility. Individual accountability meant performance of assigned role, compliance of promise, and care for members. Individual accountability is rooted on and realized by interdependence.

Chapter 12: *Towards Improved Corrective Feedback in Japanese EFL Writing Instruction*; by Richard S. Lavin. This paper addresses issues in tertiary EFL writing instruction, focusing on the situation in Japanese universities. Students in Japan typically find academic writing extremely difficult, partly because at high school they typically write no more than two or three sentences for a single "composition". Thus, university writing instruction needs to tackle nearly all aspects of writing from a near-beginner level. This paper describes the writing curriculum at a Japanese provincial public university, focusing especially on the approach to corrective feedback taken by the author. This approach chiefly leverages two technologies—a blog with microposts and Google Docs—to bridge the gap between two strands of feedback: standardised feedback and contextualised feedback. Traditionally,

standardised feedback has been seen as less useful but more sustainable, while contextualised feedback has been regarded as potentially more useful, but impractical in terms of teacher time. The approach described may make it possible to provide feedback that is both contextualised and sustainable. More generally, this account shows one example of a writing instructor, embedded in his local context and facing its inherent challenges in an imaginative way, addressing those challenges using the resources at his disposal to effect small improvements.

Chapter 13: *The Impact of the Ethnical Background and the Number of Siblings on the Scores of Mathematics Anxiety. A Study on Mathematics Anxiety of Undergraduate Students of Mathematics and Engineering*; by Mahshid Farjadpour & Carlos Fresneda-Portillo. Mathematics Anxiety (MA), the ‘phobia of numbers’, is related to poor performance in Mathematics. There are numerous studies that discuss a wide range of factors affecting Mathematics Anxiety in students at primary and secondary schools. Furthermore, there are some studies looking into MA in students of Psychology, Engineering and Nursing at a Higher Education level, see, for example (Alves, Rodrigues, Rocha, & Coutinho, 2016; McMullan et al. 2012) and more references therein. However, we believe that this is the first work on MA in undergraduate students of Mathematics. Consequently, our purpose is to determine whether factors such as gender or ethnicity affect MA. Our main results are that there are significant differences between male and female students; there is a significant difference among students with three siblings or more, compared to students who have two siblings or less. Finally, we discuss the significant difference between the gender of the main family figure providing Mathematics support amongst students with a British and Non-British background.

Chapter 14: *Teaching Evolution to Grade 12 Learners: Teachers’ Views and Pedagogical Practices*; by Lydia Mavuru. The world over, evolution has proved to be a contentious topic to teach to high school learners despite its value in acting as ‘a blending concept’ in Biology. In the South African Life Sciences curriculum, evolution accounts for 44% of Grade 12 content in terms of mark allocation in examinations. Hence teachers are obligated to address the topic adequately as there are accountability issues at the end of the year. However, previous research has shown that teachers question the theory of evolution and are conflicted to teach it. In the current study 15 teachers were each interviewed once to explore their individual views about evolution and the pedagogical practices they employ when teaching the topic. Qualitative analysis of data showed teachers’ mixed views about the content of the topic of evolution, the value of that content to learners and society in general and the best approaches to teach the topic in science classrooms. The study revealed that at times teachers failed to reconcile their beliefs and those of the learners against their science classroom practices. In conclusion, teachers who lack the understanding of the nature of science have difficulties in teaching the topic evolution for scientific understanding. There is need for teacher professional development programmes in this regard.

Section 3, entitled “Organizational Issues”, gives a glance on tools for implementing organizational learning and change in the education context.

Chapter 15: *Characterization of the “Education & Education Research” Journals Included in the Journal Citation Reports (JCR)*; by Julia Haba-Osca, Francisco González-Sala, & Julia Osca-Lluch. The evaluation of the quality of scientific journals is a topical issue. The implementation of an evaluation policy based on international indicators has contributed to improving the quality and visibility of journals from different countries, measured through their indexing in the Journal Citation Reports (JCR) databases. Currently, in some countries, such as Spain, the main criterion used to evaluate the performance of individuals, institutions or research groups is the number of publications made, especially in high impact journals in the JCR. However, the adoption of international evaluation criteria based on the JCR has been the subject of numerous criticisms by researchers, who are forced to send their research papers to foreign journals to the detriment of the journals of their own country, since in order to obtain a positive evaluation it is fundamental to publish in high demand journals, mainly published in English. In this competitive environment, where the pressure to publish in quality journals is a reality, it is useful to know the profile of the journals of your specialty in order to be able to select the one that is most appropriate for the dissemination of your own work.

Chapter 16: *Education Reform in Trinidad and Tobago through the Lens of Complexity Theory*; by Jeniffer Mohammed. The education system in Trinidad & Tobago has been subject to on-going reform though thousands leave secondary school each year with minimal qualifications. Threats to equity and social justice continue because the failures occur primarily in the state-led sector, and not in ‘prestige’ schools. Historically, there has been a concerted effort to maintain this dual system while implementing reforms. Adopting a complexity theory approach reveals an educational landscape conditioned by powerful elites and their ideologies about a ‘good’ education, which stymie reforms today. Fifteen teacher educators gave their views on the failure of education reforms to take root, and through qualitative data analysis the researcher sought to determine whether complexity theory was of potential value in conceptualizing education reform in the future.

Chapter 17: *Respect for Human Dignity as a Framework and Subject of Education in the Light of Present Challenges*; by Zoltán Rónay. Our world is full of challenges. Some of them have been present for decades; others are newer phenomena. For instance, the literature mentioned the phenomenon of black pedagogy at the beginning of the twentieth century. Aggression in school also has a long history. Digitalization has only been source of conflict in the past few years. These challenges often lead to more and more conflicts which directly or indirectly affect the most unprotected and exposed layer of our society: children. Children can become either victims or perpetrators. It is the family’s role to help them to avoid

these conflicts. However, families do not have the ability or time to handle this problem. In some cases, the family is even the cause of the conflicts. Therefore, the role of school and education is increasingly significant. Education strives to teach why these conflicts are dangerous, the dangers they represent or how to avoid them, and explains that these conflicts are wrong because they violate laws or school rules. Nevertheless, teachers often disregard the morality aspect. For that reason, it is important to define a standard which can help to highlight the moral issues. This standard could be the respect for human dignity.

Chapter 18: *The Implications of Arts Education Acts for Professional Music Training Programs: The Tut Experience*; by Hua Hui Tseng. Professional music training programs are confronted with major changes in the sociocultural and educational landscape. In response to Taiwan's societal challenges, such as current issues about Music Education Policy, the Ministry of Education, Taiwan, amended the Arts Education Act (AEA) that outlines the curriculum for study in the performing arts in 1997. The AEA of 2015 is a sequel to the Special Education Act of 1984 that was designed to apply relevant theories to curriculum standards for education reform in Taiwan. The Acts are founded on the belief that high expectations and setting goals will result in success for gifted and talented students. The reauthorization mandates that funds, knowledge of art, and art-related courses be incorporated following the model of artists-in-residence projects. The purpose of this case study is to revisit and examine policymaking within the context of professional music training programs by describing and analysing the history of arts education in Taiwan and the current policymaking framework implemented at the Tainan University of Technology (TUT), Taiwan. The conclusion drawn is that education institutions can provide a conceptual framework for understanding the implications of the AEA of 2015 for professional arts education in both the legal macro- and microenvironments.

Section 4, entitled "Projects and Trends", delivers chapters concerning, as the title indicates, education viewed as the center for innovation, technology and projects, concerning new learning and teaching models.

Chapter 19: *Promoting Mobile Learning Through the Establishment of a Mobile Learning Community*; by Lixun Wang. With the fast development of mobile technologies, mobile learning has been adopted by more and more students and staff in higher education institutions. This chapter reports on a project which aimed to promote mobile learning in higher education. In order to find out students' and teachers' experiences and perceptions of mobile learning in a tertiary institution in Hong Kong, over 100 students and around 50 staff members across different disciplines were surveyed online, and follow-up interviews were carried out. The research findings suggest that both students and staff were generally positive towards mobile learning. Based on the findings, students and staff were invited to form a mobile learning community and share their mobile learning or mobile-assisted teaching experiences through various activities, such as writing app reviews,

compiling mobile learning e-portfolios, participating in sharing sessions and offering seminars about mobile learning. To facilitate sharing among community members, a website titled 'Mobile Learning @ EdUHK' has been created to showcase good practices of mobile learning. The framework of creating and maintaining a substantial Mobile Learning Community (MLC) will be summarised. It is hoped that our study will shed some light on how mobile learning can be promoted effectively in higher education institutions.

Chapter 20: *On the Positive Effect of Rabbit-Assisted Interventions in Classroom Environment on the Anxiety of Pupils*; by Marcell Molnár, Réka Iváncsik, & Barbara Di Blasio. In our study the effect of rabbit-assisted interventions on the anxiety of first grade pupils of elementary school was investigated during a 24-week period. The rabbits were involved in the classroom according to the following pattern: 6 weeks without rabbit, 6 weeks with rabbit, 6 weeks without rabbit, 6 weeks with rabbit. After the end of each 3-week period anxiety of pupils were measured by a standardized test. These actions were performed in two different classes; one with pupils in the general population and another one containing mainly pupils with special education needs; we called the latter the integrating class. Our study shows the beneficial effect of a classroom application of rabbit-assisted interventions, as the anxiety of pupils became significantly smaller in the middle and at the end of each 6-week intervention period. Moreover, this positive effect was particularly prominent in the integrating class. Our findings support the assumption that the increasing practice of animal-assisted education is reasonable and that rabbits can be helpful assistants in education, since stress interferes with learning and performance in students.

Chapter 21: *Interdisciplinary Projects Implemented in the Entrepreneurial School. Four Crucial Steps*; by Maude Boulanger, Marie-Claude Rivard, & Rollande Deslandes. Entrepreneurship education appears to be a promising avenue for developing entrepreneurial skills (e.g., leadership, motivation, teamwork) and the school is targeted because young people are considered as key players in promoting economic growth (European Commission, 2013). One of the appropriate teaching methods for achieving academic and entrepreneurial goals is the project-based learning (P-BL). The P-BL is also the prioritized strategy to implement interdisciplinarity in schools and it appears that entrepreneurship is a privileged context for realizing interdisciplinary projects in order to give meaning to the learning experience. Based on the framework of Proulx (2004), the objective is to describe the processes of implementation of interdisciplinary projects in the context of the entrepreneurial school. Eight individual interviews were conducted with school staff from one entrepreneurial school. Our results show that the teacher assumes a key role as a supervisor throughout the interdisciplinary project in making sure that the education program objectives are achieved. However, the lack of collaboration between the teachers remains a challenge in order to help them with the realization of these projects. Interdisciplinary projects correspond to a

non-traditional and promising method of teaching; solutions are identified in the discussion to optimize the implementation and thus ensure the sustainability of these projects in this entrepreneurial context.

Chapter 22: *Design Thinking Applied in Higher Education - D-Think, A European Project for Innovating Educational Systems*; by Katja Tschimmel & Joana Santos. As a response to continual social and technological transformations, many academic, governmental and private organisations call attention to the need for urgent changes to educational systems. Because of its collaborative and creative approach, its cross-disciplinary and human-centeredness, Design Thinking is seen as a useful mindset and method to face the challenge of a new learning paradigm. Between 2014 and 2017, seven institutional partners from six different European countries developed the Research Project *D-Think*, supported by the Erasmus+ Programme of the European Commission. The goal of the *D-Think* project is the promotion of the application of Design Thinking as an innovation method to rethink not only learning/teaching methods but also pedagogical approaches, learning spaces or the role of educators. In this wider context an open access training course for Higher Education Institutions (HEI) educators and Vocational Education Training (VET) professionals was developed, through which they can learn how to apply Design Thinking tools and how to get into the designer's mindset.

Chapter 23: *Challenge in Classrooms: Moral Reasoning and Emotional Competence*; by Carmen Mañas Viejo. This article presents the first fruits of research focused on pupils in their first year at Secondary School. Its main aim is to explore the possible relationship between moral development, as understood by Kohlberg, and the impact that the components of emotional intelligence described by Baron-Cohen (e.g. self-concept, empathy, flexibility and control) have on moral detachment. At a cooperative school in the province of Alicante (Spain), following Kohlberg's method and through an action-research design, we presented 11 dilemmas and a BarOn questionnaire (EQ-i YV-S) to be resolved by a small group of 25 boys and girls (ca. 12-14 years old) during their tutoring session. The obtained results show that the whole group was at the same level of moral reasoning, but at different sublevels. We also found that the same individuals who are at lower sublevels obtain lower scores (below the group average) in the four analysed emotional components (intrapersonal level, interpersonal level, stress management and adaptability). Use of moral dialectics in the classroom promotes cognitive progress, social responsibility and decision-making at a critical developmental moment.

Chapter 24: *Challenges Faced by Female Learners Following an Engineering Career in South Africa*; by Corina-Maria Mateescu & Dorina Ionescu. The objective of this study is to examine the specific problems that arise in a society with patriarchal attitude toward women and their choice of a future career. Within the University of South Africa (UNISA) College of Science, Engineering and

Technology (CSET) started a community engagement programme called GirlPower in 2009. To understand better the hurdles faced by the female learners while choosing an engineering career, the authors carried out a survey among a sample of 74 future female engineering students, currently part of the “GirlPower” group. It emerged that although 99% of the female learners enrolled for mathematics and physical science only 32 % intend to continue with engineering studies at tertiary level. The big problem is parental and society attitude toward a female child being “able” to study engineering. Looks like our female engineers just “disappear”. The current survey shows a relatively bleak picture of the future of female engineers even if the schools in Johannesburg area are among the best in the country. Based on the present survey the authors will attempt to suggest some solutions to the problems faced by female learners.

Chapter 25: *Management of Behavior Problems of Children with and without Disabilities: Towards Parental Training and Intervention Programs in Greece*; by Leonidou Pagona & Kartasidou Lefkothea. The role of the family is extremely important in a child’s social development. Parenting style and strategies can be either a protective factor or a risk factor (Earle, 2013). Therefore, the purpose of the present study is to investigate the opinions of parents on the use of behavior management strategies. This study asked (a) which strategies parents used to manage behavioral problems and (b) if there were differences in the use of such strategies between the parents of children with disabilities and the parents of children without disabilities. Parent Practices Interview (Webster-Stratton, 1998b) was used as an instrument in this particular study in which 110 parents of children with and without disabilities have participated. The sample was randomly selected and came mostly from cities in Central and Northern Greece. The results show that, in general, parents manage behavioral problems mostly by using positive verbal discipline strategies, which contradicts Harman and Blair’s (2016) previous study, according to which parents manage behavioral problems by stating clear expectations. Also, there seems to be no statistical significance regarding parenting practices between the parents of children with and without disabilities, except for the subscale of appropriate discipline: parents of children with disabilities are using more such strategies.

Chapter 26: *A Problem-Based Learning Approach to Diversity*; by Peter Stevenson & Rita Day. Diversity is a positive approach to the systematic, fair and objective management of workforce diversity. Diversity can be triangulated into discrimination, difference and dominance. The objective was to achieve a better understanding of disabilities by working on a real-life case study. Students in this study attended a conference with other students from various European countries working together in order to find a solution to the case study during the three-day time frame. Students needed to be open minded, willing to listen to the opinions of others in order to build upon their understanding of culture and behaviours and immerse themselves in a different way of life. The method was problem-based learning using the seven-step approach of clearing difficult or unclear words and

terms, defining the problem, analysing the problem, reorganising the problem systematically (constructing a mind map), defining aims of learning, searching for information and reporting. Following the investigation, students then determined that the case was a case of unlawful harassment and discrimination. The students highlighted the key findings and outcomes of their case study through a group poster presentation with each student having an opportunity to articulate his or her findings to the wider audience.

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May, 2019

Mafalda Carmo
World Institute for Advanced Research and Science (WIARS)
Portugal

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Mohamed Ben Moussa, *University of Sharjah, United Arab Emirates*
Paschalia Patsala, *The University of Sheffield International Faculty, City College, Greece*
Peter Stevenson, *St. Mary's University College Belfast, Northern Ireland*
Petros Kefalas, *The University of Sheffield International Faculty, City College, Greece*
Rita Day, *St. Mary's University College Belfast, Northern Ireland*
Rosario Hernández, *University College Dublin, Ireland*
Sandra L. Braun, *Mount Royal University, Canada*

Section 1
Teachers and Students

Chapter #1

LIVE2WORK PROJECT: INCREASING THE CHANCES FOR SUCCESSFUL INTEGRATION OF PEOPLE IN SITUATIONS OF PROFESSIONAL VULNERABILITY

Joana Carneiro Pinto & Helena Rebelo Pinto

Faculty of Human Sciences, Catholic University of Portugal, Portugal

ABSTRACT

The Live2Work Project is an ERASMUS+ Key Action 2 Strategic Partnership for cooperation and the exchange of good practices involving four countries (Portugal, France, Denmark and the Czech Republic). Its purpose is to develop an intervention methodology for end-users working with young adults (18-30 years) in situations of professional vulnerability, including migrants and refugees. Throughout this work, we intend to briefly present the six outputs that constitute the project, namely, the conceptual framework, the toolbox, the course guide, the in-service training courses, the online audio-visual learning scenarios, and the Moodle courses and learning platform on website. Particular attention will be given to the challenge of refugees' integration on a global scale, and to the theoretical rationale of the project. In particular, we will explain the contributions from career normative models, career design, construction and management models, career systemic models, and career culturally adequate models to the development of the theoretical rationale that sustains the project.

Keywords: Live2Work project, life projects, professional vulnerability, young adults, migrants and refugees.

1. INTRODUCTION TO THE LIVE2WORK PROJECT

The Live2Work (L2W) stems from a partnership involving four countries (Portugal, France, Denmark, and the Czech Republic) and eight different institutions¹, which together developed an innovative project of public utility, and of scientific relevance.

The project's main goal is to develop a work methodology for professionals (end users: mentors, advisors and trainers) dealing with young adults (18-30 years) facing professional vulnerability, including migrants and refugees, actively promoting the development of skills relevant to their ability to build healthy and sustainable life trajectories. Taking into consideration the nature of the target group, this project envisages to endow these different professionals with the necessary knowledge, skills, and strategies to promote and support each targeted individual in starting and developing his/her own life project. Therefore, targets are all those young adults between 18 and 30 years old that currently experience professional vulnerability (unemployment) given the mismatch between their qualifications and/or skills and those demanded by the work market for a specific function. And, the professional users are those who work daily with the target group, such as advisors, mentors and trainers.

The Project's specific objectives are:

(i) To create a proven work methodology that a diversity of professionals (end users) can offer in their organizations to the target group, regardless of their academic/professional background (e.g., psychology, social work, education);

(ii) To offer a set of scientifically supported, fun and attractive instructive activities, using working tools that are either created, adapted or reinvented;

(iii) To offer a set of formative activities that can be flexibly used, either as a default or customized to the person's needs and characteristics, or to the current stage of the participant's life project development;

(iv) Training the end-users in this work methodology through their participation in free and accessible workshops;

(v) To provide a set of affordable instructional activities based on support materials;

(vi) To allow for a free use of all materials/outputs produced by this project, that can be accessed at online platforms (e.g., project's website, Moodle platform).

To achieve such objectives, the project's different partners are jointly working on the production of six distinctive outputs:


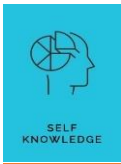
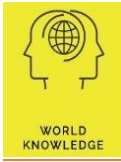

(i) Output 1: Handbook of the project's conceptual framework, concerning the (re)construction of life projects of those in professionally vulnerable situations. The handbook's first section introduces the project's objectives and distinctive characteristics and synthesizes each of its different stages and outputs. Section two focuses on the project's social relevance as it presents the demographic, educational and employability status at these different European countries, and the challenges faced by its migrants and refugees. It also presents a reflection on the importance of taking into consideration the issue of social justice on par with professional knowledge and skills, while intervening in the construction of life projects with this target group. The third section analyses the different theoretical contributions (e.g., from the career normative models, career design, construction and management models, career systemic models, and career culturally adequate models) taken as the theoretical framework for the development of the toolbox. Finally, section four presents the four dimensions - derived from the theoretical foundation - used for developing the instructional activities. Additionally, information is given on the instructional approach, organization, procedures and activity structure of the toolbox.



(ii) Output 2: Toolbox - It consists of a total of 21 instructional activities, organized into four distinctive dimensions, according to the principal models and theoretical references that support the theoretical rationale of the developed intervention (e.g., Super, 1990; Gottfredson, 2005; Greenhaus, Callanan's, & Godshalk, 2010; Pinto & Taveira, 2011; Patton, McMahon, & Watson, 2006; Conyne & Cook, 2004; Fouad & Bingham, 1995; Leong & Hartung, 2000). First dimension concerns self-knowledge and it aims to help participants to clarify their self-concept and to develop their self-esteem, through participation in six activities; participants engaged in these activities should be able to answer the following questions: "*Who am I? What traits do I have? How did I become the person I am now? Which path did I take? Who do I want to be? What do I need to change to become who I want to be?*" The second dimension relates to world knowledge. It aims to satisfy the participant's curiosity and help him/her explore educational, training, and professional opportunities, as well as identify social support networks, through participation in five activities; participants engaged in these activities should be able to answer the following questions: "*What are my main interests? What are the opportunities presented to me? What type of obstacles do I anticipate before me? To whom am I connected to (who are the people that make up my social network?) Who supports me?*" The third dimension concerns transitional skills, a set of abilities necessary for changing from one's current situation to the desired situation. There are five activities in this dimension, which will help the participant answer the following questions: "*What are my motivational, resilience and persistence levels? How do I manage my time? Am I tolerant in accepting diversity? Do I have adaptability skills?*" Finally, the fourth and last dimension concerns decision making, and helps the participant outlining

objectives and implementing an action plan that increases his/her chances of successfully achieving his/her goals. It comprises three activities which will help participants answer the following questions: “*What objectives do I need to set to achieve my goals? What is it that I want to accomplish in all aspects of my life? Which steps and stages do I need to go through and which activities do I need to accomplish to achieve my goals? What obstacles do I anticipate I will have to overcome, and what are the resources I will need to achieve my goals?*”

In addition to the aforementioned dimensions/activities, another two extra areas/dimensions are included; one related to the contractual agreement, and which precedes the intervention, and another that allows the participant to review a summary of his/her intervention path. Table 1 presents all dimensions and their respective activities included in the toolbox (Pinto, Azeiteiro, Harrsen & Rebelo-Pinto, 2018).

Table 1.
Toolbox structure: dimensions and related activities.

<u>Dimension</u>	<u>Questioning</u>	<u>Activities and Tools</u>
 PRE TOOLS		Activity 1A: Individual Contract Activity 1B: Group Contract
 SELF KNOWLEDGE	<u>What characteristics do I have?</u> <u>How did I get to where I am?</u> <u>What was my pathway?</u> <u>Who do I want to be?</u> <u>What do I need to change?</u> <u>What skills do I need to develop?</u>	Activity 2: My Values – Image Cards Activity 3: My Life Values by Self-Assessment Activity 4: Character Strength Cards - Solitaire Activity 5: Strengths by Storytelling Activity 6: VIA Online Assessment Activity 7: Strength Spotting Interview
 WORLD KNOWLEDGE	<u>What opportunities do I have?</u> <u>What obstacles do I anticipate?</u> <u>Which resources do I have to overcome those obstacles?</u> <u>Who is part of my social network?</u> <u>Who supports me?</u>	Activity 8: Self-Assessment for exploration of interest – Steps to identify future career paths Activity 9: Competence Tree Activity 10: Exploration of Occupations Activity 11: Mapping Network Relations (step 1) Activity 12: Identifying Role Models and Support (step 2)
 TRANSITIONAL SKILLS	<u>What is my learning style?</u> <u>How do I communicate?</u> <u>Am I tolerant to differences?</u> <u>What adaptability skills do I have?</u>	Activity 13: Learning Positive Emotions Activity 14: Learning the Power of Thoughts – The Diamond Activity 15: Challenging Thoughts, Core Beliefs and Build Optimism Activity 16: Perceptions Activity 17: Time Management

 <p>DECISION MAKING</p>	<p>What are my closest milestones? What goals am I motivated by? Which are the next best action steps that I need to take? How do I set my goals for the future? How do I anchor my goals for the future?</p>	<p>Activity 18: Goal Setting Activity 19: Goal Setting – Anchoring the goal Activity 20: Anchoring Learnings, Decisions and Goals</p>
 <p>WRAP-UP ACTIVITY</p>		<p>Activity 21A: The Self-knowledge Sum up Activity 21B: The World-knowledge Sum up Activity 21C: My project – The global overview</p>

For each activity a (a) “technical sheet for the facilitator” and (b) an handout for participants were developed: (a) The “technical sheet for the facilitator” identifies the activity, the belonging dimension, the number of participants, duration and objectives to achieve, the necessary preparedness, and step-by-step instructions for its implementation; some observations/suggestions (e.g., for adapting the activity) and useful reference links are also added; (b) The handout for distribution among participants contains all the information regarding the nature of the activity and its implementation. Some of the activities are accompanied by a third printed sheet (c) the “supporting information sheet”, that contains additional information to assist the technician on his/her presentation of the activity to the participants (e.g. the “Value by Image Cards” activity, is accompanied by a “supporting information sheet” that includes the definition of “Life Values”, as well as examples and definitions of specific values). We consider fundamental to ensure that the toolbox’s suggested activities are user friendly, comprehensive and relevant to the end users.

(iii) Output 3: Course guide - a general set of instructions (including a *PowerPoint* course) to assist the training of professionals on how to use all products associated with the project. A first draft was prepared so that all project members could run pilot courses in their own countries as a first test to the developed materials. A final comprehensive course guide version (Workshop facilitator’s guide) was later compiled to assist other professionals running Live2Work workshops with their peers and colleagues, further spreading the tools, methods and ideas for successfully working with the development of new life projects. This course guide is organized around the following structure: (a) migrants/ refugees and the tools, which includes the importance of social norms and the need for creating cultural awareness, (b) methodologies for running a Live2Work workshop, which includes the learning goals, the need to provide support and the Zone of Proximal Development (Vygotsky, 1987), and the sense of ownership and understanding, (c) adult leaning theories, including Andragogy – making experience relevant; Experiential learning - Experience, Reflection, Conceptualisation, Experimentation; and Transformational Learning: The Importance of AHA! Moments, (d) a workshop case to help learning from success, which comprises working with a case with notes for the facilitator, and (e) workshop modules, organized around a three-day workshop schedule. It was the consortium intention to ensure that these are hands-on and practical workshops that build on the knowledge and experience of end users. The workshop is therefore structured and designed in a way to teach professional end users how to use the tools with a learner centred focus.

(iv) Output 4: Piloting courses/ in-service training courses, aimed at testing the following materials: L2W conceptual framework, toolbox, and course guide (including workshop content and structure). The consortium organised several Live2Work Workshops that took place in Portugal, Czech Republic and Denmark. These workshops served the purpose of presenting the first three outputs, with the scope of receiving immediate reactions and recommendations from professionals actively working in the fields of unemployment, vulnerability, and refugee integration. Test persons have included professionals within Live2Work partner organisations, or professionals from professional networks of the consortium. One of the L2W trainers that ran the workshop annotated the immediate feedback received during the workshops, and after the workshop the participants were invited to fill in a survey. Based on these information sources, each partner compiled a national workshop report, to share the feedback and findings with the whole L2W consortium. This feedback was taken into consideration during the production of the final version of the tools and materials.

(v) Output 5: Online audio-visual learning scenarios. Up to now 4 videos have been produced within the project's context. One of these is intended for international promotional activities of the project (tutorial of the Toolbox). The remaining three are videos concerning the presentation of either a toolbox dimension or a toolbox specific activity. The first video is a comprehensive tutorial for the implementation of the "Character Strength Cards" (Solitaire)" activity within the context of self-knowledge. The second which is about world-knowledge, shows the importance of having a network of inter-personal relationships. The third video pertains to transition skills and stresses the relationship between thought, feeling and action, and the importance of changing the first two to achieve a more positive focus and a more positive action result. In addition to English audio, the videos will have subtitles in four languages (PT, EN, DN, CZ). Currently all videos are being reviewed for approval by all partners, while a fifth video related to the toolbox's fourth dimension (decision making) is in preparation.

(vi) Output 6: Moodle courses and learning platform on website, with a set of interactive materials for online learning, that are easy and intuitive to use. The project already has a promotion website that can be visited at the address www.live2work.eu. Moodle courses open to the entire community will soon be created, making the project materials available and ready-to-use.

The project started on September 2016 and will finish on February 2019.

2. EXPLORING OUTPUT 1: CONCEPTUAL FRAMEWORK

2.1. The challenge of refugees' integration on a global scale

In the last few years people all over the Globe have experienced hard times, mostly due to 15 still unresolved conflicts. According to the United Nations High Commissioner for Refugees (UNHCR) these conflicts were responsible for the displacement of approximately 66 million people, causing people to either seek refuge elsewhere inside their country (internally displaced) or in more extreme cases to abandon their country (externally displaced). Contrary to the European general belief, most people if forced to leave their homes would rather stay in their country of origin or seek support in the neighbouring countries and would only look for help in Europe as a last resort. Notably, people have been fleeing from conflicts in Syria, Afghanistan, Iraq, Pakistan, and Nigeria, either by land or by sea, and a large majority perish while attempting to achieve a more secure, less violent, less abusive life, and one with less poverty (BBC, 2016; Eurostat, 2017; UNHCR, 2013). In 2015

Europe hosted approximately 1.3 million refugees, mainly in Germany, Hungary, Sweden, Austria, Italy and France. However, there is a growing perception that migrants and refugees have not been welcomed in the best possible way. On arrival migrants bring with them a collection of necessities that need to be addressed such as physical (e.g. nourishment, shelter, protection) social (e.g., participation in educational, formative, professional, social, recreational, and citizenship activities) and psychological (e.g., stress, mourning, trauma, anxiety, depression, and suicidal ideation) (Berger, 2013; Hovey & Magaña, 2003; Yakushko & Chronister, 2005). This growing awareness to assist these vulnerable people and to provide them the means to a full social integration is counteracted by a strong degree of mistrust in their ability to achieve it, and concerns that their presence among us could actually increase the risk of terrorism, violence and criminality in our societies (Yakushko, Watson & Thompson, 2008). This adds up to the social costs associated with providing shelter, education, and training, and to the fear migrants will reduce the number of job opportunities for national citizens which is already low. In truth, the discriminatory treatment towards migrants is a barrier to their full integration and adaptation, and only contributes to perpetuate the cycles of poverty, vulnerability and exclusion, regardless of their permanent, or temporary settlement, as they wait for the conditions in their country of origin to change, allowing them to return in safety.

An inclusive fair and equalitarian society is constructed having in mind the satisfaction of its citizen's needs, whether physical or psychological, and creates the necessary opportunities for full realization of their citizen's potential. Such society should implement an array of diverse actions that will empower the individual, and allow equal access opportunities, resources and values, regardless of his/her gender, race, ethnicity or religious belief (e.g., Hartung & Blustein, 2002; Helms, 2003; Herr, 2001; Herr & Shahnasarian, 2001; Irving & Malik, 2004). In what specifically concerns the needs of self-realization, the refugees' developmental potential through information, guidance and career counseling activities is crucial given the likelihood that self-realization will play a significant contribution to his/her integration in a new culture (Yakushko, 2006); the enrolment in these activities will provide the refugee with the acquisition and training of new skills, necessary to face the ever changing realities of the world market, which, in the end, may be to his/her benefit should the refugee decides to return to his/her country of origin.

The theoretical information, the empirical data of scientific studies, and the field experience of the institutions have shown that the difficulties of the migrants are not exclusively of an individual nature. On the contrary, there has been a great influence of their past experiences in the country of origin, their family and employment structures, cultural norms and standards, as well as their religious values, and in the way they experience the migration situation. Such awareness requires that the study of this theme be contextualized and comprehensive, not only in relation to its protagonists (target group), but also in relation to their surroundings (contextual systems).

Next, we will present the theoretical support for the project's goals of successfully integrating people that find themselves in a professional vulnerable situation, which includes migrants and refugees.

2.2. The rationale of the L2W: Contributions from career models

The construction of life projects which is the basis of the L2W project, output 1, in what concerns the conceptual handbook, is founded on four distinct career theoretical perspectives which help to clarify and delineate interventions considering all the personal and contextual dimensions previously mentioned:

(i) The normative models (e.g. Super, 1953, 1990; Gottfredson, 1996, 2005): which consider career development as an individual continuous process, that unfolds over the life stages, over which the individual plays several different roles that differ in prominence, thus providing a broader vision of career, both longitudinal and latitudinal.

(ii) The design, construction and management of career models (e.g., Greenhaus et al., 2010; Pinto & Taveira, 2011): which put the emphasis on the cyclic, recursive and systematic nature of the process of decision-making and problem solving, containing stages such as self-exploration, environmental exploration, the development of objectives, definition and implementation of an action plan, and feedback and evaluation, mostly relying on the assumption of personal responsibility;

(iii) The systemic models (e.g., Patton & McMahon, 1997; Patton et al., 2006; Bright & Pryor, 2005; Conyne & Cook, 2004): which recognize the individuality of each client. These models are culturally inclusive and place the individual “in context” within a set of systems (individual, social and contextual) that relate among them in an open, circular and recursive manner, that have highly permeable boundaries, and are susceptible to chance; and,

(iv) The culturally sensitive models (e.g., Fouad & Bingham, 1995; Leong & Hartung, 2000): which delineate the process of career counselling in a number of stages during which the role played by the client’s culture (and that of the psychologist) is constantly emphasized, focusing on the education of minorities as a route to end the poverty and discrimination cycle.

The theoretical rationale of the Live2Work project departs from the analysis of the above models and encompasses the following detailed assumptions:

(i) The personal system: encompasses all socio-demographic (e.g., gender, age, ethnicity, race, religion, level of education) and psychologic characteristics (e.g., personality traits, interests, values, strengths, skills, attitudes) that define an individual and can influence a person’s life trajectory; it is important to educate the person about the relevance of increasing his/her the awareness of these traits since they can be very helpful for the understanding of his/her past self, and present self as well, and who he/she wants to be in the future; and how these traits can work for his/her benefit by assisting in the pursue of new life projects, in a world full of contradictions;

(ii) The contextual system: encompasses all of the person’s life contexts, from the closest ones, family, peers, neighbors school and/or work, to those more distant ones, social support, financial and legal institutions; it is important to help the person to explore, understand and use the educational, formative and professional information and to identify the positive (negative) influence the diverse contexts exerted on his/her life, and how they can contribute to attain future projects;

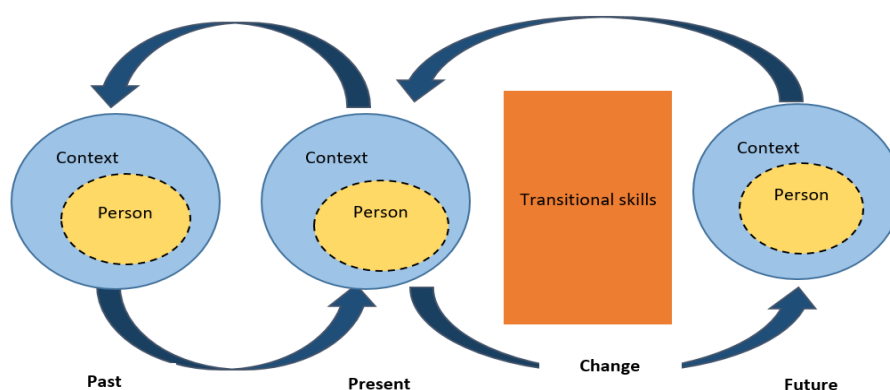
(iii) The temporal system: contains the past, present and future dimensions and their interactions with the personal and contextual systems over time; it helps the person to “relive” his/her life’s trajectory over time, by creating an awareness of who he/she was, and what he/she became based on past decisions (i.e. how his/her past influenced who he/she currently is); and what future he/she intends to create from where he/she stands; this idea of continuity in a life’s path is important since all life decisions are interlocked;

(iv) Complexity, chance, unpredictability and instability of life contexts: This matches the everchanging aspects of life and context concepts; these changes have been described in the literature as unstable, unpredictable and dynamic and therefore hard to control; people are advised to accept these changes as influential in their lives and deal with the circumstances the best possible way they can; the idea that life’s objectives can also change over time and therefore people have to constantly make informed and conscious decisions is also derived from this assumption;

(v) Personal agency: this assumption is about awakening people for their need to regain control over their lives even when chance plays a significant role; a person must be the prime agent of his/her life transformation, and thus one should be encouraged and supported to assume his/her own responsibility in this matter; in doing so the person will cease to be a passive agent waiting for the opportunity to come, and even in the face of unpredictable circumstances he/she will be able to create new opportunities and steer a path, acting swiftly and efficiently (e.g. developing new skills) towards his/her defined life's goals.

Figure 1 graphically illustrates the above 5 assumptions supporting the theoretical rationale of Live2Work project.

*Figure 1.
Theoretical rationale of Live2Work project.*



These five assumptions were considered during the structuration of the toolbox according to the dimensions and related activities already presented at table 1. Accordingly, the “self-knowledge” dimension corresponds to the personal system of the individual and aims to support the participants in collecting, analysing, interpreting and using personal information. The “world knowledge” dimension corresponds to the contextual system, and aims to allow the participants to collect, analyse, interpret, and use information related to the educational, training and professional world, and their main objectives in life/career. The “transitional skills” dimension corresponds to the changes people want to make in order to transform their present into their desired future. And, finally, the “decision-making” dimension involves the temporal system, more specifically, starting by looking at the past and the present, the design and construction of a desired future.

3. FURTHER DEVELOPMENT OF L2W PROJECT

Recently the outputs 1 to 4 were tested in pilot studies conducted by professionals that represent the intended end users - those who will be using these materials, i.e. those that will be working with professionally vulnerable young adults (the target group). These pilot studies, developed between September and November of 2017 in Portugal, Denmark and Czech Republic, were conducted to test receptivity to the project and its materials' and their suitability to the intended end users and target group.

Currently all outputs (Handbook of the project's conceptual frame, the toolbox, the course guide and the workshops) are being revised by the project's team in response to feedback obtained from the aforementioned pilot studies, to guarantee that all outputs are internationally adequate and at the same time take into consideration whatever national specifications might be considered necessary to add.

In the future, outputs 5 and 6 (i.e. the videos and the e-learning platform), will also be subjected to further assessment. As mentioned before, a promotional video and three tutorial videos are already available, but still under internal scrutiny and revision. Work on the e-learning platform is already being developed. Afterwards, it will be disseminated through the community, thereby guaranteeing that the entire project and all its materials will be made publicly available.

A major international event is scheduled for January 2019, marking the project's conclusion and presenting both the project and its outputs. The event, hosted by Catholic University of Portugal, at its Lisbon campus, will consist of a final summit (and a few workshops) that will be directed to the educators (psychologists, social workers, professors, mentors, and trainers), students, political decision-makers, social support institutions and non-governmental organizations that work with vulnerable people (e.g., refugee centers). The major goals of the conference are: (i) Awareness about the processes of the construction of life projects with populations in situations of vulnerability, (ii) Presentation and dissemination of innovative methodologies and tools, (iii) Presentation of the process development and results of the project, and (iv) Dissemination of the project's outputs. Some of the conference topics include: vulnerability (personal, social, professional); life projects (educational and employment projects); migration and refugees; multiculturalism and interculturality, inclusion; equity, social justice and social change; and, staff training on life/career (education/employment) interventions. The workshops will be focused on the training of some of the project activities such as: 1. "My values: Image cards", 2. "Identifying Future Career Paths", 3. "Tree of Competences", 4. "Diamond: Positive Focus", 5. "My Goals: SMARTE Model". The project will officially be completed on February 2019.

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KEY TERMS & DEFINITIONS

The definition of the following terms was taken from the conceptual manual (output 1, pp. 51-54):

Life project: A process of problem-solving and decision making that requires exploration skills, focused on self-knowledge and knowledge of the environment, the definition of objectives, and the definition and implementation of a plan of action, always with a proactive attitude and autonomy.

Migration: an exit movement out of the city and/or country of origin, and consequent entry into a new host city and/or country.

Professional vulnerability: gap between academic qualifications and / or technical skills and labour market requirements.

Refugee: person in situation of forced migration; those who are forced to leave their city / country of origin because of persecution, conflict, war, or violence.

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AUTHORS' INFORMATION

Full name: Joana Carneiro Pinto

Institutional affiliation: Faculty of Human Sciences, Catholic University of Portugal

Institutional address: Rua Palma de Cima, 1649-023 Lisbon, Portugal

Email address: joanacarneirpinto@ucp.pt

Short biographical sketch: Assistant Professor at the Faculty of Human Sciences at UCP – Catholic University of Portugal. She graduated and received her PhD in Psychology, with a specialization in Vocational Psychology, at the University of Minho, with the thesis "Career self-management: study of a psychological intervention model with research grant holders", a topic that represents the transition between vocational psychology and social/organizational psychology. She teaches courses related, among others, to the development of academic and professional skills, research methodologies, psychometrics, psychological assessment, psychology of learning, and educational psychology. She has working experience in assessment and interventions with children, adolescents, young adults, and adults. She is a researcher on studies related to well-being and life projects, the assessment of needs and effectiveness of psychological interventions in institutional settings, and scientific research methodologies.

Full name: Helena Rebelo Pinto

Institutional affiliation: Faculty of Human Sciences, Catholic University of Portugal

Institutional address: Rua Palma de Cima, 1649-023 Lisbon, Portugal

Email address: rebelopinto@sapo.pt

Short biographical sketch: Guest Full Professor at the Faculty of Human Sciences at UCP – Catholic University of Portugal, where she coordinates the Institute for Family Sciences. She also coordinates of the Master's Degree program in Family Sciences and the Master's Degree Program in Psychology in Business and Economics. She holds both Honors and PhD degrees in Psychology from the University of Lisbon, where she later became a Full Professor at the Faculty of Psychology. At the University of Lisbon, she held many positions including Director of the Career Guidance Institute and President of the Scientific Commission for Access and Qualifications' Accreditation. Her main scientific interests and research activities focus on the domains of Health, Education and Family and she has been intensely involved in sleep research and sleep education, particularly with children and adolescents within the contexts of basic and secondary schools on programs involving parents and teachers.

¹ Santa Casa da Misericórdia de Lisboa (SCML), Catholic University of Portugal (UCP), Padre António Vieira Institute (IPAV), Artevio, Coneqt, Mind Your Organization (MYO), Pelican, and Alb Conseil.

Chapter #2

SOCIALIZATION AND THE CONSTRUCTION OF A PROFESSIONAL IDENTITY AMONG PUBLIC RELATIONS STUDENTS IN THE UNITED ARAB EMIRATES

Sandra L. Braun¹, Mohamed Ben Moussa², Wided Dafri³, & Ana Stranjančević⁴

¹*Department of Public Relations, Mount Royal University, Canada*

²*College of Communication, University of Sharjah, United Arab Emirates*

³*Faculty of Communication, Arts and Sciences, Canadian University Dubai, United Arab Emirates*

⁴*Department of Tourism and Service Management, MODUL University, United Arab Emirates*

ABSTRACT

In the United Arab Emirates, economic and cultural forces are affecting the development of public relations. A high imbalance of expatriates to locals (Emiratis) in the population has left the field of public relations lacking in local representation. Without adequate representation across the major sectors of the society, Emirati can lose influence and control over their own homeland where they are a significant minority. A contributing factor to success in any field is the development of professional socialization and construction of a professional identity in the post-secondary environment. This is an exploratory study examining Emirati public relations students and their professional development. It is a qualitative study of semi-structured interviews of 10 Emirati public relations students, utilizing a grounded theory approach. Findings reveal that Emirati public relations students are developing in their professional identities at institutional and relational levels, but there is more that can be done by the students, themselves, to support the construction of their professional identities in their post-secondary environment. This would likely increase their chances for career placement and success in the area of public relations, and further greater representation of locals in the society.

Keywords: public relations, students, professional identity, socialization, UAE, education.

1. INTRODUCTION, BACKGROUND AND SIGNIFICANCE

The United Arab Emirates is a federation of seven emirates formed in 1971. The country has experienced rapid, ongoing, and significant development since the discovery of vast oil reserves in the 1950s (Zahlan, 2016). This ongoing, rapid growth has precipitated a high demand for ex-patriates to support the economic expansion and infrastructure development that comes with burgeoning economic activity. This has led to an extreme imbalance in the population with expatriates now outnumbering locals by about 88% to 12%. Emiratis represent only about 1.1 million out of UAE's population of 9.5 million. (Global Media Insight, 2018).

The local Emirati culture is rooted in the Islamic tradition (predominantly Sunni Muslims) and in Sharia Law. There is, among many things, a particular dress code, prohibitions on alcohol use, and a family structure that values tribal kinship, traditional gender roles and patriarchy (Mostafa, 2005). However, the influx of expatriates has created cultural diversity. The largest groups are from India (27.5%), Pakistan (12.7%), Bangladesh (7.5%), Philippines (5.5%), Iran (4.7%), and Egypt (4.2%). (Global Media Insight, 2018). The largest Western representation is from Great Britain (Ministry of

Foreign Affairs, 2018). The government of UAE is a sovereign absolute monarchy of six royal Emirati families who work to support, preserve and develop the local culture in the midst of the diversity (Zahlan, 2016).

Because of this imbalance, Emiratis are under-represented across many sectors of society. If they are to retain influence over their own society, it is important that they be adequately represented across the different sectors of society, occupy influential positions, and have meaningful employment. Emiratization, a type of affirmative action program, was instituted by the UAE in 2000 to address the imbalance in employment, but a government policy, alone, is insufficient to address the issue and the effectiveness of the program has been questioned (Al-Waqfi & Forstenlechner, 2014). Many Emiratis (about 86%) tend toward public sector employment because there is a perception that salaries and working conditions are better than in the private sector, and because public sector work supports certain cultural norms (like separation of the genders). This is problematic because public sector work is not always plentiful and competition for such positions is high; many Emirati graduates seek such employment, and opportunities are shrinking (Harry, 2007; TANMIA, 2004; Simpson, 2012). Emiratis only encompass some 1% of the private sector, leaving the group particularly under-represented in this sector (Al-Waqfi & Forstenlechner, 2014; Croucher, 2014). Emiratis need to be as skilled and as prepared as possible for employment in all of their chosen professions. They must also be willing to work across both the public and the private sectors if they wish to combat rising unemployment among their numbers and retain control over their own economy as minorities in their own country (Al-Ali, 2008).

The field of public relations is an increasingly popular, and important, career choice for Emirati students. Public relations programs are offered in about seven institutions of higher education as a baccalaureate degree, and there are many professional programs in the industry. Public relations have been described as a “profession [that is] badly needed to meet the challenges of economic, political and cultural globalization,” such as is occurring in UAE, and while the field faces challenges, “there is nowhere in the globe that having it [public relations] . . . is more important than in the Middle East” (Kirat, 2006, p. 259). It is important for Emirati to be represented in the field of public relations and for these public relations students to be adequately prepared to occupy influential and meaningful public relations roles within the society.

This study can provide information, regarding not only the development and future success of Emirati public relations students in UAE, but it can also be a means by which to examine the potential success of any student in any program of higher education in any country. It can be useful where student success is particularly vital, such as in this case of the UAE.

2. LITERATURE REVIEW

2.1. Construction of a professional identity and socialization – Foundational to career development

This research is examined through the lens of socialization and the construction of professional identity, which has been associated with positive professional outcomes (Tajfel & Turner, 1979). Professional identity can be defined as a set of beliefs, values, and experiences characterizing a group of individuals practicing the same profession (Ibarra, 1999; Tuluas & Gokturk, 2017). It encompasses the development of both a collective and personal identity through professional experiences, interactions and the generation of

meaning (Beijaard, Meijer, & Verloop, 2004; Dutton, Roberts, & Bednar, 2010). The construction of a professional identity allows individuals to adhere to a particular community with whom they share “a common approach to a particular type of work” (Van Maanen & Barley, 1984, p. 5). Public relations students are developing professional identities as they assimilate into their profession, have experiences, network with other professionals, and generate meaning about the field.

Professional socialization, a closely related concept, is “the key period within which individuals begin to form identification with their profession” as learners adopt various norms, skills, and values associated with a particular profession (Caza & Creary, 2016, p. 15). This happens through interpersonal interactions and reflective knowledge as individuals begin to internalize the values, skills and knowledge of a profession. Public relations students begin to develop in professional socialization as they learn new public relations skills, internalize professional practices such as media relations, and adopt the values and norms associated with their chosen profession, such as the role of relationship building in successful practice and the application of industry ethics.

2.2. Professional socialization and education

A key objective of any academic program is to prepare future professionals to “learn and adopt the values, attitudes, and practice behaviors of a profession” (Hammer, 2006, p. 3). However, this training cannot be codified in any single program or individual curricula, as it needs to combine a variety of practices that range from classroom education and examination to extracurricular activities and interactions between educators, mentors and students (Tanzer & Dintzer, 2017). The socialization process relies on inputs from various sources including the following: discipline-based theories and concepts; practical skills and knowledge; and reflective knowledge involving intuitive and analytical thinking about experiences and beliefs (Sutherland & Markasuskaite, 2012).

A considerable body of research has highlighted various strategies that public relations educators in the field can adopt to foster professional socialization among learners (Aldoory & Wrigley, 2000; Ahles, 2004; Berger, Reber, & Heymann, 2007; Pinkham, 2004). Many of these studies have stressed the need to move away from traditional and formal classroom training to one that recognizes the importance of creativity, self-motivation and self-management as essential qualities in public relations graduates (Berger, Reber, & Heymann, 2007).

To analyse the level and process of professional socialization and professional identity construction, this study examines three sources of possible inputs into a student’s academic training: a) the programmatic processes offered by the educational institution such as coursework; b) relationships with peers, faculty, and other academic professionals; and c) personal learning. These sources have been used to examine the professional socialization of chemistry, history, and public affairs doctoral students (Gardner, 2008; Smith & Hatmaker, 2014). In their research about what constitutes the professional identity of a doctoral researcher, Smith and Hatmaker (2014), building upon Gardner (2008), developed these categories. In their study, they concluded that

- a) at the organizational level, doctoral students received inputs from departments and programs through classroom training, advisors, and research assistantships, which helped them to develop research skills, and facilitated faculty relationships.
- b) the relational level was most central to professional identity development, both instrumentally and psychosocially. Students experienced faculty mentoring, deeper faculty relationships, and on-the-job-training, bolstering their professional identities, and increasing professional visibility.

- c) at the individual level, students reported that their proactive behaviours contributed to their professional identity construction.

From this, Smith and Hatmaker (2014) identified the vital components of a research professional identity: research skills, methods expertise, area and domain knowledge, enhanced reputation, independence, self-confidence, and development of research ethics.

2.3. Public relations and public relations education in the Middle East and UAE

The context of the public relations profession in the MENA (Middle East and North Africa) countries, and UAE in particular, provides a great challenge for promoting professional identity and socialization in the field of public relations. Although public relations has been practiced in the region for more than four decades and the need for it has developed tremendously in response to economic growth and the impacts of globalization. It is a profession that suffers, overall, from a negative reputation for a variety of reasons: professional standards and ethics are rarely maintained; public relations is often misunderstood in the society and, therefore, its use is limited; public relations is taken more as a synonym to publicity and press relations; and it can be reduced to small, executive office tasks (Badran & Ayish, 1996; Kirat, 2005, 2006, 2016). Other limitations include “poor qualifications and experience of PR practitioners,” “confusion of tasks and prerogatives,” “lack of research, studies and opinion polls,” and lack of understanding of the PR function by top managers, among others (Kirat, 2006, p. 258; Al Khaja, 2009).

In spite of the difficulties, the public relations agency industry in the UAE is one of the most vibrant and developed in the Middle East; there are about 100 public relations agencies in Dubai, many of which are branches of major worldwide firms like Hill and Knowlton (MEPRA, 2017). Because many UAE public relations agencies are branches owned by Western or European firms, or run by ex-patriates, they are “virtually identical to their counterpart firms in the United States in their organizational structure as well as in their technological resources” (Ayish & Kruckeberg, 2004, p. 41). Many commentators have focused on the role of education and training in enhancing professionalism in the field (Kirat, 2016; Prasad, 2011).

In summary, in this unusual context of high growth and rapid development in the UAE, the public relations function is very much present and operating, but struggling toward attaining and maintaining a consistent, advanced level of expression (Rizk, 2005).

2.4. Canadian University Dubai

Canadian University Dubai was established in 2006 as a private institution. Its education is based on Canadian curriculum and it has about ten partnerships with colleges and universities in Canada including Mount Saint Vincent University, University of New Brunswick, McGill University, Concordia University, and Royal Roads University, advertising itself as a “portal to Canadian higher education” (Canadian University Dubai, 2017). The public relations program is housed within the School of Communication and Media Studies (SCMS) and is the most popular program in the School compared to its counterparts, journalism and advertising. Students may study in either Arabic or English streams, with Arabic being more popular.

The program enrolls an average of about 300 public relations students each Fall semester. The majority of students in the public relations program are Emiratis, at about 59%. CUD has enrolled about 895 Emirati public relations students across the Fall semesters, 2012 – 2106.

Figure 1.
Numbers of Emirati vs Non-Emirati Students Enrolled in PR Program, CUD, 2012 – 2016.
Source: Enrolment Services, CUD.

Date	Total # of PR students	# of Emirati	# of Non-Emirati	Percentage of Emirati
Fall 2012	174	106	68	60.9%
Fall 2013	327	215	112	65.7%
Fall 2014	347	220	127	63.4%
Fall 2015	369	208	161	56.4%
Fall 2016	311	146	165	46.9%
	1,528	895	633	58.6%

3. RESEARCH QUESTIONS

RQ1: In the face of Emiratis being a significant minority in their own country, and with increased unemployment and decreasing numbers of jobs available in the popular public sector, how are Emirati public relations students faring in professional socialization and construction of their professional identities as a means to predicting possible future success?

In addition, the research questions follow the model proposed by Smith and Hatmaker (2014) and Gardner (2008), which proposes that professional identity construction emanates from the three sources of organizational, relational and personal/individual inputs and sources:

*RQ2: How is the **institution/university** contributing to the development of the Emirati public relations student?*

*RQ3: How are **PR faculty** contributing to the development of the Emirati public relations student?*

*RQ4: How are Emirati public relations **students**, themselves, contributing to their own professional socialization and development?*

4. METHODS

In-depth interviews were conducted of a purposive, convenience sample of 10 Emirati students at Canadian University Dubai to obtain in depth information on perceptions related to the socialization and professional identity construction inputs by the university, faculty, and students, themselves (Creswell, 2007; Denzin & Lincoln, 2005; Guba & Lincoln, 1998; Berger & Luckman, 1966; Wimmer & Dominick, 2006). While there has been much debate about the proper number of subjects for qualitative study, six has been considered an acceptable number (Miles & Huberman, 1994; also see Morse, 1989; Williams, Wallis, & Williams, 2013).

Participants were recruited by snowball technique (Broom & Dozier, 1990) and were offered to be interviewed by any of the four researchers of their choice, whether in English or Arabic, or by male or female interviewer. There was one first year student, three second-year students, three third-year students, and three fourth-year students. Five were

female, and five were male. Ages ranged from 19 – 43. Six were in the 19 – 30 group and four were over 30 years of age. All were self-identified as Emiratis and confirmed through enrollment information. Students were offered confidentiality.

A review of the literature provided the basis for interview questions and an interview guide was created (Strauss & Corbin, 1990; Gardner, 2008; Smith & Hatmaker, 2014). See Appendix A for the interview guide. Interviews lasted from 30 – 45 minutes. Some interviews were audio-recorded, with student permission. Recordings and notes that were conducted in Arabic were transcribed. Arabic transcripts and notes were translated into English. Information was then analyzed qualitatively through open coding for themes, using a grounded theory approach (Corbin & Strauss, 2007; Glaser & Strauss, 1997; Strauss & Corbin, 1998).

5. RESULTS

5.1. Some students experience barriers to their public relations education

Half of the students, mostly females, expressed that they experienced barriers to getting their public relations education. There were transportation, babysitting, relationship, and work issues. One indicated that she relied on the family car and driving schedule. “Sometimes the car is available, but the driver is not,” she said. Another indicated some conflict with a boyfriend who was not supportive of her studies. Two students, one male and one female, indicated that working posed a problem as it presented constraints on their ability to attend classes, to do coursework, and take opportunities provided by the university, such as networking events. It was suggested that a selection of night classes would be helpful as an option to support students who work.

5.2. The institution contributes strongly to professional identity construction and socialization, particularly through its course offerings

Students indicated many positive aspects that the institution was contributing to their development. They named many different courses and modes of delivery across the curriculum as positive, including “graphic design,” “the public relations core courses,” “organizational communication,” “protocol,” “case studies,” “critical thinking,” “crisis communication,” “field trips,” and “research methodology.” Many specifically mentioned the internship as quite positive, including the final-year capstone graduation project. One specifically indicated a liking for “the mixture between PR courses and mass comm courses.” “It is like coffee and sugar – one adds sweetness to the other.” A few mentioned the group work as overwhelmingly positive, “although the group work can be irritating at times” and one “agonized over it” sometimes. Students noted that it can sometimes be uncomfortable to work in groups of mixed gender, but recognized that it was necessary. One mentioned a specific professor’s class as being particularly enjoyable “because most of our sessions and classes were on how to manage conferences and exhibitions ... skill-building.”

With regards to internships, there was suggestion that a) there could be more internships provided, b) the quality of the internships be better, and c) the university work harder to provide and guarantee internships, with one noting there was a “lack of public relations departments in UAE accepting internships.”

Many students felt that course offerings and delivery could be improved in a variety of ways:

- Eliminate “unhelpful” or “unnecessary” courses, such as basic computer classes.
- Offer more information that helps students translate public relations concepts, which are based in Western thought, into Arabic, “because there aren’t always good translations for concepts.”
- Review the curriculum for course content overlap.
- Keep building the activity-oriented components of coursework, such as field trips and skill-building training workshops, “either on-campus or off.”
- Offer night classes to support working students.
- Include more public speaking classes and/or opportunities to develop this skill.

In one interview, the topic of mentorship was discussed. The interviewer noted that this was something she was familiar with in other public relations programs, acknowledging that there was not a formal mentorship system at CUD, and asking the student if he felt that a mentorship program would be helpful. The student, a first-year, said he was not entirely familiar with the concept or the process of mentoring, nor how it would operate in the program. This likely indicated a lack of exposure to the concept or the term.

5.3. Faculty are contributing positively

Faculty input was indicated in an overwhelmingly positive way, with students saying such things as “each is different and gives you ideas,” “everyone is helpful” and “everyone is nice.” Students noted that faculty were also helpful in providing networking opportunities by bringing speakers to class, and by organizing field trips for students. All but two subjects indicated that professors provided good tips about public relations practice. The only improvement suggested here was for professors to provide more networking opportunities.

5.4. Students are falling short of investing in their own development

While two respondents indicated that they had been known to do an occasional free online course, and only one said she attended networking events regularly, most of the students admitted they were not investing significantly in their own professional development as individuals. One said that while she attended networking events, she “really didn’t do anything.” One said she wanted to improve her writing skills and felt that she should look for additional writing classes, but admitted she had not taken any action on that. One indicated she did some volunteer work, but that it was “in the past.” One said she “intended” to take more specialized training elsewhere, but had to do so. Another said she “tried” to develop more experience by getting work experience, but felt “too shy,” citing the need for more practical, skill-building opportunities.

Students tended to rely on the required internship experience and the provided class field trips for practical training and development. Inputs on the personal level outside of the required course work were quite limited, even though students recognized such inputs as potentially valuable.

Additionally, cultural patriarchy effects exist. When asked if she planned on working in the field of public relations after graduation, one female indicated that her future laid mostly in the hands of her father, who made the final decisions with respect to her major life decisions.

5.5. Students feel mostly prepared to enter the public relations workforce but may lack confidence

Most interviewees responded emphatically positively to the question of whether or not they felt that they had the skills to be successful in the public relations field, with such comments as, “I have learned so much,” “I came in with some skills I developed on my job but now I have more,” and a more mature student said, “I had practical experience for 24 years.” Some indicated a cautionary “yes,” saying such things as, “my skills remain to be tested,” “I am just getting started,” “I need more knowledge and patience,” “I need to improve,” “I need to develop confidence,” “I need to improve public speaking,” and “I need to improve my writing skills.” However, these comments reflected students who were aware that they were new and developing in their field, rather than students who simply would not be able to function in an entry-level public relations position.

Concerning areas in need of improvement, one respondent suggested more specific skill-building opportunities were needed such field trips or training sessions, because “[covering] the curriculum is not like having training sessions.” Specifically, it was suggested that public relations students be allowed to set up events as a way for students to practice their public relations and public speaking skills.

6. DISCUSSION AND CONCLUSIONS

There is a healthy interest from Emirati citizens for careers in public relations, and Emirati public relations students at Canadian University Dubai represent a majority of the public relations students at the institution. This indicates the likelihood for locals to take up more public relations positions in Emirati society. This can help Emiratis remain influential in their own country in the face of their minority numbers. Consistent with past studies, this study confirms a preference for public sector work versus private sector work among Emiratis. Most of the students, particularly the males, said that they are either currently working in, or headed for, a career in the public sector, naming such places as Immigration, Civil Defense, Dubai Police, Office of the Sheikh, Dubai Community Development Authority, Dubai Customs, and Mubadala (a state-owned national wealth fund). Ultimately, such aspirations may pose a possible barrier to career success in public relations career success in light of the literature which suggests that public sector employment opportunities are shrinking, and that the effects of the government’s Emiratization policy are limited (Al-Waqfi & Forstenlechner, 2014).

Upon analysis of interview results, overall, students are gradually socializing into the profession and building a professional identity, as evidenced by the many university/programmatic inputs and relational inputs noted by interviewees. Professional identity and socialization are supported, to some extent, at the institutional level (program and courses). Students positively cited course work, internships, field trips, and the graduation project. This academic foundation shapes their overall set of professional beliefs, values and experiences going into the profession of public relations, and is positively associated with the construction of professional identity (Tuluas & Gokturk, 2017; Ibarra, 1999). At the relational level, students reported strong and positive relational ties with faculty, overall. Positive professional experiences and interactions are also associated with the construction of a professional identity (Beijaard, et al., 2004; Dutton et al., 2010).

The idea of developing a mentoring program holds possibilities. Structured mentoring opportunities exist in other public relations programs and it is possible that, for a highly relational culture, like the Arabic culture, the idea of developing mentoring programs is worthy of exploration. This would expand public relations students' opportunities for socialization into the profession through relationships (see Lankau & Scandura, 2007), thereby additionally contributing to the construction of their professional identities.

The area that showed the greatest limitations to the development of professional socialization and to the construction of professional identity was the individual level, i.e. the students themselves. While the development of professional knowledge and skills from programmatic inputs is central to the construction of a professional identity, and relational inputs play an important role, the development of a professional identity is not limited to these - individual self-inputs also play a role (Gardner, 2008; Smith & Hatmaker, 2014). Students seemed to recognize the value of self-inputs, but they also consistently admitted it to be an area of weakness. Collective professional identity may be formed through course work, shared experiences and relational supports, but personal professional identity may be hindered if students are not contributing aspects of their personal identity towards professional socialization. Additionally, in this study, the effects of patriarchy are revealed; female students can be either encouraged or hindered in their self-development and in their choices, depending on the decisions of their male head of the household (see Williams, Wallis, & Williams, 2013). Cultural factors are playing a significant role.

Certainly, the true challenge appears to be at the individual level and includes the need for more student agency and proactivity. In light of this finding, it would seem fruitless for the institution, or the faculty, to provide the additional self-development opportunities that students requested (such as outside training workshops, or more networking opportunities) unless such opportunities were woven into the coursework as required activities.

In summary, the process of professional socialization and construction of a professional identity is occurring, particularly at the institutional and relational levels, but there is opportunity for greater development to occur at the individual level.

7. LIMITATIONS AND FURTHER RESEARCH

Because this is a study of a specific group of students at a specific university, results are not meant to be generalizable. It is exploratory, providing a window view. It provides specific results in a specific context. However, the study could be expanded to other public relations students in UAE to confirm results. The study could also be expanded to any other program in UAE as a means to predict student preparedness and Emirati representation in other sectors, such as medical, oil, real estate, engineering, finance or entrepreneurship, etc. It could also be used to examine potential for student success in any program in any country where student success is particularly vital, such as it is in the UAE.

Further research could also identify the specific barriers that students are encountering and/or to investigate means of overcoming those barriers. A deeper investigation into cultural aspects and impacts could shed additional light and suggest additional supports (see AL-Ajmi, 2007). Lastly, the subject of mentorship could be explored as a potentially effective relational input into the construction of professional identity of the UAE public relations student, or be suggestive as an effective relational tool in other post-secondary programs.

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APPENDIX A – INTERVIEW GUIDE

1. Do you face any barriers toward obtaining your public relations education here at CUD? If so, what are they?
2. What things does the institution do to develop you? E.g. Course work, advising, etc. What things do you participate in?
3. To what extent do you think that your PR courses and your program, in general, are preparing you to become a PR professional? What is lacking? What needs to be improved?
4. What things do faculty do to develop you, if anything? What do you wish they might do?
5. Do you get tips and information from faculty members about PR practice?
6. What things do you do to develop yourself? (e.g. proactively pursue faculty, etc., get your own internships and experiences, etc.)
7. Have you received any field training or taken any special initiatives outside of required classwork, to develop in public relations?
8. Do you think you have the right skills to practice public relations? If not, what else do you think needs to happen?
9. Do you think your current experience as a student is preparing you properly for the field of public relations? Why or why not?

AUTHORS' INFORMATION

Full name: Sandra L. Braun, PhD

Institutional affiliation: Mount Royal University, Faculty of Business and Communication Studies

Institutional address: 4825 Mount Royal Gate SW, Calgary, Alberta, Canada, T3E 6K6

Email address: slbraun@mtroyal.ca

Short biographical sketch: Sandra is an Associate Professor of communication. Her research interests are in intercultural and international communication, pedagogy, and public relations history. Her latest work is *Public Relations Writing for the Canadian Practitioner* (in press).

Full name: Mohamed Ben Moussa, PhD

Institutional affiliation: University of Sharjah, College of Communication

Institutional address: PO Box 27272, Sharjah, United Arab Emirates

Email address: mbenmoussa@sharjah.ac.ae

Short biographical sketch: Mohamed is an Associate Professor of communication. Before joining UOS, he was an Associate Professor at the Canadian University Dubai, and a Post-Doctoral fellow at McGill University, Canada. His research interests revolve around new media and social movements, media convergence and journalism, online public relations, international communication, gender and communication, and ICTs for development, among others. His work has appeared, or is forthcoming, in *New Media & Society*, *Journal of Middle East Media*, *Applied Journalism and Media Studies*, and *Westminster Papers in Communication and Culture*, among others.

Full name: Wided Dafri, PhD

Institutional affiliation: Canadian University Dubai, Faculty of Communication, Arts and Sciences

Institutional address: 1st Interchange, Sheikh Zayed Road, PO Box 117781, Dubai, United Arab Emirates

Email address: widedco2005@yahoo.com

Short biographical sketch: Wided is an Assistant Professor of communication. She holds a PhD in International Relations from Alger 3 University, Algiers, Algeria; a Master degree from Yarmouk University, Jordan; and a Bachelor degree from Badji Mokhtar University, Annaba, Algeria. She has also worked in industry as a trainer and freelancer in Jordan and the UAE. Areas of specialization include strategic media questions, public relations, Arabic media, media ethics, international relations, and leadership. Her latest work is *Evaluation Reactions to Massacres against Myanmar Muslim*, published in *Middle Eastern Studies*.

Full name: Ana Stranjančević, PhD

Institutional affiliation: MODUL University, Department of Tourism and Service Management

Institutional address: 4th Floor, One JLT, PO 336532, Dubai, United Arab Emirates

Email address: ana.stranjancevic@modul.ac.ae

Short biographical sketch: Ana is an Assistant Professor of tourism management, specializing in sports and recreational tourism. She holds a PhD in an interdisciplinary field of Management in Sports and Tourism from the University of Novi Sad, Serbia. Her research interests include tourism and hospitality management, sports tourism, and destination management. Her recent work is as a paper co-author, *Determinants of Tourist Competitiveness in the Case of Montenegro: Experts' Assessment*, published in *Tourism and Hospitality Management*.

Chapter #3

CHALLENGES CONFRONTING KINDERGARTEN TEACHERS IN THEIR FIRST YEAR OF TEACHING IN ISRAEL

Eitan Simon & Aviva Dan

Dr., Ohalo Academic College for Education, Israel

ABSTRACT

Novice teachers' first year in teaching arouses great expectations, but it also engenders anxiety and lack of confidence. Research indicates that novice school teachers' induction processes entails a period of challenges, dilemmas and difficulties. However, little has been written about the first-year experiences of novice kindergarten teachers. This research took place in a teachers' training college in the North of Israel where as part of the student's professional development they are obligated to attend a professional development workshop. The workshop aims to provide a significant support system for the novice teacher. The research described here examined the novice kindergarten teacher's dilemmas and challenges during this critical first year, their attitudes towards the professional development workshop, including the relevance of the workshop in assisting them to cope with dilemmas arising from the field. The findings indicate that the novice kindergarten teachers experience similar dilemmas in their first year in the field to those experienced by school teachers. The workshop was not a significant factor in helping the novice kindergarten teachers cope with this challenging experience. It is concluded that the workshop framework should be re-evaluated to make it a significant place for the novice kindergarten teacher.

Keywords: novice kindergarten teachers, kindergarten teacher training, induction year.

1. INTRODUCTION

The induction of novice teachers into the education system field constitutes a period of great expectations; the student teachers' expectations from themselves and also their future employees' expectations. Yet, in practice statistics show that 10% will not return after their first year, with the dropout rate increasing to almost half in the first five years (Kaiser, 2011). The student-teachers expect to contribute significantly to their pupils and to their future workplaces. In reality, the transition from student-teacher to novice or in-service teachers is a period fraught with tension, anxiety and learning through trial and error, exacerbated by the fact that first year teachers are expected to "hit the ground running".

Teaching is a craft that demands an integration of theoretical and practical knowledge. Students acquire the theoretical knowledge in an academic institution, whereas their practical knowledge is acquired in the school or kindergarten. Student teachers are assigned to a practicum placement where they undergo additional training under the guidance of a mentoring teacher or kindergarten teacher, who aims to prepare the students for the reality of kindergarten life as professional kindergarten teachers (Dan & Simon, 2016). There is extensive research concerning the induction of school teachers but limited research that investigates this induction process for kindergarten teachers. The attrition of teachers

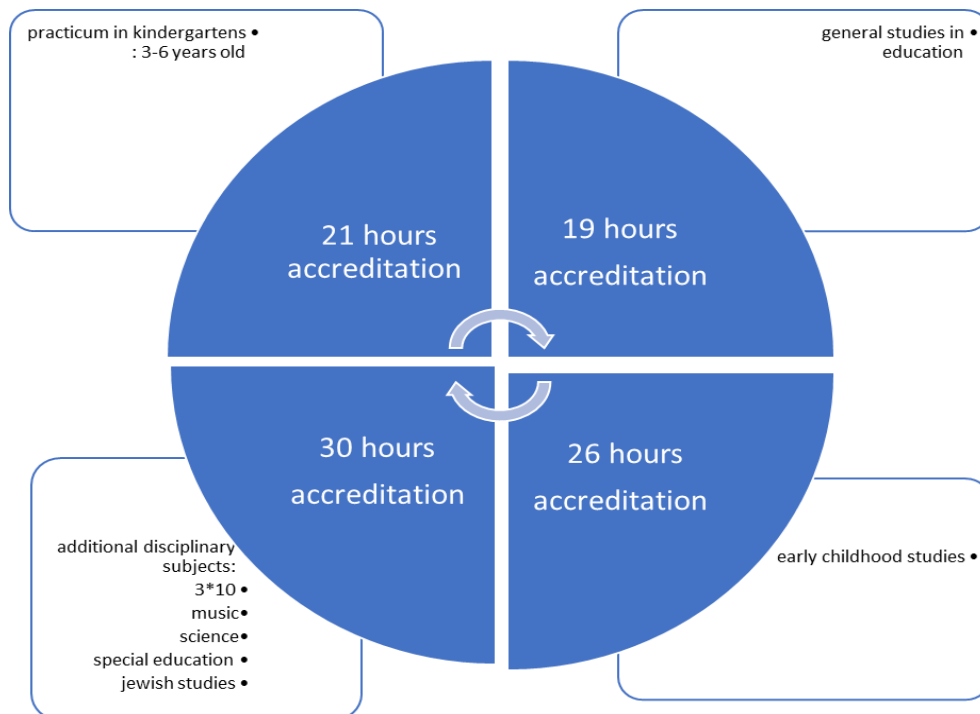
working in the education system is a problem that is costly and extremely worrying in that it is difficult to develop a stable professional experienced core of quality teachers. However, literature in this field indicates that the pupils' success in the educational system correlates with the quality of teachers. It is therefore important to understand motivations for career choices and pathways of early childhood professionals in order to attract and retain the most qualified individuals to provide early care and education, in order to maximize the potential and well-being of young children (Martinez-Beck & Zaslow, 2006).

The research described here aimed to investigate the transition from student-teacher to first year kindergarten teacher, specifically noting the novice kindergarten teachers' challenges and difficulties, the extent to which a compulsory workshop that accompanied their first year of field work assisted their work and assimilation, and also the teachers' attitudes to education at the beginning of the year and at the end of the year. This research was a pilot research, the research population was small, determined by the total number of participants in the workshop.

1.1. The kindergarten teachers' training program in Israel

The kindergarten teacher trains in a teachers' training college for four years and graduates with a bachelor's degree and a teaching licence. Their training includes theoretical studies and practical experience. At the end of the four years they are expected to sign on for additional courses organised by the Ministry of Education. A model of the training program appears in Figure 1.

Figure 1.
Model of Kindergarten Teachers' Training Program.



The transition from student-teacher to kindergarten teacher is extreme. Even though during their teachers' training program the students are assigned to practical placements they are still inadequate in preparing the students for the field (Darling-Hammond, 2014). One moment they are sheltered and accompanied by their pedagogical advisors in college and in the next moment they are in charge of 35 children and other staff members and are expected to know how to deal with anxious parents, who are sometimes the same age as them!

The stage of induction, the first step in the teaching profession, includes the "internship" year and the following two years in the field. This period is usually a time of serious difficulties, accompanied by a sense of a lack of self-confidence or self-efficacy (Dan, 2013). In addition, during the first year of internship, the new kindergarten teacher undergoes intense evaluation by the Ministry of Education to assess their fitness for a teaching licence.

To be able to teach in kindergarten, a kindergarten teacher is expected to have acquired knowledge concerning child development, management, disciplinary subjects, first aid, pedagogical knowledge appropriate for each stage in a child's development, and to know how to organize the children's day-to-day pedagogical activities and encourage children's play, all within a positive atmosphere. Additionally, the future kindergarten teacher should know how to identify children with special needs and how to enter into a significant dialogue with parents. Kindergarten teachers are also expected to act as educational leaders and experts on preschool education. (see Ministry of Education, n.d.).

Work hours are long and there are no additional professional adult staff that the kindergarten teacher can consult with in the process of decision-making during the day's activities. The kindergarten teacher works with auxiliary staff that are not on the same professional level and do not have the same responsibilities. The quality of the team work between the kindergarten teacher and their staff can play a major role in the novice kindergarten teacher's feelings of professional competency (Oplatka & Eisenberg, 2007). In time, if the kindergarten teacher remains in the profession, they attain a level of confidence coupled with maturity that comes with increased experience and thus their professional work reaches a higher level. In addition, and unique to this system, a kindergarten teacher is considered the "kindergarten manager" from their first year after internship. In most professions, including school teaching, the practitioner can only assume the responsibility of management after years of experience, and only after their work is recognized and appreciated by their superiors.

1.2. Professional development of kindergarten teachers

The relevant literature offers several models of teachers' professional development. Yet here too, little has been written about the specific professional development of kindergarten teachers. One well-known model proposed by Lilian Katz (1972) describes four periods in the kindergarten teachers' professional development: (1) Survival - first year; (2) Consolidation –second and third year; (3) Renewal - third and fourth year and (5) Maturity - fourth and fifth year. During the survival stage, the kindergarten teacher will question: "Can I make it to the end of the week?" "Can I really do this work day after day?" Survivors focus on their own needs and have little understanding of the needs of the children in their care. The teaching styles of the kindergarten teacher at this stage are usually teacher-orientated to allow them a feeling of control (Stroot et al., 1998).

In comparison, Fuller and Brown (1975) suggested another model, which investigated the sequences of concern that arose during the period of preservice. At the first stage, the student-teachers identify more with their pupils than with their role as a teacher. At the

second stage, the students become concerned with survival, while at the third stage they become concerned about their competency as teachers but not yet about what the pupils are learning, during the final stage they became concerned about what their pupils are learning and began to see their pupils as individuals with needs (Stroot et al., 1998).

It can therefore be deduced from the literature that novice kindergarten teachers need assistance and guidance during their induction into the profession. If they are not assisted in this manner, the quality of the educational programs may be negatively affected, and the real needs of the children may not be met (Doan, 2016). Jillian Rodd (2012) in her book suggests that novice kindergarten teachers may have difficulties in integrating practice and theory, or as Manlove indicates, they may become physically exhausted (Manlove, 1993); and some may leave the profession (Early Childhood Educators of British Columbia, 2012).

Other research concerning school teachers, tends to distinguish three separate periods of a teacher's professional development: the first period is characterized by stress and concern for themselves, insecurity, confusion, trial and error, a struggle to survive as they transition from training and begin to work in the field. The second period involves concerns about the job, this is the adjustment stage, involving establishment, growth and strengthening of self-esteem and the third period typically shows concern for the student, a maturation stage, with more control and professionalization (Peleg, 1992).

1.3. Difficulties of novice teachers

The transition from college to the field can be traumatic because of unreal expectations that the preservice teachers have regarding their future teaching experience. Until actually practicing teaching, student-teacher's impressions of teaching are usually based on their own previous subjective experiences of the teacher's image as school students and very often there is a "reality shock" when they actually reach the field and assume the role themselves (Weinstein, 1988). According to extensive literature concerning teachers' training, the new teacher's experiences in their first year of teaching determine their conceptualizations and beliefs concerning what it means to be a teacher, what is teaching, what it means to teach pupils and their understanding of the school environment (Gold, 1996; Gratch, 1998). In addition, a link has been found between the early experiences of novice teachers and their ability to continue to be teachers and develop in this profession (Chapman & Green, 1986). A teacher's formal professional development includes three stages: preservice - as a student teacher: induction –the first years of teaching and the final stage, experienced teacher. According to student-teachers, practical experience in the field was more significant to their professional training than attending courses in the "ivory tower" (Schempp, Sparkes, & Templin, 1999).

The induction stage is generally considered the most difficult of all stages. Difficulties indicated by novice teachers included: class discipline, pupils' motivation, pupils' diverse needs, relationships with parents, pupil evaluation, stress and many tasks to be completed, the knowledge needed to teach disciplinary subjects and many others (Veenman, 1984). According to Heath-Camp and Camp (1990) the difficulties addressed three areas: school policies, the students (behaviour) and internal struggles (self-confidence, time management and organizational skills). Teachers' ability to survive depends on the support systems or the barriers that are erected during these first years.

The problems indicated above may come from different sources:

1. The student-teachers' training courses are too theoretical.
2. The student-teachers' belief system is unrealistic or too fixated.
3. The student-teachers' professional training did not address the area of the student's beliefs (Gavish & Friedman, 2011). The student-teacher's beliefs and

mental concepts of what it means to be a teacher form their "vision" of their future teaching experience (Bullough & Gitlin, 1995). This often includes their expectation that they will have positive inter-personal relationships with their future pupils and they are not able to conceptualize anything else, hindering their ability to deal with conflictual situations with future pupils (Gavish & Friedman, 2011).

Teachers' training colleges and universities need to challenge student-teacher's previous conceptualizations. Without the ability to re-examine these previous beliefs and perceptions the future novice teachers will enter the professional field unprepared for the teaching reality.

Pacini-Ketchabaw, Nxumalo, Kocher, Elliot, and Sanchez (2015) suggest a more complex view of the role of the modern educator, indicating that since educational work is complex, it demands continuous critical reflection, a pedagogy of listening and constructivist research. If this is so then novice educators should receive ongoing support during their professional development.

To become a teacher or a kindergarten teacher is a process that necessitates tenacity and understanding, this is a complex process that can take years. To become a proficient kindergarten teacher, who is confident and able to meet work demands, challenges the teacher's previous belief system and the student-teacher needs to realize that the first few years of practical work in the field are also part of the initial training. The significance of the present innovative research is that it attempts to reappraise the support system that student kindergarten teachers receive after their professional training and perhaps to try and close the gap between the ivory tower and the actual reality in the field.

2. METHOD

2.1. Participants

Participants in this study were kindergarten teachers in their first year of field work: 28 kindergarten teachers participated at the beginning of the academic year, and 23 teachers participated at the end of the year. Most teachers were working in the secular sector (21 teachers, 75%, at the beginning of the year, and 16 teachers, 70%, at the end of the year), while others worked in the religious (Jewish sector) (6 teachers, 21%, at the beginning of the year, and 4 teachers, 17%, at the end of the year), or in special education (one at the beginning of the year and two at the end).

Kindergartens in the secular sector usually had 21 to 35 children (19 kindergartens of the 21 at the beginning of the year, and 12 kindergartens of the 16 at the end of the year). Of the 6 kindergartens in the religious sector at the beginning of the year, four had less than 20 children and two had over 26 children. At the end of the year the kindergartens in the religious sector had varying class sizes. The special education kindergartens had less than 20 children each.

Most secular and religious kindergartens were perceived by their teachers as open for change (21 of 25 responses at the beginning of the year, and 14 of 20 responses in the end), while others were perceived as resisting change.

2.2. Instruments

The novice kindergarten teachers were asked to fill in a questionnaire, at the beginning and at the end of the academic year, consisting of items that related to their attitudes concerning education as well as items that addressed challenges and dilemmas that were found to be relevant to the studied topic according to the literature. The questionnaire was served at the beginning and at the end of the year to enable to evaluate the contribution of the workshop to the ability of the kindergarten teachers to cope with the challenges and dilemmas that they encountered during this significant period. The respondents were also given the possibility to add their own open-ended comments or to describe their experiences.

2.3. Difficulties and extent of help received from the supervisor (in the workshop)

Twelve items elicited data to describe the difficulties facing the teachers, such as "preparing activities", "relationships with parents", "discipline issues". Each was rated on a 5-point scale from 'no difficulty at all' (1) to 'very great difficulty' (5). Correspondingly, participants rated the extent of help they received from their supervisor, regarding each difficulty, on a 5-point scale from 'no help at all' (1) to 'a very great extent of help' (5).

Internal consistency for difficulties: $\alpha = 0.80$

Internal consistency for received help: $\alpha = 0.92$

2.4. Attitudes toward education

22 items in three subscales:

Conservative attitudes toward education – 4 items, such as "what is needed in a kindergarten class is expanding the teacher's authority", "a kindergarten teacher should remember that children should be forced to learn". Internal consistency was low and thus results pertaining to this scale should be interpreted with caution.

Constructivist attitudes toward education – 4 items, such as "children should be given more responsibility for learning", "kindergarten teachers should be free to teach what they consider right". Internal consistency: $\alpha = 0.49$. Due to the low internal consistency results pertaining to the scale should be interpreted with caution.

Optimistic-pessimistic attitude to teaching – 13 items, such as "it is important to me to be a kindergarten teacher", "teaching in the kindergarten tires me (reversed)". Internal consistency: $\alpha = 0.72$. Items were rated on a 5-point scale from 'very high disagreement (1) to 'very high agreement (5). Scale scores were computed from item means, so that the higher the score the greater the belief in conservative attitudes, and in constructive attitudes, and the higher the optimistic attitude.

3. RESULTS

Data regarding the teachers' perceptions of the difficulties that they faced and the extent of help they received from their supervisors, are presented in Tables 1 and 2, as collected at the beginning and end of the year. Differences in means and percentages are discernible between the beginning and the end of the year, yet they are non-significant due to the small sample size. The trends are described below.

Results in both tables show that the most common difficulty, reported at both measuring points, centered around discipline issues. These issues were reported by most of the teachers at both measuring points, to a moderate extent, and about 67% of them turned

to their supervisors for help. The extent of help received was moderate-low at both measuring points. The next most common difficulty, at both measuring points, centered on the difficulty of teaching heterogeneous classes. It was experienced by most teachers at both time points, to a moderate extent, and about 55% of them turned to their supervisors for help. The extent of help received was moderate-low.

Preparing activities was perceived as a difficulty by about 85% of the teachers at both measuring points, to a moderate-low extent. 88% of the teachers reported at the beginning of the year, and 58% of them at the end that they had turned to their supervisors for help on this issue, receiving moderate and low help, respectively.

Organizing the kindergarten and Motivating the children were the next difficulties reported by about 85% of the teachers at the beginning of the year, and by about 67% of them at the end of the year. The extent of the difficulty was rather low, and about a half of the teachers at the beginning of the year, compared with about 60% of them at the end reported that they had turned to their supervisors for help, receiving a rather low extent of help.

Organizing the learning environments was the next difficulty, reported by about 79% of the teachers at the beginning of the year, and by about 52% of them in the end. The extent of the difficulty was quite low, and about 60% of the teachers turned to their supervisors for help, receiving a rather low extent of help. Next common difficulties had to do with Teaching diverse populations and Diagnosing the various levels of the children. They were experienced by about 75% of the teachers, to a moderate-low extent. About 60% of them reported turning to their supervisors for help at the beginning of the year, compared with about 75% in the end. Help received was moderate-low. Guiding outstanding children, was a difficulty faced by about 75% of the teachers at the beginning of the year, and by 52% at the end, to a low extent. About 40% of the teachers reported turning to their supervisors for help at the beginning of the year, compared with about 58% at the end. Help received was low.

Relationships with the parents were reported as a minor difficulty by about 61% of the teachers at the beginning, and by 74% in the end. About 53% reported that they had turned to the supervisor for help at the beginning, and about 65% at the year's end. Help received was moderate-low. Team work was reported as a minor difficulty by about 54% of the teachers at the beginning, and by about 65% in the end. About 53% reported turning to the supervisor for help at the beginning, and about 60% at the end. Help received was rather low at first but moderate later on. Finally, the relationship with the kindergarten superintendent was reported as slightly difficult by about 35% of the teachers, at both measuring points, 36% of them reported turning to the supervisor for help at the first measuring point, and 62% later. Help received was reported as quite low at the beginning, and moderate-low later on. As can be seen in Tables 1 and 2.

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Table 1.
Difficulties experienced by the kindergarten teachers, and help received from the supervisors, in descending order (N = 28).

	Subject	Extent of difficulty		Help received from supervisor	
		M (SD)	% positive	M (SD) if difficulty experienced	% positive if difficulty experienced
.1	Discipline issues	3.25 (1.17)	27 (96.4)	2.44 (1.12)	18 (66.7)
.2	Teaching a heterogeneous class	2.64 (0.91)	26 (92.9)	2.21 (1.14)	15 (57.7)
.3	Preparing activities	2.36 (0.73)	25 (89.3)	2.74 (0.86)	22 (88.0)
.4	Organizing the kindergarten	2.25 (0.75)	24 (85.7)	2.00 (1.31)	11 (45.8)
.5	Motivating the children	2.32 (0.94)	23 (82.1)	2.24 (1.20)	14 (60.9)
.6	Organizing learning environments	2.21 (0.96)	22 (78.6)	2.24 (0.99)	15 (68.2)
.7	Teaching varied population	2.43 (1.14)	21 (75.0)	2.22 (1.06)	13 (61.9)
.8	Diagnosing the various levels in the children	2.15 (0.91)	21 (75.0)	2.22 (1.06)	12 (57.1)
.9	Leading outstanding children	2.00 (0.90)	20 (71.4)	1.83 (1.15)	8 (40.0)
.10	Relationships with the parents	2.00 (1.12)	17 (60.7)	2.46 (1.27)	9 (52.9)
.11	Team work	2.00 (1.22)	15 (53.6)	2.07 (1.22)	8 (53.3)
.12	The kindergarten inspector	1.81 (1.36)	11 (39.3)	2.11 (1.45)	4 (36.4)

Table 2.
 Help received from the supervisors concerning difficulties experienced by the kindergarten teachers, in descending order of the difficulties experienced.

	Subject	Extent of help received from supervisor			
		Year beginning (<i>N</i> = 28)		Year end (<i>N</i> = 23)	
		<i>M</i> (<i>SD</i>) if difficulty experienced	% positive if difficulty experienced	<i>M</i> (<i>SD</i>) if difficulty experienced	% positive if difficulty experienced
.1	Discipline issues	2.44 (1.12)	18 (66.7)	2.83 (1.25)	13 (68.4)
.2	Teaching a heterogeneous class	2.21 (1.14)	15 (57.7)	1.94 (1.11)	10 (52.6)
.3	Preparing activities	2.74 (0.86)	22 (88.0)	2.05 (1.03)	11 (57.9)
.4	Organizing the kindergarten	2.00 (1.31)	11 (45.8)	1.87 (0.83)	10 (66.7)
.5	Motivating the children	2.24 (1.20)	14 (60.9)	2.67 (1.29)	9 (56.2)
.6	Organizing learning environments	2.24 (0.99)	15 (68.2)	2.00 (0.89)	7 (58.3)
.7	Teaching varied population	2.22 (1.06)	13 (61.9)	2.73 (1.16)	13 (76.5)
.8	Diagnosing the various levels in the children	2.22 (1.06)	12 (57.1)	2.47 (1.12)	13 (72.2)
.9	Leading outstanding children	1.83 (1.15)	8 (40.0)	2.09 (1.14)	7 (58.3)
.10	Relationships with the parents	2.46 (1.27)	9 (52.9)	2.86 (1.35)	11 (64.7)
.11	Team work	2.07 (1.22)	8 (53.3)	3.21 (1.63)	9 (60.0)
.12	The kindergarten inspector	2.11 (1.45)	4 (36.4)	2.63 (1.41)	5 (62.5)

Data regarding the teachers' attitudes toward education and teaching at the two measuring points are presented in Table 3. Results indicate that a moderate mean grade was given for conservative attitudes to education at both measuring points, with no significant difference between the two measuring points ($p = .391$). About 40% of the teachers disagreed with these attitudes, about 50% moderately agreed with them, and a few teachers agreed with them. Constructivist attitudes to education were awarded a relatively high mean at the beginning of the year, and a lower mean at the end, there was a significant difference between the means at the two different measuring points ($t(49) = 3.02, p = .004$). At the beginning of the year about 70% of the teachers agreed with these attitudes, compared with about 55% at the end. About 30% of the teachers moderately agreed with the constructivist attitudes at both measuring points, and a few teachers disagreed with them at the end, compared with no disagreement at the first time point. Optimistic attitudes to teaching were awarded a moderate-high mean at both times, with no significant difference between the means at the two different measuring points ($p = .601$). About 70% of the teachers agreed with the optimistic attitudes at both times, and most others moderately agreed with them.

Table 3.
Distribution of the teachers' attitudes toward education and teaching ($N = 28$).

	Disagree N (%)	Some what agree N (%)	Agree N (%)	M (SD)
Conservative attitudes toward education	8 (28.6)	12 (42.9)	8 (28.6)	3.10 (0.61)
Constructive attitudes toward education	---	8 (28.6)	20 (71.4)	4.00 (0.52)
Optimistic attitude to teaching	1 (3.6)	7 (25.0)	20 (71.4)	3.67 (0.69)

Finally, correlations were calculated between the total scores for the difficulties faced by the teachers, the help they received from their supervisors, and the teachers' attitudes toward education. One significant correlation was detected at the end of the year, between constructivist attitudes and the extent of the supervisor's help - $r = .59, p = .003$. That is, the more the teachers held constructivist attitudes toward education, the more they reported receiving help from their supervisors when faced with difficulties.

Additionally, correlations were calculated between education sector, class size, and openness for change, and the total scores for the difficulties faced by the teachers, the help they received from their supervisors, and the attitudes toward education. One result was found significant. Over time, teachers in the secular sector reported experiencing a greater extent of difficulties than teachers in the religious sector ($M = 2.29, SD = 0.51, n = 37$, versus $M = 1.73, SD = .35, n = 10, t(45) = 3.24, p = .002$). No other significant findings were found in this regard.

4. CONCLUSIONS AND DISCUSSION

The research aimed to identify the difficulties and challenges that novice kindergarten teachers experienced in the first year of their professional life. In addition, it also examined the level of assistance that the novice teachers received from their supervisor in a workshop that is part of the support system for the novice kindergarten teachers in their first year. The research also looked at the novice teachers' attitudes to teaching at the beginning and at the end of the year.

The challenges that the new kindergarten teachers encountered in this first critical year were similar to those indicated in extensive literature concerning novice school teachers: Class discipline, motivation of the pupils, different needs of the pupils, relationships with parents (Veenman, 1984). The research indicates that the preparation of the student kindergarten teachers is not adequate in providing them with all the practical knowledge of what being a kindergarten teacher entail. This indicates that it is necessary to reevaluate the emphasis in the traditional teachers training programs at an academic level. What is new in this study is that it focuses on kindergarten teachers. There seems to be a general perception that training to be a kindergarten teacher is not as difficult as training to be a teacher in school, this study shows that being a kindergarten teacher is as demanding and entails the ability to cope with diverse challenges and dilemmas. A kindergarten teacher's training is especially important since these teachers build the educational foundations for the child that will later enter the public or private school systems. The induction process for kindergarten teachers necessitates several means of support to assist the novice teachers on their entry into the kindergarten education system in an optimal manner. This research shows that the obligatory workshop is not an efficient source in the essential support system in this critical year.

The research presented in this article described the difficulties encountered by novice kindergarten teachers in their first year of their teaching careers and their attitudes towards education. We learn from this study that the induction process is a long and process but there are several milestones at which it is possible to improve this process in order to form a more fortified new generation of graduates. Future studies could explore the importance of increased, well-organized clinical practice that is integrated with the academic studies, as a better way of improving the preparation of new kindergarten teachers.

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AUTHORS' INFORMATION

Full name: Eitan Simon, Dr.

Institutional affiliation: Ohalo Academic College for Education

Institutional address: Israel

Email address: eisi@ohalo.ac.il

Short biographical sketch: Dr. Simon is a senior lecturer and the rector at Ohalo Academic College of Education, Katzrin, Israel. He serves as Head of the School for Education and Teaching. He lectures in the B.Ed. teacher training program and the M. Ed. programs in Educational Systems Organization and Administration. He is responsible for pedagogic mentoring in the pre-school and school teachers training program and for overseeing the practicum studies as a part of the M.A. program practicum experience of future school principals. Research interests include the field of teacher education K-12 and writing new curricula in teacher education appropriate for the 21st century.

Full name: Aviva Dan, Dr.

Institutional affiliation: Ohalo Academic College for Education

Institutional address: Kibbutz Chamadiya, Israel

Email address: avivanaab@gmail.com

Short biographical sketch: Dr Aviva Dan is a lecturer at Ohalo Academic College Kazrin Israel. Dr Dan is Head of Department for Early Childhood Studies and oversees the practicum experience of future kindergarten teachers. Research interests include teachers training, the inclusion of children with special needs in mainstream kindergartens. Dr Dan is involved in the establishment of various extra-curriculum projects in the college.

Chapter #4

PHYSICAL EDUCATION TEACHER'S BELIEFS AND CLASSROOM MANAGEMENT PRACTICES: DEPICTING CONVERGENCES, DIVERGENCES AND INCONSISTENCIES

Sacha Stoloff¹⁻³, Claudia Verret²⁻³, Jean-Christophe Couturier Cormier¹⁻³, & Jean Lemoyne¹

¹Department of Human Kinetics, Université du Québec à Trois-Rivières/Groupe interdisciplinaire de recherche appliquée en santé, Canada

²Department of Human Kinetics, Université du Québec à Montréal/Groupe de recherche en activité physique adapté, Canada

³Centre de recherche interuniversitaire sur la formation et la profession enseignante, Canada

ABSTRACT

Teaching practices changed significantly in the wake of the 2001 school reform in Québec. In the past decade, teachers have struggled to adapt to new orientations, particularly as regards the educational approach promoting student responsibility and its effects on classroom management practice. In physical education and health (PE), a complex discipline with varied environments, few studies examine the appropriate practices to adopt. This project aims to better portrait current practice and compare with program expectations. The research objective is to describe PE teachers' beliefs and practices. The methodology was based on the Q-PEPS questionnaire, comprised of three sections: sociodemographic characteristics (8 items); beliefs (8 items); and instructional practices (43 items). A sample of 328 respondents (205 men, 123 women, age = 41.3 ± 9.4 years) enabled a descriptive analysis per item. The findings describe 1) convergent and divergent beliefs among teachers, and 2) convergent and divergent practices regarding classroom management. These findings highlight an inconsistency in the responses to similar items, which could be owed to social desirability bias or a gap between the ideal, desired and actual practices perceived by teachers. Also, findings demonstrate a current gap between actual practice and program expectations.

Keywords: classroom management, physical education, teachers, beliefs, practices.

1. INTRODUCTION

Teachers prepare students for the future and therefore play a vital role in society. For physical education (PE) teachers in particular, responsibility towards health education is increasing at a time when public health is critical and drawing the concern of public health institutions worldwide (World Health Organization, 2014). Surprisingly, studies on teachers' health show it has declined over the past ten years. As a result, many leave the profession at the start of their career (Sauvé, 2012), while others suffer the effects of burnout (Stamate, Brunet, & Savoie, 2015).

One reason for this malaise apparently lies in the lack of recognition perceived by teachers, more so for PE teachers. Although they are key actors in our society, teachers believe the public presently views them less favourably, and the profession is no longer as attractive as it once was (Bizet, Laurencelle, Lemoyne, Larouche, & Trudeau, 2010, Karsenti, Collin, & Dumouchel, 2013, Stamate et al., 2015). Another reason for this malaise, lies in teachers' difficult relationships with their students (Auclair Tousigny, 2017; Gaudreau, Royer, Beaumont, & Frenette, 2012; Mukamurera & Balleux, 2013). These

problematic relationships have a major impact on classroom management, which seems to be a key factor in teachers' growing difficulties (Karsenti et al., 2013). Hence, students' inappropriate, disruptive and sometimes violent behaviours are an important factor influencing teachers' classroom management (Auclair Tousigny, 2017; Massé, Desbiens, & Lanaris, 2014) and, therefore, their job satisfaction and well-being.

This fact is emphasized for PE teachers who constantly evolve in a complex context affecting classroom management, combining 1) demanding physical workload, 2) student diversity (teach approximately 450 students a week) and 3) open environments. Firstly, PE requires heavy and various equipment manoeuvres, physical assistance to students in need of feedback, and multiple and active demonstrations (running, jumping, rolling...), resulting in a demanding physical workload (Chaibi, 2009). Secondly, they deal with many different student groups within a week, with various needs, motivations and abilities, affecting the significance of attachment to each student, although seen as a major factor in pedagogical climate (Stoloff, 2016). A teacher's capacity for attachment and attachment behaviours must be nuanced, particularly with respect to students' characteristics. In particular, research suggests that the barriers to relationship are greater regarding students with behavioural difficulties versus those with cognitive, emotional or physical difficulties (Wilhelmsen & Sørensen, 2017). Furthermore, numerous authors have reported relational difficulties between teachers and students (Auclair Tousigny, 2017; Gaudreau et al., 2012; Mukamurera & Balleux, 2013), and this issue directly affects classroom management. Thirdly, PE teachers need to adapt their intervention to changing environments according to activity (indoor, outdoor, and aquatic). In fact, PE pedagogical content requires various equipment, diverse spaces and divided work groups within a session, which lead to critical moments during sessions, such as managing space and transitions in an effective manner to least disrupt class rhythm and learning (Gendron, 2007, Sanderson, Heckaman, Ernest, Johnson, & Raab, 2013). Also, PE pedagogical content should be original and varied in order to support student motivation which helps maintain a positive learning climate (Gao, Lee, Solmon, & Zhang, 2009). Considering the importance of classroom management on teacher's well-being, it seems important to take a closer look at today's practice, in order to categories different existing practices.

2. BACKGROUND

In Québec, the education reform implemented in 2001 changed classroom management significantly by placing students at the center of the learning process, where student's take part in the decision making process, as opposed to a directive approach, where teachers impose their organizational system, their values, their goals (Archambault & Chouinard, 2009). Indeed, in contrast with a grading scale type of evaluation, the new educational orientations put the emphasis on "*success for all students*", where an individualized approach will enable each student to learn and evolve based on his or her individual path (Ministère de l'éducation du Québec [MEQ], 2001). This shift required teachers to adapt their practices, which were henceforth focused on empowering students through personal and social responsibility to help them determine this path. Concretely, students are expected to be responsible in different areas, such as organizational tasks (choosing equipment or having appropriate PE outfit), learning tasks (choosing personal goals or level of difficulty to reach), or functional tasks (helping teacher distribute documents to classmates). Such ministerial shift adds to difficulties perceived by teachers, who are expected to adapt their practice, including classroom management, no matter their preferred practice or belief system. It is to be mentioned that no matter the type of practice, teaching effectiveness is triggered by one's system of value, then coherently applied to practice (Archambault & Chouinard, 2009; Willmore, 2007).

2.1. Personal and social responsibility

In keeping with the education reform (MEQ, 2001), responsibility is a framework that emphasizes on students' ability to reflect on their choices, make decisions and adopt appropriate behaviours based on the decisions made (Gordon, 2010; Hellison, 2011). It is therefore expected that teachers offer opportunities during sessions, where students have choices, take decisions and be accountable for the outcome (Fortin-Suzuki, 2015). Archambault and Chouinard (2009) underline that in an accountability approach, students' motivation and engagement in the classroom are increased. As a result, giving them the opportunity to make more choices will enable them to gradually acquire greater decision-making power, leading progressively to autonomous decision making and action (Hellison, 2011). To insure proper teaching conditions, rules, routines and expected behaviour should be clear to all students at all times, along with logical and accountable consequences for any inappropriate behaviour (Gaudreau, 2017, Hellison, 2011, Lavay, French, & Henderson, 2015, MEQ, 2001). Consequently, responsibility as a framework is no longer one that favors punitive practices for managing disruptive behaviours (Archambault & Chouinard, 2009), even though such practices still occur frequently (Stoloff, 2016).

2.2. CLASSE model

The CLASSE teaching intervention model offers a comprehensive-interpretative framework of teaching practices, used for research as for practice. This model is divided into six categories (Archambault & Chouinard, 2009). The word "CLASSE" is the French acronym for belief (C), latitude (L), atmosphere (A), learning situations (S), support (S) and evaluation (E). This model offers a broad understanding of classroom management and has proved effective for research in a physical education context (Stoloff, 2016). In this research, each category describes different practices and determines whether or not teachers use accountability practices during PE sessions. A clear portrait will determine if teachers have adapted their practices since the reform in 2001.

Our research question is the following: "What classroom management practices are used by PE teachers?" Accordingly, the objective of the present study is to describe PE teachers' beliefs and practices in relation with classroom management. The relevance of such study will help clarify the different beliefs and the impact on classroom management practices, hence a better understanding of practice and applications in education.

3. METHODS

3.1. Participants

328 Quebec PE teachers participated in the study. The sample consisted of 37.5% women (N = 123) and 62.5% men (N = 205). Of the respondents, 73.2% were primary school teachers (N = 240), and 26.8% were secondary school teachers. The average age was 41.3 ± 9.4 years.

3.2. Instrument

The Q-PEPS questionnaire (Couturier Cormier, 2017) was administered electronically by "Survey Monkey", facilitating the recruitment process. Email addresses were used to send out the information and the link to participants. They were obtained thanks to regional lists of PE teachers. Before undertaking the research, this project was approved by the ethical committee of Université du Québec à Trois-Rivières. The questionnaire itself

includes three sections: sociodemographic characteristics (8 items), beliefs related to the teaching profession (8 items), and teaching practices (27 items). Sociodemographic characteristics were measured using a descriptive scale and include 8 items: age, number of years as a teacher, type of employment, teaching levels experienced, teaching level, gender, experience and socioeconomic context. The sociodemographic variables affect practice (Stoloff, Verret, Couturier Cormier, & Lemoyne, 2018) but will not be addressed in this article.

Teaching beliefs and practices were measured on the basis of 43 items, all developed on a 7-point Likert type scale. As mentioned earlier, 6 categories related to teaching beliefs and practices were assessed: 1) beliefs (8 items), 2) latitude (7 items), 3) atmosphere (3 items), 4) learning situations (8 items), 5) support (0 items), and 6) evaluation (9 items). Participants were asked to indicate their level of agreement for each item in the belief section (from 1 (*totally disagree*) to 7 (*totally agree*)). Next, they were asked to indicate their level of frequency for each item in the practice section (from 1 (*rarely*) to 7 (*always*)). Each category was treated individually by assessing each item separately. We used each participant's response to categorize three levels of agreement: 1) low (scores = 1-2-3), 2) neutral (score = 4), and 3) high (scores = 5-6-7).

Descriptive analyses were conducted to fulfil the aims of the study. Only participants who completed the questionnaire were used. The final sample consists of 281 (of the initial 328) participants. A first part of the analyses was descriptive in order to provide a comprehensive picture of PE teaching practices among Quebec's PE teachers, and attain the objective presented in this chapter. Further analyses will provide the statistical procedures and correlations, yet they are not addressed since they do not fit the aim of the present chapter.

4. FINDINGS

4.1. Beliefs

Findings reveal that teachers tend to have the same beliefs regarding PE but differ on matters related to fundamentals. In Table 1, the first column presents the different statements with the corresponding number of appearances in the questionnaire. Statements are presented with scores from highest to lowest, depending on level of agreement. The second, third and fourth columns indicate the percentage of respondents, respectively, for high, neutral and low levels of agreement.

Table 1.
PE teachers' beliefs regarding teaching practices.

ITEMS	LEVEL OF AGREEMENT (% of respondents)		
	+	+/-	-
<i>STATEMENT (item #)</i>			
<i>I must adapt my practices to the needs of my students. (3)</i>	98	1	1
<i>All students have the capacity to improve their skills. (4)</i>	98	1	1
<i>Teachers should change their practices over time. (5)</i>	97	1	2
<i>Students need an environment that promotes autonomy. (7)</i>	96	2	2
<i>Physical and health education serves mainly to develop the competency to "act, interact and adopt." (6)</i>	72	10	18
<i>In PE, students with the best motor skills have the highest grades. (8)</i>	62	10	28
<i>It's more important to promote physical activity than sedentary learning. (1)</i>	59	7	34
<i>Students' development is promoted when I take care of all organizational and learning tasks. (2)</i>	30	10	60

Four beliefs converge because they are shared by 95% of the respondents (items 3, 4, 5 and 7). The beliefs common to teachers include the importance of adapting practices to students' needs (98%), the capacity of all students to improve their competencies (98%), the importance of adapting one's professional practices over time (97%) and students' need for an environment that promotes autonomy (96%). These findings show that virtually all the teachers believe in the importance of flexibility and the updating of teaching practices. They also denote the importance, in the teachers' view, of students' developing autonomy and all students' capacity for improvement.

Four beliefs vary for 30% or more of the respondents (items 6, 8, 1 and 2). In fact, teachers appear to hold distinct beliefs about the priorities to be established in PE, with 72% of respondents favouring disciplinary competencies, 62% focused on performance and 59% emphasizing the importance of physical movement over sedentary learning. Teachers' beliefs also diverge with regard to performing tasks alone (30%) versus sharing them with students (60%). These beliefs therefore reflect differing views regarding the objects of learning to prioritize in PE and the degree of student involvement in organizational and learning tasks.

4.2. Practices

The CLASSE model used for the Q-PEPS questionnaire presents four descriptive categories detailing classroom management practice during PE lessons: latitude, ambiance, learning situations and assessment. Because the fifth category regarding support lacks statistical correlation and significance, it is not discussed in the present article. In presenting the findings, combination of items was deemed more useful than order of appearance. The first column of Tables 2 to 5 presents the different statements with the corresponding number of appearances in the questionnaire. Statements are presented with scores from highest to lowest, depending on level of frequency. The second, third and fourth columns present the percentage of respondents, respectively, for high, neutral and low levels of practice.

4.2.1. Latitude

Latitude concerns “the level of controllability of the students, that is, teaching practices that offer students the opportunity to make choices, pursue personal objectives and become involved” in all organizational or learning tasks (Stoloff, 2016, p.5).

Table 2.
PE teachers’ practice regarding latitude.

<i>ITEMS</i>	<i>FREQUENCY</i>		
	<i>+</i>	<i>+/-</i>	<i>-</i>
<i>STATEMENT (item #)</i>			
<i>I plan to give students the opportunity for autonomous learning during parts of the course. (25)</i>	78	20	2
<i>I offer students the opportunity to choose personal objectives. (13)</i>	70	22	8
<i>The students are responsible for the majority of organizational tasks. (33)</i>	22	23	55
<i>The students participate in creating classroom rules. (29)</i>	16	26	58
<i>I involve my students in choice of activities. (9)</i>	15	50	35
<i>I choose my courses of action without discussing them with the students. (17)</i>	15	28	57
<i>I perform the majority of organizational tasks during the session (e.g., matériel, presences, teams, etc.). (21)</i>	11	21	68

These findings show that 78% of the teachers state they often reserve parts of the course for autonomous learning. This finding represents a majority of teachers but is less than the 96% of teachers who believe that autonomy should be encouraged in the classroom environment as shown in Table 1.

As for the latitude given to students, teachers favor choices regarding personal objectives (70%), rather than courses of action (57%) or learning activities (15%). Regarding the tasks to assume during a session, there seems to be a dichotomy. In fact, 69% of the teachers indicate they provide little or no help with most of the organizational tasks; at the same time, however, a mere 22% maintain that the students are responsible for the majority of tasks. These results suggest that a large portion of tasks are not accomplished.

4.2.2. Ambiance

The ambiance category relates to classroom dynamics, particularly the quality of the teacher-student relationship.

Physical Education Teacher's Beliefs and Classroom Management Practices: Depicting Convergences, Divergences and Inconsistencies

Table 3.
PE teachers' practice regarding classroom climate.

ITEMS STATEMENT (item #)	FREQUENCY		
	+	+/-	-
<i>I use my students' first name during interventions. (14)</i>	98	1	1
<i>I maintain an emotional connection with the students, while respecting boundaries. (37)</i>	92	6	2
<i>I take the time to learn more about the students' interests. (26)</i>	81	14	5

On the whole, the statements regarding ambiance show that teaching practices converge and that those privileging the quality of interpersonal relationships are frequent and common. The most frequent practices are first, using students' first name during an intervention (98%); second, establishing a significant emotional connection (92%); and third, taking the time to discover students' interests (81%).

4.2.3. Learning situations

The learning situations category refers to functioning modalities privileged in PE courses, learning objects and discipline management.

Table 4.
PE teachers' practice regarding learning situations.

ITEMS STATEMENT (item #)	FREQUENCY		
	+	+/-	-
<i>Consequences are known before the disruptive behaviour occurs. (11)</i>	92	4	4
<i>My courses of action vary from one school grade level (cycle, year) to the other. (35)</i>	92	6	2
<i>During planned play time in my courses, I stress learning objectives. (38)</i>	92	6	2
<i>I use original courses of action. (15)</i>	86	12	2
<i>I vary consequences based on the student, the context and the nature of the disruptive behaviour. (27)</i>	73	18	9
<i>I establish some routines that place the student in a situation of responsibility. (31)</i>	63	23	14
<i>I use removal (to a bench, corridor, etc.) as a consequence for all disruptive behaviours. (19)</i>	9	27	64
<i>During planned play time in my courses, I stress active time and enjoyment. (23)</i>	8	16	76

This category deals with two areas of practice: learning situations and discipline management. In terms of learning situations, teachers say they focus more on learning (92%) than on active time and enjoyment (8%). As well, their practice appears to be flexible because they often teach content that is varied (92%) and original (86%).

In terms of discipline management, teachers say they have a system of established consequences in place before the disruptive behaviour occurs (92%). At the same time, they maintain they vary consequences based on the student, the context and the nature of the behaviour (73%). Similarly, only 9% of the teachers state they frequently resort to removal as a consequence for all disruptive behaviours, versus 27% who use it occasionally and 64% who almost never use it.

4.2.4. Assessment

Finally, the assessment category demonstrates the biggest differences in terms of practice. It relates to all the assessment modalities implemented by the teacher.

Table 5.
PE teachers' practice regarding assessment.

<i>ITEMS</i>	<i>FREQUENCY</i>		
	<i>+</i>	<i>+/-</i>	<i>-</i>
<i>STATEMENT (item #)</i>			
<i>At the start of LAS*, I inform my students about my assessment criteria. (36)</i>	89	8	3
<i>I assess students orally to compare their results. (16)</i>	84	10	6
<i>The students don't know my assessment criteria. (20)</i>	74	5	21
<i>I vary my assessment formats (e.g., by games, self-assessment, etc.). (28)</i>	69	18	13
<i>I give students the opportunity to improve their assessment results. (12)</i>	63	24	13
<i>I use formative assessment. (24)</i>	56	27	17
<i>I offer students the opportunity to self-assess their performance. (32)</i>	56	29	15
<i>I ask students to note down their achievements in order to self-assess their progress. (39)</i>	51	23	26
<i>The students choose the time for self-assessment, within a pre-established timetable. (41)</i>	43	23	34

* LAS: Learning assessment situation

Assessment modalities fall into two categories: one on teaching actions and the other on the empowering actions given to students. In the practices most frequently used, teachers inform students of the assessment criteria at the start of the learning assessment situation (LAS) (89%), compare students orally in terms of their results (84%), do not inform students of the assessment criteria (74%) and, finally, vary assessment formats (69%).

As regards assessment practices dealing with the latitude and choice allowed to students, results show that only half the teachers tend to opt for assessment modalities with strong empowerment potential. In fact, teachers frequently offer students the opportunity to improve their results (63%), self-assess (56%), make notes on their progress (51%) and, finally, choose when to self-assess (43%), based on a pre-established timetable.

5. DISCUSSION

5.1. Beliefs

Interestingly, the findings show that certain beliefs converge and are shared by virtually all the teachers questioned. Indeed, all respondents believe in students' capacity to improve their competencies. As well, teachers share a belief in the importance of autonomy and accountability. This belief aligns with the expectations of the Québec program, which advocates the implementation of conditions that promote students' autonomy and accountability (MEQ, 2001). It appears, however, these findings contradict previous research conclusions, where teachers were somewhat resistant to the approach recommended by the current program (Stoloff, 2016), as can be noticed when teaching practices are characterized by an autocratic and traditional style (Gaudreau, 2008).

5.2. Practices

5.2.1. Latitude

Findings on teachers' practices regarding latitude suppose rather autocratic teaching practices. Nevertheless, these stated practices allow students to assume responsibility in some learning situations or at certain times during the session. This aligns with the work of Gendron (2007) and Sanderson et al. (2013) on the existence of critical moments during class when allowing students to choose may be difficult. Conversely, there are times that favour the promotion of student choice and autonomy, notably during warm-up. For example, in Québec, warm-up time often provides the opportunity to develop disciplinary competence in line with the *adoption of a healthy and active lifestyle*. In a context such as this, the student is encouraged to identify his/her personal objectives, develop an action plan and implement this plan autonomously (MEQ, 2001). Teachers, however, should favour such an approach for all three competencies developed in PE sessions (act, interact and adopt), not only one.

5.2.2. Ambiance

The findings concerning class ambiance demonstrate the importance teachers' accord to the quality of the relationship. They agree with research conclusions on both classroom management (Stoloff, 2016) and the conditions conducive to learning (Siedentop, 1994). Although most teachers say they use practices favouring the quality of the relationship, however, the fact remains that a teacher's capacity for attachment and attachment behaviours must be nuanced, depending on student's behaviour or student's difficulties (Auclair Tousigny, 2017; Gaudreau et al., 2012; Mukamurera & Balleux, 2013, Wilhelmsen & Sørensen, 2017).

5.2.3. Learning situations

As for learning situations, the portrait of teaching practices indicates that most respondents focus on learning with an emphasis on original and varied content. These practices are aligned with actions supporting student motivation, which helps to maintain a positive learning climate (Gao et al., 2009). Discipline management practices, on the other hand, show that teachers are in line with the concept of preventive organization, which recommends clarity of expectations and students' knowledge of consequences (Gaudreau, 2017). At the same time, however, they vary consequences according to the student, the context and the nature of the behaviour, a custom more in keeping with an individualized approach (Stoloff, 2018). The results in this research seem to contradict each other or point,

rather, to two different strategies: the first targets the gymnasium code of conduct, where rules and consequences are known in advance; the second targets the day-to-day behaviours that occur during a session and for which consequences vary based on different factors. Furthermore, it's obvious that only 9% of the teachers say they make frequent use of removal as a consequence for all disruptive behaviours. The non-use of punishment is in keeping with an approach intended to be educational (Lavay, French, & Henderson, 2015) and empowering (Hellison, 2011). The stated practices in this research, however, do not reflect previous research conclusions, which point to the use of punitive practices for managing disruptive behaviours (Stoloff, 2016).

5.2.4. Assessment

In terms of the findings on teaching actions, responses are inconsistent regarding teachers' presentation of assessment criteria given that two contradictory practices are said to be common occurrences. Indeed, teachers claim that assessment criteria are presented to students at the start of LAS, but are at the same time unknown to them. It should therefore be noted that oral comparisons of students and withholding information on assessment criteria are not recommended teaching practices (Tapin, Verret, Caplette-Charette, Grenier, & Chaubet, 2018). In terms of assessment modalities involving the student, findings denote that having students self-assess and having them track their progress are not common teaching practices (respectively 44% and 49%). Now, this implies that close to half the teachers do not fulfil the requirements of their program with respect to the student assessment process, which should promote self-assessment, tracking modalities and tools, all based on the student's knowledge and understanding of the assessment criteria (MEQ, 2001).

6. FUTURE RESEARCH DIRECTIONS

Four sociodemographic variables affect practice: teaching level, gender, experience and socioeconomic context (Stoloff et al., 2018). These variables have a significant impact on the beliefs and practice of PE teachers. Further research is needed, however, for a more in-depth understanding. In addition, the findings in this article are based on a descriptive approach to each item. The next potential step is to analyze results using a quantitative approach, enabling each item, category and sociodemographic variable to be statistically fit and correlated.

7. CONCLUSION

Subsequent to the shift required by Québec's latest educational reform, where the focus is on student empowerment through responsibility, it appears that teachers' beliefs are aligned with the new educational orientations. A solid majority believes in the importance of responsibility and autonomy as a core framework. However, teachers' practices fail to consistently offer the kind of empowering conditions reflected in the latitude, learning situations and assessment categories of the CLASSE model. Students do not appear to have many opportunities to make choices, and this prevents them from acquiring greater decision-making power (Hellison, 2011).

This research has been useful for depicting teachers' beliefs and practices, yet different limits must be addressed. Firstly, findings present a major inconsistency, possibly due to the use of an ecological model (Archambault & Chouinard, 2009) as the foundation of the Q-PEPS questionnaire. Secondly, when questioning teachers about their beliefs and

practices, results highlighted an inconsistency in their responses, perhaps because of social desirability bias (Boutin, 1997) or a gap between the ideal, desired and actual practices perceived by participants (Schön, 1994). This suggests the use of diverse tools to collect data, instead of questionnaires.

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AUTHORS' INFORMATION

Full name: Sacha Stoloff

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Sacha Stoloff, Ph.D., is a professor at the Department of Human Kinetics, Université du Québec à Trois-Rivières. She holds a doctorate in education from Université de Sherbrooke, Quebec. Her research focuses on classroom management in PE settings and professional development through training. She also specialises in teacher's professional well-being. Professor Stoloff is a regular researcher at *Groupe interdisciplinaire de recherche appliquée en santé (GIRAS)* at the Université du Québec à Trois-Rivières and *Centre de recherche International pour la formation et la profession enseignante (CRIFPE)*.

Full name: Claudia Verret

Institutional affiliation: Université du Québec à Montréal

Institutional address: Faculté des Sciences, UQAM – Complexe des Sciences, Pavillon des sciences biologiques, Local SB-4345, 141 – Avenue du Président Kennedy, Montréal, Québec, H2X 1Y4, Canada

Short biographical sketch: Claudia Verret, Ph.D., is a professor at the Department of Human Kinetics at the Université du Québec à Montréal. She worked as a physical educator in child psychiatry at Rivière-des-Prairies Hospital for 10 years. Her research activities focus on interventions in adapted physical activities for youth with mental health problems, in particular, ADHD. Professor Verret is a regular researcher at *Groupe de recherche en activité physique adaptée (GRAPA)* at the Université du Québec à Montréal.

Full name: Jean-Christophe Couturier Cormier

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Jean-Christophe Couturier Cormier, M.Sc., is a graduate student from the Department of Human Kinetics, Université du Québec à Trois-Rivières, since december 2017. He holds a Master degree in Human Kinetics. His research focused on development and validation of the Q-PEPS questionnaire on class management practices in physical education and health. At present, he is a physical educator in primary and secondary schools in Mauricie province of Québec.

Full name: Jean Lemoyne

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Jean Lemoyne, Ph.D., is a professor at the Department of Human Kinetics, Université du Québec à Trois-Rivières. He holds a doctorate in education from Université de Laval, Quebec. His research interests are mainly oriented towards behavioral theories and interventions which promote self-enhancement through sport participation and the adoption of active lifestyles by diverse populations (mostly adolescents and young adults). His expertise lies in all statistical approaches in areas such as sport, physical activity and teaching. Professor Lemoyne is a regular researcher at *Groupe interdisciplinaire de recherche appliquée en santé (GIRAS)* at the Université du Québec à Trois-Rivières.

Chapter #5

LEARNERS' VIEWS OF THE TEACHER ATTRIBUTES IN CONTRIBUTING TO MEETING THE CHALLENGES OF THE SOUTH AFRICAN CURRICULUM IN PHYSICAL SCIENCE

Leelakrishna Reddy

Department of Physics, University of Johannesburg, South Africa

ABSTRACT

A decline in learner performance in South Africa over the years in Physical Sciences at grade 12, in the transition from National Senior Certificate (NSC) to Curriculum and Assessment Policy Statement (CAPS), have implored us to do an investigation of the perceived attributes of the teacher in meeting the challenges imposed by the new CAPS curriculum. 150 university students participated in the study. Learners were requested to give their views about their teachers on a questionnaire designed to elicit characteristics of a successful teacher. Learners were requested to indicate their degree of agreement or disagreement to each of the items of the questionnaire. The data was subjected to the Principal Component Analysis (PCA) procedure by use of the SPSS program, which revealed three broad clustered characteristics of the teacher. These characteristics are Teacher efficacy, Teachers' efficiency, effectiveness, and Teachers' understanding of CAPS curriculum. The results reveal that the teachers' frequent and immediate feedback on the quality of their assessments is considered the most important attribute about a successful teacher, while the use of active forms of learning is an area of concern for the present day teacher in meeting the challenges imposed by the CAPS curriculum for Physical Science.

Keywords: physical sciences, curriculum, teacher, demands, engaged.

1. INTRODUCTION

The achievement in Physical Sciences at grade 12 level has got worse over the last few years in South Africa, more so since the inception of the new CAPS document. Apart from the learners, home, school and peer characteristics, the role of the teacher is of paramount importance in contributing to their knowledge and which according to Hattie (2003) contributes as much as 30% to learner achievement. Hattie (2003) also mentioned that: "It is what teachers know, do and care about which is very powerful in this learning equation" (page 2). This implies that excellence in teaching is considered a single most powerful factor to learner achievement. We are informed from research that whenever the curriculum changes, as with changes in the CAPS curriculum, it is the teachers that are uncomfortable about the content knowledge (Henze, Van Driel, & Verloop, 2008; Lee & Luft, 2008; Ramnarain & Fortus, (2013)). The difficulty that teachers face is their lack of deep and coherent understanding of the CAPS curriculum. The challenges experienced by most teachers was the lack of time for curriculum completion, insufficient content knowledge, insufficient practical skills and large workloads (Gudyanga, 2017). The result of this is that teachers may struggle to monitor learner problems and at the same time unable to provide effective feedback of the subject (Hattie, 2003). A lack of subject

knowledge and PCK in the implementation of the new CAPS document may lead to ineffective and undesired results in the subject (Sharp, Hopkins, & James, (2009)). However, it must be mentioned that although teachers were subjected to professional development before the implementation of CAPS, the limited training they received may not necessarily have changed their traditional pedagogical approaches to teaching (Black, Harrison, Lee, Marshall, & William, 2002) because the new curriculum may introduce instructional approaches and strategies that are not aligned to their way of thinking (Bantwini, 2009). According to Lekgoathi (2010), the new curriculum clearly defines the specific roles of the teacher with respect to lesson outcomes and assessment criteria, and which when implemented should lead to success in teaching and learning. There are a few sections of the Physical Sciences paper, according to the Diagnostic Reports from the Department of Basic Education (DBE, 2011-2015) for which learners have done consistently badly and they are: Photoelectric Effect, Rate of Reactions and Electrolytic Cells. It is revealed from research in South Africa that, of the 84% of teachers that are professionally qualified, only 42% of them are qualified in physics (Makgato & Mji, 2006). This implies that the rest of the teachers will have to undergo sustained professional development in the subject to improve their content knowledge and pedagogical content knowledge (PCK) on the CAPS curriculum to bring about much improvement in Physical Sciences from the national average of around 50%. In this instance, only 50% of the teachers will benefit from such an intervention. Thus in this scenario the role of the teacher plays an important variance in learner achievement. This study aims to explore the views of learners who have been successful in Physical Sciences of their perceived attributes of their teachers. The reason for using these learners is because they are recipients of such knowledge and their views could provide indicators for improvement.

2. RESEARCH QUESTION

The research question for this study is:

What are the attributes of the present day teacher from the perspective of the student in meeting the challenges of the CAPS curriculum in Physical Sciences?

3. CONCEPTUAL FRAMEWORK

The conceptual framework for this study that pertains to the key principles for successful teaching was taken from the work of Fink (2006). Such principles as presented by Peter Connor from the Colorado State University are:

1. Challenge students to a higher level of learning: This attribute of the teacher demands more of the learners' ability to comprehend and understand the nature of the problem.

2. Use of active forms of learning: Although passive forms of learning such as watching a video, reading, notetaking and listening has its place in any learning situation, but provided it enriches and allows for debating, interpretation and discussions, then active forms of learning unfolds.

3. Gives frequent and immediate feedback to the learners on the quality of their learning: Teachers provide feedback to the learners on given tasks such as tests, assignments, examinations, practicals, etc.

4. They provide a fair system for assessment and grading of learners: The subject content, objectives, and the outcomes of the course outline are clearly communicated before commencement of classes.

5. They care about what is being taught: The teachers take a lot of care about what is being taught in class; have respect for their learners, are aware of the cognitive ability and pitch lessons accordingly.

6. They provide strong academic leadership: Teachers provide strong leadership in their credibility of teaching and classroom management. Learners are sensitive to the competency, trustworthiness and enthusiasm of the teacher when embarking in teaching new topics in science.

4. METHODOLOGY

4.1. Participants

A sample of 150 first year university students at a South African university that enrolled for a physics disciplined programme, participated in this study. Prior to the administration of the questionnaire, permission was sought from various stakeholders at the university. Permission was first sought from the lecturer and the students themselves. This study was conducted at the beginning of the year, before the assumption of classes, when the students are still fresh out of high school.

4.2. Instrument and procedure

As mentioned before, this study made use of a questionnaire that was piloted by the author, inspired from the misconceptions in the examiner's reports of the grade 12 Physical Science papers. This questionnaire has been administered to 150 first year university students at the beginning of the year whilst they have a fresh perspective of their grade 12 teachers. The questionnaire is comprised of 11 questions and the students were expected to indicate their levels of agreement or disagreement to each of the items. A Likert-type scale of evaluation from Strongly Disagree (+1) to Strongly Agree (+5) was used in the calculation to obtain the mean scores. For reliability of the data, the Cronbach Alpha was computed.

4.3. Reliability of the data

The Cronbach Alpha for this data was found to be 0.875, suggesting that the factors have a high reliability (should be greater than 0.70 to be acceptable).

5. RESULTS

In Table 1, we have the various items of the questionnaire that corresponds to a specific attribute about the teacher.

Table 1.
Aligning items of the questionnaire to 1 of 6 attributes of the teacher. The average mean for corresponding items are also given.

Item(s)	Attribute of the Teacher	Average Mean
7, 11	Challenge learners to a higher level of learning	3.74
3	Use of active forms of learning	2.64
6, 8, 10	Gives frequent and immediate feedback to the learners on the quality of their learning	3.76
2, 4, 5	They provide a fair system for assessment and grading of learners	3.54
1	They care about what is being taught	3.46
9	They provide strong academic leadership	3.59

Of all the attributes that pertains to a teacher, item 3 whose mean value is 2.64, is not considered beneficial as a good perceived attribute about the teacher. The use of videos, particularly in teaching a difficult section has not proved to be beneficial to the students as an active form of learning. It can be considered as a passive form of learning. The rest of the items from the questionnaire appear to be adequate with respect to the attribute of a teacher, with average mean scores between 3.46 and 3.76.

5.1. Teacher efficacy

They care about what is being taught (item 1)

The inception of the CAPS document has created more curricular demands on the present day teacher in teaching Physical Science. Because of the pressure to teach additional content materials, more time should have been allocated to these teachers, but unfortunately the department or the schools did not cater for this. Teachers will have to spend time after school, weekends and during school holidays to complete the syllabus. With respect to the students' responses to this item in the questionnaire, a mean score of 3.46 (item 1) is a reflection of their commitment to go the extra mile in fulfilling their professional obligations.

They provide a fair system for assessment and grading of learners (items 2 and 4)

In order to eliminate the errors that some of the learners are making in the examination papers, teachers are guided by reports from the department and from past year examination papers. With this kind of information, teachers will be challenging learners to answer examination questions in the same format as required by the examiner. Teachers are making an important contribution in this regard. For this item in the questionnaire, they have responded positively (mean score of 3.79 for item 2) and a positive attribute to their professionalism.

The experience and knowledge of a teacher is important when trying to solicit information beyond the textbook. For those teachers that use the same information year after year without venturing out beyond the confines of the prescribed textbook will be denying learners a repertoire of questions that could be asked on a particular topic. Teachers should also look for alternate questions for the MCQ section, as learners seem to also battle with this section in the examinations. Lack of exposure to a variety of questions in this field and the skill to answer them systematically, will leave them with no option but to guess the answer for those types of questions. The learners have responded positively to this item in the questionnaire. The mean score for item 4 is 3.47.

Gives frequent and immediate feedback to the learners on the quality of their learning (item 10)

Teachers are in the habit of praising, encouraging and motivating learners in their care. This allows them to participate and keeps them sustained in the class lessons. Being able to contribute in class lessons is one way of clarifying ones' conceptual knowledge. For this item in the questionnaire, the learners have responded very positively (mean score of 3.92 for item 10) and an important item for success in any examinations.

Challenge learners to a higher level of learning (item 11)

Being conscious about the time the learner is required to spend per question in the examination or tests is crucial. Learners are challenged to answer every question in any form of assessment from easy to difficult. Teachers are forcing learners to be time conscious. For example, if a question is allocated a mark out of 10, then learners should spend no more than 10 minutes for such a question and if the time is exceeded, they should move on to another question (Mason & Singh, 2010). Learners were most positive about teachers enforcing such a rule (mean score for item 11 is 3.93).

5.2. Teachers' efficiency and effectiveness in teaching

Use of active forms of learning (item 3)

The use of videos in teaching can be beneficial if used in the correct context and if it enhances active form of learning. For example, if a section on Doppler Effect (new topic in the CAPS curriculum) has to be taught, then an animation (motion of objects) of a real life situation could be played out. Likewise, this could be done for sections such as Photoelectric Effect, Rate of Reactions and Electrolytic Cells, where more misconceptions seem to exist at school level. The use of these video lessons should be used cautiously and should not replace the teacher or his/her class lessons. For this aspect of the questionnaire, the learners have responded negatively (mean score of 2.64 for item 3), indicating that their teachers are not using videos to good advantage.

They provide a fair system for assessment and grading of learners (item 5)

Having a sound knowledge of the CAPS curriculum will only come through after a few years of experience in teaching the subject matter. The critical importance of having well prepared and qualified teachers in the classroom as they are responsible for making a difference in the lives of students (National Academic Press, 2000). This is because the teacher's pedagogical content knowledge (PCK) and a deep understanding of the curriculum will have a direct impact on the quality of their teaching and learner achievements. Teachers doing justice to the school curriculum ensures that learners are well prepared for university. For this aspect of the questionnaire, the learners have responded fairly positively about their perception of their teachers' content knowledge of CAPS (mean score of 3.37 for item 5).

Gives frequent and immediate feedback to the learners on the quality of their learning (items 6 and 8)

Marking of tests and examination papers in the same format as required by examiners will give learners a better picture of what to expect in the examinations. Previously, teachers were accustomed to allocating a 0 if the given answers were not correct. In the new format, teachers will have to allocate marks for the correct formula and correct substitutions. In this regard, learners have responded positively about this item in the questionnaire (mean score of 3.63 for item 6). Proper feedback for all assessment exercises is essential, the purpose of which is to zoom into misconceptions held by learners in Physical Science. Just providing answers, for example in the MCQ section of an assessment is futile since it will never demonstrate the essential skills that are lacking. With respect to

homework exercises, teachers should provide meaningful feedback to learners. In this respect, teachers are providing proper feedback for most assessments as indicated by their responses to this item in the questionnaire (mean score of 3.72 for item 8).

Challenge learners to a higher level of learning (item 7)

If teachers are not pitching questions in Physical Science at varying levels of difficulty in school assessments, then students will experience considerable difficulty when confronted with the final examinations. Hypothetically, if questions are all set at levels 1 and 2, then these students will barely cope with demands of questions pitched at levels 3 and 4 in the final examinations (criteria laid out in Bloom's taxonomy. Understanding the cognitive level of demand of questions will be difficult for junior teachers (inadequate PCK) and they will be more inclined to set lower order questions, thus making learners less prepared for the examinations. This perceived attribute of a teacher is good in that they are teaching learners for life-long learning instead for an exit examination only. In this respect, learners have responded positively to this item in the questionnaire (mean score of 3.54 for item 7).

They provide strong academic leadership (item 9)

Being punctual and regular to school is a given norm. Deviation from such practices has consequences in terms of curriculum completion. The implementation of the CAPS curriculum has increased the workload of teachers many-fold, as teachers are barely able to complete the syllabus in time for examinations. This is an ideal attribute of a teacher in being timeous and taking control of the classroom. Having a highly qualified and a well-prepared teacher in every classroom in physical sciences is an ideal to be desired (National Academic Press, 2000). These teachers have sufficient content knowledge and are able to seek information from learners for appropriate interventions. Although this is far from ideal, our teachers are making inroads in their professional duties in becoming better teachers with well-developed PCK. From the survey, the students have commented positively (mean score of 3.59 for item 9) about their teachers fulfilling their professional obligations in being regular and punctual to school.

6. DISCUSSION AND CONCLUSION

Since the role of the teacher is of paramount importance, then the teacher should be able to identify where the major sources of variances in student's achievement lie and then focus on these sources of variances to truly make a difference in their lives. (Hattie, 2003). The perceived behaviour of a teacher as viewed by the learners in terms of efficiency, efficacy, and effectiveness are considered key milestones for learner proficiency. These characteristics clearly have an impact on learner proficiency and should be supported. Teachers' knowledge of CAPS is crucial because it affects the quality of his/her teaching and for meaningful interactions with the learners who are at different cognitive levels. In terms of meeting the demands of the new curriculum, they are making many sacrifices in fulfilling their professional obligations. The results of this study, as perceived by the learners, indicate that teachers are viewed as meeting the demands of the new curriculum, despite all the challenges they face in interpreting the curriculum. The perceptions of the learners are all positive about their teachers having the adequate pedagogical skills in delivering the subject matter to the satisfaction of their learners.

The perceived attributes of the present day teacher in meeting the curricular demands are very encouraging; especially in terms of the study skill, interventions they are making to enhance learning (Hattie, Biggs, & Purdie, 1996). Another perceived attribute of the teacher, which probes their efficacy and effectiveness in teaching, is the depth of their

content knowledge of CAPS and their PCK. Their subject knowledge expertise will allow their learners to develop a sound understanding of the content and this will allow them to be challenged to a higher level of learning. The teachers' academic leadership skills are considered an important attribute in the complex role they play when sound decisions are made for the learners' needs (Darling-Hammond & Barnett, 2001). Learners consider the timeous feedback on the quality of their work as the most important attribute about a successful teacher in this study. Closely linked to this attribute is the teacher providing frequent and immediate feedback on all class assessments. Unfortunately, the use of active forms of learning is a grey area in the teachers' domain and not used optimally for success in teaching and learning.

7. RECOMMENDATIONS

Whilst the attributes of the teacher as perceived by the learner to be largely positive, however active forms of learning needs attention. Physics being a numerical subject lacks opportunities for active forms of learning and allows students to passively listen to lessons instead of actively participating in it. A suggestion to improve improve active forms of learning is to consider the following (some taken from Karamustafaoglu, 2009):

- Revise the curriculum to include topics that involve active forms of learning,
- Students should be allowed to use the laboratories and libraries regularly,
- Teachers should encourage students to research topics on the internet and make presentations in class,
- Allow for group discussions on project topics, and
- Show videos in class and then follow up with strategic questions.

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ANNEXURE

Attributes of a teacher to meet the challenges of CAPS

		Fully Disagree	Disagree somewhat	Neutral	Agree somewhat	Fully Agree
1	My teacher has devoted his holidays, weekends and time after school to complete the syllabus and do some revision					
2	My teacher has taught us correct examination techniques to answer examination type questions					
3	For a difficult sections, my teacher has shown us a video lesson of a particular topic					
4	My teacher has used the best available resources in the market to expose us to a variety of question to make us better prepared for the examinations					
5	My teacher has a sound knowledge of the CAPS curriculum and this has helped my preparation for the examinations					
6	My teacher has marked all our tests and examination scripts in the same format as is required in the final examinations					
7	My teacher has pitched all the school tests and examination papers at a high standard in anticipation of what is expected in the final examination					
8	My teacher is in the habit of giving us proper feedback to all tests and homework exercises					
9	My teacher is always punctual and never misses a class lesson					
10	My teacher always praises us and motivates us to achieve our goals					
11	My teacher prepares us to be time conscious and to adhere to the mark allocation for each question					

AUTHOR INFORMATION

Full Name: Prof, Leelakrishna Reddy

Institutional affiliation: University of Johannesburg

Institutional Address: 37 Nind Street, Doornfontein, Gauteng, Johannesburg, South Africa.

Short biographical sketch: I am a senior lecturer at the University of Johannesburg in the Department of Applied Physics. My area of specialty is Science Education, Condensed Matter and Nanotechnology.

Chapter #6

LIVING ABROAD: IRISH ERASMUS STUDENTS' EXPERIENCES' OF INTEGRATION IN SPAIN

Rosario Hernández

University College Dublin, Ireland

ABSTRACT

Living and studying in another country requires students to pursue a process of integration into a number of areas of life, among them university itself, as well as social and cultural events and day-to-day activities, all of which require the building of relationships. As English has become the *lingua franca* in many countries, English-speaking students nowadays face increased challenges to using Spanish as a means of communication to fully integrate into the host country. This paper identifies the strategies employed by a cohort of students from an Irish university during their year abroad in Spain with the aim of explaining their process of integration into the host country. The data used for this study were an integral part of a module completed by the students during their study abroad, where students wrote two reflective assignments in Spanish to analyse their experiences during study abroad. Results show that students who made efforts to move out of their comfort zone had a positive experience of integration. The experiences of students who did not integrate so successfully are discussed and recommendations that may be relevant for students and institutions in their preparation for study abroad are provided.

Keywords: study abroad, integration, foreign languages, higher education, reflection.

1. INTRODUCTION

The Erasmus programme was established in Europe in 1987 with a view to enabling mobility of staff and students across higher education institutions in Europe, and over 3 million students have benefited from the programme by 2013 (European Commission, 2015). Although spending time studying abroad as a means of developing language skills is not a new phenomenon (Mitchell, Tracy-Ventura, & McManus, 2015), many university programmes in Europe nowadays include a period of studying and living in another country as an integral part of the course of study. Spending time abroad for students from European institutions has taken on new significance given the large increase in the number of students attending higher education institutions (Coleman, 2015) and the fact that mobility is one of the objectives of European policy for higher education as part of the Bologna Process (Teichler, 2015).

During their time abroad, students go through a process of integration and immersion into different spheres of life, among them, university itself, as well as social and cultural events and day-to-day activities, and this requires effort on their part, in particular to move out of their comfort zone and be open to new experiences. The term integration is used in this paper to refer specifically to the building of relationships through educational, social, cultural and day-to-day activities undertaken by students during their time abroad. Immersion and integration are used interchangeably in this paper, although in Second Language Acquisition the term immersion is usually reserved for formal education delivered through the medium of the L2 (Coleman, 1997). Linked to integration is the concept of intercultural

adaptation that relates to issues arising as a result of contact with other cultures (Zhou, Jindal-Snape, Topping, & Todman, 2008). The integration process generally results in numerous gains, including in linguistic ability, personal development and a life experience that the students will treasure forever. Engberg and Jourian (2015) advocate the idea of intercultural wonderment, which entails students pushing themselves outside their comfort zone and being immersed into the culture of the host country, as contributing to students' development of a global perspective. However, embarking on such a journey is not easy.

2. LITERATURE REVIEW

Jackson (2018) states that, prior to departure for the host country, many students are excited about the opportunity to make friends and experience another way of life. However, Meier and Daniels (2013) report that many students find it difficult to make meaningful contact with locals during their time abroad. As far back as 1998, Freed already concluded that student interactions with native speakers during study abroad "may be far less intensive and frequent than was assumed" (Freed, 1998, p. 51). Linder and McGaha's (2013) study on American students spending a semester in Brussels noted that students' isolation was often discussed in their reflective journals, particularly by introverted students, whereas students who made the effort to get out of their comfort zone and joined activities outside the classroom were able to make friends more easily. Thus, Di Silvio, Donovan and Malone (2014, p. 180) argue that interaction with native speakers "requires a personal commitment", while Engberg and Jourian (2015) note that students should be prepared "to deal with discomfort and disequilibrium" (p.1). Integration into the social environment does not happen easily and should not therefore be taken for granted. Goldoni (2013) adds that for immersion to happen students need to be motivated and willing to invest in developing contacts with L2 speakers and the host community; this is supported by O'Reilly (2012), who notes that positive experiences of integration were reported by Irish students who developed friendships with other European students while participating on Erasmus programmes in Germany. In addition, in a study of Chinese students in the UK, Spencer-Oatey, Dauber, Jing, and Lifei (2017) argue that universities should address the issue of integration of international students to ensure student satisfaction and academic success.

Although there are many factors involved in accounting for the integration made by students during study abroad, some researchers have argued that students themselves need to be more actively involved in exploiting all the possibilities at their disposal (Ife 2000), while others contend that academics can play a significant role in the intercultural preparation of students in order to encourage meaningful interactions between local and study abroad students (Jackson, 2018; Vande Berg, Connor-Linton, & Paige, 2009). However, even the best intercultural preparation cannot entirely prevent students experiencing difficulties in making friends during study abroad, because many locals already have established friendships and see no need to make new friends with exchange students whose stay is temporary and whose linguistic skills may make conversation difficult (Coleman, 2015). As observed by Jackson (2018), "study abroad learning is much more complicated and variable than is often assumed" (p. 368).

When students of languages are faced with using the L2 either in the classroom or in an L2 context, many of them experience foreign language anxiety (FLA). MacIntyre (2007) defines FLA as "the worry and usually negative emotional reaction aroused when learning or using an L2" (p. 565). Woodrow (2006) reported that one of the most frequent sources of anxiety occurs when interacting with native speakers, while in classroom situations oral presentations were cited as the greatest stressor. His study concluded that perseverance and

the development of language skills were the coping strategies most widely used by the students when addressing FLA. A particular challenge for English speakers during their study abroad is that English is very often the *lingua franca* available to them (Ife, 2000; Mitchell et al., 2015) for communicating with their peers as well as with other exchange students whose English skills are often better than those in the L2 and even with the locals who are eager to practise their English with L1 native speakers. Thus, the process by which students integrate into the host country during study abroad is not a smooth one and its pace may differ for each student, as reported by Beaven and Spencer-Oatey (2016). Besides, such journeys are highly influenced by emotions, either positive or negative ones, and more research is needed to establish the extent to which students do indeed fully integrate with locals as well as to identify possible reasons for their lack of integration.

Many studies on integration have focussed on the students' homestay experiences, emphasising the effect of the host families on the immersion process (see Di Silvio et al, 2014; Kinginger, 2015) and some have reported a lack of integration in the community beyond the homestay family (Allen, 2010). Furthermore, few studies have addressed issues of integration with native speakers through building relationships and by examining their participation in social events. In order to better understand the emotional journey undertaken by students during their study abroad, this paper examines that gap in the literature by exploring affective factors contributing or hindering to the building of relationships during study abroad. The rationale for undertaking this study is to gain a better understanding of students' experiences during study abroad so that a pre-departure programme can be developed to address linguistic and sociocultural issues faced by them. The research questions to be considered are:

1. What role does language competence play in the process of integration?
2. In which sphere of life do students experience greater challenges regarding integration?

3. BACKGROUND FOR THE STUDY

Students of International Business with Spanish at University College Dublin undertake a compulsory academic year in Spain during the third year of their undergraduate studies. During that year, students complete a number of academic modules on Business subjects at the host universities; these are taught in Spanish. Many students also take language specific courses during their year abroad, including an intensive course prior to the start of the academic year and regular language courses that may continue for a full semester. Furthermore, students from the UCD Business programme are required to complete two 5ECTS year-long modules for their home university. These two modules focus on student reflection and intercultural experiences. Normally, these modules differ from ordinary academic modules in that they focus not on content but on a number of tasks that students complete in order to use and develop their language skills, as well as to reflect on their experience abroad. All the tasks for the second of those modules, namely *SLL30070 Language Experience Abroad*, are completed using the target language. Students are required to submit a total of four assignments for the module, two of which are group tasks (an oral presentation and a blog). The other two are individual written assignments submitted online via Blackboard, the university's VLE. The first reflection is submitted after 6-7 weeks of their stay in Spain and the second at the end of the academic year. In the first assignment, students are asked to reflect about their experience abroad to date. More specifically, they are asked to examine how their language competence has changed since their arrival in the host country. The second reflection asks students to capture key moments throughout the

year that have had a special meaning because they represented a significant development, or because they were challenges that they had to face, and what they have learnt in relation to themselves as learners of a language while immersing themselves in the culture where that language is spoken. Each assignment is about 900 words long and is written in Spanish.

4. RESEARCH METHODOLOGY

A qualitative approach, more specifically a case study, was employed for this research. Gall, Gall and Borg (2003) define a case study as “the in-depth study of instances of a phenomenon from the perspective of the participants involved in the phenomenon” (p. 436). This study belongs to the category of educational research which aims to contribute to better learning and teaching, in particular during preparation for study abroad.

4.1. Participants

During 2016-17, a total of 20 students from the Business with Spanish programme spent their academic year at a host university in Spain. Nineteen out of the 20 students returned to UCD in 2017-18 and registered for the final year of the programme while one student took a leave of absence. The researcher contacted the 19 students in September of 2017 via email, providing them with an information sheet about the research project and a consent form. If they agreed to participate, they were asked to sign and return the consent form to the researcher, allowing her the use of the two reflection assignments from *SLL30070* for the research project. When completing the assignments, students were not aware of the research project and the grade approval process had been completed by the time they were contacted. Twelve students (six male and six female) out of the 19 agreed for their assignments to be used for this research project. The host universities where the participants spent the year abroad are set out in Table 1.

Table 1.
Host Universities.

University	Number of students (n=12)
Carlos III, Madrid	1
Comillas, ICADE, Madrid	3
Deusto, Bilbao	2
Deusto, San Sebastian	2
Navarra	2
Salamanca	1
Valencia	1

4.2. Procedure

Two written assignments, submitted during their 2016-17 year abroad by the students as part of the *SLL30070 Language Experience Abroad* module, were used to provide data for this study. The data of interest from the assignments relates to the strategies adopted by the students during their integration into the host country and the resultant feelings they experienced after 6-7 weeks abroad (in their first reflection) and at the end of the academic year (in the second reflection). This research had received approval from the University Ethics Committee and students were assured that participation in this study had no effect on their grades. The written texts were subjected to a content analysis that was carried out in Spanish, and relevant extracts used for this paper were translated into English after analysis.

5. RESULTS

Strategies used by the students to integrate into the host country, the challenges they experienced, and the emotions that arose in the process were ascertained. The foreign language anxiety (FLA) construct (MacIntyre, 2007) was used to analyse the results of this study. Thus, students' positive and negative experiences of integration are examined below.

In their first assignment, all the participants except one describe their lack of confidence in using the L2 when they arrived in Spain. They experienced significant anxiety in all spheres. They mention, for example, the difficulty in understanding university lecturers and a fear of being asked questions in class (academic sphere), and also their anxiety in situations such as dealing with landlords (day-to-day). One of the participants expresses his anxiety in the following excerpt:

I was afraid during the first weeks in CITY. Being totally submerged and surrounded by a new culture and language, I did not have much confidence using Spanish. (A1_N02) [My own translation]

A number of participants recognise that their anxiety about using the L2 was due to their fear of making grammatical mistakes. One of the participants explains in the following excerpt such fear in relation to his housemate:

At first, I was afraid talking to him because I did not want to be wrong, but he does not care so I can talk without anxiety now. (A1_N03) [My own translation]

As a result of their anxiety and fear about using Spanish during their first weeks in Spain, a significant number of participants were reluctant to move out of their comfort zone. Thus, they spent a lot of time with English speakers, and refrained from social or cultural activities involving native speakers. However, after 7 weeks in Spain most had recognised that their anxiety and lack of confidence in using Spanish was decreasing and they were beginning to reflect on the strategies they needed to develop in order to feel more confident using the language. Some recognised that a Tandem exchange with a native speaker gave them increased confidence to speak Spanish. Other participants identified the intensive language course they completed at the start of the academic year as a major factor in reducing their anxiety. After two months in Spain, they were ready to take a more proactive role in integrating into the host country. Most of the participants explicitly mention their intention to spend more time watching TV in order to develop listening skills as well as making a bigger effort to speak Spanish daily. This reflection on language competence was significant in allowing them to identify the strategies needed to improve their second language.

By the end of the academic year, the students reflected on the challenges, key moments and achievements of their integration into the host country. Many of the challenges they described are language related, the principal one being the lack of language competence (perceived or real), both in understanding others and in oral expression itself. All students except one recount key moments in the integration process relevant to their integration into the different spheres of life. They describe such moments as achievements, among them linguistic improvement, academic successes and feeling comfortable alongside native speakers in social, cultural and sporting events. Samples of key challenges, key moments and achievements are set out in Table 2 below.

Table 2.
Integration process.

Challenges	Key moments	Achievements
<ul style="list-style-type: none"> * Making friends at university (studies/social) * Development of listening skills (studies/day-to-day/social) * Oral presentations (studies) * Participation in class (studies) * Understanding lecturers (studies) * Group work with native speakers (studies) 	<ul style="list-style-type: none"> * Visit to chemist (day-to-day) * Dinner with native-speaker family (social) * Team leader of group project (studies) * Feeling comfortable with native-speaker housemates (day-to-day) * Feeling prepared to deliver a group presentation (studies) 	<ul style="list-style-type: none"> * Integrating in the rugby team (social) * Good grades in a written assignment (studies) * Increased listening comprehension and vocabulary (studies/social/day-to-day) * Confidence speaking Spanish (studies/social/day-to-day)

The following excerpt exemplifies how students felt more integrated into the host country as time went on:

*Another very important moment in which I realized that I had improved my Spanish a lot was during Holy Week. I went to Marbella with my friend X. Before going, we booked a moped for the week. The man in the store did not speak a word of English. ...When we got to the store, there was a problem with the moped. The lights did not work, and the man did not want to change them because it cost money. We argued, and I decided to write down in Spanish what we needed. The lights were finally changed. **I felt great after this event because I had just had an argument in Spanish with a local and I won.** And also, I had used my oral and written Spanish.*
A2_N14 [My own translation and highlight]

All students expressed some regrets at the end of the academic year and listed things they would do differently if they could go back in time. While they give examples from all spheres of life, the missed opportunities listed relate mainly to participation in social activities with native speakers and to living with English speakers. Table 3 presents some examples as described by the students:

Table 3.
Regrets.

Sphere of life	Example from students' responses
Social	Join sports clubs earlier in the year. Join more sports clubs. Be more proactive in joining social activities. Get out of my comfort zone early in the year as it was difficult to join clubs late in the academic year.
Personal/Day-to-day	Live with native speakers. Live with Spanish or non-English speakers. Live with native speakers from the start of the academic year.
Day-to-day/Social/Studies	Greater participation in activities (day-to-day and university events) that would contribute to the use of Spanish. Spend more time using Spanish in authentic situations. Make more efforts to meet native speakers.

6. DISCUSSION AND CONCLUSIONS

The findings of this study indicate that the L2 plays a significant role in students' integration into the host country. Fear of communicating in Spanish at the start of their time in Spain resulted in some students relying too much on English, as supported by Coleman (2015). Most of the students in this study expressed anxiety regarding understanding and using Spanish in the day-to-day activities, corroborating Woodrow's study (2006) that a frequent source of anxiety was interacting with native speakers. Such anxiety was due to the normal process of adjustment; as for many students it was the first time they had lived in Spain, surrounded by the Spanish language. Students will need reassurance about their language competence in order to move out of their comfort zone in the knowledge that although they will initially experience frustration and encounter problems understanding and speaking the L2, they will soon realise that the linguistic difficulties are temporary. Rather than relying on using English as the easy way out, their acceptance of the situation, and their attitude and perseverance will result in overcoming their anxiety, as argued by Woodrow (2006). Part of the pre-departure preparation needs to place greater focus on addressing student confidence and other affective factors.

This study has established that in the earlier part of their stay, the strategies used by students to integrate in Spain varied significantly; some students opted for stepping out of their comfort zone and made efforts to integrate into the host country while others decided to wait until they felt more confident and ready to use the L2. It is argued that because English is widely spoken as a *lingua franca*, L1 English students face greater challenges when going abroad given how easy it is to speak their L1, as contended by Ife (2000) and Mitchell et al. (2015). That explains why the participants of this study had less need to use Spanish than would be the case for students whose L1 is not English. Undoubtedly, the first weeks in the host country are not easy, but starting out with the right frame of mind would help, as pointed out by one of the respondents, "I think it's extremely important to make a decision before you

go on Erasmus that you will speak as much Spanish as possible from day one” (A2_N01). It is important to note that those who chose to remain within their comfort zones by living with English speakers, tended to socialise, as well, with English speakers and this resulted in them missing opportunities to live with native speakers, or to join social and sports activities where more native speakers were participating. As time went on, it became more difficult to break into the circle of native speakers.

It is evident from the findings of this study that participation in social and cultural events, in particular team activities such as sports, was an effective way of breaking into the circle of Spanish speakers. A shared interest made participation in such events much easier. Students who did not seek involvement in social activities attributed this to a lack of confidence in their language skills. Interestingly, many of these students regretted this as they recognised that, even if involvement in socio-cultural activities required a large initial effort, it would have enabled them to integrate better with native speakers, to speak more Spanish and to develop better knowledge of day-to-day life and traditions. As pointed out by Goldoni (2013), students’ attitude, interest in the host culture and openness to integration are key to their success during study abroad as this study has revealed.

Students’ Erasmus journeys start before departure and preparation is a key aspect. This study concurs with Coleman (1997) and other researchers in stressing the importance of preparing students before they go abroad. This preparation should include intercultural awareness as an integral component of the programme in the home university, as advocated by many researchers (See Coleman and Parker 2001; Goldoni 2013; Ife 2000; Jackson 2018; Vande Berg et al. 2009). Furthermore, as this study shows, preparation for study abroad should address some of the socialisation challenges that students will face so that they may be better prepared to step out of their comfort zones at an early stage of study abroad. In order to address those challenges, we might design workshops or courses that focus both on L2 use and intercultural issues to enhance students’ language and cultural awareness prior to departure. Activities may include simulations and role-plays that require students to think about how they would approach similar situations during study abroad. Additionally, sharing experiences with returnees from Erasmus programmes may provide an ideal opportunity to develop knowledge of the host country as well as intercultural learning. However, it is important to ensure that students are supported during their time abroad by helping them to integrate with native speakers. While some host universities provide pre-orientation sessions to Erasmus students, these tend to be language classes with an emphasis placed on speaking and general information about logistics; more emphasis could be placed on cultural activities where Erasmus students could interact with native speakers. Ideally, as suggested by Vande Berg et al. (2009, p. 25), having a ‘cultural mentor abroad’ might contribute positively to students’ integration and increase their intercultural learning.

Integration into the host country, as revealed in this study, does not happen easily and requires effort. However, overcoming the initial language barriers seems to be the key to better integration. This study found that the principal factors contributing to fuller integration were living with native speakers of Spanish and participating in social activities and sports. Respondents found it easier to communicate in Spanish when they took part in social activities, sports or when living with Spanish speakers.

One limitation of this study is the relatively small number of participants. The analysis relied on assignments written during study abroad and, since it is not common for Irish Erasmus students to complete modules for their home university reflecting on their experiences while on study abroad, the cohort of participants was necessarily small. With that in mind, the findings of this study should not be generalised to other contexts. However, considering that many of the findings of this study concur with previous literature, it may be

safe to conclude that students from other institutions may face similar challenges. This study may therefore help programme directors and academics when preparing students in advance for the challenges of the year abroad.

Further studies will be needed to expand this study beyond a single programme within the university to include other programmes and other institutions participating in Erasmus programmes at Spanish universities. As pointed out above, it may not be feasible to use reflective assignments as a means of data collection beyond this programme. Instead, focus groups and interviews may provide the necessary data to expand the study.

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AUTHOR INFORMATION

Full name: Rosario Hernández

Institutional affiliation: University College Dublin, Ireland

Institutional address: School of Languages, Cultures and Linguistics, Newman Building, Belfield, Dublin 4, Ireland

E-mail address: charo.hernandez@ucd.ie

Short biographical sketch: Rosario Hernández is Associate Professor in the School of Languages, Culture and Linguistics at University College Dublin (UCD), where she teaches Spanish and second language studies. Her research interests include second language teaching and learning, assessment of students learning, ICT in teaching and study abroad experiences. She has presented her work at international conferences and published several articles in peer-reviewed journals. In 2014 she co-edited a book, published by Peter Lang, on *Higher Education and Second Language Learning: Promoting Self-Directed Learning in New Technological and Educational Contexts*. She has been Vice-Principal for Teaching and Learning in the College of Arts and Humanities (2014-17) working on a number of initiatives to enhance the educational experience of students at UCD and to facilitate activities for staff development in teaching, learning and assessment.

Chapter #7

PLURILINGUAL AND INTERCULTURAL AWARENESS AND ITS INTEGRATION INTO PRACTICAL DOMAINS OF TEACHER EDUCATION

Anne Julia Fett & Peter Grüttner

Center for Teacher Education, Martin Luther University Halle-Wittenberg, Germany

ABSTRACT

Dealing with cultural heterogeneity has become one of the most crucial challenges for teachers making it necessary to linguistically and culturally diversify teacher education (HRK, 2015). The project “Intercultural Ambassadors at Schools and in Teacher Education” aims precisely at this kind of diversification. It has been initiated at the Centre for Teacher Education of the University of Halle as a measure of professionalization. The project has the intention to raise prospective teachers’ awareness of different beliefs and values in culturally heterogeneous teaching/learning environments. In so doing, it defines the dimension of plurilingualism as a vital component of cultural diversity, which is inseparably linked to culturally heterogeneous interpretive schemes. Accordingly, the immediate experience of cultural as well as linguistic differences is at the centre of the project: future teachers are put into an international Co-Teaching-situation in a culturally mixed team. Together with foreign teachers and students, they enter a teaching/learning setting in which they first experience and later reflect on the cultural dimension of their individual idea of school and teaching.

Keywords: education for diversity, cultural heterogeneity, plurilingualism, co-teaching.

1. INTRODUCTION

Current social challenges such as cultural heterogeneity, social inequality and technological change have an impact on the teaching profession and are transforming and diversifying the demands placed on prospective teachers. In order to react to this kind of transformation, the German Federal Ministry of Education and Research (BMBF) has designated up to 500 million euros in two funding phases (2014-2019 / 2019-2024) for the “Qualitätsoffensive Lehrerbildung”, an initiative which supports new approaches and projects in the realm of teacher education. During the first phase, 49 projects at 59 German universities of teacher education receive funding. Selection criteria have been, amongst others, the lasting impact of the projects on the improvement of teacher education and the harmonisation of the three training elements of the teacher degree. The KALEI project (“Kasuistische Lehrer*innenbildung für den inklusiven Unterricht” / “Casuistic Teacher Education for Inclusive Education”) at the Centre for Teacher Education of the Martin Luther University Halle-Wittenberg has been selected for funding. It is focusing on the development of a teacher education which raises prospective teachers’ awareness of heterogeneity, enables them to embrace diversity and to reflect teaching/learning situations in heterogeneous groups.

Although the definition of “inclusion” as a “pedagogy of diversity” (Prenzel, 2006), which comprises different dimensions of heterogeneity, has been fixated as an international standard by the UNESCO a decade ago,¹ in German academic as well as everyday language a narrowing definition is surprisingly prevailing. “Inclusion” is thus too often related

exclusively to the dimension of ability-disability, and if ever a culturally broader concept is applied, it tends to reduce the dimension of “cultural heterogeneity” to its mere linguistic scope, focusing on the inclusion of pupils as non-native speakers. This kind of reductive view can even be detected in large-scaled international conferences, which are addressing current developments in teacher education and are nevertheless neglecting the fact that linguistic diversity is not more (and, of course, not less) than a part of cultural heterogeneity (Kaiser, 2017).ⁱⁱ

A closer look at the heterogeneity dimensions defined by the UNESCO in 2008 („race, social class, ethnicity, religion, gender and ability“) reveals that actually every dimension is permeated with culturally dimensioned patterns. Consequently, these patterns play a crucial role in processes of in- and exclusion and are thus highly relevant for educational disadvantage. In this perspective, it becomes clear that the question of how to deal professionally with diverse, culturally shaped values and beliefs within culturally heterogeneous teaching/learning environments is at the core of teacher education – and clearly goes beyond language sensitive approaches.

The project “Intercultural Ambassadors at Schools and in Teacher Education”, as part of the KALEI project’s section “Internationalisation of Teacher Education”, tackles precisely this question: it prepares prospective teachers not only for an effective handling of plurilingualism, but also raises their awareness of culturally heterogeneous values and beliefs.

2. BACKGROUND

With regard to its intention of an internationalisation of teacher education Germany is facing very similar challenges as other European and non-European countries: in view of rather rigid and crowded curricula on the one hand and various concurrent requirements (such as e.g. the digitisation of teacher education) on the other hand, the implementation of a cross-curricular internationalisation strategy often falls behind. Beyond that, the fact that, as Hélot (2012) states, “teacher education institutions are often slow to take on board the growing linguistic diversity of the school population” (p. 225) might be due to other individual reasons, such as staff shortage or the perception of intercultural awareness raising as an extra-curricular rather than a cross-curricular concern.

As a result of these shortcomings, future teachers too often do not feel prepared for culturally heterogeneous teaching/learning settings. This tendency is amplified by the fact that, in a large-scale perspective, only a small group of prospective teachers goes abroad during their studies. As the “Hochschul-Bildungsreport 2020” (“Stifterverband für die Deutsche Wissenschaft”, 2015) has revealed, even though in comparison to students of other degrees teacher trainees consider periods spent abroad more important for their future profession, their international mobility is significantly lower. Only every fourth or fifth prospective teacher (23%) spends time abroad during their studies – compared to e.g. 36% of all economics students and 29% of all medical students. As a further differentiation according to subject matters shows, the overall mobility rate of future teachers (23%) drastically decreases in the STEM subjects, with the subject of mathematics showing the lowest international mobility rate (11%) (p. 55).

Due to the rather selective German school system with its segregated school types up from the fifth grade, the majority of future teachers graduated from a “Gymnasium” (the most advanced secondary school, comparable to the British grammar school). This kind of school biography also implies relatively few experience with cultural heterogeneity. In this way, many students might have addressed plurilingual and intercultural issues on a theoretical

level, but completely lack the immediate experience of cultural as well as linguistic differences in the classroom – and have a need to acquire the essential practical knowledge in this realm in order to be prepared for an effective pedagogical action in heterogeneous teaching/learning settings.

This situation and the resulting need for a format of intercultural cooperation which can be easily integrated into the practical domains of the curriculum has been the point of departure of the international Co-Teaching-Project.

3. OBJECTIVES, DESIGN, AND METHODS

3.1. Objectives and design

The project “Intercultural Ambassadors at Schools and in Teacher Education” creates a setting of intercultural cooperation by bringing together foreign teachers and students and prospective teachers in the stage of teaching practice placements.

The initiative aims at the lasting implementation of intercultural and plurilingual awareness-raising into the two periods of curricular practical placement (Schulpraktika I und II), which present an integrative part of the teacher degree at the Martin Luther University Halle-Wittenberg.

In a first step, foreign Master and PhD students, prospective students from the University’s “Preparatory German Courses for Refugees” as well as foreign teachers are brought together with future teachers as Co-Teaching-Partners. The culturally mixed teams of two are then trained as Intercultural Ambassadors of culturally open schools in order to be placed in partner schools of different school forms during the period of practical placement. The training starts with a two-day full-time seminar “Cross-cultural Mediation and Linguistic Awareness” which prepares students and partners for their commitment through the reflexion of individual aims as well as through case work and role play. Communication and presentation techniques are imparted, furthermore within the seminar section “Intercultural Understanding – Intercultural Values” participants acquire basic theoretical knowledge of World Ethics, Human Rights Education and Intercultural Competence.

The seminar concept is based on the assumption that education for linguistic tolerance and education for World Ethics and democratic citizenship are essentially linked. Countering the “monolingual habitus”, which Gogolin (2008) has proven to be at the core of the German education system from the 19th century onwards, project participants get to know different forms of bilingualism within and outside the context of school, alongside with pedagogical methods which support linguistic heterogeneity. The question of how pupils speaking a minority language can be encouraged to value their own and their classmates’ linguistic competences is approached through an engagement with the proper linguistic biography. Applying the concept of “plurilingual repertoire” suggested by, amongst others, Hélot (2012), the culturally mixed teams of two reflect on their own and the pupils’ experience with different languages in its life-long dynamics.

Within this stage and through the following phases of preparation, realisation and reflection of Co-Teaching-Lessons, all teams are continuously accompanied and supported by the cooperating teaching methodologists as well as by the cooperating teachers in partner schools. All Co-Teaching-Teams have space for discussion and are encouraged to reflect cultural dimensions of school, differences in self-conception and teacher habitus and not least differing value orientations.

At the same time, the Co-Teaching-Lessons are conceived to give pupils of all participating schools an insight into cultural, linguistic, religious and social diversity. Depending on the subject matter, a Japanese student co-teaching a Geography lesson on

volcanism and seism might give insights into her own experiences with earthquake preparedness at school in Japan, while a Syrian teacher co-teaching the same subject might focus on cultural as well as geographical aspects. During the co-taught English and Spanish lessons, not only the competence of co-teachers as native speakers is brought to class. For example, an English teacher from Turkey might co-teach a lesson with a German partner, opening up an intercultural perspective not only on Turkish language and culture, but also on the tuition of English in Turkish schools as well as on other aspects linking more than two cultures and languages.

The project is recorded (audio and video) and scientifically evaluated. Beyond that, all collected data are didactically worked up, anonymised and fed into an Open Access Portal for further free investigation as well as for didactic application within intercultural formats in school and teacher education.

3.2. Methods

Due to the innovation of the format and the multitude of intercultural team-constellations it implicates, the collected data (audio and video) appear particularly insightful: the research design goes beyond previous studies on Co-Teaching, by transferring it into the area of cross-cultural educational research. Interaction patterns of the different Co-Teaching-Teams are contrasted employing the Documentary Method (Bohnsack, 2011), which is particularly suited for the study and confrontation of social practices as well as for the exploration of implicit knowledge within comparative research designs.

A case comparison with regard to different school forms is implemented. In winter term 2017/2018 the project has started with a focus on two school subjects, English and Geography, and accordingly with teaching methodologists from those two subject matters collaborating. Foreign students from Japan and Syria have participated in the first cycle. In summer term 2018, also Spanish has been included as another subject and this time, foreign teachers from Turkey and Colombia with several years of professional experience have joined the project, opening up new possibilities and research perspectives in the realm of multi-professional collaboration and collegial feedback on teaching. Prospective teachers of the second cycle have largely profited from their partners' teaching experience and the insights they gave them into the school system and teaching methods of their country of origin. At the same time, the evaluation of the second cycle has shown how foreign teachers have greatly benefitted from their first teaching experiences in German schools and have been motivated to pursue the recognition of their degree in Germany.

During the first project cycle, the following research questions, which are particularly focusing on implicit and explicit value systems, have been developed:

- How do prospective teachers deal with plurilingualism and culturally shaped ideas of school and teaching within the intercultural cooperation situation (Co-Teaching)?
- Does the experience of the intercultural cooperation situation have an influence on the attitudes of future teachers, foreign project participants and/or pupils towards cultural and linguistic heterogeneity?
- Does the cooperation affect the prospective teachers' expectation of self-efficacy relating to teaching situations in culturally heterogeneous groups?

Not only the videography of the Co-Teaching lessons themselves, but also the videography of reflection meetings conducted with every single culturally mixed team retrospectively has been very insightful. Evaluation has shown that prospective teachers'

dealing with plurilingualism on a theoretical as well as on a practical level during the introductory seminar, the preparation phase and finally during the co-taught lessons has enhanced their linguistic tolerance and appreciation. Remarkably, the analysis has proven that the majority of participants has assessed the preparation phase, and especially the autonomously handled one-to-one exchange with the Co-Teaching partner prior to the lessons as the most valuable part of the project. Furthermore, the majority of the teams has stated to have used the non-German partner's language or English for one-to-one communication during the preparation phase and beyond. This was certainly not due to a lack of linguistic competence in German on behalf of the international Co-Teaching partners, as all of them mastered German at least on level B2 (CEFR) or higher. Instead, this result seems to indicate an action orientation in favor of linguistic diversity in general (or the minority language in particular) assumed by the Co-Teaching-partners from the beginning of the project. As a reason for this choice, amongst others, the achievement of linguistic "symmetry" – defined as a similar competence of both partners in the spoken language – has been stated (especially referring to English).

The claim made by Hélot (2012) that prospective teachers are to be encouraged to reflect on languages and their own "plurilingual repertoire", that they are to be given the opportunity to "observe the differences between the language(s) of the classroom and the language(s) of real life, and should be educated to value linguistic and cultural diversity" (p. 218) thus seems to be answered to a certain degree through the project outcome.

4. FUTURE RESEARCH DIRECTIONS

Initially, the project "Intercultural Ambassadors at Schools and in Teacher Education" had been planned and designed as a cooperative format between prospective teachers and international students. As a reaction to current political and social processes, this initial conceptual design has been changed, and a different orientation has shown to be more effective. As a result of the so-called "refugee crisis", between 2015 and 2018 thousands of Syrian teachers have moved to Germany and are currently searching for a recognition of their degree. From 2016 onwards, a just as large number of teachers from Turkey has emigrated and is eager to work in their profession in Germany. Unfortunately, the recognition of foreign teacher degrees is often a lengthy procedure (depending on the estimated equivalence and thus validation of the foreign degree). Arising problems comprise the lack of documents that have been lost while fleeing from war and violence, the language requirements (usually C2) which are very hard to fulfill, and not least the requirement of two subject matters which have to be studied within a special degree course defined as teaching degree ("Lehramt"). Given these demands, teachers from countries such as Syria and Turkey, where teaching degrees tend to comprise one single subject, are usually forced to return to University in order to study a second subject and to "catch up" on every single topic which has not been considered equivalent or which has not been part of their foreign teacher degree.

As a consequence, in Saxony-Anhalt, where Halle is located, only a remote part of teachers in public schools are non-German. We had the possibility to access the statistical data regarding the nationalities of teachers in Saxony-Anhalt for the year 2017, and discovered that out of a total of 15.669 teachers only 72 were non-German. That is a surprising number and illustrates an asymmetrical constellation which can be encountered at schools: while more than 10.000 pupils in the federal state's primary, secondary and vocational schools have a migratory background, those pupils' teachers are – almost always – German.

Considering this situation, we decided to involve foreign teachers in the process of recognition of their degree into the project instead of focusing on international students as co-teaching-partners. Retrospectively, this decision has been proven to enhance the project in many respects: future teachers have come in contact with the teachers' biographies, they have profited from their professional experience and their teaching methods, and at the same time, pupils and teachers in the participating partner schools got to know a more symmetrical teaching/learning setting in which a culturally heterogeneous class has met a culturally heterogeneous team of teachers. Beyond that, in our evaluation international teachers who participated in the project repeatedly underlined the positive effect of the co-teaching on their professional self-conception: while on a bureaucratic level institutions were reluctant to recognize them as "teachers", pupils at schools accepted them as their teachers without any hesitation. Furthermore, in many occasions the cultural background of the international Co-Teachers also increased the participation of non-German pupils in cultural heterogeneous classes. Arabic-speaking pupils were included as experts into teaching units focusing on the international teachers' culture and language and thus arouse their classmates' curiosity about their bilingualism and multicultural identity.

The project's future research directions are shaped by this new orientation towards a format of cooperation between prospective and foreign teachers. It now appears promising to contrast differing teacher habitus and to carve out and confront their cultural and individual dimensions. For this scientific purpose, the sequence-analytical habitus reconstruction ("Sequenzanalytische Habitusrekonstruktion") appears to be an adequate means (Kramer, 2017).

5. CONCLUSION/DISCUSSION

The evaluation of the first project cycle has shown that not only prospective teachers, but also participating students from abroad benefit greatly from the project, by getting directly in contact with German school life, its predominating pedagogical practices and institutional arrangements. Considering that currently in Saxony-Anhalt a lot of teachers from abroad are in the (rather lengthy) process of recognition of their degree, the project's second cycle has been focusing on foreign teachers in the process of degree recognition, not least in order to offer them the opportunity of a first contact and working experience within the German school system.

In case of a positive funding decision, the project might be sustainably implemented within the curricular structure of practical placements for future teachers of all subject matters at the University of Halle in the course of the following three years.

In so doing, the dimension of plurilingual and intercultural awareness-raising could become an integrative part of the practical phases and thus of teacher professionalisation. In the long term perspective, Beacco's and Byram's (2003) claim that "plurilingual awareness should be structured and assisted by schools" (p. 16) can only be answered if also applied to institutions for teacher education.

First results have shown that by means of the international Co-Teaching experience during the practical phases of teacher education prospective teachers profited from their international partners' teaching experience and the insights they gave them into the school system and teaching methods of their country of origin. At the same time, foreign teachers benefitted from their first teaching experiences in German schools and all participants' linguistic tolerance and appreciation has been enhanced.

Anyway, to counter the aforementioned significant lack of international exchange (e.g. in the form of academic and practical student experiences abroad) that recent studies have shown and more generally a lack of intercultural education in teacher education, a lot of work still has to be done. For an effective cross-curricular implementation of internalisation strategies into teacher education, creative and effective ways have to be found. At the same time, international mobility has to be integrated into teacher degrees and valued as a key qualification. Reliable “mobility windows” within the curricula have to be found and recognition has to be guaranteed in order to avoid a lengthening of studies.

Meanwhile, on the level of an “internationalisation at home”, the project “Intercultural Ambassadors at Schools and in Teacher Education” offers a straightforward and effective means to enhance intercultural awareness in teacher education and to prepare future teachers for effective pedagogical action in the intercultural classroom. By addressing cultural heterogeneity and culturally shaped beliefs and value orientations, it works against a narrow definition of “inclusion” and counters the reduction of “intercultural awareness” to a mere linguistic sensitivity.

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AUTHORS' INFORMATION

Full name: Anne Julia Fett

Institutional affiliation: Zentrum für Lehrer*innenbildung, Martin-Luther-Universität Halle-Wittenberg

Institutional address: Dachritzstr. 12, 06108 Halle (Saale), Germany

Short biographical sketch: Anne Julia Fett holds a PhD in German Studies which she completed as a cotutelle with the European Commission's Erasmus Mundus programme "Cultural Studies in Literary Interzones" at the Universities of Bergamo, Perpignan and Sydney. She has worked as a German teacher in Italy (Florence) and as a University lecturer in the Netherlands (Nijmegen) and Germany (Münster). From 2016 to 2017 she has coordinated the language section of the initiative "Integration of Political Refugees with Academic Backgrounds or Ambitions" at Magdeburg-Stendal University of Applied Sciences. Since 2017 she is a postdoctoral researcher at the Center for Teacher Education of Martin Luther University Halle-Wittenberg within the project "Internationalisation of Teacher Education". Her research focuses on the pedagogical dealing with cultural and linguistic heterogeneity in different European countries (esp. Italy, France, Germany) in a comparative perspective. She also develops training formats for intercultural professionalisation, for students as well as for in-service teachers.

Full name: Peter Grüttner

Institutional affiliation: Zentrum für Lehrer*innenbildung, Martin-Luther-Universität Halle-Wittenberg

Institutional address: Dachritzstr. 12, 06108 Halle (Saale), Germany

Short biographical sketch: Peter Grüttner graduated at Martin Luther University of Halle-Wittenberg (MLU) with a Master's Degree in Intercultural Communication (Majors: Latin American Studies and Anglo-American Studies). In 2013 he went to Brazil (Florianópolis) for a research stay (funded by the DAAD). He then worked as the coordinator of MLU's International PhD Network from 2014 to 2016. In 2016 he started to work with the Center for Teacher Education at Uni Halle in a BMBF funded subproject called the "Internationalisation of Teacher Education". Over the years he gained profound knowledge building and expanding an international network to facilitate student stays abroad and designing complementary courses for culture and language learning at the students' local university. His research interests include (but are not limited to) education and learning in different cultures, cultural beliefs and teaching, culture and language learning, migration and international networks in education.

ⁱ „Internationally, however, [inclusion] is increasingly seen more broadly as a reform that supports and welcomes diversity amongst all learners. It presumes that the aim of inclusive education is to eliminate social exclusion resulting from attitudes and responses to diversity in race, social class, ethnicity, religion, gender and ability“. Cf. United Nations Educational, Scientific and Cultural Organization. (2008). *Inclusive Education. The Way of the Future. Reference Document of the International Conference of Education. 48th session, Geneva 25-28 November 2008*, 5. Available at:

http://www.ibe.unesco.org/fileadmin/user_upload/Policy_Dialogue/48th_ICE/CONFINTED_48-3_English.pdf

ⁱⁱ Accordingly, the congress *New International Perspectives on Future Teachers' Professional Competencies* (University of Hamburg 2017, September, G. Kaiser (Chair)) contains a section entitled *Linguistic and Cultural Heterogeneity* in which de facto not a single talk addresses non-linguistic aspects.

Chapter #8

UNDERGRADUATE PHYSICS PRACTICALS AT THE UNIVERSITY OF JOHANNESBURG: A SURVEY ON STUDENTS' PERCEPTIONS

Leelakrishna Reddy

Department of Physics, University of Johannesburg, South Africa

ABSTRACT

For the conductance of physics, practical use was made of one of the seven technologically enhanced laboratories. These laboratories are designed to offer some 350 undergraduate experiments. A unique software-embedded system, the first of its kind in South Africa, was used to assess the students' results. Once the students submit their results, these are captured by the data capturer, fed into the software system, and simulated for comparison with the background readings. To appreciate the scientific value of these experiments and its offerings, a modified questionnaire, developed by Deacon & Hajek (2011) has been used. The questionnaire survey has been administered to 100 first year university students. A Likert-type scale from Strongly Disagree to Strongly Agree was used to analyze the results. The framework used for this study was taken from the work developed by the American Association of Physics Teachers (AAPT), which highlights goals to be achieved in a physics laboratory. The results of the survey revealed at least four factors that contributed to a positive perception to the value of the lab practicals. They ranged from the labs contributing to their knowledge, understanding, skills and enjoyment of the practicals.

Keywords: laboratory, software, practicals, value and experiments.

1. INTRODUCTION

According to Deacon & Hajek (2011), the perception of the value of physics practicals refers to an “enhancement” of the students' knowledge, skills abilities and other attributes that they acquire from an educational laboratory experience. This idea is also echoed by Freedman (2002) who says that laboratory experience improves one's knowledge of concepts and the various principles that are involved in an experimental investigation. So, what does laboratory work entail? It is said that laboratory work is the subset of all activities such as demonstrations, hands-on activities and activities for the attainment of other skills such as analytical and practical skills (Kirschner & Meester, 1988; Deacon & Hajek, 2011). Besides these activities, von Aufschnaiter and von Aufschnaiter (2007) say that laboratory activities should entail the development of concepts rather than finding the relationship between theory and practice. Some believe the aim of practical work is to “get the correct result” regardless of the way it is obtained (Emson, 2013), while many students argue that it is possible to complete experiments without a sound understanding of the physics concepts and equations (Hu, Zwickl, Wilcox, & Lewandowski, 2017). Researchers such as Shah, Riffat, and Reid (2007) have found their students to have a positive attitude towards laboratory work but they complained that the laboratory work lacked clarity in its purpose (Emson, 2013). Therefore, to improve the value of practical work with respect to its intended purpose, there is a need to develop a deeper

understanding of the knowledge of the procedural processes involved in the practical work (Pekmez, Johnson, & Gott, 2005). Thus, to improve the attitude of learners and the value of practicals, teachers need to have a clear understanding of its intended purpose as well as a sound understanding of the method of delivery of the practicals (Emson, 2013). Other researchers such as Hanif, Sneddon, Al-Ahmadi, and Reid (2009) view practical work as the development of both analytical and problem-solving skills. For a more holistic view of the laboratory skills, Elawady & Tolba (2009) have stated that there are four skills that are necessary for such a development, which are Conceptual understanding, Design skills, Professional skills and Social skills. The American Association of Physics Teachers (AAPT, 1998) has postulated similar goals for effective learning in the laboratory. A well-developed laboratory with well-crafted activities can make laboratory experiences for students enjoyable and interesting (Deacon & Hajek, 2011). Others such as Fraser, McRobbie, & Giddings (1993) have highlighted the following factors for student satisfaction: Student Cohesiveness (this factor describes how well students each and support each other), Open-endedness (this factor gives students opportunities to design their own research), Integration (this factor considers the integration/alignment between theory covered in class to the practicals offered in the laboratory), Rule Clarity (this factor describes how order and discipline is maintained in the laboratory) and Material Environment (this factor describes the adequacy of the laboratory to offer the stipulated practicals) (Luketic & Dolan, 2013).

To our knowledge, there is no literature that explicitly uses a software system to assess data collected from physics practicals. In most cases, practical reports are marked manually using some rubric system. Here at the University of Johannesburg we have patented a system that will be able to assist in assessing practical reports. However, it must be mentioned that there is sufficient literature on the use of technology in physics and in particular in the teaching and learning of the subject. The use of technology in the instruction of physics can be seen in the work of Ramma, Bhoola, Watts, and Nadal, (2018).

The University of Johannesburg makes use of seven dedicated technologically advanced laboratories for the conductance of practicals. Each laboratory, which focusses on different domains in physics, is comprised of twenty-four identical cubicles. The results of each experimental station are linked to a computer software system, which allows for easy and efficient marking of voluminous reports. In the context of the above, we consider the perceptions of the students towards the value of physics practicals through analysis of a survey questionnaire and to find factors that could contribute to positive satisfaction about their laboratory experiences.

2. RESEARCH QUESTION

This research is underpinned by the following research question:

What factors can be considered to contribute to a positive perception of the value of practical work?

3. CONCEPTUAL FRAMEWORK

This study made use of a framework, which recognizes five goals that are important in promoting effective learning in a laboratory. Such goals as promulgated by AAPT (1998) are:

(a) **The Art of Experimentation:** This goal allows for the engagement of each student in attaining significant experiences from the various experimental processes in the laboratory.

(b) **Experimental and Analytical skills:** This goal helps the student to develop basic skills in experimental physics as well as the skills necessary to do data analysis.

(c) **Conceptual Learning:** This goal helps the student to master the basic concepts in physics.

(d) **Understanding the Basic knowledge in Physics:** This goal helps the student to understand the role of observation in the laboratory and to distinguish between inferences that are based on theory to that from outcomes from experimental investigations.

(e) **Developing Collaborative Learning skills:** This goal helps the student to develop collaborative learning skills that are essential for success in their future life.

4. METHODOLOGY

4.1. Participants

A survey has been administered to 100 students that were engaged in a physics disciplined study at a South African university. These students were aware that the survey was voluntary and that they would not be jeopardized in their participation. Permission was sought from both students and laboratory facilitators before undertaking this research. The laboratory capacity is roughly 25 students per laboratory session, hence 4 different groups of students formed part of this research cohort. The survey took about 15 minutes to complete.

4.2. Instrument and procedure

A modified (adapted for inclusion of other questions) survey, which was developed by Deacon & Hajek (2011), was used for this study. The survey has 13 questions, with a 5-point Likert response scale, ranging from "Strongly disagree" to "Strongly agree". Results are expressed as a percentage. For discussion purposes, the "Strongly Agree" and "Agree" percentages are combined. To obtain a positive perception about the value of laboratory practicals, items in the percentage range of 80% and above were considered. Items of the questionnaire are also clustered into one of the five goals of the conceptual framework mentioned above. This questionnaire has questions that pertain to the nature of the student's experiences in the laboratory. Over and above these questions, five open questions were incorporated to give a holistic picture of the laboratory offering at the University of Johannesburg. These questions are aimed at including points not mentioned in the table to improve the value of practical work. The nature of these five questions are given below (also taken from the above reference (Deacon & Hajek, 2011)):

1. What did you like about the labs?
2. What did you dislike about the labs?
3. Please provide your suggestions for changes or improvement in the lab sessions.
4. The lab component of the course should be worth... of the overall course mark
 - a. Less than 20%
 - b. Equal to 20%
 - c. Greater than 20%
5. Prior for the lab session, I prepared for each lab session by doing the following:
 - a. Reading the lab manual
 - b. Reading my notes and/or textbook
 - c. Asking my friend about the lab experiment
 - d. I did not prepare for the lab session

5. RESULTS

The results of the survey are given in the table below (For purposes of discussion Strongly Agree/Agree and with Strongly Disagree/Disagree are combined).

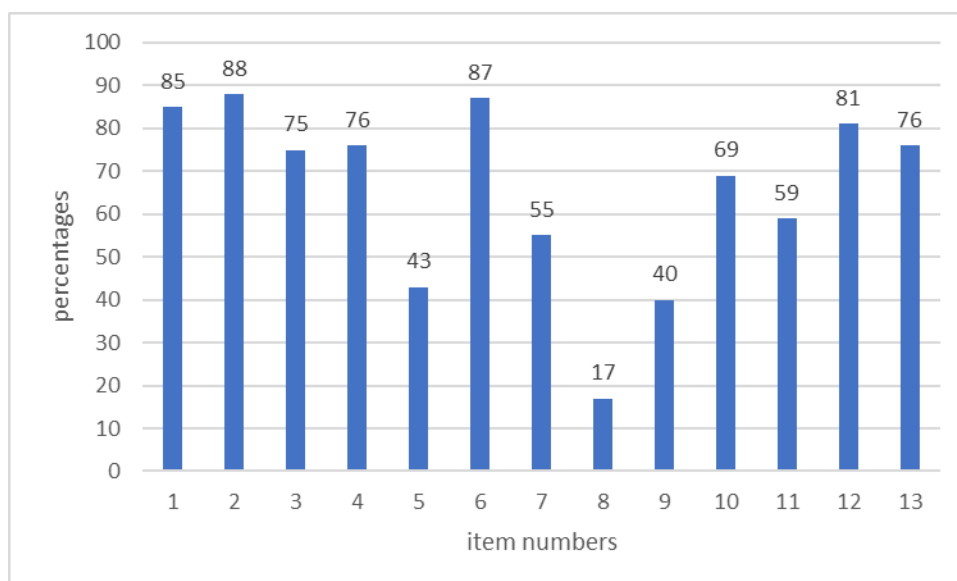
5.1. Perceptions of the students' value of their laboratory experiences

Table 1.
Factors contributing to the students' perceptions of the value of the laboratory offering.
Results are presented as a percentage.

No	Description	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	The labs contributed to my knowledge and understanding of physics	45	40	10	0	5
2	The labs helped to improve my lab skills and techniques	48	40	8	4	0
3	I see the relevance of the experiment in my physics studies	35	40	12	6	7
4	The labs were interesting	44	32	15	6	3
5	I recommend the lab component should include a pre-lab quiz	15	28	32	13	12
6	Adequate help was provided during the lab session	60	27	13	0	0
7	The deadline for the submission of lab reports should be extended	18	12	25	35	10
8	The time allocated for the experiment should be extended	5	12	28	42	13
9	I receive constructive feedback on my lab report	4	36	34	13	13
10	I was marked fairly on my lab report	6	63	7	17	7
11	The experiment helped me connect with the theory done in class	17	42	14	13	14
12	The experiment was interesting and enjoyable	43	38	9	8	2
13	This experiment helped me develop my data interpretation skills	28	48	16	8	0

The figure below is a graphical representation of the combined percentages for each of the items in table 1 under the “Strongly Agree” and “Agree” columns.

Figure 1.
Combined percentages for each of the items under the columns “Strongly Agree” and “Agree” in table 1.



From figure 1, we see that a large majority of students have responded positively about the laboratories in respect to its contribution to their knowledge (item 1 - 85%) as well as to an improvement in their laboratory skills (item 2 - 88%). Most students appear to see the relevance of the practical work in their physics studies (item 3 - 75%). A huge effort was made by lecturers to make the laboratory sessions interesting (item 4 - 76%) and the experiments interesting and enjoyable (item 12 - 81%). Students have seen the importance of the practicals (in the laboratory) in relation to the theory covered in class (item 11 - 59%). In respect to the assistance provided to students during laboratory sessions, (item 6 - 87%) students are in overwhelming agreement. Less than 50% of the students are of the opinion that pre-lab quiz should be introduced to improve their preparedness for laboratory sessions (item 5 - 43%). The time allocation for experimental investigation were more than adequate and thus no need for extension (item 8 - 17%). Item 7 (55%) for which the students have responded negatively pertains to the time-lines for the submission of laboratory reports. They have indicated that the time for the submission of such reports were more than adequate. This is strategically done by us to get the students to do practicals on a weekly basis. Another factor for which the students have responded positively was the aspect of laboratory reports being fairly assessed (item 10 - 69%), but they were unhappy about the feedback they received in such reports. They felt that the feedback was not constructive enough in understanding their mistakes (item 9 - 40%). One must bear in mind a software system was designed to mark these reports hence a timeous return of reports to students. Reports only gives them marks for correct data capturing, accuracy of data, analysis of the data and a conclusion. Lecturers then do a post mortem of

the practical work, identifying high frequency errors and mistakes to be avoided in subsequent practicals. In the final item of the questionnaire (item 13 - 76%), the students were very positive about the experiments as it provided them with an opportunity to improve their data analysis skills and interpretation skills.

5.2. Students' responses to the open questionnaire

Students "likes" about the laboratories were overwhelmingly positive, without a single negative comment. Samples of such responses are as follows:

- Better understanding of what I have been doing in class
- They helped me connect with the theory in class
- Fun to do the experiments
- So much equipment available to us
- Expansion of knowledge
- Help us get practical knowledge
- Labs are open and spacious
- Enjoyable practical experience
- It is easy to understand better in the labs
- Everything is well organized.
- They are safe
- A variety of experiments available

The "likes" reflects in some of their comments one of the aims of practical work, namely a correlation between the theories covered in class and the experiments done in the laboratory. The fact that the students enjoy their practical work and have fun in doing their experiments reflects a positive perception of the value of practical work and this indicates to us that effective learning is taking place in the laboratory. Further, students also show an appreciation for the physical aspects of the laboratory, namely the safety features of the laboratory, the infrastructure and learning space.

On the other hand, student's comments on the aspect of "dislikes" of the laboratories were very few, and samples of their comments are as follows:

- Old resources
- Equipment malfunction (at times)
- Time of day for practicals
- We do not do practicals according to the theory
- Some experiments are too long
- Labs are too cold
- Slightly complicated at times
- Working by myself

Most of our laboratories are used throughout the day without a break between periods and thus it is difficult for us to assign all laboratory sessions in the morning. At times some of our equipment in the laboratory break, which arises from frequent use of them and thus they will have to be repaired at a later stage. Students are not aware that before any practical session, all equipments are in good working order, thanks to a standby technician. Some students complain that the experiments are too long and this stems from the fact that they could be doing a temperature related experiment and for them to take any readings they will have to wait for equilibrium conditions to establish itself. A dislike about the laboratories being too "cold" is an understatement because they fail to say that it is well ventilated a requirement for the running of our laboratories.

In terms to the weighting of the practicals in relation to the theory, 60% of the students have suggested that the weighting of the practical should be no more than 20%. Likewise, 60% of the students have indicated that they have prepared for each laboratory session prior to the practical session (thus the students have shown a keen interest in their practical work and appreciate its value).

6. DISCUSSION AND CONCLUSION

This research was done to get some feedback from students about their perceptions about the value of the nature of undergraduate practical offerings and factors that contributes to their positive perceptions of the laboratories. It was found that of the many items in the questionnaire, many factors contributed to a positive perception to the value of their laboratory experiences. The item that contributed most to the satisfaction of the students was item 1 and that pertains to conceptual understanding and this factor contributed to a better understanding of physics. This item aligns itself well with goal 3 of the conceptual framework for this study. Other factors of the laboratory offering, such as those pertaining to the help that the laboratories provided in developing their analytical (item 2) and interpretation skills (item 13), were well received. This is essential in their reports that they must submit their reports which is streamlined (software compliant) and requires them in some instances to provide equations, using an excel program for data analysis. This factor aligns itself well with goal 2, which deals with experimental and analytical skills in successful completion of their laboratory reports. Of paramount importance of the laboratory offering is to make laboratory sessions engaging, interesting and enjoyable (items 2, 4 and 12). This will ensure that the students are engaged in their practical work for a sustained period whilst gaining some expertise in the Art of Experimentation (goal 1). Such engagement in experimental procedures will result in significant laboratory experience and thus leading them to appreciate the value of practical work. They have alluded to these perceptions about the laboratory in the open questions that were asked, where they have indicated that the labs were fun, it improved their understanding and that it was an enjoyable experience. This may imply that effective learning is taking place in the laboratory (Emson, 2013). Goal 1 may suffer some setbacks in that it is specifically designed (cubicles layout with a technological flair) and that it does not allow students to design their own experiments. For the understanding of the Basic Knowledge of Physics (goal 4), factors such as items 11 and 3 have contributed to a better understanding of physics and further the students were able to find a better relationship between the theory covered in class to the practicals done in the laboratories. According to Wilcox and Lewandowski (2017), the foundations of physics are built on the interplay between theory and experiment. Thus, the theory helps to provide meaningful directions to experimental results. This goal refers to the connections they make with respect to the theory as well as to its relevance in their field of study. On the issue of Collaborative Learning skills (goal 5), this goal has not been achieved in our laboratory since the laboratories were designed for students to work in cubicles to conduct their own experiments but suffice to say that we have seen them work collaboratively outside the laboratory in sharing their ideas about the practical work.

Further, other factors for which students have responded negatively pertain to their feedback to laboratory reports. According to Dunnett, Gorman, and Bartlett (2019), robust and frequent feedback to practical assessments are crucial for students in understanding their mistakes. Our students do receive frequent feedback, but they do not seem to understand the comments provided. This happens because they are not acquainted with the

software that is used to assess their practicals. Besides this aspect, largely their laboratory experiences were largely positive on many items of the questionnaire and this contributed to a better understanding of their physics.

In summary, four factors had a positive influence on the students' perceptions about the value of the physics laboratory. They ranged from the labs contributing to their knowledge and understanding of physics, the labs providing them with an opportunity to improve their lab and technical skills, the labs provided them with adequate help during lab session and to the labs making physics interesting and enjoyable. These factors tie in well with the goals set out by the AAPT (1998) in the conceptual framework for undergraduate physics laboratories.

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AUTHOR INFORMATION

Full Name: Prof, Leelakrishna Reddy

Institutional affiliation: Prof, University of Johannesburg

Institutional Address: 37 Nind Street, Doornfontein, Gauteng, Johannesburg, South Africa.

Short biographical sketch: I am a senior lecturer at the University of Johannesburg in the Department of Applied Physics. My area of specialty is Science Education, Condensed Matter and Nanotechnology.

Section 2
Teaching and Learning

Chapter #9

SENSITIZATION SESSIONS FOR HEALTHY ENVIRONMENTS

Stakeholders' point of view

Marie-Claude Rivard¹⁻², Maude Boulanger²⁻³, Sacha Stoloff¹⁻²,
François Trudeau¹⁻², & Sylvie Ngopya Djiki¹⁻²

¹Department of Human Kinetics, Université du Québec à Trois-Rivières, Canada

²Groupe interdisciplinaire de recherche appliquée en santé, Canada

³Department of Psychology, Université du Québec à Trois-Rivières, Canada

ABSTRACT

Healthy food choices and regular physical activity are two key behaviours that help prevent the premature development of chronic diseases, obesity and their complications. To raise awareness on the issue, numerous sensitization sessions were held across Quebec to sensitize stakeholders on ways of facilitating healthy environments (physical, economic, sociocultural and political) that promote healthy food choices and active lifestyle. The objectives were to 1) explore the knowledge and skills acquired during the sessions and 2) examine the transfer from sessions toward concrete actions for fostering environments conducive to healthy lifestyles. Individual interviews were conducted with 52 stakeholders (F=41; M=11). The results reveal, first, that most of the stakeholders consolidated or even improved their knowledge and skills and were better able to recognize the four types of environments in their respective workplaces. They also developed a common vocabulary and a better understanding of the influence of environments on lifestyles. Second, the transfer into action, although possible, was more problematic because the concerted actions needed to facilitate healthy environments are complex. These results will be discussed in light of Kirkpatrick and Kirkpatrick's four-level pyramid model. Sensitization sessions can be viewed as a societal project encouraging influential stakeholders to develop environments conducive to healthy lifestyles.

Keywords: healthy environments, sensitization sessions, stakeholders, impacts.

1. INTRODUCTION

The World Health Organization (WHO) has emphasized the widespread problem of chronic diseases and obesity (WHO, 2014). WHO predicts that rates of obesity and overweight will continue to rise from now to 2030 (WHO, 2014). Although chronic diseases are a multifaceted health problem, the literature leaves no doubt that two important reasons for the epidemic are overeating and a sedentary lifestyle (WHO, 2004, 2013). Many experts argue that environments - physical, economic, sociocultural and political - play a greater role than biological factors in this increase (Booth, Pinkston, & Poston, 2005; de Souto Barreto, Cesari, Andrieu, Vellas, & Rolland, 2017; Hill, Wyatt, Reed, & Peters, 2003). The rising prevalence of preventable chronic disease and obesity has led to an ongoing search for effective preventive interventions along with strategies to promote health. Numerous interventions promoting healthy environments have been implemented worldwide to induce influential stakeholders to facilitate environments more conducive to healthy lifestyles (Booth et al., 2005; WHO, 2014).

2. BACKGROUND

Numerous measures and action plans have been implemented in countries throughout the world to fight obesity and promote healthy lifestyles. Examples include *Healthy People* a United States initiative (Office of Disease Prevention and Health Promotion, 2014), *Health Program* in Europe (Commission européenne, 2014) and the *Integrated Pan-Canadian Healthy Living Strategy* in Canada (Public Health Agency of Canada, 2010). While these broad governmental policies target a wide audience and inspire diverse initiatives in a variety of industries, they remain distant to users. To date, the literature contains nothing comparable when it comes to sensitizing thousands of actors in the field to sessions on healthy lifestyles. Of these various initiatives, many interventions promoting healthy environments have been implemented to induce influential stakeholders to facilitate environments more conducive to healthy lifestyles (Cohen, Scribner, & Farley, 2000), among other projects and programs in Canada (Gadai, Boulanger, Trudeau, & Rivard, 2018). A systematic Canadian review by Gadai and his colleagues confirms the popularity of interventions regarding healthy lifestyles; a sharp increase in the number of studies on this subject was observed between 2010 and 2015. Two major lifestyle components - physical activity and nutrition - and two environmental aspects - neighbourhood and built environment - were the elements most frequently examined - echoing the physical environment. The authors underscore the relevance of documenting all types of intervention on favourable environments previously neglected by researchers, namely, the spheres of political and sociocultural action.

Regardless of sector of activity, an evaluation and monitoring process is required to appreciate the changes effected based on initial intention and anticipated degree of change (Handicap International, 2012). Evaluative research is essential for studying not only the impacts, but also the process of implementing population and large-scale approaches (Schultz et al., 2011). To reach a maximum number of individuals, a population sensitization intervention is the first stage of the behaviour change process (Prochaska & DiClemente, 1985). Such an approach has been shown to be an effective and powerful strategy (Gordon, McDermott, Stead, & Angus, 2016).

2.1. Context

In Quebec, the 2006-2012 governmental action plan to promote healthy lifestyles and prevent weight-related problems, entitled *Investigating for the Future* (Ministry of Health and Social Services, 2006), emphasizes the promotion of healthy lifestyles based on physical activity and healthy eating. This plan served as a lever for multiple networks of stakeholders focused on effective or promising actions to promote healthy lifestyles, including an approach aimed at facilitating the four healthy environments (physical, economic, sociocultural and political). How do these four types of environments can influence healthy eating and physical activity? Examples include: a neighbourhood with good walkways, sidewalks and bike paths or the proximity of healthy food markets (physical environment); the costs associated with food and physical activity practice (economic environment); a community's beliefs and values in terms of gender, ethnicity, religion and tradition in addition to elements relating to the structures and modes of operation of individuals or groups of individuals (sociocultural environment); and the regulations, laws, policies and institutional or governmental rules for the food and physical activity sectors (political environment).

With a joint initiative by *Québec en Forme* and the *Comité québécois de formation sur les saines habitudes de vie*, an intervention was deployed across Quebec to sensitize stakeholders in various sectors (school, municipal, community, health and government/political organizations) to the need for environments that encourage routine physical activity and healthy food choices and therefore help prevent the development of obesity and other chronic diseases.

The main goal of this province-wide effort was to implement a social innovation by: 1) dispensing information regarding all four healthy environments needed to prevent problems of obesity and other chronic diseases, 2) highlighting the effects of these environments on lifestyles, and 3) identifying the means of action needed to build environments conducive to healthy lifestyles. The intervention was unique in that it comprised 1) a sensitization session for stakeholders, 2) the promising combination of four favourable environments, 3) the power of influence by sensitized stakeholders and, especially 4) a vast population approach. This large-scale intervention was piloted by some thirty trainers who had previously received training to conduct “sensitization sessions”. Approximately 15,000 stakeholders from the school, municipal, community, health and government/political sectors were sensitized during a little over 1,000 sessions (~ 3 hrs. and ~ 15 stakeholders / session) conducted between September 2012 and December 2015. Considering the importance of this massive intervention, a process was put in place to evaluate these sessions (Schultz et al., 2011). Although the study is part of a larger evaluation process, only the point of view of stakeholders who received the sensitization session and participated in individual interviews is discussed in this chapter. The relevance of involving stakeholders who can significantly influence the four environments is underscored in the literature (Cohen et al., 2000). These stakeholders include employees in the various sectors, all of whom have the potential to take action in their respective workplaces.

3. CONCEPTUAL FRAMEWORK

The 2006 Kirkpatrick Evaluation Model involving four levels of impacts served as a theoretical and methodological guide for this study. The use of this model makes it possible to qualify the nature of the impacts resulting from a program, in this instance, a sensitization session. It proved to be the one best suited to our objectives, since it appears no model has yet been developed for specific sensitization sessions. The Kirkpatrick and Kirkpatrick model (2006) consists of a pyramid with four levels of impacts, ranging from the base (level 1) having the least impact, to the top (level 4) having the most impact. Satisfaction (level 1), at the base, refers to participants' degree of satisfaction with an activity, in this case, the sensitization session. Acquisition (level 2) is how well participants acquire the expected knowledge and skills based on their participation in the session. Transfer (level 3) refers to how participants apply what they learned in practice. Finally, Organizational performance (level 4), at the top of the pyramid, indicates the extent to which targeted results are achieved and integrated into the organization's decision-making and action processes. Regarding the impacts on the work performed by sensitized stakeholders, we focused on the acquisition of knowledge and skills (level 2) and the transfer of theory into practice (level 3).

4. OBJECTIVES

The objectives were 1) to explore the knowledge and skills acquired during the sessions (level 2) and 2) to examine the transfer from sessions toward concrete actions for fostering environments conducive to healthy lifestyles (level 3).

5. METHOD

5.1. Participants

The reference group consists of 52 participants (F=41, M=11; \bar{X} =43 years) randomly selected from those who took part in a sensitization session, responded in advance to an online questionnaire (previous research phase) and agreed to participate in a subsequent individual interview (between February and April 2014). The participants include stakeholders from five professional sectors: school (n=8), municipal (n=7), community (n=11), health (n=14) and government/political organizations (n=12). These are actors of influence whose tasks are likely to influence one of the four environments presented in the sensitization session.

5.2. Tool and analysis strategy

A qualitative approach was best suited to achieve our research objectives (Poupart, 2011). We privileged this approach by using telephone interviews to easily reach participants throughout the 17 administrative regions of Quebec. The personal interview is a highly useful tool for understanding an individual's point of view, grasp of experience and insight for purposes of in-depth analysis (Baribeau & Royer, 2012). Direct access to stakeholders' live experience is precisely what enables a deeper understanding of a situation (Savoie-Zajc, 2009; Yin, 2014). With the flexible interaction of the "semi-directed" interview, a rich understanding of the subject of study is gained at the same time (Savoie-Zajc, 2016). The interview included 11 questions and was developed based on the Kirkpatrick and Kirkpatrick model (2006), particularly levels 2 and 3, keeping our two objectives in mind. The phone interviews, which lasted about 17 minutes, were conducted during the spring of 2014, audio-recorded and fully transcribed. A deductive content analysis (Patton, 2002) was performed based on two categories of the Kirkpatrick and Kirkpatrick model (2006). The analysis strategy comprised four stages adapted from Boutin (2007): 1) preliminary readings, 2) grouped statements, 3) identification of sub-categories, and 4) description of findings. Use of the NVivo 8 software facilitated the delineation, coding and grouping of units of meaning, the emergence of sub-categories and content analysis. Two analysts intercoded the data with 98% agreement (Yardley, 2008).

5.3. Limitations

Our qualitative study has certain limitations. Recruitment on a voluntary basis may have skewed the results, since the participants were perhaps more interested in the topic of healthy lifestyles, such as those working in the health sector. However, we think the social desirability often associated with interviews (Savoie-Zajc, 2016) was limited because participants were informed there were no right or wrong answers and the interview style was friendly, casual and respectful.

5.4. Ethical considerations

The Research Ethics Board of the home institution found that an ethics certificate was not necessary insofar as the study was part of a program evaluation. Nevertheless, individuals were free to participate or not in the study.

6. FINDINGS

Findings are presented in keeping with the objectives of the study. First, regarding the knowledge and skills acquired during sensitization sessions (level 2), most participants either learned about the existence of the four favourable environments or honed their understanding of them, as the following statement illustrates: *“The fact of knowing about the four environments helped me better distinguish the types of environments in my context and stay more alert to ways of improving them.”* (Participant#11). The theoretical concepts discussed offered a more nuanced knowledge of favourable environments, and the related concrete examples enabled participants to better grasp the importance of their role in this respect. The session was apparently an opportunity to learn a common vocabulary deemed useful within the context of their work. However, the information acquired seems to have been less significant for stakeholders in the health sector. Indeed, these stakeholders already had the knowledge and skills specific to this area of activity. The concept of lifestyles was an integral part of their daily lives, as the following passages indicate: *“I already had on extensive knowledge in this field [health] before attending the session. My objective in coming was not necessarily to learn more, but rather to establish contact with people in the community.”* (Participant#10) and *“[...] being from this field, we were already working with that, the session confirmed what we were doing.”* (Participant#9).

Our second objective, the transfer of knowledge and skills into concrete actions (level 3), appears possible, albeit complex. On one hand, the vast majority of participants were able to influence their environments to a greater or lesser extent. Influencing the political environment seems more difficult insofar as the interviewees' comments mainly relate to the three other environments. Examples include improved access to sports facilities (physical environment), improved cafeteria and school canteen menus and reduced costs (economic environment), collective walking initiatives (sociocultural environment), etc. In connection with the physical environment, one participant stated: *“I try to focus more on action in my work. I'm developing a corridor for active transportation that encourages alternatives to driving, such as walking or biking (...).”* (Participant#23). Another adds: *“Exercise modules have been installed in the parks.”* (Participant#15). Another person views matters from an economic perspective: *“They set up health combos, cheaper than just buying chocolate, so they really applied the concept of offering a favourable economic environment.”* (Participant#3). On the other hand, organizational challenges proved to be obstacles, notably for stakeholders working in compartmentalized frameworks as government/political organizations without concertation committees or with supervisors having little interest in change. This is the reason for their problems regarding the political environment, as the following excerpt shows: *“I couldn't apply anything at all to my profession because first of all, as a political assistant, I don't have the power to make decisions. All I do is follow orders, and my boss, the deputy, has a very rigid way of looking at things. I really can't change anything.”* (Participant#22).

7. DISCUSSION

Consistent with level 2 of the Kirkpatrick and Kirkpatrick model (2006), our findings show that the sensitization sessions regarding favourable environments fostered a shared vision and sharply improved participants' knowledge and skills. As well, the sessions enabled them to accurately distinguish the four environments related to lifestyles. In other words, distinguishing the four types of environment in their work also led to an improved evaluation of the potential for positive change. In other words, an assessment could clarify achievable goals and identify realistic actions and strategies to implement. In this respect, a sensitization is deemed relevant if it encourages reflection and raises awareness concerning a social problem or a common need (Nexus santé, 1998). The importance of a common vision also becomes obvious in the deployment of every new population initiative (Savoie-Zajc, 1993).

The next findings are in agreement with level 3 of the Kirkpatrick and Kirkpatrick model (2006). Progress was somewhat more modest regarding concrete reinvestment in certain professional sectors, particularly the health sector. In keeping with the literature, it refers to the profile and level of knowledge of the target audience, which must be learned for the purpose of adapting content and strategies (Gérard, 2003; Noyé & Piveteau, 2009). Otherwise, the diversity within stakeholder groups appears to have been an advantage. As Curtis and Riva (2010) point out, health promotion must consider interventions from different domains and contexts in order to build an alliance between actors in different sectors, professions and, even, organizations. Sensitization must reach influential stakeholders having little knowledge of healthy living environments, as is often the case for municipal decision-makers who play a major role in the creation of environments likely to influence citizens' way of life. According to Gérard (2003) and Jetter and Cassady (2006), public policies are important for creating healthy eating environments. In the specific matter of introducing change, policy environment appears to be the most resistant to innovation and physical environment to be the most welcoming (McCreedy & Leslie, 2009). In defense of our study, it should be noted that the deployment of "sensitization session", in various professional sectors, implies that the impacts within the organization (level 4) are actually less important. With this in mind, we propose that a second phase focused on "training" should follow a "sensitization session" in order to optimize the impacts, especially a transfer in practice (level 3) and even an organizational modulation (level 4). Thus, we hypothesize that the evaluation of organizational performance, the top of the fourth level of the Kirkpatrick and Kirkpatrick model (2006), would be more impactful at the "training session".

Our project is unique in that it focuses on sensitization and networking rather than training. It is therefore aimed at the large and highly diverse population that it reaches. The responsibility for a healthy life cannot be left to individuals alone (Québec en Forme, 2014). Accordingly, this project targets groups of stakeholders with an important role to play in promoting health. Furthermore, the sensitization session targeted adults as well as children, something rarely encountered in the scientific literature, if at all (Wolfenden et al., 2014). Collecting and analyzing participants' perceptions of the implementation of this initiative is essential because stakeholders' involvement is one of the keys to successful interventions (Franks et al., 2007, Grimshaw, Eccles, Lavis, Hill, & Squires, 2012). However, the involvement of stakeholders from different professional backgrounds raises challenges related to the collaboration and concerted actions considered necessary in the creation of healthy environments promoting healthy food choices and active lifestyle (Beuret, 2006).

Our study leads us to advance two hypotheses: first, a large-scale sensitization sessions should be held prior to every training phase intended for a targeted public, and second, a sensitization session should be a prelude to a second phase aimed at concrete, long-term impacts in the field. Training sessions focused on developing expertise, for example, have a greater impact potential (Rivard et al., 2016).

8. FUTURE RESEARCH DIRECTIONS

New approaches to healthy lifestyles are emerging in Quebec. We firmly believe that the sensitization sessions are a prerequisite for training sessions. We suggest that future initiatives should target actors most likely to be impacted by sensitization training: those with little or no knowledge of the subject of healthy lifestyles and favourable environments, but having a certain interest in it. We could also potentially improved impacts keeping in mind to develop expertise in key stakeholders with strong powers of persuasion, influence or decision-making (e.g., people in politics). Content better suited to level of expertise is therefore proposed to maximize the impacts of these sensitization sessions. We agree with Curtis and Riva (2010) regarding the importance of putting forward research based on an interdisciplinary strategy. To this end, our hope is that Quebec policymakers will agree to fund training sessions on healthy lifestyles and favourable environments along with parallel evaluation studies.

9. CONCLUSION

Our study's results show that the sensitization session evaluated had an impact on participants' knowledge and skills as well as on their professional practices. A vast population strategy deployed throughout the province of Quebec, combined with the theme of favourable environments together with eating habits and physical activity and based on the influence of stakeholders from different professional backgrounds, was the key to the success of a health sensitization session. We believe this approach can serve as a model in other professional fields whose members are likewise concerned about health behaviours and motivated to act in all four environments. Environments can be examined to determine the type of intervention most likely to affect people's health behaviours. A sensitization session, when used as an education strategy, offers a better understanding of the mechanisms of an intervention and its impacts on users. In light of our study, we argue that actors committed to such an approach are likely to benefit from the sensitization session as a lever for real concerted and sustainable actions over time. The study reveals that the physical environment is the most flexible and highlights the need for a partnership between actors from different sectors to effect improvements in the economic, sociocultural and political environments. Focusing on the potential of the physical environment is crucial because the quality and appearance of physical structures send a message that can influence individuals' behaviours, especially if these individuals possess minimal health knowledge (Cohen et al., 2000). However, a large-scale influence on the political and economic environments that transcend physical and sociocultural environments is also relevant. In short, the four environments cannot be considered separately given that they interact with each other and impact health behaviours.

In conclusion, individuals are not entirely responsible for healthy lifestyles. The improvement of lifestyles and the creation of environments facilitating the adoption or maintenance of healthy lifestyles should be responsibilities shared by all the community.

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AUTHORS' INFORMATION

Full name: Marie-Claude Rivard

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Marie-Claude Rivard, Ph.D., is an associate professor at the Department of Human Kinetics, Université du Québec à Trois-Rivières. She holds a doctorate in physical activity intervention from Université Laval, Québec. Her research focuses on health education from the perspective of healthy lifestyles and on teacher training in physical and health education. Professor Rivard is a regular researcher at *Groupe interdisciplinaire de recherche appliquée en santé (GIRAS)* at the Université du Québec à Trois-Rivières and *Centre de recherche et d'interventions sur la réussite scolaire au Québec (CRIRES)*.

Full name: Maude Boulanger

Institutional affiliation: Université du Québec à Trois-Rivières

Institutional address: 3351, boul. des forges, C.P. 500, Trois-Rivières (Québec), G9A5H7, Canada

Short biographical sketch: Maude Boulanger, Ph.D. (c) is a doctoral student in psychology and a lecturer at the Bachelor of physical education and health program at the Université du Québec à Trois-Rivières. Her master's studies focused on collaboration between the school and the family as part of the Healthy Schools approach. This approach favors, among other things, the educational success of students. The subject about collaboration in her doctoral studies focuses on another initiative that promotes educational success: the deployment of interdisciplinary projects in the context of entrepreneurial school. Her research interests also include project-based pedagogy, physical activity and methodology approach using qualitative analysis.

Full name: Sacha Stoloff

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Sacha Stoloff, Ph.D., is a professor at the Department of Human Kinetics, Université du Québec à Trois-Rivières. She holds a doctorate in education from Université de Sherbrooke, Québec. Her research focuses on professional competency development through reflective practice and training. Professor Stoloff is a regular researcher at *Groupe interdisciplinaire de recherche appliquée en santé (GIRAS)* at the Université du Québec à Trois-Rivières and *Centre de recherche International pour la formation et la profession enseignante (CRIFPE)*.

Full name: François Trudeau

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Dr. François Trudeau, Ph.D., is professor and researcher in exercise physiology at the Université du Québec à Trois-Rivières since 1992. He is interested in the role of the school in promoting physical activity among youth, including active transportation, physical education and sport. He also conducts research in rehabilitation through exercise in people with chronic diseases. He is a regular researcher at *Groupe interdisciplinaire de recherche appliquée en santé (GIRAS-UQTR)* and a Fellow of the *American College of Sports Medicine*.

Full name: Sylvie Ngopya Djiki

Institutional affiliation: Université du Québec à Trois-Rivières, Department of Human Kinetics

Institutional address: C.P. 500 Trois-Rivières, G9A5H7, Canada

Short biographical sketch: Sylvie Ngopya Djiki, held a BSc in Chemical, Molecular and Cell Biology at University of Cape Town in South Africa and a Medical Degree at Université El Hadj Ibrahima Niassé in Sénégal prior to engaging on a masters in physical activity and recently a doctoral in biomedical sciences at Université du Québec à Trois-Rivières. These studies looked at the influence that the physical, sociocultural, economic and political environments can have on growing problem of obesity. Her research focussed on sensitizing stakeholders to ways of facilitating healthy environments, promoting an active lifestyle and healthy food choices. The main aim was to develop projects that will raise awareness on sedentary lifestyle, inadequate diet and develop environments favourable to healthy lifestyles.

Chapter #10

DIFFICULTIES WITH THE ACADEMIC WRITING:

What do the students from the first year of the pedagogy course reveal

Ana Luzia Videira Parisotto¹, Michelle Mariana Germani², Zizi Trevizan³,
Andréa Ramos de Oliveira², & Adriana Locatelli França²

¹Department of Education, UNESP/Teacher, Brazil

²Pos-Graduation in Education, UNESP/Student, Brazil

³Department of Education, UNOESTE/Teacher, Brazil

ABSTRACT

In spite of undergraduates having passed exams to enter higher education, this does not necessarily imply that they can read and write proficiently. In light of this situation, it is important to reflect on the initial education of teachers. This text presents some results of a broader research project investigating the socioeconomic-cultural profile of first-semester student teachers' reading and writing skills via questionnaire at a state university in São Paulo State, Brazil. This text aims to describe the reasons they give for their writing difficulties or insecurities. The research participants are 79 first-semester undergraduates in Pedagogy — 36 and 43 students from the afternoon and evening shifts of the program, respectively. Participation was made available to those interested in collaborating with the research — all of the students enlisted to participate. This research is of a qualitative nature with a descriptive-analytical approach. The data were analyzed in light of the content analysis, with categories created *a posteriori*. When asked about the reasons for their writing difficulties or insecurities, the participants indicated low self-confidence and increased anxiety, lack of knowledge about the topic/subject, deficient knowledge of standard language, no writing training/habit/practice and difficulty in organizing ideas.

Keywords: writing in higher education, initial teacher education, writing difficulties.

1. INTRODUCTION

We live in a grafocentric society. Therefore, mastering the language in its written mode is extremely relevant. We can even emphasize that writing is an instrument of power, since those who do not dominate it are segregated from access to formal knowledge, besides having difficulties to act actively in society.

Knowing that writing is a reflexive action that stimulates verbal thought and interaction, the Brazilian educational picture becomes worrisome in the face of the devaluation of writing practices. According to Garcia (2011), Brazil, as well as all of Latin America, has an expressive number of illiterates, with many children who do not master reading and writing. The author points out that this uncomfortable position of Brazil, by not guaranteeing students (in their compulsory schooling) the mastery of reading and writing competence, makes these students impossible to change in their own lives and changes in our world of cultural and social inequalities.

Therefore, we live a school reality in which children advance from elementary school with great difficulties of reading and writing; young people leave school without even knowing how to write an essay (cohesive and coherent) or without interpreting the ideological senses of texts. The situation has reached extreme levels where students come to universities with serious problems to write, which is why many universities have already

inserted in their curriculum a discipline to help students. That is, the entrance into Higher Education does not guarantee that the graduates will have a proficient writing.

This scenario inevitably ends up having repercussions on the formation of the future professional and, consequently, damages the society through the different professionals who do not dominate the language in their written modality.

No less disturbing is the situation of the degree courses in Pedagogy. In them, we also find students with serious writing difficulties and little dedication to reading. The situation is rather delicate when we reflect that those will be the professionals responsible for teaching children. Besides writing problems, how can they develop and inspire their students if they do not have writing skills, and do not even like writing?

Thus, this work derives from a larger research that aimed to know the socioeconomic-cultural profile, reading and writing of the student entering the course of Pedagogy, through a questionnaire. With the vast amount of collected material, after careful analysis, we drew attention to the writer's profile of the investigated ones, especially the reports about cases of failure or insecurity when composing.

In this perspective, our objective for the present text is to describe the reasons for failure or insecurity when writing texts, pointed out by the incoming students.

This chapter is organized as follows: a section of theoretical reference, with the conceptions we will adopt and the ideas with which we join; a section devoted to the methodology with the details of the subjects, instrument and research procedures, besides the criteria of analysis of the obtained data; a section focused on results and discussions, with a graph representing our findings and the relevant analyzes; and our final considerations.

2. BACKGROUND: THE THEORETICAL FRAMEWORK

Human beings, from time immemorial, have found many ways to record their ideas. However, we can emphasize that the human history has a turning point: the advent of writing. Writing, sophisticated instrument that we know today, underwent many transformations. In addition, at present, the civilizations that exist are basically graphotechnical, that is, they are based on writing (Higounet, 2003).

In Brazil, courses to prepare teachers for the teaching of the "first letters" go back to the end of the 19th century with the creation of Normal Schools (Gatti, 2010). From then on, the concern with the educational formation of the Brazilian population increased, crossing different social and political contexts, culminating with the creation of the Law of Directives and Bases of National Education (LDB) in 1996, the National Curricular Guidelines for Teacher Education in 2002, in addition to the Curricular Guidelines for each degree that were approved by the National Education Council in the following years.

In regard to pedagogy course,

[...] only in 2006, after much debate, did the National Education Council sanction Resolution No. 1, of 05/15/2006, with the National Curricular Guidelines for these programs, granting them a teaching licentiate status and assigning to them the education of teachers for preschools and the first years of elementary schools, as well as high schools in the modality Normal, when necessary and where Normal programs still exist, and for youth and adult education programs, in addition to the education of school administrators. In spite of its wide-ranging attributions, the focal point of this licentiate program is to prepare teachers for the first elementary school years (Gatti, 2010, p. 1357).

Based on the attributions of the pedagogue listed in Resolution 1 of May 15, 2006, it should not be forgotten that the role of future teachers is extremely important, since they will be the first masters to act in the formation of citizens conscious of their role in our society.

This way, we know that the domain of reading and writing as a form of codification and decoding does not take account of meeting social demands, since the expectation is that students are able to understand the contents; think critically; build and solve problems; synthesize information, as well as express themselves with proficiency and criticality.

Writing, in Bakhtin's historical-cultural theory of intertextuality, is reading converted into production (Kristeva, 1974). In other words, for Bakhtin (2014) the reader, in the productive act of interlocution with the author of the read text, enters into cultural attunement with it, traversing the cultural movements of the author's creation (a confirmed reader) situated in a given context historical-social, and in this process of cultural attunement with the author, the reader identifies the ambivalent function of the text and its cultural (ideological) marks of its production. Reading is, according to this Bakhtinian conception, a mode of textual (co) production. Writing and reading, although they are different acts, dialogue among themselves, since in the theory of intertextuality, a text is born of another text (already read), implicit in the cultural repertoire of the author. However, this dialogical relationship (writing x reading, reading x writing) has not been properly contemplated in the teaching of writing in Brazil.

Therefore, with support in the Bakhtinian theoretical framework, we use the concepts of intertextual (ambivalent) function and redistributive (dialogical) function of the text in this study to make explicit the concept of writing as an opportunity for apprentices to position themselves in the world, of interacting with others, of understanding the social reality of written discourse. Kristeva (1974), Bakhtin's scholar, states that every text is *intertextual* in nature, that is, it is born of the context and carries cultural marks of other texts implicit in it. According to Eco (1980), this *ambivalent* function of the text reveals that it is always a *reply*, in relation to another text already existing in the author's cultural repertoire. On the other hand, Kristeva (1974) also states that every text has a *redistributive* function, which enables the author to inaugurate the meanings of the text - what Eco (1980) defines as the *invention*. This redistributive function of the text will guarantee the dialogical nature of discourse.

Leite, Ghedin and Almeida (2008), in the light of recent research in the field of education, affirm that teachers have not been adequately prepared by the training institutions to face problems in the daily life of schools; so that it is urgent to overcome the model of the technical rationality that has characterized the training courses for teachers so as to ensure the reflective base from initial training with extension to professional performance.

We believe in the importance of opening up to become a teacher who is still in the undergraduate field, providing formative experiences that enable the development of knowledge necessary for professional practice, as it is the moment to build a foundation for future professional performance. Although the initial formation does not contemplate a complete and definitive formation, which would be even incoherent if we think that the teacher acts in a space loaded with unpredictability, it is in the degree that the future teacher must acquire knowledge that will form its reference frames for the performance of the teaching profession (Mizukami, 1996).

Knowing how to act verbally successfully is indispensable to social interaction. However, what we observe in classrooms are restricted and unreflective writing opportunities, which has had negative impacts and consequences on Portuguese language teaching even in graduate courses. Generally, as discussed by Antunes (2005), the students' concern lies only with the formal aspects of writing (grammar, punctuation, concordance, etc.), forgetting the relevance of the content and meaning of the text.

Additionally, it is expected, by the vast majority of teachers, that one who enters higher education, after so many years, usually in contact with the mother tongue, knows how to master it. According to Velásquez (2012), it would be expected that the students of Higher Education would have a high ability to understand and interpret texts, besides being able to make complex readings, inferences, deductions, links between texts read, comparisons, dominating the different textual genres.

According to Gregório (2006), the obstacles to a good performance of writing should not be present in Higher Education anymore; however, there is an increasing gap, which impacts on the student's professional, intellectual and social performance.

In addition to this unpreparedness of university students, resulting from the lack of training of their teachers (Trevizan, 2017, Parisotto & Trevizan, 2012), higher education also presents students resistant to writing and with many limitations to exercise writing: many students know what to say but do not know how to do it; report lack of time to practice and rehearse writing; demotivation, since most of them do not conceive writing as an opportunity to put themselves in the world, to understand themselves and understand reality; too much concern to write grammatically correct, instead of writing with clarity of the social intention objectified in the text (Vitória, 2011).

These are the conceptions in which we will guide ourselves to the analyzes made in this work.

3. METHODS

Detailing our research trajectory is fundamental to understanding the data, as Swales and Feak (2004, p. 227) elucidates: "In many of the social sciences, the methodology is very important and is often described in considerable details. Indeed, in some cases in these areas, the main point of an RP [research paper] will be announcing some development in method."

Basing writing in higher education as our object of study, we developed a qualitative research in a public higher education institution in the interior of the State of São Paulo/Brazil.

Considering that researches in the social sciences are marked by quantitative methods in the description and explanation of the investigated phenomena, we opted for the qualitative approach to explain in depth the characteristics and meanings of the information obtained (Oliveira, 2007).

The qualitative research "[...] refers in the broadest sense to research that produces descriptive data - people's own written or spoken words and observable behavior" (Taylor, Bogdan, & DeVault, 2016, p. 7). Therefore, it is the most adequate research to our objectives, mainly by the characteristics presented by Taylor, Bogdan, and DeVault (2016) as being typical of the researcher who makes this option: 1) is concerned with the meaning people attach to things in their lives; 2) is inductive; 3) looks at setting and people holistically, as a whole; 4) is concerned with how people think and act in their everyday lives; 5) all perspectives are worthy of study; 6) emphasizes the meaningfulness of their research; 7) there is something to be learned in all settings and groups; 8) is a craftsman.

The participants selected for our research were students of the first semester of the Pedagogy course, in the year 2017, since our intention was to outline the profile of the future teacher entering higher education. Efforts were made to map their writing and reading skills in line with the standards established by the teaching profession.

The sample of participants was composed of all first year students. 79 students collaborated with the research, of which 36 were in the evening shift (out of a total of 38 students enrolled in the period) and 43 in the evening (out of a total of 50 students enrolled this time). The participation was optional, the students were not evaluated by the collaboration, did not have any expenses, nor did they receive any type of payment.

We have adopted a descriptive-analytical approach, since, according to Martins (2008, p. 56), "the chief merit of a description is not always its accuracy or details, but the capacity it may have to create a clear picture for its readers."

We use as a data collection instrument the questionnaire, because it is a "research technique composed of a relatively large number of questions presented in writing to people, aiming at knowledge of opinions, beliefs, feelings, interests, expectations, situations experienced, etc." (Gil, 2008, p. 121).

With the questionnaire, our intention was to situate the students from the socioeconomic-cultural point of view and to know their profile of reading and writing. This data collection instrument has two sections: a) questions related to the student profile, with 14 close-ended questions, 01 mixed dependent question and 01 open-ended question; b) questions related to the students' school background on learning about textual production, with 02 open questions and 05 mixed questions (explanation about the chosen alternative was required).

In this text, we will not use all the material collected with the questionnaires, only keeping to the open question about the reasons for failure or insecurity when writing texts. The data were interpreted in light of the content analysis, with the theoretical support of Bardin (2011) and Franco (2008). The content analysis technique comprises three steps: 1) preanalysis; 2) the exploitation of the material; and (3) data processing and interpretation. The categories can be defined *a priori* or *a posteriori*. In our case, we adopted the second option, and categorization occurs in the third step. The categorization is the grouping of raw data into organized data following some principles (mutual exclusion, homogeneity, pertinence of the message transmitted, fertility and objectivity), with regrouping according to the common characteristics, which are refined. Once the final categories have been created, we analyze the data, using a theoretical framework to support our interpretations.

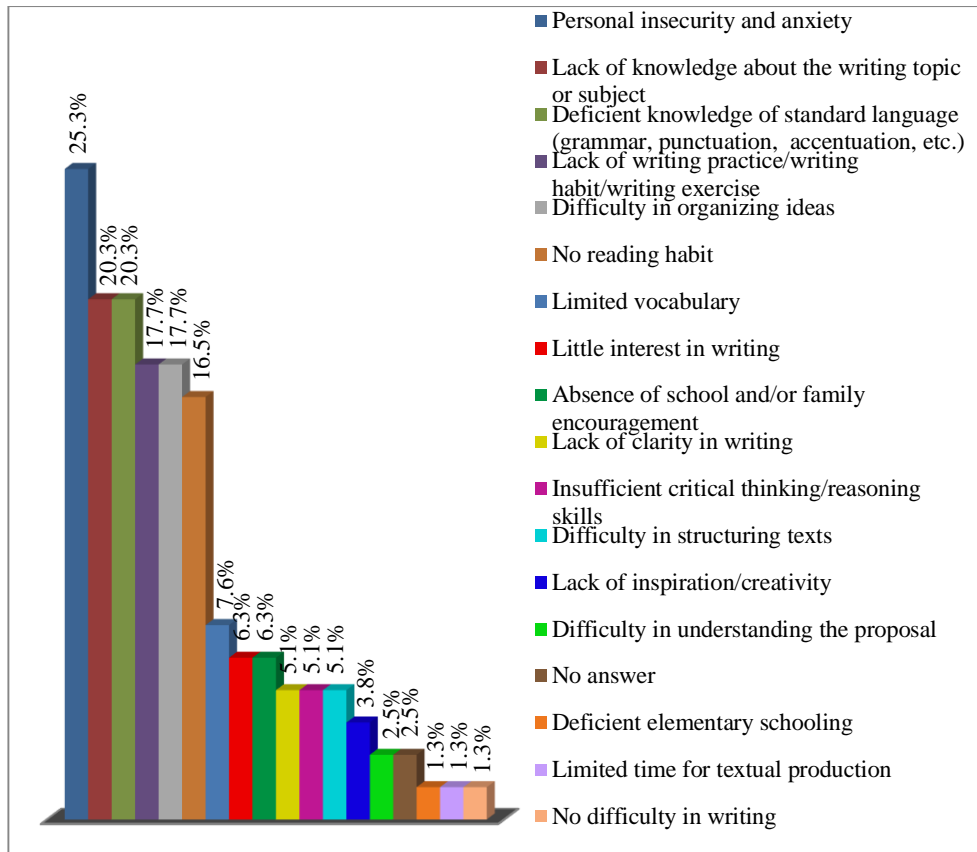
4. RESULTS AND DISCUSSIONS

The collection took place on April 26, 2017, in two different occasions: afternoon and evening shift. In the afternoon period, there were 36 students, and in the evening 43 students. All of them agreed to collaborate, making a total of 79 questionnaires collected.

Asked about reasons for failure or insecurity when writing, the main problems were personal insecurity/anxiety, lack of knowledge about the writing topic or subject, deficient knowledge of standard language, lack of writing practice/habit of writing/writing exercise, difficulty in organizing ideas and no reading habits. Other problems were also pointed out on a smaller scale, as we can see in Figure 1.

Difficulties with the Academic Writing:
What do the students from the first year of the pedagogy course reveal

Figure 1.
Reasons for writing difficulties or insecurities.



Source: Data categorized by researchers based on results (2018).

Note: Percentages refer to frequencies of responses. Some participants' responses fell under more than one category due to the open-ended nature of some questions.

There are many identified learning problems of writing by research participants. In this text, some reflections have been woven on some of them. Although it appears at a low frequency, 3.8% of academics say they lack inspiration/creativity. It is clear that students have a conception of inspiration and creativity as solitary, subjective acts. However, in Social Psychology on which the Bakhtinian Materialistic Philosophy is based, the concept of creativity involves a process of historical-cultural construction; creativity and inspiration emerge from readers' own social interactions with cultural objects. In the case of the production of verbal texts, creativity is formed, also, from the cultural coexistence with the texts already read; that is, writing involves dialogically reading. Indeed, it is quite difficult to write on a topic that is not culturally dominated; a consistent argument will inevitably be committed. Precisely for this reason, many students end up saying that they lack inspiration. Writing cannot (nor should) be conceived as a gift, for as Vitória and Christofoli (2013, pp. 47-48) explain:

[...] if what leads us is the concept of inspiration, from gift to writing, we are probably paralyzed in the first attempt to elaborate writing: here the product idea prevails. However, if what drives us is the belief that writing is an artisan-enhancing skill with constant exercise and systematic practice, we will probably find in the writing act the possibility of constantly creating and re-creating ways and means to better express what we have to say: here preponderates the idea of process. And so, understood as process, we can say that everyone can learn to write more and better.

Although reading and writing are diverse activities encompassing different mental schemas, in the Bakhtinian conception of text *ambivalence*, discursive production is the result of a conversion from reading to writing, since all texts have an *intertextual* function, pointing to cultural marks (replicas) of the context of discourse construction.

By this we mean that it is absolutely necessary to read various texts and submerge in their understanding, reflection and analysis, before and each time the task of writing is undertaken. The person familiar with written works, even if not reflective and conscious, is better able to adapt to the cultural forms that convey the transmission of information in writing. (Vitória, 2011, p 121)

In our opinion, the "lack of reading", stated by 16.5% of the academic participants, is the main reason for the other problems they pointed out, such as: "personal insecurity/anxiety" (25.3%); "lack of knowledge about the topic/subject" (20.3%); "lack of knowledge of standard language" (20.3%); "limited vocabulary" (7.6%); "lack of clarity in writing" (5.1%); "insufficient critical thinking/reasoning skills" (5.1%); "difficulty to structure a text" (5.1%) and others, also recorded in Graph 1: "reasons for writing difficulties or insecurities". Replication and invention are part of the process of writing construction, as pointed out by Bakhtin's historical-cultural theory and the other scholars cited in this study. If students received an adequate teaching regarding cultural interactions between reading and writing, many of these problems pointed out by them would be eliminated procedurally as they would become increasingly more aware of the social function of the text and the cultural possibilities of building their own creativity, inspiration, motivation and interest in writing.

It is also worth mentioning that the results point out the need for more frequent texts production, as well as social language practices, allowing reflection on grammatical, textual and discursive reading and revision strategies, so that to form students/future teachers who can interact socially, safely assuming the position of reader and producer of texts.

In this way, the lack of significant cultural practices of reading compromises the development of the writing skills in higher education students fresh from secondary school, adding to them intellectual losses in the higher education, as observed, for example, in 6.3% of researched, who even claim "disinterest for writing", even though they have sought a degree in pedagogy, where they seek professional training to be competent trainers of readers of text producers.

5. FINAL REMARKS

Upon entering an undergraduate degree, undergraduates have spent at least 12 years at school, usually with a portion of the time devoted to writing activities. In spite of this time of dedication in which writing is constantly present, many deficiencies are diagnosed when we analyze the writer profile of those who enter higher education.

Personal insecurity/anxiety, lack of knowledge about the writing topic/subject, deficient knowledge of standard language, lack of writing practice/writing habit/writing exercise, difficulty in organizing ideas, in our view, may be strongly linked to the lack of reading, keeping the specificities of each language activity. In the answers given by the students, we can infer dissociation between the act of reading and writing, arriving at the emission of subjective concepts of creativity/inspiration/interest in writing, as if these intellectual acts did not constitute historical processes of cultural development of all readers. These results point to the need for the university to take the initiative to prepare them for understanding the social functionality of reading and writing.

Many courses of Pedagogy have already included a Portuguese Language course in their curricula in order to help the incoming students with the lags related to the writing and, therefore, necessarily, reading.

It is necessary to figure out that the difficulties are related to the fact that the learning of the writing happens in a continuous process that is not concluded with the students' entrance in the university. In this sense, each writing practice must correspond to the teaching and learning of some textual, discursive and social knowledge.

Thus, it is of paramount importance that higher education institutions rethink this problem and seek alternatives to develop the writing and reading competence of future teachers. Developing the writing competence becomes essential to improve the training of these professionals who, in the future, will mediate the process of their students' literacy.

On the other hand, we must recognize that higher education institutions have an arduous task, since the inclusion of a single discipline in the curricula of the course is not sufficient to overcome the difficulties presented by the students. The problem needs to be thought of comprehensively, taken as the responsibility of all teachers.

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AUTHORS' INFORMATION

Full name: Ana Luzia Videira Parisotto

Institutional affiliation: São Paulo State University (Unesp) / Department of Education / Teacher

Institutional address: Roberto Símonsens Street, 305 - Educational Center, Presidente Prudente City, São Paulo State, Brazil, Zip code: 19.060-900

Short biographical sketch: Ana Luzia Videira Parisotto is an associate professor at Education Department of the São Paulo State University (Universidade Estadual Paulista "Júlio de Mesquita Filho" – Unesp). She received her Ph.D in Linguistics at the same institution, with emphasis on the teaching of Portuguese. Her research interests are: teacher education, teaching of Portuguese, text production and academic literacy. Leads the Research Group "Teacher Education and Teaching Practices in Basic and Higher Education" of Unesp - Presidente Prudente/SP.

Difficulties with the Academic Writing:
What do the students from the first year of the pedagogy course reveal

Full name: Michelle Mariana Germani

Institutional affiliation: São Paulo State University (Unesp) / Pos-Graduation in Education / Student

Institutional address: Roberto Símonsens Street, 305 - Educational Center, Presidente Prudente City, São Paulo State, Brazil, Zip code: 19.060-900

Short biographical sketch: Michelle Mariana Germani is a Pos-Graduate student in Education of the São Paulo State University (Universidade Estadual Paulista "Júlio de Mesquita Filho" - Unesp). Her PhD research is aimed at Academic Literacy (writing in higher education). She participates in the Research Group "Teacher Education and Teaching Practices in Basic and Higher Education" of Unesp - Presidente Prudente/SP.

Full name: Zizi Trevizan

Institutional affiliation: Oeste Paulista University (Unoeste) / Department of Education / Teacher

Institutional address: Raposo Tavares Highway, 572 Km – Limoeiro District, Presidente Prudente City, São Paulo State, Brasil – Zip code: 19.067-175

Short biographical sketch: Holder of a Doctor's and Master's degree in Liberal Arts from the São Paulo State University (Universidade Estadual Paulista "Júlio de Mesquita Filho" – Unesp), College of Liberal Arts - FCL/ Assis (SP). A retired teacher by the Department of Education of the São Paulo State University (Universidade Estadual Paulista "Júlio de Mesquita Filho" – Unesp), College of Sciences and Technology (FCT) in Presidente Prudente (SP), in 1995. Pro-Rector for Research and Graduate degree (2005/2013) and Pro-Rector of Extension and Community Action (2001/2011) in the Oeste Paulista University - UNOESTE, Presidente Prudente (SP). She is currently a Teacher and Researcher in the Master's Degree Course on Education at UNOESTE. A current participant in Research and Studies Groups: Research Group enrolled with CNPq, Oeste Paulista University/UNOESTE - Presidente Prudente (SP): School Context and Teaching and Learning Process - actions and interactions.

Full name: Andréa Ramos de Oliveira

Institutional affiliation: São Paulo State University (Unesp) / Pos-Graduation in Education / Student

Institutional address: Roberto Símonsens Street, 305 - Educational Center, Presidente Prudente City, São Paulo State, Brazil, Zip code: 19060-900

Short biographical sketch: Andrea Ramos de Oliveira is a teaching supervisor at the Municipality of Birigui. Master in Education from the São Paulo State University (Universidade Estadual Paulista "Júlio de Mesquita Filho" - Unesp). She holds a PhD in Education at UNESP - Presidente Prudente, in research focused in teaching Portuguese and text production. She participates in the Research Group "Teacher Education and Teaching Practices in Basic and Higher Education" of Unesp - Presidente Prudente/SP.

Full name: Adriana Locatelli França

Institutional affiliation: São Paulo State University (Unesp) / Pos-Graduation in Education / Student

Institutional address: Roberto Símonsens Street, 305 - Educational Center, Presidente Prudente City, São Paulo State, Brazil, Zip code: 19060-900

Short biographical sketch: Adriana Locatelli Franca has been working in Education for 13 years. With a degree on Portuguese and English, has worked as a Portuguese Language teacher in Brazilian public school system. Currently, works as a coordinating teacher. Beginning in 2019, will start her master's degree course at São Paulo State University (Universidade Estadual Paulista "Júlio de Mesquita Filho" - Unesp), with teacher education as her research line. She participates in the Research Group "Teacher Education and Teaching Practices in Basic and Higher Education" of Unesp - Presidente Prudente/SP.

Chapter #11

A QUALITATIVE STUDY ON THE PERCEPTION OF UNDERGRADUATE STUDENT'S COOPERATIVE LEARNING EXPERIENCE IN THE CASE OF ROLEPLAY

Youngsoon Kim, Gi Hwa Kim, & Youngsub Oh
Inha University, Korea

ABSTRACT

The aim of this study is to investigate the perception of cooperative learning experience through the roleplay among undergraduate students participating in a liberal arts course related to multicultural education of 'P' university in Korea. In this study, we adapted qualitative research method, including participatory observation and focus group interview. We collected reports, questionnaires, journals, and roleplay scripts. We analyzed the implications of experiences of students in terms of interdependence and individual responsibility as core elements of cooperative learning. Results are as follows: First, interdependence was experienced by students in dealing with conflicts in the cooperative learning process. It reflected their own will to pursue and practice a strategy for harmony and coexistence among members. Moreover, interdependence meant positive trust among members, formation of human relationship, and expression of interest and praise for members. Second, recognizing that one's role in a team influences on other members and team achievement, students seriously took individual responsibility. Individual accountability meant performance of assigned role, compliance of promise, and care for members. Individual accountability is rooted on and realized by interdependence.

Keywords: roleplay, cooperative learning, learning experience, interdependence, individual accountability.

1. INTRODUCTION

As globalization and advanced technology have changed social and cultural environment, changes in the purpose, content, and curriculum of education are required. Currently, the world is faced with a challenge in the era of the fourth industrial revolution, which stands for big data, artificial intelligence, and so on. The fourth industrial revolution has raised both hope and concern that replacing a significant portion of the labor force with an automated system of artificial intelligence will restructure the existing industrial structure. As a result, higher education has also started to change. It is urgently necessary for university educators to find the teaching-learning model that fosters the talents with creativity and morality, which automated machine cannot replace with.

Cooperative learning has been studied by numerous experimental studies over the past century in a variety of learning environments, subjects, and research areas. Cooperative learning is recognized as an effective strategy with validity and generality, rarely seen in education (Johnson & Johnson, 2002; Kagan, 1994). Therefore, it is expected that the cooperative learning model will be used as an appropriate teaching-learning method for the fourth industrial age.

This study deals with a class of 'I' university in Korea which incorporates cooperative learning into liberal art education, especially multicultural education. This class is designed for students to learn cooperation by preparing for a roleplay with the theme of putting oneself in other's shoe. In other words, students prepared a roleplay to become immigrants by themselves. There are 4 types of immigrants in Korea like foreign workers, immigrant married women, international students, and North Korean defectors. Students presented the concrete situations in which immigrants really have lived and the feelings and difficulties which they have experienced in Korea. Thus, students felt empathy for immigrants.

This study examined students' experiences in terms of interdependence and individual responsibility as the key elements of cooperative learning. Therefore, the research question is as follows: "How do undergraduate students perceive interdependence and individual accountability in the role-play-based cooperative learning process?"

2. THEORETICAL BACKGROUND

Cooperative learning is "the instructional use of small groups so that students work together to maximize their own and each other's learning" (Johnson & Johnson, 2018). Although there are some differences in the elements of cooperative learning according to scholars, they are considered as the five elements: positive interdependence, face-to-face promotive interaction, individual accountability, appropriate use of social skills, and group processing (Johnson & Johnson, 2002).

First, positive interdependence means a relationship that helps each other because each member of the group has to achieve group goal. Second, individual accountability is the responsibility of the individual, when each member masters the assigned task and he or she is evaluated according to individual performance. Third, face-to-face promotive interaction means that group members encourage and promote the efforts of other members to achieve group goals. Fourth, social skills mean in-group-cooperative effort to be successful. Fifth, group processing means the process of discussion and evaluation on how each member worked and cooperated to achieve common goal. Table 1 summarizes the elements of cooperative learning presented by scholars (Kim & Choi, 2018).

Table 1.
Elements of Cooperative Learning.

Scholar	Elements of Cooperative Learning
Johnson & Johnson (1989), Johnson, Holubec, & Johnson (1992)	Positive interdependence, Individual responsibility, Face-to-face interaction, Social skills, Group processing
Slavin (1991)	Positive interdependence, Individual responsibility
Cohen (1994)	Open concept tasks that emphasize thinking skills, Group tasks which require participation of other members, Multiple tasks related to main topics, Roles assigned to each group member
Rottier & Ogan (1991)	Social skills, Interpersonal interactions, Individual accountability, Group cohesion, Collective responsibility, Teacher supervision, Group evaluation
Ormrod (1995)	Interdependence, Group goals, Small group size, Individual accountability, Teacher supervision, Group evaluation
Sharan (1990)	Positive interaction, Face-to-face interaction, Individual accountability, Small group and interpersonal skills, Group evaluation

Cooperative learning has been evaluated as more positive than individual learning or competitive learning. The competitive society has been changing into a society which pursues cooperation and communication. Social change requires changes in education. Therefore, school has been looking for the process of socialization training through cooperative interaction.

Among these elements of cooperative learning, interdependence and individual accountability are the key elements in which scholars have commonly presented (Slavin, 1991; Rottier & Ogan, 1991; Ormrod, 1995; Sharan, 1990; Kim & Choi, 2018). Therefore, this study focuses on cooperative learning experience in terms of interdependence and individual responsibility.

Previous studies on cooperative learning for undergraduate students were more than 305 cases since the 1960s (Johnson, Johnson, & Smith, 2007; 1998). The first study was conducted in 1924, and 68% of studies have been conducted since the 1970s. The meta-analysis of college studies can be summarized as follows: First, cooperative learning is more effective in improving the academic achievement of adults over the age of 18 than competitive or individual learning. Second, cooperative learning enhances the quality of relationships among students and the perception of social support. Interestingly, it affects even human relationships among a variety of racial, cultural groups, and social classes. Third, cooperative learning contributes to the psychological health of college students. Cooperation positively affects self-esteem more than competition or individual learning. Psychological health promoted by cooperative experience can have a positive impact on university life at various levels of self-concept, self-efficacy, and adaptation to college life (Tinto, 1993). Fourth, cooperative learning affects the behavior and attitude of college students. Cooperative learning promotes college students' positive attitudes and behavior patterns toward learning, subjects, and colleges. Fifth, cooperative learning helps promote the citizenship of students. Each outcome by cooperative learning is influenced in reciprocal and virtuous cycle.

Korean studies on cooperative learning began in the middle of 1980s. Since the 1990s, research has expanded to a variety of research participants, ranging from infants to graduate students (Kim & Choi, 2018). Cooperative learning of undergraduate students in Korea has been analyzed in various aspects as follows: First, cooperative learning had a positive effect on subject definition, achievement goal orientation, academic motivation, problem-solving ability, learning motivation, learning attitude and learning satisfaction in terms of academic achievement (Kim, 2003; Park, 2010, Park & Ko, 2016; Jung, 2014; Lee, 2017). Cooperative learning positively affected peer relationships in terms of human relations (Kim, 2003). Cooperative learning promoted self-efficacy, life satisfaction, and emotional relief in terms of psychological adaptation (Kim, 2003; Park & Ko, 2016; Ahn & Kim, 2015; Choi, 2010).

However, although there is a consensus among researchers around the world about the positive effect of cooperative learning on student achievement, there yet remains controversial as to specific conditions under which such effects occur (Slavin, 1989). Thus, it is necessary to find how cooperative learning works under various conditions.

3. RESEARCH METHOD

In order to develop teaching-learning methods suitable for the 4th industrial revolution and cultivate the talents needed for multicultural society, 'I' University in Korea has provided a core liberal arts course for undergraduate students, Multicultural Society and Coexistence Humanities (MSCH), since 2017. This course is based on flipped and blended

learning format. In other words, students study the theory of multicultural society for 1.5 hours in an online class. And then, they experience cooperative learning for the remaining 1.5 hours in an offline class. 38 undergraduate students enrolled in this course at the autumn semester of 2017. Those students were organized into 8 teams with diverse backgrounds to cultivate a multicultural spirit. In other words, a team consisted of 5-6 students with diverse majors, birth places, ages, etc. They democratically selected a team leader. Team activity was to prepare for two role-plays as follows: the first one was dramatized about exchange, cooperation, competition, and conflict as the four types of social interaction in everyday life. The second one was to become foreign workers, international students, and marriage immigrants in Korea. The members of each group had experienced cooperative learning in the whole process of writing scripts, rehearsing and demonstrating roleplays.

This study used qualitative research method. The researchers participated in and observed the whole process of cooperative learning. Undergraduate students participated in the questionnaires and journals about their own experiences of cooperative learning. Particularly, the FGI (Focus Group Interview) was conducted on the 8 team leaders who led those groups. Table 2 summarizes the demographical characteristics of the FGI interviewees.

Table 2.
Research Participants.

Student	Gender	Age	Major
#1	M	24	Electronical Engineering
#2	M	20	Space Information
#3	M	24	Electronical Engineering
#4	M	23	Industrial Engineering
#5	F	24	Consumer Studies
#6	M	26	Business Administration
#7	M	25	Business Administration
#8	M	25	Mathematics Education

In the Table 2, research participants were undergraduate students from a variety of majors. Their ages were in the 20s. They voluntarily were leading their own team. FGI was conducted at the end of November 2017, after the first roleplay ended and before the second roleplay was demonstrated. Those leaders participated in the interview before the FGI was conducted. And the purpose and outline of the interview were explained and then interviews were conducted. This study confirmed their anonymity so that they could genuinely speak even sensitive experiences such as negative conflicts. The interview's main question is about interdependence and individual responsibility. Detailed questions are as the follows:

- What was your positive experience with your team?
- What is important to achieve successful team work?
- Who did the best role in the team and what do you learn from the person's behavior or traits?
- What are the behaviors and characteristics of team members who disturbed team activities?

- Was there a big or small conflict? If so, how was it resolved?
- What did you do when your opinions were not accepted?
- Are you a proper person in a cooperative class?
- What would you like to improve yourself?
- What if you had a team member who was marginalized?
- How many points do you give to your team's interdependence score?
- What is the most demanding element for cooperative classes? (responsibility, positive interaction, communication ability, sympathy for others, etc)
- Do you think you have fulfilled your responsibilities in performing your role? (In what ways do you think so?)
- What do you think responsibility is?
- In what situation did you feel the burden of responsibility?
- What is missing or unsatisfied in your role?

First of all, based on the responses of students as research participants to the above interview questions, it is necessary to distinguish cooperative learning's two representative elements such as interdependence and individual accountability. And then this study will analyze what the perception of each element is.

Particularly, Researchers transcribed the verbatim record from the Focus Group Interview on the interviewed students, and thus got a documentation which accounted for A4 80 pages. As researchers read the verbatim record several times, they categorized themes with similar meanings. Through the coding and categorization, this study can find how their experiences and perceptions are overlapped. Especially, this study summarized the two representative elements of cooperative learning as interdependence and individual accountability.

4. RESEARCH RESULTS

Undergraduate students' experience of cooperative learning through roleplay were perceived as interdependence, individual accountability, and creativity. Especially, interdependence meant positive trust among members, formation of human relationship, and expression of interest and praise for members. And individual accountability meant performance of assigned role, compliance of promise, and care for members.

First, interdependence was explored in terms of aspect and meaning of cooperative learning. As cooperative learning involves intimate interaction with unfamiliar and diverse students, it can lead to large and small conflicts in the early stages of group work. Particularly in this class, psychological conflicts were experienced, when individuals did not conduct their assigned roles properly or failed to fulfill their promises. However, team leaders were doing more cautiously to find harmonious relations rather than expressing personal psychological conflicts. Considering cooperative-learning-based class, they were aware that conflicts will have a negative impact on achieving common goals. In addition, avoiding conflict and striving for a positive relationship can be interpreted as reflecting the willingness to overcome conflicts and pursue their own strategies for harmony and coexistence.

“Some students were responsible for what they have to do until the next meeting. But the others were not responsible for their roles. They did not actively join in conversation. Because of those people, we seemed to make our team mood in a soft and smooth way. We made giving our opinions not too burdensome” (Student # 8)

“First of all, it is basically necessary to respect others’ available time. I think, responsibility is not to disturb others. But responsibility is to do well one’s own duty. However, unfortunately, there were not as many as such cases. For example, we have already made an appointment, but someone suddenly broke it because of his private schedule like club activities. However, we became foolish.” (Student # 6)

Not all members were active in group activities. Particularly at the beginning of group activities, they were passive in their character traits, or they were difficult to communicate and harmonize because of different sex or school-entry year. At this time, team leaders understood the students who were marginalized in the group activities and encouraged their participation through careful consideration. For example, a leader deliberately facilitated participation, just as he pretended not to know what he knew and asked easy questions. This was not only a conscious effort to interact positively with others, but also a special concern for those marginalized in the team. As a practical action, that effort and concern had an important meaning in cooperative learning.

"There was a woman in my team. She was a freshman and younger than the others. She was not good at adapting to my team. Thus, I intended to become a fool, as I used to do so sometimes in a similar situation. I pretended not to know what I knew. But rather, I asked something to her who did not speak. If you do in this way, you will be able to make friends easily. Now, we came to a comfortable stage, in which we played with jokes, gave lots of opinions and laughed a lot." (Student # 7)

Interview from students 8, 6, 7 shows that positive trust among members plays an important role in achieving team goal and providing a place to form human relationship.

“I am not sure whether it is appropriate with your question. But I am commuting from Gwang-myeong city to school. Fortunately, a team member’s house was very close to my house. He was also commuting by car. His major was also similar with mine. So, we became friends so that we can have a meal together and commute together.” (Student # 3)

Additionally, interview from student 5 shows that mutual compliment was important in interdependence. Student 5 tried to facilitate interdependence among team members. It is considered as active and concrete behavior for caring a passive member.

“I had a freshman female member in my team. She did not talk much at the discussion time because she is passive. So, I often praised her appearance like ‘Your hair style is changed. You look great today.’ I thought it would help my team’s rapport.” (Student # 5)

Second, individual accountability was explored in terms of aspect and meaning of cooperative learning. Students shared a common opinion that responsibility was the most important personal ability to be involved in the cooperative learning process. As most of offline classes are centered on group activities, students in a team play a role in achieving a common goal with other students. The students were sensitively aware that if a member did not fulfill his or her role, the damage would be given to the other members. Thus, they worried that others or the whole team would be negatively appraised by them. They were more active in finding their own roles to overcome their own weakness.

“I thought that I was not good at making Power Point Slides or dramatizing my role for my team. So, I have to contribute to my team by engaging with other parts and rehearsing my part hard.” (Student # 2)

Students stated that higher level of responsibility is required in the cooperative learning process. The difference between individual learning and cooperative learning is the degree of individual responsibility. In the case of individual learning, they are much freer, although they do not perform tasks or when they are absent. Student 3 expressed responsibility in cooperative learning as ‘consideration’, which means that it helps others to take a more central role. This can be interpreted as the thoughtful consideration of other people rather than the self in the background of the sincere role performance in the cooperative learning.

“I personally think that consideration is an investment for having a good score. Consideration is a responsibility in terms of team. Although I don’t evaluate myself as a good student, I have never been absent in my team activity, because this is a team activity. If it is an individual learning, I may not do my duty. But, this was a cooperative class. I had a sense of consideration not to cause harm to my team members. Consideration is a responsibility” (Student # 3)

In the performance of cooperative learning tasks, students perceived that roles should be distributed fairly. They thought that if someone plays a larger role or someone plays a lesser role, it does not fit with the fairness. It is because their score is evaluated by the score of the whole team in the cooperative class. It is logical that the role performance should be done fairly because they receive the same grades. However, it has more significance than equal performance and fair evaluation. Students were aware that when someone lacks a role, a lot of complaints can arise, and thus it can lead to conflict. Therefore, responsibility that is the most important in cooperative learning suggests that it should be based on positive interactions.

“When someone did not come to the last team meeting, she was given more weight of role in the role-play. If someone did in this way, and in front of other members, the student may be more conscious of the team evaluation and made more efforts for team. It was a better way.” (Student # 4).

According to students 2, 3, 4, individual accountability meant performance of assigned role, compliance of promise, and care for members. Additionally, students cultivated creativity by means of cooperative learning.

“Roleplay seems hard and tiresome, when we start something. But, when we really met and shared ideas together, it was very funny. New ideas and direction were very interesting. My previous experience of team project was boring in my major. I cannot have a chance to experience roleplay. But ordinary people can come here, share ideas, and do roleplay. In this way, I got a strong impression that I really participated in doing something like this. It was a very good to me.” (Student # 4)

In the case of student 4, roleplay helped increase his degree of participation as well as his creativity. In the sense that promoting the creativity of student is an essence of education, this roleplay positively contributed to participants’ creativity production.

5. CONCLUSION

Although previous studies on cooperative learning in higher education confirmed a significant consensus on its positive effect, the working mechanism yet remains questionable. In addition, researches on cooperative learning in colleges are much lesser than those in elementary and secondary schools (Slavin, 1989). Furthermore, many universities' intentions are still paid more to fostering individual genius than to creating learning environment in which all students' achievement will be enhanced (Johnson, Johnson, & Smith, 1998). Thus, it is necessary to carry out more researches on cooperative learning at university with various conditions and situations. In this regard, this study seeks to qualitatively find the perception of two core elements of cooperative learning through the narratives of participants, especially of team leaders.

The liberal art course as the research filed, Multicultural Society and Coexistence Humanities (MSCH), positively contributed to the formation of interdependence and individual accountability for undergraduate students. It means the confirmation of the results of previous studies (Johnson & Johnson, 1989; Slavin, 1991; Ormrod, 1995; Sharan, 1990; Rottier & Ogan, 1991). However, this study is different from previous studies as following aspects:

First, this study takes note of group leader's significance for interdependence. In the process of cooperative learning, group leaders initially experienced conflicts, but they constantly attempted to form a positive relationship. In other words, interdependence was experienced by them in dealing with conflicts properly in the cooperative learning process. It reflected group leader's own extraordinary will to pursue and practice a strategy for harmony and coexistence among members. Furthermore, interdependence meant positive trust among members, formation of human relationship, and expression of interest and praise for members. And recognizing that one's role in a team influences on other members and team achievement, students seriously took individual responsibility.

Second, this study finds how individual accountability can be specifically realized and perceived by university students in the process of cooperative learning. Individual accountability meant performance of assigned role, compliance of promise, and care for members. Noticeably, thoughtful consideration for other members means that cooperative learning can positively influence on personality formation among students. Furthermore, it was shown that individual accountability cultivated through cooperative-learning-based roleplay was considerably related to the promotion of creativity of participants. In other words, this study implies that cooperative learning can be utilized as a teaching-learning model for character and creativity education.

Thus, it suggests that individual accountability is rooted on and realized by interdependence. However, such outcomes as interdependence and individual responsibility may not be pursued or gained without intentional and painstaking means of cooperative learning.

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AUTHORS' INFORMATION

Full name: Youngsoon Kim

Institutional affiliation: Department of Social Studies Education, Inha University

Institutional address: 100 Inha-ro, Michuhol-gu, Incheon 22212, Korea

Short biographical sketch: Youngsoon Kim received Ph.D. in cultural studies from Berlin Free University. He is a professor in the Department of Social Studies Education in Inha University. As a research head, he leads the Convergence Institute of Asian Multicultural Studies as well as national research project teams. His research interests are in qualitative research, multicultural education, local culture, and ethnography.

A Qualitative Study on the Perception of Undergraduate Student's Cooperative Learning
Experience in the Case of Roleplay

Full name: Gi Hwa Kim

Institutional affiliation: Graduate School of Education, Inha University

Institutional address: 100 Inha-ro, Michuhol-gu, Incheon 22212, Korea

Short biographical sketch: Gihwa Kim is a full-time lecturer in Graduate School of Education, Inha University, Korea. She received Ph.D. in child welfare studies. Her research interests include multicultural education, childcare, welfare facility, single-father family, ethnography, qualitative researches, and so on.

Full name: Youngsub Oh

Institutional affiliation: Department of Multicultural Education, Inha University

Institutional address: 100 Inha-ro, Michuhol-gu, Incheon 22212, Korea

Short biographical sketch: Youngsub Oh received Ph.D. in multicultural education. He is interested in cooperative learning for multicultural education, and multicultural counseling/psychotherapy for immigrants in Korea.

Chapter #12

TOWARDS IMPROVED CORRECTIVE FEEDBACK IN JAPANESE EFL WRITING INSTRUCTION

Richard S. Lavin

Prefectural University of Kumamoto, Japan

ABSTRACT

This paper addresses issues in tertiary EFL writing instruction, focusing on the situation in Japanese universities. Students in Japan typically find academic writing extremely difficult, partly because at high school they typically write no more than two or three sentences for a single “composition”. Thus, university writing instruction needs to tackle nearly all aspects of writing from a near-beginner level. This paper describes the writing curriculum at a Japanese provincial public university, focusing especially on the approach to corrective feedback taken by the author. This approach chiefly leverages two technologies—a blog with microposts and Google Docs—to bridge the gap between two strands of feedback: standardised feedback and contextualised feedback. Traditionally, standardised feedback has been seen as less useful but more sustainable, while contextualised feedback has been regarded as potentially more useful, but impractical in terms of teacher time. The approach described may make it possible to provide feedback that is both contextualised and sustainable. More generally, this account shows one example of a writing instructor, embedded in his local context and facing its inherent challenges in an imaginative way, addressing those challenges using the resources at his disposal to effect small improvements.

Keywords: writing, English as a foreign language, corrective feedback.

1. INTRODUCTION

Japan is facing a population crisis, which presents major challenges to the tertiary education sector. As the total population falls, so does the number of school-leavers, now down to close to 1 million from a peak in the 1960s of around 2.5 million. Competition for university places has fallen, to the extent in some cases that every applicant can get in. In terms of wider access to education, in some ways this is a positive trend. More worrying, though, is the general drop in academic standards. This trend is particularly marked in general English proficiency, as measured by TOEIC or mock TOEIC scores (Nippon.com, 2015).

The author teaches at a provincial university of about 2,100 students administered by the local government. The Department of English Language & Literature (henceforth English department), to which he belongs, has an intake of 45–50 students per year, as well as a very small number of students on master’s and doctoral programmes. In this paper, I describe the approach taken to writing instruction in the author’s department and specifically by the author himself, concluding the paper with a description of an innovative approach taken to computer-mediated corrective feedback, which has some implications for feedback scholarship. Although much of the content concerns the learning and instruction taking part in this department, it should also be relevant to other institutions in Japan, as well as in other countries, particularly in Asia, with similar levels of English. The general approach can also be adapted to other contexts, though the specific content of the feedback described will be different.

Pedagogical practices necessarily respond to the contexts in which they are embedded. In this section, I outline the situation of academic writing in Japan, and make some remarks concerning the state of writing pedagogy.

1.1. Academic writing in Japan

The traditional focus in high school English classes is the learning of grammar and vocabulary through reading. More recently, there is a focus on communication, narrowly defined as conversation. Neither in the past nor in the present is it usual for students to write compositions of more than two or three sentences, and these compositions tend to be on everyday topics, such as what the student did in the holidays. In addition, although quite a large number of high-school classes are devoted to grammar explanations, writing grammatical sentences represents a major challenge to students. It seems that little grammar has really been internalized.

Thus, for Japanese students writing tends to be extremely difficult (e.g., Davies, 2010). In particular, teaching academic writing to Japanese university students presents a major challenge. A fairly common approach in English departments in Japanese universities is what might be recognized in many western countries as a process approach (Emig, 1971; Horowitz, 1986), with some adjustments made in recognition of Japan's unique circumstances. This is also the overall framework in the author's department. This approach has had some successes, in the author's view. Many students have developed a reasonable grasp of how to structure an essay. However, numerous problems still exist at the sentence level, and the number of errors is too large to be handled in a reasonable way simply by giving traditional feedback on drafts of essays and graduation papers. This conclusion echoes that of Hartshorn (2008), who notes that, even after mastering rhetorical conventions, L2 writers tend to "struggle to extricate themselves from the linguistic gulf that separates them from their native-speaking peers" (p. 1). Qu (2017) also emphasizes the necessity of focusing on language problems. Hinkel (2004) suggests that some modern practices in L2 instruction are imports from L1 instruction that may not be suitable, and that deemphasizing grammar and vocabulary is one of these. Thus, the approach described in the present paper addresses itself overwhelmingly at the "linguistic gulf," mainly grammatical errors, noted by Hartshorn (2008).

1.2. A note on writing pedagogy

Although second-language writing has its own journal, in general second-language writing pedagogy appears to lag behind that of speaking pedagogy. A key reason for this situation is the primacy of speech in structuralist linguistics and methods such as audiolingualism that grew out of that theory (Hinkel, 2010). One key feature of generally accepted speaking methodology is a focus on fluency. (Indeed, a perceived overemphasis on fluency is part of the motivation for the Principled Communicative Approach, Arnold, Dörnyei, & Pugliese, 2015.) In general, when students are engaged in more-or-less free production, teachers will not expect perfect grammatical accuracy, and accordingly will avoid intrusive error correction, with any correction being done according to focus-on-form principles (e.g., Doughty & Williams, 1998), typically in the form of occasional recasts. (See, e.g., Lyster & Ranta, 1997.) Another key feature is the provision of models. Many speaking classes also recognize that students may not have the resources to communicate effectively what they want to say, and therefore provide model dialogues or a list of phrases, or some language material in some other form that students can use and repurpose.

Alongside the primarily process approach mentioned above, there also exists in Japan a very traditional approach, which might be caricatured as “It’s better not to write at all than to write incorrectly” (Beaufait, Lavin, & Tomei, 2007). This needs to be countered whenever it appears, as “grammatical aspects of students’ writing seem to improve more from regular practice than they do as a result of having errors corrected” (Casanave, 1998, pp. 97-8). As Truscott (1996) points out, much revision of writing in response to feedback may cause pseudolearning rather than actual restructuring of the learner’s interlanguage. This idea is at the base of Truscott’s hostility to correction. It is necessary to clarify the purpose of correction in academic writing: Just as students may need correcting in speaking when the speaking involves some kind of performance (such as a speech, lecture, or play), they also need correcting in writing when their purpose is to create an academic essay or other formal piece of work, where the focus is more learning-to-write than writing-to-learn (Manchón, 2011). This kind of work happens alongside fluency practice (explained briefly in the next section), where correction is usually unnecessary, and the study of models, usually through dictogloss (Wajnryb, 2013) and similar exercises. These latter practices are hopefully contributing to interlanguage development, while the corrective feedback system described in this paper is contributing to the skill development necessary for producing formal writing assignments.

2. FLUENCY FIRST

A major problem evident in first-year tertiary writing classes is a lack of fluency. It is not uncommon to find a 5- or even 10-minute writing session—even on an easy topic like *My Summer Vacation*—yielding a single sentence. In addition to an inability to generate much content, it is common to see students erasing everything they have written and starting again, but then not having enough time to complete even a single sentence. This likely signifies a basic lack of confidence in writing, to a large extent attributable to a lack of experience thereof. In the same way as extensive reading advocates claim that the best way to improve reading ability is to do a lot of reading (e.g., Day & Bamford, 1998), advocates of extensive writing (e.g., Lavin & Beaufait, 2003) suggest that frequent writing should be a priority. This also is consistent with R. Ellis’ (2002, 2018) call for a fluency-first curriculum, which is justified by the idea that explicit teaching is necessary, but that it works well only when students have enough lexis to start an implicit process of rule extraction that the explicit teaching can supplement.

Accordingly, all students in the department are required to create their own blog in approximately the third week of their first semester in the department. They are required to write approximately two book reviews a week (see also Section 4, below) as well as diary posts. This department-wide requirement continues for three semesters, and thereafter continues for some students depending on which classes they take.

3. A FOCUS ON INPUT

Fundamentally, all language acquisition theories insist on the importance of abundant comprehensible input (e.g., Krashen, 1982), although some may object to the terminology, and the purported function of the input may differ from theory to theory. Input is widely acknowledged to be lacking in the Japanese secondary English curriculum. (Research by Rob Waring indicates that the quantity of English encountered in secondary textbooks in Japan is approximately half that in South Korea and one-sixth that in Mexico.) Accordingly, the department now requires students to read approximately 100 English

books in the students' first semester. These can be short and easy graded readers or even levelled readers (children's books from the UK or other English-speaking country); the main purpose is to build a habit of reading English. In the second and third semesters, the recommended difficulty level of the books is raised, and the number of books is correspondingly reduced. Thereafter, students are encouraged, but not yet in a department-wide way, to continue reading, with the unofficial target being a total of 1,000,000 words (see Furukawa et al., 2013) by graduation, although as yet only a small number of students reach or exceed that total.

A key feature of the extensive reading programme is that it features an input–output link: Students read books and write blog posts about the same books. Thus, as Plakans and Gebril (2012) point out, the books not only provide a topic and content for the posts but also serve as a language repository. Students are strongly encouraged not only to summarize the content and comment on the book but also to transcribe short excerpts of the book. This exercise, while superficially a trivial one, requires students to hold language material briefly in memory before retrieving it, and thus is similar to activities like dictation and read-and-look-up (Nation, 1991).

4. PROVIDING TARGETED CORRECTIVE FEEDBACK (1): A CUSTOM WEBSITE

4.1. Corrective feedback in L2 writing

There are now countless studies available on corrective feedback on writing, especially since Truscott's (1996) highly controversial call for the abandonment of corrective feedback. Truscott's call was the result of the observation by many writing teachers that error correction does not lead automatically to uptake (performing the suggested correction), still less to a reduction of errors in subsequent compositions. However, a look at examples of actual corrective feedback, as shown in Zamel (1985), for example, shows that "ESL writing teachers misread student texts, are inconsistent in their reactions, make arbitrary corrections, write contradictory comments, provide vague prescriptions" (p. 86). This may be the major reason why some studies have failed to find a beneficial effect for feedback as it is often practised. An emerging consensus suggests that feedback can contribute to substantial improvements in student writing if done well. In particular, it should be selective (e.g., Ferris, 2011) and sustainable (and of course sustained) (Carless, Salter, Yang, & Lam, 2011). For Hartshorn (2008), also, manageability (equivalent to sustainability) is one of the four criteria of sound feedback practices.

Feedback has always been sustained to a certain degree in the department, in the sense that writing classes are offered over five continuous semesters, an unusually high number that is not true of other skills classes such as reading. Unlike other classes, writing classes usually contain fewer than 20 students, often around 15. The sustained nature has been boosted in recent years by the previously mentioned incorporation of blogging into a first-semester general skills class, with regular corrective feedback (via blog comments). The introduction two years ago of Extensive Reading & Listening classes in the second and third semesters—also featuring blogging centred on book reviews, and also with feedback in comments—has greatly increased the total quantity of feedback. In addition, students in the author's third- and fourth-year seminars also write book reviews in the same way, also with feedback via comments.

Hattie and Timperley (2007) suggest that it is important that feedback be embedded in a process that also includes Feed Up, which addresses goals, and Feed Forward, which addresses next steps. Although the bulk of this paper focuses on Feed Back itself, it is also possible to use the proposed feedback site as part of Feed Up and Feed Forward steps, and this issue will be discussed briefly in the final section.

4.2. E-feedback on L2 writing

The effect of medium on corrective feedback has not yet been fully examined. The default position is that, fundamentally, the effects of the same feedback delivered in different ways would be very similar, with differences in effects being attributable to individual differences (some learners may, for example, dislike computers) or to specific features of the feedback system used. With e-feedback, these differences are likely to be very large, as software and tastes evolve, making it very difficult, or even impossible in principle, to compare e-feedback as a whole with handwritten feedback.

In any case, as the possibilities of computer-mediated communication (CMC) in L2 writing instruction came to be explored, it was natural for researchers to focus primarily on peer interaction, since language education as a whole has come to emphasize language as a system that emerges in communicative use (Beckner, et al., 2009), with what is learned corresponding to a large extent with that which is encountered frequently (Ellis & Collins, 2009); even in research where corrective feedback is featured, the focus tends to be on peer feedback (e.g., AbuSeileek & Abualsha'r; Tolosa, East, & Villers, 2013; Vinagre & Muñoz, 2011; Ware & O'Dowd, 2008), rather than on teacher feedback.

Departing from the peer feedback paradigm, Akbar (2017), contrasting synchronous with asynchronous CMC, found that, where corrective feedback occurred, in synchronous CMC it consisted exclusively of recasts, whereas in asynchronous CMC it also included clarification requests. Akbar's study concerned quasi-naturalistic communication between native and non-native speakers, rather than teacher-delivered, intentional corrective feedback.

Research by Ene and Upton has focussed on teacher e-feedback. Taking a Hippocratic approach to technological innovation (First, do no harm.), they are concerned first of all about any unforeseen problems that might arise from switching from a handwritten to an electronic mode. Ene and Upton (2014) find that electronic feedback is usually delivered in a principled way and that there is no reason to avoid it. In a later paper (Ene and Upton, 2018), they examine the effectiveness of feedback delivered to students via comments in Microsoft Word. They find that, if the feedback is given in a principled way with care taken to tailor the feedback to the students' levels and needs, the feedback is just as effective as handwritten feedback. They further suggest that this type of asynchronous feedback can profitably be supplemented with synchronous feedback.

In Tuzi (2004), a custom, database-driven website was used for the delivery of (mainly peer) feedback. Tuzi noted that, although students tended to prefer oral feedback to the electronic feedback delivered via the website, the e-feedback seemed to encourage focus on larger writing blocks, leading to macro revisions more often than oral feedback did.

Tafazoli, Nosratzadeh, & Hosseini (2014) compared feedback delivered via email to conventional, paper-delivered feedback in an ESP course. They concluded that the email-delivered feedback was more effective in improving the students' grammatical accuracy, as well as more appreciated by the students. Sain et al. (2013) also compared email-delivered feedback with conventional, paper-delivered feedback, and found that the email-delivered feedback succeeded in improving students' writing skills. Perhaps more importantly for our purposes here, they also found that the email-delivered feedback saved time.

4.3. Use of Google Docs and other collaborative websites

Google Docs has been mentioned in research and teaching contexts by a number of scholars, such as Mansor (2012). Ishtaiwa and Aburezeq (2015) point to its uses not only for student–student collaboration but also for student–teacher interaction. Working at the intersection of L2 writing and computer-supported collaborative writing, Strobl (2014) analyses the contributions of collaboration over Google Docs to both the quality of written products and the writing process. The present author also uses Google Docs frequently with students in order to enable frequent consultation on undergraduate, Masters, or doctoral theses. Google Docs used by itself excels in such uses, enabling intense and ongoing personally tailored guidance. In this paper, however, we are concerned with the tool as part of a system enabling the sustainable delivery of feedback to comparatively large numbers of students, hence the two-part design of the system described.

4.4. Website design

The chief innovation in the approach described in this paper is to split the feedback work into two sites. Since many of the errors made by students are of a finite number of predictable types, the bulk of the work is done by a website designed to deliver standardised feedback. Then, feedback on an error in a student assignment can be given simply by directing the student to the part of the site that explains the error and how to correct it.

The individual feedback stage will be addressed in Section 5. Here, I describe the website that houses the standardised feedback. The website in question is a free one created on wordpress.com, and called *Rick's Research Writing* (<https://rickresearchwriting.wordpress.com/>). The WordPress software, much of it run on wordpress.com, is claimed to run 31% of all internet sites (wordpress.com, Sept. 23, 2018). Unlike most other sites, though, the author uses the P2 WordPress theme for this site. P2 has certain similarities with Twitter and other, similar microblogging sites, in that the site homepage has a small posting window, removing the necessity to move between an admin page, to post or edit, and the homepage, to view. This at one stroke removes a small but significant impediment to frequent posting. (For this reason, students in some of the author's classes are encouraged or required to use the same theme.)

Rather than designing the standardised feedback site initially, which would have required pre-defining the errors to be addressed, and then starting to use it only once it was completed, the author has built the site gradually while teaching writing classes. In many class sessions held in computer labs, students are required to create multiple short posts in a single session. This creates frequent chances for students to make errors. The frequent posting affordance of P2 means that, when the author sees even the smallest of errors in a student's writing, he has two options: If it is an idiosyncratic error, he tailors his response to the student or ignores the error. If, however, it is an error of a common type, and he does not yet have a standardised response prepared, he copies the error-containing sentence, pasting it into a new post as a quotation, adding a short explanation, and then publishing the new post, all within the space of a minute or two.

As an example, if a student writes:

I want to go England.

the author can quote the sentence with an indication that it is incorrect, add the correct version, and add a title such as "Don't forget prepositions!" to complete a post on the standardised feedback site. This standardised feedback can then be delivered to the student in the manner described below. In this way, the site has grown organically over a number of years, coming to cover a wider and wider range of students' general feedback needs.

4.5. Permanent artefacts

Referring back to the previous example, a traditional way of responding in classtime would be to talk to the student, perhaps pointing to the offending sentence. Out of class, a traditional way of responding might be to write a note in the margin reminding the student not to forget prepositions, or a simple underline if the judgement was made that the student would notice if their attention were directed to the site of the error.

Figure 1.

A screenshot of a sample micropost from rickresearchwriting.wordpress.com. This post has error marking, textual enhancement, tags, and an external reference.

One of...

What do you think of this sentence?

The Lord of the Rings is one of my favorite ~~book~~.

The hint for why it is incorrect is in the expression *one of*. That expression is used with books. So of course singular *book* is incorrect. The correct version is:

The Lord of the Rings is one of my favorite books.

Check out another similar sentence:

Ichiro is one of the few players in MLB history to score 3,000 hits.

Sometimes, the “one of the...” construction is best avoided. The following isn’t e:

Krashen is one of the researchers who focused on input.

...but in most cases the following would be better:

Krashen is one researcher who focused on input.

[#plural](#) [#number](#) [#nouns](#)

Barker A-Z, p. 180

By introducing an extra step, the method proposed leads to the creation of a kind of permanent mediating artefact (Lavasani, 2016): It mediates the instructor’s feedback to the learner, and, being available at a fixed location (with its own URL), it is available for

infinite reuse in a standard form. This has a practical advantage—the teacher does not need to craft an ad hoc response for each error warranting comment—and a principled one: by being directed to a standardized response, possibly multiple times, the learner is led to a heightened awareness of their error as an instance of a specific class of error, rather than as a one-off, thus leading to greater engagement and deeper processing.

The general approach has a lot in common with coded feedback, which can use shortened forms such as S.V (subject–verb agreement; e.g., Salimi & Valizadeh, 2015) or colours to represent different kinds of error (e.g., Shvidko, 2015). The difference is that, instead of using codes or colours, we use URLs. They combine the advantage of codes or colours—they are quick and easy for the teacher to add—with the more elaborated feedback that can be given in a blog post.

4.6. Short and focused posts

As mentioned earlier, the blog consists largely of microposts, i.e. posts that are short and focused on one specific type of error. This is part of the solution to a very common problem with feedback delivered directly, in an ad hoc tailoring to the specific composition: that it is simultaneously both too short and too long. It is too short because it is not usually practical to write enough to explain adequately what the problems are: it would take too long for the teacher to do this each time, and, on paper-based compositions, there usually is insufficient space on the paper to do so. At the same time, even something approaching useful commentary on a composition is too long for the teacher to compose, and the quality may suffer when he or she is commenting on a large number of compositions.

An example micropost (shown in Figure 1) is titled “One of...”. It has an example sentence containing an error of this type:

The Lord of the Rings is one of my favorite book.

This is followed by three sentences explaining why it is incorrect, and then a corrected version:

The Lord of the Rings is one of my favorite books.

Conventional localized feedback on this kind of error might consist simply of an underline or a circle under the final *k* of *book*. If the student fails to realize the nature of the error immediately, the feedback is likely to be disregarded.

Alternatively, the teacher might write *books* by hand. This is likely to result in successful uptake, but that uptake risks being of the most mechanical kind.

Another approach might be to make a more general note, reminding the student to “Mark nouns for number” or “Don’t forget to add an ‘s’ to plural nouns.” This approach frequently fails to result in uptake.

In short, the proposed approach, because it involves crafting an appropriate post with an example and explanation only once, enables reliable delivery of feedback that has already been determined to be appropriate.

4.7. Textual enhancement

Poor uptake has already been alluded to as a problem with conventional feedback. Textual enhancement is one possible solution to this problem.

Figure 1 shows an example each of, respectively, error marking and emphasis of a correct form. As can be seen, the error is marked with strikethrough formatting, and the correct form is bolded, thus promoting noticing.

There is no principled reason why the same thing cannot be done in conventional feedback. However, it would be prohibitively time-consuming, and in practice it would be difficult to remember to reliably include all the elements in a standardized notation. At least with paper-based work, it would also be difficult to find the space, and there is always the risk of poor handwriting sabotaging the teacher's efforts.

4.8. Tags

A glance at Figure 1 shows tags, preceded by the pound sign. The tags in this case are “plural”, “number”, and “nouns”. These encourage students, after checking the post to which they have been directed, to look at related posts, usually those at a higher level of generality or abstraction. In this specific instance, clicking on “plural” takes one to a page with the “One of...” post and three others. Clicking on “number”, a more abstract concept, takes the browser to a page containing the “One of...” post and seven more. Clicking on “nouns” takes the reader to five posts, including the “One of...” post.

The selections mentioned are partially overlapping; by enabling readers to take multiple paths through a body of information, meeting the same information but in slightly different contexts, the site follows the principles advocated by Spiro and colleagues (e.g., Spiro, Feltovich, Jacobson, & Coulson, 1995) for knowledge that lacks a definitive specification.

4.9. Links to external information

Some of the posts on the site also refer to specific page numbers in more comprehensive guides, available on campus, allowing students to explore topics in more detail and with more varied examples.

5. PROVIDING TARGETED CORRECTIVE FEEDBACK (2): GOOGLE DOCS

A paper-based workflow would necessitate laborious and error-prone transcription of URLs. To avoid this, the system involves the use of another tool, Google Docs, whose margin comments feature is used to add the URLs. (Google Docs/Drive has also featured in a number of recent studies (e.g., Ebadi & Rahimi, 2017) as a tool for delivering feedback, but to my knowledge it has hitherto been used only to deliver custom feedback rather than for links to pre-composed feedback.) The author maintains a note containing a list of the most frequently used URLs for rapid pasting. It is a feature of this system that no explanations are added to the URLs: a key point is that the linked explanations are written with sufficient clarity and detail to enable the students to understand the explanation. A key affordance of the Google Docs Comment feature is that it is highly granular: a whole sentence, a whole word, or just one letter, or any arbitrary stretch of text can be used as the anchor for a comment, allowing the attachment of multiple comments to a particularly troublesome sentence, with clarity as to what each comment is referring to.

Some errors may be particularly frequent errors in a student's composition. This is often true of subject-verb agreement, especially third-person singular S. If there are, say, 20 examples of this error in a single composition, I would typically comment on, say, the first three instances on a first pass, hoping for uptake as well as an awareness of this as a

common error, leading to the student taking the initiative to check for other instances. Most commonly, the student will correct the specific instances that have been commented on, not noticing the others. On a second pass, I would mark another three or four instances. This is enough to cause some students to check the rest of the essay and find some more instances. For the majority of students, however, it takes at least three passes, usually with an explicit request to look through the rest of the essay for more instances of the same kind of error.

It should be noted that, on the next composition, most students will make the same kinds of error again, but may be a little quicker to become aware of the kinds of errors they are making frequently. Experience suggests that three or four consecutive compositions where the teacher has been fairly consistently focusing on a small number of persistent errors are enough to engender a large drop in the numbers of such errors.

5.1. Selective feedback

As has been stated, a key goal is to make students more aware of the kinds of errors they make habitually, and thus able to correct those types of errors. Research suggests that feedback of the traditional kind, where teachers attempt to turn the student's work into an error-free composition by marking all errors, divides the student's attention between a large number of types of error. In many cases, indeed, the student may focus not on types, but on the specific errors marked by the teacher, and attempt to correct them all in a more-or-less mechanical way.

The effectiveness of the approach described depends on selectivity. Comprehensive marking of errors would dilute the student's attention, and marking of infrequent errors is inefficient in the sense that even eliminating that class of error completely will have little effect on the total number of errors in the student's compositions.

6. DISCUSSION AND CONCLUSION

This paper has described an approach to improving students' academic writing, with a particular focus on decreasing the number of errors. After laying a foundation of frequent writing backed up by frequent reading, the approach delivers corrective feedback that is heavily focused on each individual student's persistent errors. By leveraging pre-composed microposts on a blog combined with Google Docs comments, the approach can be said to combine the advantages of personalised and contextualised feedback, on the one hand, with standardised feedback, on the other. Thus, it may represent an efficient, and therefore sustainable, way of delivering effective feedback.

The approach has been developed in an organic way over the last few years to meet the author's personal pedagogical challenges. Using the system as a teacher, the author feels some satisfaction that students are having some success in reducing the number of errors that they make, and remarks by individual students have suggested that they feel the benefits of the system. This paper has described the system and the rationale behind it.

The possibilities of computer-mediated feedback may necessitate a new typology of corrective feedback. Ellis (2008) lists "electronic feedback" as its own discrete type, whereas it is clear that this type of feedback cuts across the other classifications. For example, it can be focused or unfocused, direct or indirect, and can feature or not feature metalinguistic information. It has become clear that the physical limitations of paper-based handwritten feedback create a tension between information-rich, generalised feedback and localised, or situated, feedback, requiring the "outsourcing" of much of the information to an external source such as a list of codes. Making that external information available simply

through a click on a URL in an attached comment effectively makes the information localised, dissolving the tension.

Although in this paper I have focused on Feed Back, in Hattie and Timperley's (2007) framework, the microposts on the site can readily be used as part of Feed Forward, by conducting a mini-lesson focused on a specific post or set of posts before students tackle a writing assignment, with the expectation that students will take particular care over the relevant feature or features. This can be viewed as a kind of preemptive focus on form (Ellis, Basturkmen, & Loewen, 2011), and accords with general advice (e.g., Mack, 2013) that comments need to be linked very closely to instruction.

The approach may even be of some use in teacher training, since, as Hairston (1986, cited in Ferris, 2007) notes, many writing instructors fear fatigue and burnout, or even becoming a "composition slave." Beginning instructors could use the site as it is, being selective about which microposts they use, and gradually compose their own posts on their own blog, first of all for points which are not covered on *Rick's Research Writing* or which are covered in a way that does not fit the instructor's needs, and later as a complete replacement for *Rick's Research Writing*.

The next step is of course to test the effectiveness of the system in a systematic way, and future research will report on the results of such tests. In addition, because the site has been built up gradually, its design prioritizes ease of posting over ease of use. This does not represent a problem with the site's primary use case, which is simply following URLs to read specific individual posts. However, it is not ideal for encouraging pre-emptive engagement by students with the content, for which better search and guided browsing functions (Bates, 1989), as well as more user-friendly classification of posts, are in order. The author is currently planning the migration of the site content to a new site meeting these design goals.

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AUTHOR INFORMATION

Full name: Richard S. Lavin

Institutional affiliation: Prefectural University of Kumamoto

Institutional address: 3-1-100 Tsukide, Higashi-ku, Kumamoto-shi, Kumamoto-ken, 862-8502, Japan.

Short biographical sketch: Richard S. Lavin is Professor in the Department of English Language & Literature at the Prefectural University of Kumamoto, where he teaches applied linguistics and English in undergraduate and postgraduate courses. His research interests centre around technology-enhanced language learning, writing, and sociocultural theory.

Chapter #13

THE IMPACT OF THE ETHNICAL BACKGROUND AND THE NUMBER OF SIBLINGS ON THE SCORES OF MATHEMATICS ANXIETY

A study on Mathematics Anxiety of undergraduate students of Mathematics and Engineering

Mahshid Farjadpour¹ & Carlos Fresneda-Portillo²

¹Post-Graduate Certificate in Secondary Education student, University of Oxford, UK

²Dr., Senior Lecturer in Mathematics, Oxford Brookes University, UK

ABSTRACT

Mathematics Anxiety (MA), the ‘phobia of numbers’, is related to poor performance in Mathematics. There are numerous studies that discuss a wide range of factors affecting Mathematics Anxiety in students at primary and secondary schools. Furthermore, there are some studies looking into MA in students of Psychology, Engineering and Nursing at a Higher Education level, see, for example (Alves, Rodrigues, Rocha, & Coutinho, 2016; McMullan et al. 2012) and more references therein. However, we believe that this is the first work on MA in undergraduate students of Mathematics. Consequently, our purpose is to determine whether factors such as gender or ethnicity affect MA. Our main results are that there are significant differences between male and female students; there is a significant difference among students with three siblings or more, compared to students who have two siblings or less. Finally, we discuss the significant difference between the gender of the main family figure providing Mathematics support amongst students with a British and Non-British background.

Keywords: mathematics anxiety, ethnicity, gender, mathematics, higher education.

1. INTRODUCTION

In the UK there has been an increasing need for employees with a strong mathematical background yet there has been a decrease in the number of students who chose to continue to study Mathematics post-16. Comparatively, Japan has 84% of its students continuing with Mathematics post-16 whereas the UK only has 14% (Mansell, 2010). The reason behind the low levels of continuation of Mathematics has been associated with the growth of a “Mathematics Anxiety” (hereafter MA) culture within the UK (Frenzel, Goetz, Pekrun, & Watt, 2010). MA is defined as ‘a feeling of tension and anxiety that interferes with the manipulation of numbers and the solving of mathematical problems’ (Richardson & Suinn, 1972). There are some causal factors which have been researched such as gender (Devine, Fawcett, Szűcs, & Dowker, 2012), ethnicity (Huntsinger et al, 2000) and family influences (Gonzalez-DeHass, Willems, & Holbein, 2005). Wilkinson and Pickett (2009) identify the UK to be one of the most unequal of societies in the world and so this study will also take into consideration the diversity gaps within the factors listed. There were very few articles that contained data which was based in the UK, and lacked discussion between the link of these factors in British schools and universities. This study will research whether there are any correlations between these factors and whether they have a direct influence on MA in students of Mathematics and Engineering at a Higher Education institution within the UK.

1.1. Gender

There has been an extensive amount of research focused on how males and females respond to MA. Many studies in elementary education have determined that girls exhibit higher MA than boys (Hill et al., 2016, Devine et al., 2012, Meece, Wigfield, & Eccles, 1990). This suggests that fewer females will continue with Mathematics post secondary education. In 2016 the percentage of women taking A-level Further Mathematics within the UK was only 30% (FMSP, 2016). As a result, numbers further deplete at university where females who studied Mathematics and Engineering in 2013-14 were approximately 30% and 10% respectively (timeshighereducation.com, 2018). This infers that females experiencing MA are not only less likely to continue with Mathematics, but also avoid pursuing careers requiring quantitative skills (Hill et al., 2016).

The current study will focus on gender-related findings in older students of Mathematics. While there has been research conducted on gender and MA in both primary (Vukovic, Roberts, & Green Wright, 2013, Newstead, 1998) and secondary schools (Catsambis, 1994, Frenzel et al., 2010), there is little research on the impact post secondary education. Consequently, this study will investigate gender-related findings on MA in Higher Education. Current findings at secondary level education suggest that despite the generally higher levels of MA in females, this has not made an impact on their performance. In fact, studies have proposed that their performance is similar to males and in reality, females have a greater mathematical potential than males (Devine et al., 2012). Little research contradicts this statement. However, Tella (2007) found that there was no significant relationship between academic achievement in gender at secondary level education. It was stated that females were underperforming compared to males in Nigeria leading to the discussion of gender differences and attitudes in non-British cultures within the UK.

1.2. Ethnicity

In recent years, the migrant population has risen by approximately 565,000 since 2011 (BBC News, 2015). The resulting multi-cultural society has led to a range of different beliefs and attitudes towards Mathematics. This can have both positive and negative effects in one's development in Mathematics which may be a causal factor to MA. Positive aspects include diverse cultural beliefs towards Mathematics. For example, Huntsinger, Jose, Larson, Balsink Krieg, and Shaligram (2000) explained how Eastern countries understand the importance of enforcement of Mathematics from an early age. Ultimately, this will be reflected onto the child in their schooling environment. Huntsinger et al. (2000) studied whether different parental attitudes towards Mathematics can prevent the development of MA by comparing American parents with Chinese American parents. Results suggest that parental practice of early training and discipline influences children's later performance in Mathematics, as Chinese American interactions were longer with a greater emphasis on Mathematics. Thus, encouragement from parents was shown to be a great factor towards positive performance.

1.3. Family influences

Parents perceptions of the importance of Mathematics and students valuing Mathematics were positively correlated (Frenzel et al., 2010). This indicates that parents have the ability to aid their child's MA by supporting them. However, if they do not use their influence responsively, children may not perform well, possibly leading to MA. Some studies have shown that parents have pre-conceptions of their child's mathematical ability (Jacobs, 1991). These parental assumptions include gender stereotyping where their expectations are based on the career choice their child may be likely to proceed with. Hence, assumptions

were not based on their child's achievement. Additionally, if parents display little confidence towards their child's mathematical ability it can lead to MA due to poor self-esteem and a lack of motivation.

This study will research whether students in the UK who are from other cultures experience MA and if this is correlated with the support they may have received from their parents'. This will be explored by measuring whether students of Mathematics and Engineering received emotional support and whether they have received support with their Mathematics work. Hence, developing their own attitudes in correlation with their personal heights of self-efficacy.

2. METHOD

2.1. Participants and procedures

A questionnaire was designed specifically to investigate whether gender differences, ethnic diversity and parental support amongst other factors had an effect on MA. An altered version of the official MAS-UK was included alongside a self-created version which was aimed to explore their confidence and general feeling towards Mathematics. This was a paper questionnaire which was distributed amongst Mathematics and Engineering students in lectures.

The opening section of the questionnaire enquired about general information in order to assist with potential causal factors. For example, the purpose of asking how many siblings a student had could influence levels of parental support. This could be due to many factors, including potential comparisons or even lack of time for support. On the contrary, this could be favourable for the participant to have a greater number of siblings, as they may support each other. Additionally, if students did have parental support a follow up question determined which parent supported them, if not both. This was related to the question of gender differences in MA.

Following the questionnaire there were two altered versions of the official MAS used in the UK (Hunt, Clark-Carter, & Sheffield, 2011). This MAS described the act of Mathematics in everyday life and responses determined how anxious students may or may not feel doing these tasks. The reasons for these few modifications was to tailor them towards the target audience, undergraduates of Mathematics and Engineering. Observing the original list from Hunt et al. (2011), questions which were believed to be irrelevant were removed, such as "counting the number of people in a room". However, using everyday Mathematics may be more challenging for students as they no longer have non-calculator assessments and so may be out of practise. As mathematicians and engineers were likely to have a different level of ability in Mathematics, explicit questions were designed dependent on the subject they studied, although these differences were very minor.

Furthermore, the discussion of ethnicity arose as a recurring theme when researching MA. General attitudes towards Mathematics in the West has allowed it to become 'socially acceptable in admitting to having a lower ability with numbers, in contrast to core skills such as reading and writing' (Chinn, 2009). As one's ethnicity can be particularly broad, the response part of the questionnaire regarding ethnicity was altered to be specific for this study, focusing on differences between the East and West. Additionally, the questions based on ethnicity were expressed in a way that the participant could select the ethnic group they believed to be most affiliated with. This was to eliminate the possibility of someone not knowing their "official" ethnicity due to factors such as having a background of multiple heritages.

3. ANALYSIS AND RESULTS

We have designed three main outcome variables. The first and the second ones are based upon the scores of the MARS questionnaires published (Hunt et al, 2011) with adapted independently to students of undergraduate programmes of Mathematics and Engineering. Since we have one scale MAS for Engineering and one MAS for Mathematics, we will denote these dependent variables respectively MASE and MASM. The third one is MC which is based on the score of an original questionnaire which intends to study the confidence levels at the time of dealing with Mathematics.

Let us note that there is a statistically significant linear relationship between MASE and MC (Pearson's $r = 0.621$, $n=50$, $p\text{-value} < 0.0005$), and also between MASM and MC (Pearson's $r = 0.531$, $n=50$, $p\text{-value} < 0.0005$). In both cases, the variables are positively correlated. As MASM and MASE are linearly related to MC, we will consider MC as the only dependent variable.

We are interested in identifying students with Mathematics Anxiety. Therefore, the outcome of MC must be transformed into a binary variable which discriminates between confident and not confident. Then, we transform the variable MC into a new binary variable, MCB, with values: '0 =confident' and '1=not confident'.

The percentile 65 of the distribution of MC was decided as a threshold value between confident and not confident, since the mean, percentile 50 is understood as the normal levels of confidence.

Table 1.
Means and Standard deviations by level of the factors Gender and Number of Siblings.

Variable	N	Mean	S.D.
Males	76	26.61	8.81
Females	26	30.04	6.39
No siblings	9	26.44	6.29
1-2 siblings	72	29.33	8.39
3-4 siblings	18	21.83	6.64
5-6 siblings	3	21.33	6.03

From Table 2 we can see that the factors Gender, Number of Siblings and the interaction factor Parent Ethnicity*Parent Support Gender are significant with a 95% level of confidence. This implies that there are significant differences among the levels of each of the factors. In particular, males score approximately 3.5 points on average less than females on MC score. Furthermore, students with more than 3 siblings happen to score much lower than students with two or less siblings, as we can see from Table 1.

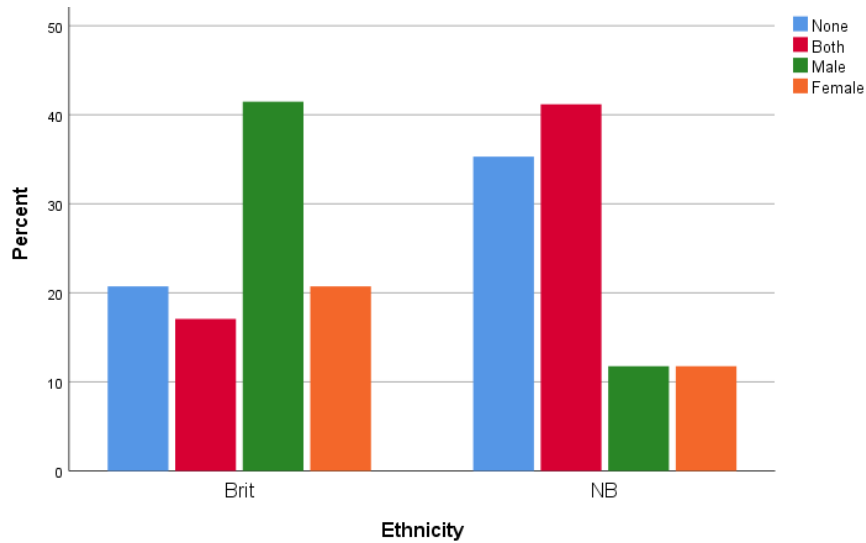
Table 2.
Output of the Logistic Regression with MCB as the response variable.

Variable	B	SE	p Value	OR	95% C.I.
(Constant)	-2.06	0.74	.005		
Gender	1.507	0.632	0.017	4.515	1.31 – 15.59
Ethnicity	-0.280	0.872	0.748	0.756	0.14- 4.17
Year	-0.178	0.400	0.656	0.837	0.38 – 1.83
Number of Siblings	-2.173	0.678	0.001	0.114	0.03 – 0.43
Parent Ethnicity	2.224	1.141	0.051	9.243	0.99 - 86.53
Parent Support	0.289	0.652	0.658	1.335	0.37 – 4.79
Parent Support Gender	0.369	0.332	0.266	1.447	0.75 – 2.78
Student Motivation	-0.147	0.086	0.089	0.864	0.73 – 1.02
Subject	-0.423	0.890	0.635	0.655	0.12 – 3.75
Age	0.178	0.117	0.129	1.195	0.95 – 1.50
Parent Ethnicity*Parent Support Gender	-1.237	0.530	0.020	0.290	0.10 – 0.82

Model $\chi^2 = 20.161$, $df = 12$, $p = .259$

Finally, the differences across the sample regarding the significant factor Parent Ethnicity*Parent Support Gender are illustrated with Table 3. Here, we can appreciate that students from a British background have received mathematical support mainly from a male figure whereas students from other backgrounds have either received support equally by both male and female or not received any support at all.

Table 3.
Bar chart explaining the relationship between parent ethnicity
(Brit = British vs. NB = Non British).



4. DISCUSSION

4.1. Gender

As expected there was a gender gap in students who had MA despite studying mathematics or engineering at degree level. There are many factors which could influence this result but the definite reasonings still appear to be unclear. One possible reason could be that in recent years there has been a development of a more 'open' culture. This includes social issues arising such as it being 'taboo' for men to talk about their feelings and admit to 'feeling anxious' as it indicates a 'lack of masculinity' (Charteris-Black & Seale, 2009). This has stemmed from the increase of men taking their lives in recent years; national statistics show that since around 1990, men have been at least three times as vulnerable to death from suicide as women. (Ons.gov.uk, 2018). Hence, it may be that males experience MA but feel that they cannot admit to this. This is supported as there is current evidence that suggests mental illness, including anxiety in men remains both under-diagnosed and misunderstood by society (Rawala, 2018).

Another figure which was expected within this research was the low number of female students studying engineering. This was apparent when the ratio of males to females in a first year engineering class was 21:1 respectively. This has recently been highlighted within the UK as a major problem due to the contribution engineering makes to the British economy. 'Enabling women to meet their full potential in work could add as much as \$28 trillion to annual GDP in 2025' (Woetzel et al., 2015). In attempt to prevent this becoming a further problem there has been a great emphasis in STEM subjects at school and recruiting more women by eliminating the threat of the stereotype and introducing more female oriented interventions such as the Quadcopter challenge (*Mathematics Anxiety and Engineering*, Contemporary research in mathematics anxiety and emotions 2018, unpublished work).

4.2. Ethnicity

There were no significant associations between ethnicity and MA itself, however this could be due to the fact that as there was a limited sample where very few students were of the same ethnic minority. Hence, when ethnicity was categorised it was condensed so that students were either British or Non-British students. Despite ethnic minority being reduced to only two categories there was still no relationship between ethnicity and MA. Nevertheless, there is cause to believe that there may still be a significant relationship as the sample collected from this study only had 18 students who were categorised as Non-British. From other articles and studies we can confidently state that there must be some sort of association between ethnicity and mathematics as there is a vast amount of research showing that 'English-speaking countries, with the exception of Canada, there is widespread talk of a STEM 'crisis' and that countries in East and Southeast Asia which share a Post-Confucian heritage are exceptionally dynamic in STEM; China, South Korea, Japan, Taiwan and Singapore' (Marginson, Tytler, Freeman, & Roberts, 2013).

Furthermore, research on ethnic minorities in education and STEM subjects should be taken into consideration as this indicated that the gender gap present was not the only diversity gap present. It was found that there was a lack of racial diversity within STEM subjects and that Black and Minority Ethnic (BME) males were 28% less likely to work in STEM than White men (Campaign for Science and Engineering, 2014). Aforementioned, the UK is one of the most unequal societies of the world and this ethnic minority gap goes beyond STEM subjects. This is shown as the recorded number of Black students in full time HE in 2016/17 was 7% (Hesa.ac.uk, 2018).

4.3. Family influences

The psychologists who analyse family constellations talk about the importance of the number of siblings, age differences between them, order and sex as factors that intervene in the social development of the person. Some of the conclusions reached are that the firstborn children tend to have better academic and professional achievements, as well as better scores on intelligence tests (Hanushek, 1992). Hanushek (1992) found contradictory findings to our own that being early in the birth order implies a distinct advantage, entirely because of the higher probability of being in a small family. However, this study did not research MA levels and had this been researched, it could imply that if the oldest sibling had low MA levels this could influence their younger siblings as Bandura (2001) found that social learning and modeling of behavior is a key process by which older siblings influence their younger siblings. This influence can include positive behaviour on their academic studies hence, lower levels of MA if their older siblings had shown little resistance towards mathematics.

Moreover, parental support was a factor which was studied to determine whether students who had a positive home learning experience through their childhood had a lower MA score than those who did not have any/little support. Research on parents' daily involvement in their children's lives has found that adolescents whose parents show higher levels of involvement, both in general and specifically tailored to the school context, tend to have higher grades and academic self-perceptions (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999; Juang & Silbereisen, 2002). Melhuish, Sylva, Sammons, Siraj-Blatchford, & Taggart (2001) concluded that, 'higher home learning environment was associated with increased levels of cooperation and conformity, peer sociability and confidence, lower anti-social and worried or upset behaviour and higher cognitive development scores ... after age it was the variable with the strongest effect on cognitive development' (p.ii). Nevertheless, the levels of home learning experience will alter from family to family and is most commonly linked to social-class. For decades it has been identified that those from working class backgrounds tend to have a more chaotic upbringing, including; less social support and resources (Thompson, 2017). This is another factor which could have been investigated as the results may have been influenced due to the fact that the majority of students in the UK have a middle-upper class background. Statistics by the BBC News (2018) report that Black students make up 8% of the UK university population and about 4% of 18-24-year-olds in England and Wales.

5. CONCLUSION AND FURTHER WORK

Mathematics Anxiety in undergraduate students of Mathematics and Engineering has been shown to be affected by the factors: gender, number of siblings and the interaction factor parent ethnicity*parent support gender. Students from a British background received support predominantly from a male family figure. This might be one of the reasons of the gender imbalance on Engineering and Mathematics degrees and should be subject to further research.

As an application of this research, the Education policy should guarantee training on prevention of MA for parents, in order to reduce the parental support gender gap. Moreover, this intervention may lead to a reduction of the gender balance of undergraduate students pursuing a STEM degree.

Further research on this study includes the exploration of why having a greater number of siblings decreases MA levels as this was not an expected to be a significant factor. It would also be beneficial to identify whether they are the older, younger or middle sibling, whether they are a twin and the gender of their other siblings. Moreover, the same study could be

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conducted but also include other universities within the UK instead of basing it upon one institution. This could even be developed further with a key focus on ethnicity and conduct this experiment with international universities and compare the results with universities from the UK.

Finally, MA in undergraduate students of Mathematics and Engineering has been shown to be affected by the factors: gender, number of siblings and the interaction factor of parent ethnicity*parent support gender. Students from a British background received support predominantly from a male family figure. This may be a potential cause of the gender unbalance in Engineering and Mathematics degrees and should be subject to further research.

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The Impact of the Ethnical Background and the Number of Siblings on the Scores of Mathematics Anxiety: A study on mathematics anxiety of undergraduate students of mathematics and engineering

AUTHORS' INFORMATION

Full name: Mahshid Farjadpour

Institutional affiliation: Oxford Brookes University

Institutional address: School of Engineering, Computing and Mathematics, Wheatley Campus, OX33 1HX.

Short biographical sketch: Mahshid is a current graduate student of Mathematics. She is passionate about education and has recently been admitted on the Postgraduate Certificate in Education programme of the University of Oxford. The work published on this chapter was the result of her work on the final year of her undergraduate degree in Mathematics, supervised by Dr Carlos Fresneda-Portillo.

Full name: Dr Carlos Fresneda Portillo

Institutional affiliation: Oxford Brookes University

Institutional address: School of Engineering, Computing and Mathematics, Wheatley Campus, OX33 1HX.

Short biographical sketch: Dr Carlos Fresneda Portillo is a Senior Lecturer of Mathematics at Oxford Brookes University where he teaches several courses in the undergraduate degree programme of Mathematics. He is passionate lecturer interested in finding out about enablers and barriers to learning Mathematics.

Chapter #14

TEACHING EVOLUTION TO GRADE 12 LEARNERS: TEACHERS' VIEWS AND PEDAGOGICAL PRACTICES

Lydia Mavuru

University of Johannesburg, South Africa

ABSTRACT

The world over, evolution has proved to be a contentious topic to teach to high school learners despite its value in acting as 'a blending concept' in Biology. In the South African Life Sciences curriculum, evolution accounts for 44% of Grade 12 content in terms of mark allocation in examinations. Hence teachers are obligated to address the topic adequately as there are accountability issues at the end of the year. However, previous research has shown that teachers question the theory of evolution and are conflicted to teach it. In the current study 15 teachers were each interviewed once to explore their individual views about evolution and the pedagogical practices they employ when teaching the topic. Qualitative analysis of data showed teachers' mixed views about the content of the topic of evolution, the value of that content to learners and society in general and the best approaches to teach the topic in science classrooms. The study revealed that at times teachers failed to reconcile their beliefs and those of the learners against their science classroom practices. In conclusion, teachers who lack the understanding of the nature of science have difficulties in teaching the topic evolution for scientific understanding. There is need for teacher professional development programmes in this regard.

Keywords: teachers' views, pedagogical practices, evolution, grade 12 learners.

1. INTRODUCTION

Worldwide, the teaching of evolution in high schools has been a controversial issue. There had been lawsuits in America where creationists feel discontented with the theory of evolution and advocate for the theory of 'intelligent design' (ID) as an alternative in explaining the diversity of life on earth (Getz, 2006). However, ID has been discredited as unscientific and labelled a religious view (Getz, 2006). Though most researchers prefer to use the phrase the 'evolutionary theory' instead of the 'theory of evolution', the current study uses the later. The theory of evolution encompasses all branches of biology which span from molecular genetics to ecology. In a study of 926 American teachers by Berkman and Plutzer (2011) 13% of the teachers advocated for the teaching of creationism or ID against 60% who were not comfortable in choosing the former or evolution. Hence evolution is still a socio-scientific controversy in America (Hermann, 2008), in some countries in Africa and Asia (Clément, 2013). In a study carried out in 30 countries to determine teachers' conceptions related to evolution and to the separation between science and religion, Clément (2015) found diverse teachers' conceptions across countries ranging from extreme evolutionist to extreme creationist. The study also showed that teachers from economically less developed countries tend to believe more in in creation and upheld their religion as compared to those in economically developed countries.

1.1. The need to teach evolution

Sager (2008) noted that many scientific and religious organisations in education have expressed the need for the teaching of evolution due to its controversial nature. However, there is still resistance in different nations for example the United Kingdom and South Africa as well, such that there is a lot of inconsistency in how evolution is addressed in different curricula (Hermann, 2013). In addition, there is limited research that has been done to determine teachers' conceptions of the theory of evolution (Rutledge & Mitchell, 2002). In a study to determine Indiana teachers' conceptions and knowledge structures of evolution Rutledge and Mitchell (2002) found a distinct pattern of increased teacher acceptance of evolution with increased subject matter coverage during teacher preparation programmes. Their study also revealed the trend that teachers with increased acceptance of the theory of evolution devoted more time in teaching and the reverse was found to be true. In another study Coleman, Stears and Dempster (2015) sought to determine the existence of any relationship between South African University pre-service teachers' understanding of evolution and the Nature of Science (NOS). The study also determined the pre-service teachers' level of acceptance of evolution. The research revealed that the participants had a relatively higher level of acceptance of evolution. Notably, it showed the independence of conceptual understanding of evolution and the changes in beliefs about the NOS.

Previous research showed that teachers' attitudes and views about subject matter may influence the decisions they make about the curricular and instruction (Grossman, 1989; Wilson, Shulman, & Richert, 1987). Therefore, if a Life Sciences teacher accepts or rejects the theory of evolution as a scientifically valid explanation, the degree to which the teacher treats evolution concepts is affected. Because learners' knowledge structures resemble those of their teachers (Bartos & Lederman, 2014), teachers' conception and knowledge structure of evolution may impact those of their learners (Rutledge & Mitchell, 2002; Coleman, et al, 2015). Consequently, existence of misconceptions about evolution within teachers result in them transferring the same misconceptions to learners through their instruction (Mpeta, De Villiers, & Fraser, 2015).

1.2. Factors impeding the teaching of evolution in high schools

Evidence from previous studies showed that the instruction of evolution in high schools may be absent or marred with superficial or distorted information (Shankar & Skoog, 1993). Factors that cause instructional inadequacy of evolution include restrictive curriculum policies, opposing religious groups poor content coverage in textbooks (Shankar, 1990; Zimmerman, 1987) and teachers who lack capacity to teach the content (Rutledge & Mitchell, 2002).

Researchers have acknowledged that generally teachers experience problems in teaching evolution. In particular, Mpeta et al (2015) noted that the teachers are constrained by learners' different worldviews, which might be in conflict with the theory of evolution. In South Africa evolution is taught to learners of diverse socio-cultural backgrounds. As such, the controversy in the classroom is intensified as learners bring different views and beliefs that conflict or clash with scientific knowledge. de Beer and Henning (2013) noted that the controversy arises as teachers struggle to assist in resolving religious differences and objections from learners. Amongst the problems are that teachers lack a clear conceptualisation of evolution, which stifles the ability to teach it properly and that due to their religious background, they have problems in accepting evolution as an important and key principle in Biology (Coleman et al., 2015). It is important for teachers to have a deep understanding of the principles underpinning the NOS and the content of evolution (Lederman, 1992) for proper teaching and engagement with the content in the science

classrooms (Coleman et al., 2015). Previous research showed that teachers find it difficult to understand concepts on evolution (Kirsten, 2014) and that there is inconsistency between teachers' and learners' beliefs about the NOS (Abd-El-Khalick & Lederman, 2000), which causes problems in the science classroom.

2. BACKGROUND

In the South African Life Sciences curriculum, evolution accounts for 44% of Grade 12 content in terms of mark allocation in examinations. Hence teachers are obligated to address the topic adequately as there are accountability issues at the end of the year. Unfortunately, previous research showed that South African teachers question the theory of evolution and are conflicted to teach it. Teachers' personal views on a topic or subject matter heavily influence or determine how the topic is treated in the classroom (Coleman et al., 2015). Previous researchers alluded to the existence of a relationship between teachers' acceptance of evolution and the emphasis and level of how they teach it (Deniz, Donnelly, & Yilmaz, 2008). One difficult issue with the teaching of evolution is that it may not be taught with the objective of making learners accept it as Meadows, Doster, and Jackson (2000) argued that it would be unethical. This is related to a study by Mpeti et al (2015) where some learners indicated that they felt their teacher was persuading them to accept evolution and renege their religious beliefs. The onus is on the learners to make a decision on whether to accept or reject evolution (Sinatra, Southerland, McConaughy, & Demastes, 2003). In consideration of scientific views and the NOS one should teach learners for understanding. In a study to explore factors related to acceptance of evolutionary theory among Turkish pre-service biology teachers, Deniz et al. (2008) found out that evolution understanding was related to acceptance of evolutionary theory. In reality many people with strong religious beliefs are bound to reject evolution as they perceive that acceptance of the theory of evolution and belief in creation cannot coexist (Deniz et al., 2008).

The topic evolution was introduced into the South African Life Sciences curriculum in 2008. Understandably therefore the problem of poor instruction of the theory of evolution emanates from the fact that the current teachers were not taught evolution during their high school years or they were taught by teachers who themselves had not been exposed to the content and pedagogical practices suitable for the topic. Therefore, the underlying issue is that these teachers do not accept the theory of evolution fully (Coleman, 2006), and they are scared to teach content for which they feel inadequately prepared (Ngxola & Sanders, 2008).

3. OBJECTIVES AND RESEARCH QUESTION

The study sought to explore Life Sciences teachers' views and pedagogical practices when teaching the topic evolution to Grade 12 high school learners. Accordingly, the study sought to answer two research questions: 1. How do Grade 12 Life Sciences teachers perceive the teaching of the topic evolution to Grade 12 high school learners? 2. What are their pedagogical practices when teaching the topic evolution to Grade 12 Life Sciences learners?

4. RESEARCH METHODOLOGY

In a qualitative case study research design 15 practising novice and experienced Life Sciences teachers, nine females and six males were each interviewed once to determine their views and pedagogical practices when teaching the topic evolution to Grade 12 learners. The design was appropriate for the study as it is a naturalistic approach that sought to understand phenomena in context-specific settings (Grade 12 Life Sciences teachers teaching evolution), where the researcher did not manipulate the phenomenon of interest (Patton, 2002) but probed for deeper understanding rather than examining surface features (Johnson, 1995). Previous research studies in education have used case-study research design mostly to explore the processes and dynamics of practice (Merriam, 1998) in order to shed light on a phenomenon, the process, events, persons or things of interest to the researcher (Gall, Gall, & Borg, 2003).

The researcher provided the teachers with three hypothetical scenarios of teachers teaching the topic evolution to high school learners (see appendix), which provoked or stimulated teachers to revisit their thought processes on how they have taught the topic that year and during the previous years. A semi-structured interview schedule (see appendix) was used for the interviews. The researcher's probing questions evoked responses from the teachers which provided an insight into the: teachers' views about the content of the topic evolution; need for continued inclusion of the topic in the curriculum; value of the content and skills to learners and society in general; the approaches teachers used to teach the topic in terms of the manner in which they introduced it to the learners and the teaching strategies and activities employed. Each interview lasted 45 to 60 minutes, was captured using an audio-recorder and then transcribed verbatim immediately after each interview. Data analysis involved identifying codes then analysing data using Atlas ti version 8 to determine recurring themes from the data (see table 1).

Semi-structured interviews were suitable for this study because they are neither as restrictive as fully-structured interviews nor as flexible as unstructured interviews (Karasar, 1995). At the same time, semi-structured interviews allowed the teachers to tell 'their own stories' in their own words, so that the issues the researcher had not thought of arose (Hatton & Smith, 1995).

Table 1.
A coding and analysis sample of data from interviews.

Codes	Categories	Emerging themes
i. Topic is difficult. ii. Topic is too broad. iii. Has a lot of content. iv. Still struggling with ways to deal with the topic.	Lack of content knowledge. Lack of conceptual understanding.	Teachers have poor content knowledge and hence pedagogical content knowledge.
i. A sensitive topic. ii. Heated debates as learners get an opportunity to raise their opinions. iii. Make it clear the distinctive roles of science and religion, the two need not be in conflict.	Controversial issues arising. Failure to manage proper teaching and learning.	Teachers conflicted to teach concepts due to own beliefs and those of the learners.
i. Still struggling with ways to deal with the topic. ii. No one to ask or share any ideas. iii. No one shows me how to teach the topic. iv. Lack of support for novice teacher. v. Struggling to find suitable strategies to teach the topic. vi. Failure to come up with suitable activities, only utilise those in the textbooks.	Poor support system. Lack of pedagogical skills. Failure to formulate authentic activities for the learners.	Novice teachers lack appropriate pedagogical knowledge and skills to teach concepts meaningfully.

<ul style="list-style-type: none"> i. Use teaching strategies that do not challenge learners' beliefs. ii. Focus on content coverage. iii. Avoid debates and discussions as they raise emotions. iv. Asking learners' views may create challenges and problems with parents. v. Respect learners' decisions if they choose to keep quiet. 	<ul style="list-style-type: none"> Focused on content coverage. Not worried about learner understanding of concepts. Very conservative. 	<ul style="list-style-type: none"> Teachers are conservative and do not explore inquiry-based approaches to teaching and learning.
<ul style="list-style-type: none"> i. Consulting and using different sources. ii. Provide questions which learners should explore. iii. Involve learners in providing explanations for some of the theories. iv. Allow learners to engage and ask questions. v. Building a bridge from learners' existing worldviews to new perceptions. vi. Address learner misconceptions. vii. Debates and group discussions are important. 	<ul style="list-style-type: none"> Teacher use of learner-centred approaches. Interested in facilitating learner understanding of concepts and not teach for examinations. Scaffolding emphasised 	<ul style="list-style-type: none"> Teachers are progressive and explore various ways to ensure learner understanding of concepts.

5. RESEARCH FINDINGS AND DISCUSSION

Analysis of the teachers' responses showed teachers' mixed views about the content of the topic of evolution, the value of that knowledge to learners and society in general and approaches suitable to teach the topic in the science classrooms. Teachers attested to the use of higher order questions, debate, argumentation and group discussion as strategies that allow learners to share their opinions based on their diverse cultural and religious background. The study also showed that sometimes teachers failed to reconcile their beliefs and those of the learners and their science classroom practices. The findings are presented under four subheadings that follow.

5.1. Teachers' views on the content of the topic of evolution

The majority of the participants (9 out of 15 teachers) had the view that evolution was the most complex and controversial topic compared to any other Life Sciences topics in the curriculum. They raised issues that the topic contradicts some of the people's socio-cultural beliefs, challenges different religious beliefs and raised concerns on the truth of the content and reliability of its evidence. As such, teachers pointed out that the concepts are controversial, particularly in a science classroom of learners from diverse cultures, which results in a clash between science and learners' belief systems.

The teachers complained that the topic is difficult, which shows that they have inadequate content knowledge of the topic. The findings show that teachers' academic background and personal religious beliefs impact on their acceptance of evolution and consequently on the teaching process. The teachers also indicated that evolution is too broad and has a lot of content that needs to be covered within a short period of time before the learners write final Grade 12 examinations. As such, learners do not have enough time to engage with the topic. They wished the content was distributed evenly from Grade 10-12. The novice teachers (3 out of 15) indicated that they lacked support as there were no readily available mentors who would coach them on how to teach the topic better. As such, the novice teachers struggled to identify suitable ways of dealing with the topic particularly in formulating suitable activities. Hence they relied heavily on available textbooks.

5.2. Teachers' views on the need for continued inclusion of the topic evolution in the curriculum

Almost three quarters of the teachers (11 out of 15) acknowledged the importance of inclusion of the topic evolution in the curriculum for a number of reasons. Firstly, they argued that evolution covers important content that spans beyond the educational boundaries and taps into learners' experiences. Secondly, they indicated that evolution exposes learners to different fields of study. The other reason is that evolution provides a background for Life Sciences subject as a whole. One of the teachers said, "In any case it is important for human beings to know their origins". This showed how much they valued the content of evolution.

Teachers also argued for the inclusion of evolution in the curriculum as they feel that the topic develops a repertoire of skills in the learners. Evolution promotes learners to think deeper and be able to critique their belief systems against the scientific knowledge or vice versa. The majority of the teachers (13 out of 15) pointed out that by learning the theory of evolution, learners develop the desire to study more, solve problems and make intelligent choices in life. Teachers viewed evolution as a topic that promotes learners' understanding and application of science as it provides practical scientific examples in their lives. They also pointed out that in examining the different views and theories that support or oppose evolution, learners develop skills in assessing different sources of evidence and realise that reasonable compromise is often an important part of democratic decision-making process. In this case teachers were referring to experiences learners go through when considering various viewpoints such as creationism, big bang theory, and Lamarckian theory vis a vis natural selection. Notably, three of the teachers pointed out that learners develop understanding of the strengths and weaknesses of data in any scientific investigation.

In interpreting teachers' views, it shows that learners are exposed to the tenets of the NOS, which may not be so apparent when teaching other topics in Life Sciences. Two of the teachers (those with post graduate qualifications) attested to the fact that learners acquire knowledge of how science can resolve issues and thereby develop critical thinking skills, skills to use rational methods when planning some investigations and also in considering significant issues in any scientific practice. Most importantly several teachers (5 out of 15) pointed out that when learners are taught evolution properly, they develop positive attitudes and willingness to recognise and accept differing viewpoints, which is a valuable skill in science and is a normal process in real life situations.

Contrary to the majority of the teachers' views, there were two teachers who strongly felt that the content of evolution was not important to all learners considering some of the job opportunities some learners would pursue. When probed further, these teachers would not elaborate on their views. One could infer that the two teachers had strong religious beliefs, which were conflicted by the theory of evolution.

5.3. Teachers' views on how the topic evolution can be introduced to learners

When asked about how they normally introduced the concepts on evolution, 60% of the teachers (9 out of 15) were quite clear that in as much as they are conflicted by their own belief systems and those of the society in general, evolution should be introduced to learners in an enthusiastic manner. They indicated that such introductions dissolve the boundaries of socio-cultural prejudices and facilitate learners to express their opinions without the teacher constraining them. Teachers alluded to the fact that when introducing the topic, one should not shy away from addressing important issues due to religious affiliations and resistance from learners. A third of the teachers, however indicated that such introductions retard the progression of the lesson as more time is spent on the

introduction at the expense of content coverage. Teachers (8 out of 15) provided a range of ways that evolution can be introduced to learners. These include introducing the topic as an integral part of NOS, that means teaching using inquiry approaches, use of role play with learners taking different roles ranging from being plant species, microorganisms to primates living in one community, use of question and answer technique to elicit learners' prior knowledge or misconceptions and use of videos to capture learner attention.

5.4. Teaching strategies and activities teachers employed

Teachers were forthcoming in suggesting teaching strategies and activities that can be employed in teaching evolution to Grade 12 learners. There were two groups of teachers, i.e. those who were 'conservative' (7 out of 15) and the 'progressive' ones (8 out of 15). 'Conservative' teachers indicated that they were conflicted in teaching evolution due to their religious beliefs. As such, they had reservations in exploring the concepts deeper to enhance learner understanding. Such traditional teaching practices (lecture methods) where learners' opinions are not recognised can result in learners developing a distorted view of evolution leading to its rejection (Mpeta et al., 2015).

The 'progressive' teachers were those who despite their religious beliefs, portrayed that they confidently and competently engaged learners fully in the teaching and learning of concepts in evolution. Such teachers understood the principles underlying the NOS. The 'progressive' group mentioned teaching strategies and activities such as engaging learners in controversial debates and then guide learners in building consensus, use of scenarios or case studies familiar to learners, using higher order questions, which stimulate small and large group discussions and argumentation. They emphasised that the suggested strategies and activities create a classroom atmosphere that is positive, and openness encourages learners to 'take a position' and make meaningful decisions. The use of open ended questions is critical as learners explore and build bridges between their existing worldviews and new scientific knowledge and divergent thinking is encouraged. Learners would share their opinions and ideas in group discussions, learn from each other and get an opportunity to justify or refute their previous view points (in an argumentation process) after consulting different sources of information. Cavagnetto (2010) insists that if learners participate in an argument, they develop communication skills, metacognition, critical thinking and understand the culture and practice of science and scientific literature. As such, learners are challenged to develop a position based upon what they will have discovered in their search for evidence and in that way, they learn scientific content (Klosterman & Sadler, 2011).

The 'conservative' group of teachers indicated that direct instruction (use of transmission method of teaching such as lecture methods) is sometimes suitable because such a teaching strategy does not challenge learners' beliefs and allows teachers to provide explanation of the content easily. The teachers also felt that such teacher explanations address learner misconceptions and not much time is wasted to allow completion of syllabus before examinations and learners only ask relevant questions without straying from the curriculum requirements. To show how teacher-centred the instruction they advocated for were, one of the teachers in the 'conservative' group said, "When you stick to the textbook content after consulting different sources, you are safeguarding yourself from any criticism from the parents". These teacher practices show lack of understanding of the theory of evolution and the NOS, which cause them to teach the topic to learners in an isolated manner, leaving room for misinterpretations and misconceptions by the learners (Coleman et al., 2015). Rutledge and Mitchell (2002) noted that due to lack of an understanding of evolution and NOS, teachers may be incapable of making informed decisions regarding acceptance or rejection of the theory of evolution. Such teachers fail to make appropriate instructional decisions regarding their teaching.

Important teaching strategies raised by the eight teachers in the 'progressive' group include taking learners for excursions so that learners can study the organisms in their natural environment for example in forests or botanical gardens and in museums. Through the excursions, learners make their own decisions based on their observations and discussions and not solely rely on the textbook information. These teachers mentioned the importance of addressing learner misconceptions when teaching the topic evolution as most learners remain with their ingrained wrong or alternative conceptions. The teachers suggested that one has to identify those learner misconceptions, provide explanations or activities that clear learner confusions and as such, learners would acquire new conceptions which do not conflict with scientific concepts. Involving learners in pair, group and class discussions to allow them to share their views and learn from each other was suggested as an important strategy to help learners understand new concepts by building up on what they already know.

The teachers' argument was that teaching strategies should not challenge learners' beliefs. They pointed out that learners are likely to make their own decisions based on the discussions and knowledge acquired thereof and not on the teacher's information. The teachers' suggestions closely resemble the constructivist view that when teaching, focus should be on continuing emphasising or building up on concepts that were previously ignored or underemphasised rather than replacing or discarding them (Smith III, DiSessa, & Roschelle, 1994). By employing constructivist teaching strategies the teachers view the learner as responsible and active in acquiring knowledge (Brooks & Brooks, 1999). To this end, Marlowe and Page (2005) emphasised the importance of teachers providing an enabling environment where learners are involved in critical questioning, problem solving and extensive reading. Learners' misconceptions in evolution would be addressed by eliciting, addressing and reconciling with previous knowledge. Adoption of sound pedagogical strategies is of utmost importance so that controversial topics such as evolution are presented in a scholarly manner rather than opposing religion (Woods & Scharmann, 2001). The teaching strategies that teachers pointed out are all constructivist in nature which, Deniz et al. (2008) regarded as emphasising knowledge construction and not take knowledge of evolution as a representation of reality.

A third of the teachers (mostly from the progressive group) admitted that they did not properly implement most of the strategies they mentioned in the interviews and as such, their learners maintained a poor understanding of evolution, which raises questions on whether teachers are fully prepared to teach evolution for meaningful understanding. It is important to note that teachers expressed their views based on their theoretical understanding of the pedagogical practices of teaching abstract and difficult concepts. It would have been more appropriate to observe the same teachers teaching the topic and assessing their pedagogical practices, rather than basing on what they said. Baxter and Lederman (1999) indicated that the assessment of teachers' practices has been shown to be very difficult as it requires a combination of approaches that can collect information about what teachers know, what teachers do, and the reasons for their actions. This is because teachers' actions are a more accurate representation of what they know and believe than the usual array of self-report measures (van Driel, Bijaard, & Verloop, 2001). Most importantly teachers cannot verbalise all of their practice; therefore what they know may be uncovered better from their performances than from what they say. In addition, what teachers say does not always reflect what they do. Therefore, a deeper understanding of teacher knowledge could be best achieved by observing them in teaching, as Borko and Putman (1996) alluded that teaching is contextualised and embedded in teachers' actions.

6. FUTURE RESEARCH DIRECTIONS

The findings of this study show that the topic of evolution does not receive adequate attention in the classroom in terms of meaningful teaching and coverage of important concepts despite the curriculum emphasis and stipulations. The following important questions therefore arise, which can inform future direction of research: Do teachers understand the nature of science because Lederman (1992) views the NOS as the cornerstone for effective teaching and learning of science as a subject? If they understand, how can they incorporate the tenets of the nature of science in teaching evolution for learner understanding? If they do not understand, how can pre-service and in-service teacher professional development programmes be structured to accommodate content on evolution, the tenets of the NOS, and their incorporation in science teaching? Based on the research findings, future research can extend the current study by observing teachers with different teaching philosophies whilst they teach different concepts on the theory of evolution. In doing so, the relationship between teacher beliefs and pedagogical practices can be ascertained better.

7. CONCLUSION

In this study teachers acknowledged the value of evolution as a key principle in Biology and were quite knowledgeable about the teaching strategies that are appropriate in teaching the concepts in a comprehensible manner. The teachers however, clearly indicated their inability to implement these teaching strategies in the science classroom particularly faced with learners from diverse socio-cultural and religious beliefs. As such, the 'conservative' teachers indicated that they utilised the transmission model of teaching (lecture method) where learners passively absorb what their teachers deliver about the theory of evolution with the hope that learners would regurgitate such information in examinations. On the other hand, 'progressive' teachers' mentioned constructivist teaching strategies, which recognise the role learners' prior knowledge plays in constructing and understanding new knowledge. Examples include use of debates and argumentation, which invoke critical thinking in learners. Teachers indicated the importance of using open-ended questions in promoting learners to share their ideas and justify their viewpoints. The research findings inform teachers on some useful pedagogical knowledge and skills in terms of teaching strategies, activities and ways of introducing the topic that they can employ in teaching in order to enhance learner understanding of the concepts on the theory of evolution. They are also informed of some of the pitfalls and challenges associated with the teaching of this topic.

It can be concluded that teachers who lack understanding of NOS, experience difficulty in teaching the theory of evolution for scientific understanding because previous studies have found a correlation between understanding the NOS and acceptance of evolution. Because teachers determine the quality of classroom instruction, it is recommended that they possess a deeper knowledge of theory of evolution and also a repertoire of pedagogical strategies that make concepts more accessible to the learners for meaningful understanding. There is need for teacher professional development programmes to continuously develop teachers in terms of content and pedagogical skills as teachers can be constrained by their own personal belief systems, which may conflict with their understanding of the theory of evolution. Teacher educators need to provide continuous support to teachers even years after teachers have obtained their qualification to enhance continued professional development.

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KEY TERMS & DEFINITIONS

Grade 12 learners: These are students in their final year of high school in South Africa.

Life Sciences: The scientific study of living things from molecular to macro level and their interactions with one another and their environments.

Pedagogical practices: The methods, strategies, instructional approaches and/or styles of instruction and activities that teachers use to support learning.

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APPENDIX: SCENARIOS FOR TEACHER INTERVIEWS

Evolution is a controversial topic and it evokes mixed emotions in learners from diverse religious and socio-cultural background. Consider the practices of teachers A, B and C.

Teacher A: Today class we are going to visit memory lane, trace where you came from as a person, in other words I want you to draw your family tree based on the generation you have met.

Teacher B: Today as an introduction to the new topic on evolution, I want you to write down your views about the content of the topic theory of evolution and how it will help you as an individual and society in general.

Teacher C: Let us firstly watch a video clip of what happened on earth many centuries of years ago before we proceed to the new topic on evolution.

Interview schedule

1. What are your views about the content of the topic Theory of Evolution?
2. When teaching this topic, how do you normally introduce the topic?
3. What are some of the teaching activities that you engage your learners in?
4. Which questions do you ask to motivate learner participation?
5. What would you consider as the most appropriate teaching strategies and approaches when teaching this topic?
6. What are the challenges associated with teaching this topic?
7. How do you resolve these challenges?
8. If you were responsible for curriculum design, would you include this topic? Motivate your answer.

L. Mavuru

AUTHOR INFORMATION

Full name: Lydia Mavuru

Institutional affiliation: University of Johannesburg

Institutional address: Department of Science and Technology Education, Faculty of Education, B Ring 404A, Kingsway Avenue, Auckland Park, Johannesburg, 2006, South Africa.

Short biographical sketch: I am a Senior Lecturer in the Department of Science and Technology Education at the University of Johannesburg. I hold a PhD in Science Education from the University of Johannesburg, Master of Science Education Degree in Biology from the University of Zimbabwe, for which I was awarded two book prizes for the two years I studied. I also hold a Postgraduate Diploma in Science Education and a Bachelor of Education majoring in Biology from the University of Zimbabwe. I currently teach the undergraduate and postgraduate programmes. My research interests include socio-cultural perspectives in science education with a focus on social constructivist pedagogies and consideration of equity and diversity in making science content more comprehensible and relevant to learners. I am currently working on a project on indigenous knowledge, which envisages the provision of professional development to science teachers with knowledge, skills, tools and resources to implement multicultural science education.

Section 3
Organizational Issues

Chapter #15

CHARACTERIZATION OF THE “EDUCATION & EDUCATION RESEARCH” JOURNALS INCLUDED IN THE JOURNAL CITATION REPORTS (JCR)

Julia Haba-Osca¹, Francisco González-Sala², & Julia Osca-Lluch³

¹*Departament de Filologia Anglesa i Alemanya, Universitat de València, Spain*

²*Departament de Psicologia Evolutiva i de l'Educació, Universitat de València, Spain*

³*INGENIO CSIC – Universitat Politècnica de València, Spain*

ABSTRACT

The evaluation of the quality of scientific journals is a topical issue. The implementation of an evaluation policy based on international indicators has contributed to improving the quality and visibility of journals from different countries, measured through their indexing in the Journal Citation Reports (JCR) databases. Currently, in some countries, such as Spain, the main criterion used to evaluate the performance of individuals, institutions or research groups is the number of publications made, especially in high impact journals in the JCR. However, the adoption of international evaluation criteria based on the JCR has been the subject of numerous criticisms by researchers, who are forced to send their research papers to foreign journals to the detriment of the journals of their own country, since in order to obtain a positive evaluation it is fundamental to publish in high demand journals, mainly published in English. In this competitive environment, where the pressure to publish in quality journals is a reality, it is useful to know the profile of the journals of your specialty in order to be able to select the one that is most appropriate for the dissemination of your own work.

Keywords: education journals, scientific journals, impact factor, JCR, bibliometrics.

1. INTRODUCTION

Contemporary science needs powerful communication tools to fulfil its functions of universalization, updating and certification of knowledge (Villamón, Devís, & Valenciano, 2005). Scientific publications are the main vehicle for the dissemination of science and play a fundamental role in the different stages of research activity. Its study and evaluation allows to obtain data of great value that, applied to countries, institutions, geographical communities, etc., and make it possible for decision-making in scientific polity to be made with greater objectivity. For this reason, the use of bibliometric indicators, which quantify and analyse research through scientific publications, has experienced a great boom (Claudio-González, Martín-Baranera, & Villaroya, 2017). These indicators are currently an objective and effective method for analysing the activity of scientific communities in a specific country, region or institutional sector. They also allow obtaining valuable information about the structure of the different areas or scientific disciplines, as well as analysing their evolution over time. However, not all journals reflect the same prestige, professionalism, respectability, specialization, universality and transcendence. For that reason, it is not possible for every publication to have the same curricular value. Therefore, it is necessary to establish criteria that allow for the elaboration of a hierarchy or classification to mediate the quality of the various publications.

The institutional pressure exerted on the group of researchers for their promotion and consolidation increases the need to have widely disseminated and recognized scientific journals for the valuation of their contributions. Not all scientific journals have the same relevance as a means to disseminate research production. Researchers tend to select those journals that allow them greater opportunities for professional growth and recognition, make their work more accessible and, therefore, have greater guarantees that their articles can have an impact on the scientific community (Molina, Gómez, Cañadas, Gallardo, & Lupianez, 2011). Every community requires a means of expression through which it registers, transmits and exchanges experiences among its own members and those of other groups. The scientific community, as evidenced by the development of the first scientific journals in the seventeenth century, is no stranger to this situation. Scientific culture cannot exist outside scientific publications, but not all have the same prestige and degree of influence in the scientific community. Its recognition depends to a large extent on its quality and visibility (Osca-Lluch, González-Sala, Fonseca, & Civera, 2017).

Studies on publications frequently use the Web of Science, a multidisciplinary database suitable to analyse science in its most international aspect, since it covers a selection of journals that meet quality criteria and international interest. The current system of evaluation of the scientific activity of some countries, consists in the recognition of publication in journals indexed in the databases of the Web of Science (WoS) that currently belongs to the Clarivate Analytics company and, especially, those included in the Journal Citation Reports (JCR), which constitute one of the most influential and prestigious resources on an international scale. The special relevance of this product is not exempt from criticisms that question some of its shortcomings or the Anglo-Saxon bias of the selection of journals that are considered as data sources, therefore, in recent years, the most developed Ibero-American countries have led to rigorous policies to promote national publications of higher quality (García-Pereira & Quevedo-Blasco, 2015; Quevedo-Blasco & López-López, 2011).

The evaluation of scientific journals with bibliometric indicators has been dominated by the impact factor. Since its launch in the early seventies, the impact factor has been an indicator that has been criticized as a determining factor in the processes of scientific evaluation (Garfield, 1972; Jacsó, 2009; Saha, Saint, & Christakis, 2003; Torres-Salinas & Gimenez-Contreras, 2010). In some countries, such as Spain, for most evaluators there seems to be only one star indicator, the impact factor, which is published annually in the JCR (Quintas-Froufe, 2016) and, for this reason, for some researchers, one of the most important criteria when choosing a journal to publish a work is its impact factor. In this way, we do not choose the publication that will divulge our work among experts in the field, but we choose the option that will have the most favourable impact on promotion and professional recognition.

The objective of this work is to carry out a bibliometric analysis of the education journals included in the “Education & Education Research” thematic category of the JCR database, in order to know the countries that lead the publications in this discipline, their position, language of publication and its relationship with other related disciplines.

2. METHODOLOGY

The 236 journals (see annex) included in the “Education & Education Research” category of the 2016 JCR (corresponding to the 2017 edition) were analysed. It is a descriptive study through document analysis. In the study, the educational journals were analysed and compared, collecting all the data referring to title, country of publication,

language of publication, publishing institution, quartile, thematic area in a database designed ad hoc for this work. For this statistical calculation, the Excel program was used and the Pakej and UCINET programs were used to create the network graphic.

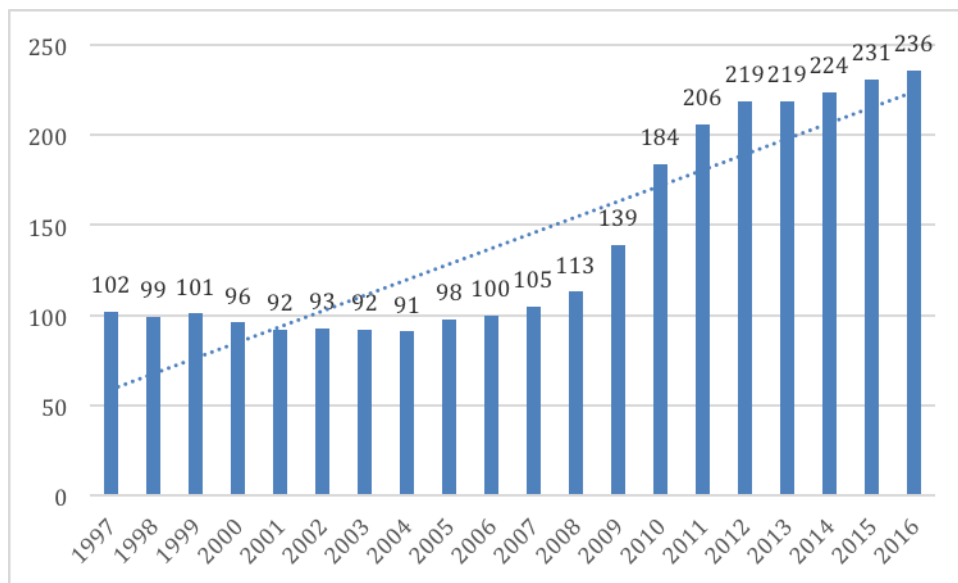
3. RESULTS

The results obtained from the bibliometric analysis of the 236 journals analysed are shown.

3.1. Temporary evolution of the journals in the “Education & Educational Research” category of the JCR

The current number of education journals included in the “Education & Educational Research” category of the JCR Social Sciences edition database is 236. As can be seen in figure 1, the presence of education journals included in this thematic category has grown considerably over the years. The increase in the number of education journals in 2016 compared to 1997 is 131 per cent.

Figure 1.
Evolution of the number of journals.



3.2. Countries where journals are published

When analysing the countries of edition of the journals included in the thematic category under study, it can be seen that they are edited by 18 countries, being USA and UK, the countries that have indexed a greater number of journals, 89 and 88 respectively. These two countries represent 75% of all journals included in this thematic category. Other countries that stand out for having a greater number of journals are the Netherlands, Australia and Spain.

Table 1.
Distribution of the number of journals by country.

Countries	Number of journals	%
Australia	8	3,39
Belgium	1	0,42
Brazil	1	0,42
Canada	1	0,42
Croatia	1	0,42
Germany	5	2,12
Italy	1	0,42
Lithuania	1	0,42
Mexico	1	0,42
Netherlands	18	7,63
New Zealand	4	1,69
Philippines	1	0,42
South Africa	4	1,69
South Korea	2	0,84
Spain	7	2,97
Turkey	3	1,27
United Kingdom	88	37,29
United States	89	37,71
Total journals	236	100,00

3.3. The publication languages

It is observed that more than 94% of the journals use English as the language of publication. The other languages used by the journals analysed to publish their works are German (3 journals), Spanish (2 journals), Croatian (1 journal), Italian (1 journal) and Turkish (1 journal). There are 5 journals (2.12%) that use several languages to publish their work (multi-lingual), being in these cases, the publication of works in English and Spanish.

3.4. Publishing institutions

An aspect of particular importance is to know the weight that the different publishing entities of the journals have. For the study of the scientific activity of institutions, at a general level, the centres were grouped in the following types: Universities, Commercial Publishers, Professional Foundations and Associations and Others. Most of the journals included in the thematic category “Education & Educational Research” of the JCR, are edited by Commercial Publishers (78.39%) and Universities (12.29%). The other two sectors responsible for the publication of journals are the Professional Foundations and Associations (5.08%) and the Other sector (4.24%).

3.5. Distribution of the number of journals by countries and quartiles

One of the most important criteria when choosing a journal to publish a work is its impact factor. For researchers it is increasingly important to know the position of the journals of their scientific field in the JCR databases, since it is one of the criteria taken into account in many countries by the evaluation agencies of the research activity (De Filippo, Pandiella-Dominique, & Sanz-Casado, 2017) and, for this reason, a large part of the time is dedicated by researchers who are concerned in studying the impact factors and quartiles of

journals and sometimes pressured by the evaluation that will be received by the evaluation agencies, assessments that affect the researcher’s professional career.

The evaluation of scientific contributions according to location by scientific areas in the JCR, with the impact factor as a basis to know how to place the researcher in his scientific field is quite wrong, because not a high number of publications is the same quality, or that it is published in journals with a high impact factor is equivalent to a greater scientific significance (Reverter, 2012).

Table 2 shows the distribution of the number of journals indexed in the thematic category “Education & Educational Research” by countries and quartiles. The same journal can be indexed in more than one thematic category within the JCR databases and, therefore, can occupy different quartiles. In order that the distribution of the number of journals per quartile coincide with the actual number of journals, journals have been only counted once, including it in the quartile in which the journal is better positioned. It is observed that of the 18 countries that publish journals included in the “Education & Educational Research” category of the JCR, there are only 6 countries that have a journal positioned in the Quartile 1, being the UK and USA those that have a greater number of journals in this position of privilege.

*Table 2.
Distribution of the number of journals per countries and quartiles.*

Countries	Quartile 1	Quartile 2	Quartile 3	Quartile 4	Total journals
Australia		1	3	4	8
Belgium			1		1
Brazil				1	1
Canada	1				1
Croatia				1	1
Germany			3	2	5
Italy				1	1
Lithuania				1	1
Mexico			1		1
Netherlands	5	8	2	3	18
New Zealand	1	1	1	1	4
Philippines				1	1
South Africa			2	2	4
South Korea				2	2
Spain	1	1	2	3	7
Turkey			1	2	3
United Kingdom	29	17	27	15	88
United States	35	24	21	9	89
Total	72	52	64	48	236

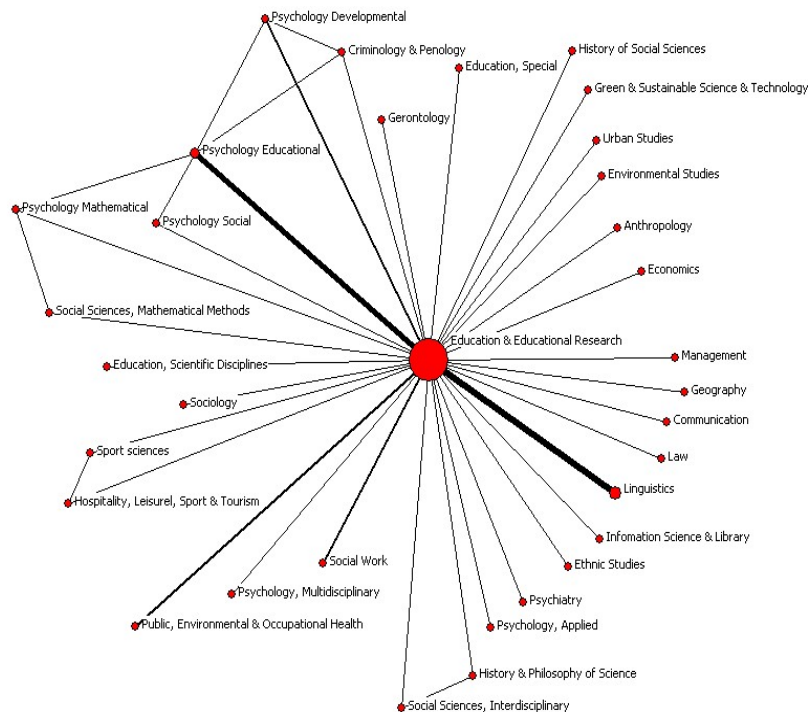
3.6. Network analysis applied to the thematic areas of journals

In JCR databases, the same journal can be included in more than one thematic category. In order to know the relation of the journals indexed in the thematic category “Education & Educational Research” with other thematic areas of the JCR, a network

analysis has been carried out to the subjects in which the journals included in this category have been classified. The starting point of our work has been to create a matrix where all the thematic categories in which the 236 journals under study have been classified have been collected. The matrices allow collecting the data of all these cases. The matrices allow gathering the data of all these cases, however, when it comes to very large matrices it is difficult to intuit through reading a relationship. With the graphics, the opposite happens. The network graphs allow intuiting clearly the existing relationships between the actors. Network graphics have two basis elements: points and lines, which represent, respectively the actors and their relationships. In this case, the points are the thematic categories of the journals and the lines that are established between them.

Figure 2 shows the network formed with all the thematic areas in which the journals indexed in the “Education & Educational Research” category have also been classified. The total number of thematic categories of the JCR in which these journals have been included is 33. This means that journals indexed in the “Education & Educational Research” thematic area also included simultaneously in one of the other 32 thematic areas of the JCR. When looking at the graph of the network, the first thing that draws attention is that all the thematic areas are part of a single component and that the thematic areas with which there is a greater relationship is with “Psychology Educational” and “Linguistics”, this means that these are the areas in which there are a greater number of journals included simultaneously. As expected, there is a relationship with thematic categories related to education or psychology, but draws attention to the relationship with other more unexpected thematic areas, such as those related to sociology and economy, sports sciences, anthropology or criminology & penology.

Figure 2.
Network of journal thematic areas.



4. CONCLUSIONS

Scientific journals are the main vehicle for the dissemination of science. Its study and evaluation is reaching an important development in recent years in the different areas or scientific disciplines, due to the relevant role they play in the framework of scientific research, as tools that are fundamental for scientific dissemination and that, moreover, enable the advancement of knowledge and achieve scientific excellence. Scientific publications become the main requirements for academic promotion, to obtain funding through research projects or for recognition among the scientific community. Every community requires a means of expression through which it registers, transmits and exchanges experiences among its own members and those of other research groups. Its recognition depends to a large extent on its quality and visibility (Osca-Lluch, 2012).

The objectives for which a scientific journal is created and maintained are apparently the dissemination of research results within the same scientific-professional community. However, currently publication in international media has become one of the hallmarks of scientific activity and the computation of publications is used to measure the relative weight of a country or a group of countries in world scientific production for a certain discipline. The validity of the figures obtained obviously depends on the quality of the databases used and their representativeness (Callon, Courtial, & Penan, 1995). However, for some authors, the assessment of scientific contributions according to the impact of the journals where the papers have been published is quite wrong, because the fact that it is published in journals with a high impact factor is not equivalent to a greater scientific significance and, above all, when there are studies that show that most articles published in high impact factor journals do not receive too many citations among the works of other researchers, and that about 50% do not receive any (Reverter, 2012) and that can cause pathologies in researchers who, obsessed with publishing in impact factor journals, manipulate the data of their research (Buela-Casal, 2014). Still, currently, one of the most important criteria when choosing a journal to publish a work is its impact factor.

One of the conclusions drawn from this study is that it is relevant that the edition of journals included in the thematic category “Education & Educational Research” of the JCR, increases with the years, going from the 102 journals included in that category in the year 1997 to 236 that there is currently. It is observed that the increase in the number of journals takes place in 2009 (with 139 journals) and that, since then, it has not stopped growing. As expected, although there are journals that admit works in different languages, nevertheless, English is the most used language by almost all journals in this discipline, exceeding 94%. One aspect related to the publication of publications is that they are published, mainly by Commercial Publishers (78.39%) and Universities (12.29%).

Regarding the countries where the publications are published, it is noteworthy that although the journals analysed belong to 18 different countries, however, there are only 7 countries that have a journal located in privileged positions (Quartiles 1 and 2) and that two countries, the UK and USA, are those that have not only a greater number of journals indexed in this thematic category of the JCR, but also they are those that have a greater number of journals occupying the best positions, along with the Netherlands.

It is observed that the fact that the same journal can be classified in more than one thematic category in the JCR, does not imply that this journal will occupy a better position (Quartile), although it is observed that the journals that occupy a greater impact factor and, therefore, better positions are those that are related to other scientific disciplines such as “Linguistics” and “Psychology Educational”. It is important to highlight that journals are the source of information that will allow us to know the relationship between different

scientific disciplines and that the application of network analysis to the representation of the thematic areas used to classify scientific journals in different databases, can be used as a support tool for the location of journals and works that may be related to the object or subject of study and which, because they are classified in other thematic areas, could go unnoticed.

In short, education journals have a greater presence in the “Education & Education Research” category. It would be desirable that these journals not only continue to increase in number, but that the journals published in some emerging countries were increasingly accepted by the scientific community and occupy positions of privilege. The data obtained in this study show that educational journals are the most visible at the international level, however, we consider it would be interesting to analyse, in later studies, the circulation of education journals in other databases, such as Scopus, as well as the emerging education magazines included in the WoS database, which are not yet included in the JCR.

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AUTHORS’ INFORMATION

Full name: Dra. Julia Haba-Osca

Institutional affiliation: Departament de Filologia Anglesa i Alemanya, Universitat de València

Institutional address: Avda. Blasco Ibáñez, nº32; 46010 Valencia (España/Spain)

Short biographical sketch: Junior Lecturer at the English and German Philology Department. Both English Studies and Italian Studies Degree, during her training stage she collaborated in several research centres: *Institut d’Història de la Ciència i la Documentació López Piñero*; Confucius Institute and *Istituto di Storia dell’Europa Mediterranea CNR – Università di Milano*. In addition, she studied abroad: Universidad de Granada (Spain), Université de Limoges (France), Università di Bologna (Italy) and Beijing Foreign Studies University (China). She worked as a United Nations Volunteer (UNV) in Trà Vinh University (Vietnam) and after this experience she developed an interest in the social area and studied at a Master’s Degree at the Sociology and Social Anthropology Department at the Universitat de València, specializing in Education for the Sustainable Development, with a Ph. D. in Education as a specialist in didactics of English Literature, ESD and bibliometry. She currently teaches contemporary literature and practical literary criticism and researches in scientific production, collaboration and consumption by means of bibliometric indicators.

Full name: Dr. Francisco González-Sala

Institutional affiliation: Departament de Psicologia Evolutiva i de l’Educació, Universitat de València

Institutional address: Avda. Blasco Ibáñez, nº21; 46010 Valencia (España/Spain)

Short biographical sketch: Senior Lecturer at the Evolutionary and Education Psychology Department since 2003, teaching mainly Psychology of Life Cycle. In addition to teaching at the Psychology Degree, he also teaches at the Special Education Master’s Degree (*Máster de Educación Especial*); Psychological and Social Intervention Master’s Degree (*Máster de Intervención en ámbitos*

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Sociales y Psicológicos) and in Criminology and Security Master's Degree (*Máster de Criminología y Seguridad*). His main research lines are related to neurodevelopment, family and minor's under risk disorders and scientific and documentation production. Besides his academic life, he is also the president of the NGO *Asociación de Voluntarios de Acogimiento Familiar* (AVAF).

Full name: Dra. Julia Osca-Lluch

Institutional affiliation: INGENIO CSIC (Consejo Superior de Investigaciones Científicas) – Universitat Politècnica de València

Institutional address: Edificio 8E, Camino de Vera, 46022 Valencia (España/Spain)

Short biographical sketch: Senior Scientist of the Higher Council of Scientific Research (*Consejo Superior de Investigaciones Científicas CSIC*, in Spanish). Bachelor and PhD in Psychology at the Universitat de València (Spain). Specialist in scientific information and documentation. Currently working at the Innovation and Knowledge Management Institute (*Instituto de la Gestión de la Innovación y del Conocimiento INGENIO*) at the Universitat Politècnica de València. She has been the main researcher of several national competitive research projects, mainly dedicated to the study of the production, collaboration and consumption of scientific information. Her research activity is also reflected in the direction of doctoral theses and in the publication of more than ninety papers. She is the Editor-in-Chief of the Spanish Journal of Drug Dependency (*Revista Española de Drogodependencias*) and collaborates with both the Universitat de València and Universitat Politècnica de València by teaching classes in different Master's Degrees.

Chapter #16

EDUCATION REFORM IN TRINIDAD AND TOBAGO THROUGH THE LENS OF COMPLEXITY THEORY

Jeniffer Mohammed

The University of the West Indies, Trinidad & Tobago

ABSTRACT

The education system in Trinidad & Tobago has been subject to on-going reform though thousands leave secondary school each year with minimal qualifications. Threats to equity and social justice continue because the failures occur primarily in the state-led sector, and not in 'prestige' schools. Historically, there has been a concerted effort to maintain this dual system while implementing reforms. Adopting a complexity theory approach reveals an educational landscape conditioned by powerful elites and their ideologies about a 'good' education, which stymie reforms today. Fifteen teacher educators gave their views on the failure of education reforms to take root, and through qualitative data analysis the researcher sought to determine whether complexity theory was of potential value in conceptualizing education reform in the future.

Keywords: Trinidad & Tobago, educational reform, complexity theory, equity, secondary education.

1. INTRODUCTION

This paper explores complexity theory as a 'new direction' in educational reform for Trinidad and Tobago, where many decades of reform, especially in the secondary system, have not borne the required fruit. While it may seem that this context is too small and, perhaps not easily relevant to international trends, I want to suggest that the conditions and obstacles to change bear close resemblance to those of other postcolonial societies (Hickling-Hudson, Matthews, & Woods, 2004). The paper takes the position that historical relationships in education is a useful starting place in attempting reform, and enlists complexity theory in exploring how such conditions may be overcome.

There are two secondary systems, both financed by the state, but with only one having legitimacy in the society (Campbell, 1992). Powerful denominational groups, the élites of different ethnic backgrounds, and the inherited, prevailing ideologies about a 'good' education, maintain the ascendancy of one system housing only a minority of students. Reforms meant to address these inequities are directed mainly at the 'other' system (state schools), and have largely failed. Conventional ways of conceptualizing educational reform have not factored in the emotional, social and ideological ties that the population has for a classic, grammar-type denominational education. Whole-system reform began in earnest in 1962 on independence from Britain. Oil and natural gas helped to finance loans from international agencies, and by 2001 the country had achieved Universal Secondary Education or USE (De Lisle, 2012). However, quality education has been elusive - if by 'quality' is meant that, "...every child has an inherent right to an education that will enhance the development of maximum capability regardless of gender, ethnic, economic, social or religious background" (Ministry of Education, 1993, p. 1). Recently, complexity theory has been receiving widespread attention in the international literature (Lemke & Sabell, 2013, Morrison, 2006) as a more meaningful option to the traditional ways of conceptualizing reform.

2. BACKGROUND

Trinidad and Tobago is a two-island Caribbean nation with a past marked by European colonization, African slavery and Indian indentureship. The inherited British model of schooling was (and, still is) élitist. Independence and decolonization saw efforts by the state to build more secondary schools, of different types to cater for all abilities, but the population continued to desire the older model. Colonial society was highly stratified with the whites (British and French mainly) at the apex of the social pyramid, the Coloureds or Mixed population occupying an intermediate socio-economic position, and at the bottom were the Africans and Indians (Campbell, 1992). Secondary education was established as early as the 19th century, mainly by denominational bodies in the form of exclusive grammar schools, which charged fees. The poor also had aspirations of their children accessing such an education since it led to jobs in the public service or teaching, or a university education and the professions. It was a route to social mobility and a life away from menial and manual labour, the only option available for the majority of the descendants of enslaved and indentured labourers.

The possibility of attending one of these schools energized the primary system and the last two years of a student's school life was marked by intense preparation for the College Exhibitions (CE) – scholarships awarded to a few poor students in the 19th and early 20th centuries. Its successor, the Common Entrance Examination (CEE) (Mackenzie, 1989), which ended in 2000, had the same effect (De Lisle, 2012). The present-day Secondary Education Assessment (SEA) – a reform in its own right - continues this trend, though by now all students have assured places in the secondary system through USE. Students' scores are used to allocate them to different types of secondary schools – the Ministry of Education does the allocating (De Lisle, Keller, Jules, & Smith, 2009). High performing students are sent to the 'prestige' sector. State schools offer a more varied curriculum, on the 'comprehensive model', preparing students for careers in business and in technical and vocational fields. It is not lost on the public though that by placing higher performing students in grammar schools, the state acknowledges that state schools are meant only for average and under-performing students – thereby, possibly shooting its attempts at reform in the foot.

The powerful denominational lobby has in the past swayed governments from enacting reforms geared towards a more equitable secondary system. In the independence era proposals to dismantle the grammar schools and establish comprehensive schools were met by such a huge outcry from denominational bodies (Roman Catholic, Anglican, Presbyterian, Muslim and Hindu), that the new, nationalist government backed down. The state even thought it prudent to sign the Concordat of 1960 which recognized, not only that the denominational bodies owned and controlled their schools, but also that the state was now responsible for paying salaries and a certain percentage of the upkeep of those schools (Stewart, 1981). They became known as 'government assisted' schools, and because the government paid all the expenses of state schools as well, the arrangement was called the 'dual system'. A continuing controversial decision of that time was to allow the denominational schools to have a say in 20% of their intake. Many feel that through this 'loophole' the children of the wealthy and influential could secure a place at a prestige school without necessarily having excellent performance in the CEE or the SEA (London, 1989). Today the children of the wealthy are educated mainly in denominational secondary schools (and they come from all ethnic groups), whilst the children of the poorest groups tend to be found overwhelmingly in state schools (mainly African and Indian). Thus, there is an evident socio-economic and ethnic separation in who attends which type of secondary school as well as segregation according to intellectual ability.

The author contends that the root of the failure of education reform today can be traced to the events that fashioned this dual system. The prestige sector influences how state schools are regarded, because the ideologies in the society about education continue to prize denominational schools, and a classical curriculum. To wear the uniform of a prestige school signifies that one is 'bright' (London, 1989). This historical and contemporary background of the growth and development of the system is important as it represents the contexts into which reform efforts are inserted today. Powerful groups such as denominational bodies, the elites of all ethnicities, and, even the state, advocate for a particular type of secondary schooling based on ideologies and values about what is a 'good' education. Unsurprisingly, parents, teachers and students also hold fast to such beliefs, even though they may be located in the state system. For a small, developing nation, these are complex contexts into which to position, and hope for leverage, for educational reform.

3. THE STATEMENT OR THE PROBLEM

The issue focuses on the possible reasons why education reforms have failed so spectacularly in Trinidad & Tobago, particularly in secondary education. The small, prestige sector remains high-performing whilst the much larger state sector is typified by consistent underperformance, indiscipline and sometimes violence (Williams, 2013). Yet these are the schools that educational reforms were designed to transform. The reform process has been linear and traditional, following blueprints dictated by international donor agencies. The complex historic roots of the system have not been given due consideration in conceptualizing and implementing reforms and so, there is scope for considering another approach.

4. THE PURPOSE OF THE STUDY

The study explores the views of teacher educators about the failure of education reforms and assesses their perspectives in the light of what complexity theory has to offer as an approach to reform. Complexity theory takes the view that education is an ecosystem and is therefore sensitive to the contexts from which the system emerged. Such a view may augur well in bringing the polarized groups who act as gatekeepers for the status quo into a discourse, and could also prove beneficial to those who are still held in thrall by ideologies of education that can no longer serve them.

5. RESEARCH QUESTIONS

- What do teacher educators feel are the most significant issues that prevent meaningful reform of the education system in T&T?
- What explanatory power does complexity theory hold for clarifying these issues and suggesting new and possibly different directions for educational reform?

6. LITERATURE REVIEW

6.1. Education reform in Trinidad & Tobago

Research relating to education reform in Trinidad & Tobago seems to indicate that the social institution of education has been largely taken for granted in the process of reform. For instance, in pursuing national development through public sector reform to enhance

efficiency, quality and accountability, education is construed merely as an unproblematic part of that whole. That education remained largely immune to the efforts of researchers led Lewis and Lewis (1985) to say that “...*the colonial model of education has proved remarkably resilient, difficult to dislodge even today...*” (p. 159). Similarly, Jules and Williams (2016) feel that the intransigence of the system to move in the directions prescribed by reform is due to the “... *legacies and structures that owed their genesis to many years of colonial policies and practices*” (p. 288). Another example is seen in the pursuit of national development through the building of an industrial economy. Education was called into service to provide the knowledge and skills necessary to support the growth of a cadre of mid-level technicians and craftsmen through the development of technical-vocational curricula, available in state schools. This was a major reform involving the building of huge senior comprehensive schools outfitted with expensive industrial arts workshops - notwithstanding the deep-seated stigma associated historically with such a curriculum.

Other reforms attempting to make school governance more participative also have this taken-for-granted aspect. Groups and constituencies in education are regarded as if they are neutral players, all wanting and seeing the need for a democratization and decentralization of the system. For some groups, notably principals and school supervisors, decentralizing decision-making is welcome in dismantling the centralized governance structures of the past, though Hutton (2015) notes that stakeholders, especially at the school level, are slow to believe in this new reality. He sees it as a relational problem in that governments function in bureaucratic structures which engender a lack of responsiveness to those at the lower echelons. London (1996) described this as a “... *culture which in the past encouraged loyalty, passivity and rigid adherence to ministerial regulations and rules. A reactive rather than a proactive administrative style was promoted and rewarded, and simply telling personnel that they now have the right and responsibility to change things may prove ineffective*” (p. 200). In fact, the model of supervision and control established in the plantation era by the élites is difficult to supplant today by reform attempts that do not seek to deliberately encourage a collaborative culture. There may also be groups, especially the denominational lobby, who do not necessarily want deep-seated change, because their schools have always been high performing. Sustaining reforms geared towards ‘shared governance’ and ‘collective accountability’ (Hutton, 2015, p. 515) will be difficult without taking into account how the system was configured, and how to remedy the deep divisions between the two arms of the dual system in secondary education.

In addition to school building, institutional strengthening, and curriculum development, reform efforts focused on professional training for principals and teachers. In the case of principals, De Lisle (2009) notes that the training did not give a central place to dismantling the “...*value commitments and practices...*” of school leaders which continued “*to act as barriers to change, creating conflict with core concepts that are often promoted in formal training*” (p. 80). Leading and changing schools in postcolonial contexts, he suggests calls for “...*both reflective practice and conceptual change in practitioners. Such approaches to training will be more efficacious because they seek to alter personal and professional identities, thereby enabling education leaders to confront old beliefs and adopt new ideological systems that are change-focused and supporters of school improvement*” (p. 75). It is clear that reformers have not realized the power of deeply-held values and ideologies about education, derived from colonial conditioning, that continue to be hegemonic in the population. Reforms have been based on a generic or neutral idea about education, quite at odds with the reality. As a result, quantitative expansion of the system (school building, new curricula, professionally trained staff, and student services) has been the most visible accomplishments of this long period of reform. Improvements in quality and equity are still

to be realized. Reform efforts deliberately seem to skirt around thorny and controversial issues such as the dual system in secondary education. Reforms then have not taken seriously on board the schisms, the mindsets and the ideologies that lock the system into a constant reiteration of a plantation pedagogy model.

6.2. Complexity theory

Alhadeff-Jones (2008) and Snyder (2013) posit that there comes a time in the evolution of a system when the centre can no longer viably hold things together as it does not possess all the information that various groups at all levels are generating. Even a decentralized model would find difficulty in doing so. According to Snyder (2013), a simple system has few parts and is easily monitored, whilst a complicated system has a multitude of moving parts which are all known. However, in a complex system such as education, much of the information related to divers groups is unknown, and behaviour cannot be reliably predicted based on past responses. The complex, he suggests

.... is the realm of the unknown unknowns. It is a space of constant flux and unpredictability. There are no right answers, only emergent behaviours, ... The policy maker's role in this space is to create safe spaces for patterns to emerge, which is best done by increasing levels of interaction and communication within the system to its largest manageable level. (p. 8)

In this view, a reform should be based on a continuous process of acquiring information about how various groups are responding. This differs from the linear reform process where 'roll out' is the major visible 'event' (giving politicians 'mileage'). Reform is cast as a 'project', with pauses where information is considered, and even re-tooling and tweaking. Understanding education as a complex system suggests that reform should not involve a big political unveiling, but a more tentative approach, tapping constantly into what stakeholders know and deliberating on the best ways forward.

Drawing on general systems theory, cybernetics and ecological studies, theorists have identified *self-organization, emergence and feedback* as key concepts in understanding complex entities. For instance, within a social institution such as education, groups organize themselves (the denominational lobby in Trinidad and Tobago), and create relationships (links with ethnic elites). When a change is imminent (reform in secondary education), negative and or positive feedback loops develop and grow larger (channels of information and communication by key actors and others as they share and react to the reform). Their emergent behaviours are based on various reactions to the change which may not necessarily be homogeneous, so that information is needed on the details of these responses; some may be less opposed than others based on their unique perspectives or contexts (Morrison, 2006). In conventional ways of doing reform, all this interaction, information and interest may lie well outside of the official scope of the project. But, according to complexity theory paying attention to these *complex adaptive behaviours*, learning how to identify them, and steer them possibly in other directions, may be what 'reform' should be about, especially in polarized contexts as is the case in Trinidad and Tobago. Casting education as a 'sprawling ecosystem' (Snyder, 2013, p.6) with a multitude of groups, each having their own historical connections, ideologies and values, is a more realistic picture on which to base efforts at reform, as it would necessarily mean increasing dialogue across all parties. The present model is more reminiscent of 'the funnel' - wide consultation at first and then a narrowing of focus and drilling down at the various sites, to enact a prescribed course, looking for a certain outcome.

7. RESEARCH DESIGN

A qualitative approach is taken, exploring the perspectives of teacher educators at a School of Education in Trinidad and Tobago, selected because they work with teachers on a daily basis in schools across the country. They have a first-hand appreciation of how reforms are faring while being privy to the actions and views of principals, teachers, parents and supervisory and curriculum staff from the Ministry of Education. They have experience as subject-specialists in secondary schools, or as supervisors or administrative officers in the Ministry of Education. The researcher solicited their views via e-mail (sent out individually) on the failure of educational reform (without mentioning complexity theory). Twenty members were contacted and 15 responded (6 males and 9 females) to the following e-mail: *I am envisaging writing a paper and I would like a little input from you. I am thinking about all the education reform that we have implemented and all the far-reaching changes in education in recent times, yet educational achievement/performance for the majority of students has not improved, judging solely by CXC results as a marker. I am asking you to write me a few paragraphs (or longer, in fact I would prefer if you could elaborate) as to why you think that this continues to be so. There may be many reasons but perhaps one or two that you believe are the most important and why.*

8. DATA ANALYSIS AND FINDINGS

Responses were subject to qualitative data analysis i.e. reducing the data via codes and organizing according to significant emerging themes. The analysis was guided by what the teacher educators emphasized in their critique of educational reforms, and whether their statements revealed a 'gap' that could be meaningfully filled by an alternative approach grounded in the tenets of complexity theory.

There were two major points: (1) Time - The urgency with which reforms were implemented, and the slap-dash nature of the implementation process, indicated the influence of political expediency. In Trinidad and Tobago a political party has a five-year term in power and then has to face the polls. There are two major political parties, largely defined by ethnicity, and the campaign trail can become overheated with bitterness and accusations. It is a Westminster form of government, often described as 'the winner takes all', meaning that the winning party has the right to people state boards and other statutory bodies, and extend their influence. Consequently, there is a 'dog eat dog' fight during each general elections, and this continues in Parliament with the Opposition frequently denying support to bills proposed by the government. Relationships are so polarised that a new party in power often seeks to discredit, discontinue and dismantle the previous regime's efforts at reforms – for example,

The Single Sex School Programme, where some former Junior Secondary and Senior Comprehensive Schools were converted to either all boys or all girls schools. ...lasted for about three years and was overturned by the succeeding government. I am unaware of any positive impact of this reform effort on student achievement.
(#3)

(2) Policymakers and planners lack comprehensive knowledge and understanding about the contexts targeted for reform. This relates to the first point in that in the extreme urgency to conceptualise a reform, seek funding, and design, implement and evaluate it, there is little time left for researching schools and iteratively gathering information from all major

stakeholders. (It also relates to the first point in another way – policy makers and planners are inextricably linked to politicians). As a result, ‘taken-for-granted’ knowledge fills the gap.

Education reform is often state-centric and top-down, a technical-rational approach is taken without the necessary meaningful consultation with major stakeholders. As a result, there is little buy-in and the reform is doomed even before it starts. Consultations that occur are usually ritualistic and if stakeholders are aware that their voice really does not matter; that their contribution does not significantly change decisions already made, then support is also withheld. (#4)

There are a number of challenges that persons at the ground level of the education system experience (teachers in the classroom, administrators, parents, counsellors and school support services, entrepreneurs, denominational boards), but these do not seem to be considered when the managers of the system diagnose the needs of the system and suggest reforms. (#5)

These issues also relate to the specific problem of literacy. Many students leave state schools with minimal literacy skills, and this has been continuing for decades, despite reforms. What is needed is not a specific focus on literacy, but, recognition of the nature and characteristics of the clientele. For example,

*... reform has **never** addressed the issue of text complexity. It’s not recognized as an issue in any reform documents, yet it is expected that students will be prepared for examinations on complex texts, that often exceed their ability to negotiate them ...*

An even larger issue, ... stems from inadequate proficiency in Trinidad and Tobago Standard English. There is nothing new I can say about this phenomenon. Annually, it accounts for thousands of Creole speaking students’ failure to achieve Grade 1 or 2 at English. What is frustrating is that we know children who read voluminously eventually internalize the structure of English, even if they are immersed in Creole-speaking contexts, but too many of our adolescents make other recreational choices except reading. (#9)

There are a number of other issues raised, many at a micro level, which also speak to the taken-for-granted nature of the practices which encourage inequities. They relate in some way to the larger issues of political expediency, and ignorance of pertinent and crucial relationships in schools. For example,

Teachers work in isolation. Many teachers do not collaborate, share ideas or share best practices. They teach alone, work alone and do not seek help or guidance... Conversations about teaching and learning are often negative. Teachers are very often in survival mode and as a result do not believe that they have time for anything beyond delivering their lessons in the way they best know how to do. (#11)

To me, the biggest reform we need is in the examination system, because it is encouraging superficial teaching. Remember that the failures we are speaking about here are not the children of the educated middle and upper classes, it is the children who often have few supports beyond what they receive from school. (#9)

In a country of hills and valleys, rivers and swamps, villages and cities, I have come to reflect on the contrasts within the education system of my beloved country. We love geographical contrasts in small areas, but do we love disparities within education? Do we love that certain schools are considered elitist? Do we love that students access secondary schooling based on performance at eleven plus [SEA]? That some schools will have only the top performers and others only those who can barely read and write, thousands of them?(#13)

9. DISCUSSION

Data analysis reveals persistent inequities and issues which encourage disadvantage that go unaddressed by the traditional approach to educational reform. These include - the inadequate knowledge of the system by authorities in education, meaning that the authorities are largely unaware of, or ignore, or take for granted, the needs of the various stakeholders at the different types of secondary schools; a reformed system that leaves the high-stakes examination system intact; the plight of low-achieving, Creole speakers of English (who are in the majority); the embattled position of teachers, especially in the state sector; and, last but not least, the urgency with which politicians expect positive results.

It is not far-fetched to see that because of 'funnel vision' such 'problems' continue to exist (and, even escalate) in a climate of continuing reform. If reformers would cast the net wide in information-gathering (and treat this as a continuing process), they would be likely to catch more of the multifarious issues that emanate from ideologies, values and policies that tend to privilege a small sector of students and marginalize thousands. A major tenet of complexity theory is the salience of information and communication within a sprawling ecosystem such as education. Further, complexity theory by its commitment to regular and on-going meetings, and feedback loops, structures 'safe' spaces for groups with entrenched and opposite positions to interact in a prolonged way over key issues, hopefully building a broader awareness than just an emphasis on a particular type of secondary school. A simple example is that principals' associations do not necessarily need to be configured according to school type. Another is that staff of neighbouring secondary schools could agree to discuss common issues, rather than be content to be rivals. The present approach to reform seemingly takes the position that all these groups, affiliations, factions and, their related ideologies of education, are a veritable hornet's nest, and tries to steer clear by generalizing the research process and generating prescriptions for progress. This though leaves inherited values and norms intact, an uneasy foundation for successful reform.

10. CONCLUSION

Complexity theory is an approach that seeks out who is generating information, what that information is (facts, processes, ideas, criticisms, values), how it changes as the reform continues, and how that information could be directed towards a better research effort. For a traditionally-oriented and politically-driven education system such as that in Trinidad and Tobago, frank and respectful dialogue across disparate groups, is at present a non-starter. However, one way in which information sharing could be maximized is to construe reform

as research. Long before specific reforms are actually contemplated, the Ministry of Education might consider setting up groups across traditional loyalties to, not only gather data from their constituencies, but also to bring such data to wider audiences for a thorough airing. Once a reform is embarked upon, all manner of information about its progress is disseminated, monitored and discussed by these groups, because the reform may be doing well in certain contexts and not in others; and, there may be scenarios where the reform is being sabotaged.

Research through such a means can reveal nodes (groups) and norms (interactions) which represent valuable information in thinking out how a reform will be accepted and its likely trajectory. In the present climate of adversarial relations between some of the major players in education, expanding research into the system, which is necessary for any organization (beginning with quantitative data), could be a way to develop solid knowledge of all parts of the system, prior to any reform undertaking. Hopefully, such data would lead naturally to more qualitative approaches, as issues arise, that may unearth the knowledge and insights from groups nearer to the chalkface. It may be that the tenets of complexity theory cannot be fully implemented in local reform efforts right now, but its cardinal point that more contextual information is fundamental to successful reform can be a starting place, and more research into the system could bring us closer to confronting the issues that have in the past led to educational failure.

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AUTHOR INFORMATION

Full name: Jeniffer Anne Mohammed

Institutional affiliation: The School of Education, The University of the West Indies

Institutional address: St. Augustine Campus, Trinidad & Tobago, West Indies

Email address: jeniffer.mohammed@sta.uwi.edu

Short biographical sketch: Jeniffer Anne Mohammed, PhD, is a lecturer at The School of Education, University of the West Indies (UWI), St. Augustine, Trinidad & Tobago, in the areas of the sociology of education, qualitative research, and the teaching of social sciences. Her research interests lie in textbook pedagogy, educational reform, the history of Caribbean education systems, gender relations in schooling and, biography and education.

Chapter #17

RESPECT FOR HUMAN DIGNITY AS A FRAMEWORK AND SUBJECT OF EDUCATION IN THE LIGHT OF PRESENT CHALLENGES

Zoltán Rónay

*Ph.D., Associate Professor, Eötvös Loránd University, Faculty of Education and Psychology,
Institution of Education, Budapest, Hungary*

ABSTRACT

Our world is full of challenges. Some of them have been present for decades; others are newer phenomena. For instance, the literature mentioned the phenomenon of black pedagogy at the beginning of the twentieth century. Aggression in school also has a long history. Digitalization has only been source of conflict in the past few years. These challenges often lead to more and more conflicts which directly or indirectly affect the most unprotected and exposed layer of our society: children. Children can become either victims or perpetrators. It is the family's role to help them to avoid these conflicts.

However, families do not have the ability or time to handle this problem. In some cases, the family is even the cause of the conflicts. Therefore, the role of school and education is increasingly significant. Education strives to teach why these conflicts are dangerous, the dangers they represent or how to avoid them, and explains that these conflicts are wrong because they violate laws or school rules. Nevertheless, teachers often disregard the morality aspect. For that reason, it is important to define a standard which can help to highlight the moral issues. This standard could be the respect for human dignity.

Keywords: fundamental rights, aggression in school, black pedagogy, digitalization, social integration.

1. INTRODUCTION

Approaching the third decade of the 21st century, we face many challenges which affect our everyday lives. Some of them relate to technological development, and others concern social and natural factors. These include phenomena which are well-known in the school system, but which are being transformed as a result of the aforementioned challenges. Firstly, there is the issue of digitalization, which can be both a blessing and a curse, as it promotes education but can endanger human relationships through isolation and bullying. Secondly, it is reasonable to talk about migration in order to help pupils recognize real and false dangers and facilitate the social integration of disadvantaged migrant children (and their families) in school; think about the tools which can help them, and also the inclusive community. Thirdly, there are the problems of aggression and black pedagogy. Aggression is not a new phenomenon, but digitalization means that it can now appear in new forms. Digitalization makes it easier for bullying and mobbing to take place not just within the school, but outside of school too at the hands of strangers. Moreover, migrant children may also be a new target for these actions. Finally, there is an old pedagogical problem, the phenomenon of 'black pedagogy', which is connected to either assessment or discipline in school.

If these symptoms directly or indirectly affect the life of any child, and it is up to the school to deal with them. Many researchers investigate the phenomena mentioned above from the perspective of educational science. Many researchers develop pedagogical tools to respond to these challenges. This paper offers a new perspective on this issue. It provides an overview of the topic, and presents (respect for) human dignity as an educational framework on the one hand, and as subject of teaching on the other. Human dignity as a framework is especially relevant to interpersonal relations within the school, but it is also important as a subject of teaching and education. That is, it is necessary to help students to be empowered citizens, to equip them with the relevant legal knowledge and to teach them to respect the rights of others. However, in order to ensure that this is possible, future teachers must also know their rights and limitations. This paper proposes a method which will be applied from next semester on the teacher training programme at Eötvös Loránd University in Budapest.¹

2. THE PRINCIPLE OF RESPECT FOR HUMAN DIGNITY

2.1. Brief history

Respect for human dignity is not only one of the oldest fundamental rights, but the basis for most of the others. This right came to the forefront when citizens turned against their monarchs. Its historical evolution was similar but different in Europe and the United States. The contractual theories of Hobbes, Locke, and Rousseau served as its foundation. These concepts focused on the relationship between the state (the monarch) and citizens, but they already contained elements relating to the equality of citizens, too. There were various stages in the evolution of this right in England, namely Magna Charta Libertatum (1215), Petition of Right (1628), Habeas Corpus Act (1679), and the Bill of Rights (1689). It is also important to mention the role of court judgements in England (McCrudden, 2008; Sári & Somody, 2008). Declarations were also important, both in North America (Declaration of Independence) and in France (the Revolution). The role of human dignity was becoming increasingly significant when enacted constitutions started to appear in the 19th century. Initially only political and civil rights were covered, but these were later followed by economic, social and cultural rights in the early 20th century. A new level of fundamental rights then emerged as a consequence of World War II, namely increasing internationalization in order to avoid the tragedies such as the World War. Unfortunately, this movement was not global, as countries under the Soviet sphere of influence were not able to participate. Several international organizations (e.g. Council of Europe) and conventions (in relation to human and political, and later economic, social and cultural rights) were established in order to safeguard these rights. Finally, the third generation of human rights emerged, namely solidarity rights (right to development, peace, a healthy environment and to share the benefits of the common heritage of mankind).

All the above-mentioned fundamental rights include elements of the respect for human dignity (e.g., McCrudden, 2008; Enders, 2010).

2.2. Fundamental rights based on the principle of respect for human dignity

Respect for human dignity is closely related to the concept of protection of human life. Body and soul are inseparable, thus if one is violated, they are both violated. Therefore, as a normative order, this right is inviolable and unrestricted. On the one hand, this means that it is the only right whose restriction and violation are prohibited for both the State and other people under all circumstances, even in case of other fundamental rights. In some instances, the other fundamental rights may be restricted with regard to human

dignity – although in this case, the restriction must be necessary and proportionate. On the other hand, everybody has the right (without discrimination) to these rights (respect for human dignity and protection of human life), and they determine all the rules, the measures taken by authorities and other human behaviour. All other rights are based on both respect for human dignity and respect for human life, e.g., personal rights; the prohibition of torture (mental or physical); inhumane or degrading treatment or punishment; slavery, servitude or forced labour; discrimination; the respect for private and family life and home; the protection of reputation, personal data; the right to know and share data of public interest; freedom of thought, belief and religion.

The aforementioned rights are typically violated as a result of fundamental rights being breached. Human dignity is nevertheless most closely linked with personal rights, although violation of respect for human dignity is often indirect in nature.

3. CURRENT CHALLENGES FOR SOCIETY AND EDUCATION

3.1. Challenges in general

Several authors approach and/or summarize challenges differently, depending on whether they focus on complex or individual challenges, or the start or end point. The differences may also be rooted in whether the challenges are connected to society, the school as a leading organization, the teachers or students or certain subjects. This also results in a different number of challenges being emphasized (Google offers ‘the main three, five, seven, etc. challenges’, for example).

One of the most recent works on this subject proposes a complex approach with almost twenty challenges (Steyn, Vos, & de Beer, 2018). There is not enough space to list all of them here, but the elements most related to our topic should be highlighted: urbanization, migration patterns, including domestic and external mobility; communication; the information and knowledge revolution; robotics and automation; the emergence of multiculturalism and minority interests.

According to Baraldsnes & Saeverot (2016), the most important challenges for education are policy decisions, as well as the existing problems in society, globalization and increasing pluralism. Power (1997) mentioned the economic and social, technological and political transformations which lead to a knowledge-based society and need for new forms of teaching and learning. Other authors emphasize the behaviour of students, and the tools (methods) of teachers to handle them, and term this challenge ‘effective classroom management’ (Marquez et al., 2016). The introduction of new Information and Communication Technologies (ICT) into schools is also a challenge for education (Rabah, 2015).

While I compiled my own collection of current challenges, I focused on the connection between education and human dignity. Two different causes can be identified: social and natural factors. Aggression within schools, bullying, mobbing², black pedagogy and technological development (digitalization) come under the first. Migration can fall under either social or natural (cf. global warming) factors. In the case of the natural factor, migration is in the second group. These challenges are closely related to one other. For instance, migration can be a source of aggression, bullying and mobbing; black pedagogy can also lead to aggression. Although some of these [aggression (bullying, mobbing), black pedagogy] have existed for a long time, others [migration crisis (problems of immigrant students), digitalization] are relatively new phenomena. However, what they have in common is that they affect our everyday lives.

3.2. Links between the challenges

If we look at some cases related to the challenges of education, the relationship between them is obvious. Digitalization via social media can become a tool for bullying and mobbing, which may lead to aggression. Digitalization can also cause black pedagogy through the wrong use of ICT or internet, etc. Migration is also closely linked to aggression, which targets mainly migrant students, but there are several known cases where the conflict was mutual. However, if schools mishandle conflicts between local and immigrant students or if the teacher turns against a migrant student, migration can be linked to black pedagogy. In some cases, aggression may be a reaction by offended students, so the relationship between black pedagogy and aggression is clear. Upon closer analysis of these cases, it becomes clear that each challenge is connected to human dignity.

The legal cases are from the Annual Reports (2000-2016) of the (Hungarian) Commissioner for Educational Rights, except the ones that are connected to the immigrant students. The annual reports do not contain information on these. Those examples are therefore taken from the collection of Maynard, Vaughn, Salas-Wright, & Vaughn (2016).

3.2.1. Aggression

The phenomenon of aggression, including bullying and mobbing, is present in children's lives both inside and outside of school. The literature emphasizes that aggression within the school is always a breach of discipline (therefore also a general infringement), but not every breach of discipline is a form of aggression (e.g., if pupils are late to school) (Aáry-Tamás & Aronson, 2010). Aáry-Tamás & Aronson (2010) distinguish between types of aggression on the basis of how the aggression manifests itself: physical/non-verbal (fighting, tugging, jostling, punching), verbal (shouting, cursing, swearing), and the victim of aggression: person (teacher, student, parent), object (damaging). Furthermore, they mention special forms, such as shaming, humiliation and exclusion, which are often combined, and go hand in hand with typical forms of aggression (verbal, physical). Their research showed that although physical aggression is more visible and easier to recognize, verbal aggression is twice as frequent. The latter often remains hidden because it includes the ruining of self-esteem, or harassment in a relationship (exclusion, isolation), and frequently relates to sex, race, skin colour and other innate characteristics (Coloroso, 2014). Victims often do not wish to speak about their ordeal. This is similar to the phenomenon of sexual harassment (physical and/or in a relationship), which, according to Coloroso (2014), is always a question of power, and therefore never the same as flirting.

The incidence rate of both physical and verbal aggression by students depends on the target of the aggressive act, especially in student relationships. In teacher-student relationships, verbal aggression is more common than physical violence or humiliation, which is rarely directed towards teachers by students. This contrasts with physical aggression by teachers against students, which is more typical (see black pedagogy). Verbal aggression is common in both directions.

According to Aáry-Tamás & Aronson (2010), the most characteristic source of aggression by students is anomie or lack of trust (in the system, school, teachers, parents, each other, etc.), because the less trust there is, the more likely it is that aggression will occur. Coloroso (2014) emphasizes the role of xenophobia. If it is latent or open but does not target actual people, it does not represent a breach of discipline. However, it is important to avoid this behaviour. Nevertheless, xenophobia is often directed against a real person (student or teacher) which means violation of human dignity or personal rights in itself, as this always leads to aggression and in many cases to racism (Coloroso, 2014).

Aggression by students is very dangerous because it repeatedly results in new cases of aggression, often by former victims. Their aggression can be self-inflicted (see suicide acts) or take aim at the real or supposed offender (the community, the class) (see school shootings, e.g., Columbine High School). Aggression is also a danger to offenders because it may also lead to commit a crime in a further stage of their lives. (Coloroso, 2014). These problems should not be solved by the tools of penal law, but by the tools of pedagogy.

There are typical cases of aggression in schools everywhere. Unfortunately, there are plenty of examples – from slight cases to those with tragic consequences. There are also many cases in Hungary. One example of such a case involved a group of pupils dragging their classmate into the bathroom, where they hit her and forced her onto the floor. They filmed the entire incident and then uploaded the video on to the internet. Another case involved a student who took photos of his naked classmates and then shared them on social media. In both cases fundamental rights were violated, but many other rights could be violated, too: personal rights, right to freedom of religion, right not to have to face racism, etc. Being aware of the human dignity leads to know the consequences of these actions and stop students from behaving in this way. It supports the understanding that aggression is immoral, a disciplinary offence, as well as illegal. Furthermore, and perhaps more importantly, it can help to make it clear to students that their acts are not acceptable on moral grounds either.

3.2.2. Black pedagogy

As mentioned previously, aggression within schools can be caused by teachers as well. It can be expressed (physical and verbal) aggression, but more typically it takes the form of harmful teaching methods (mainly assessment and discipline). The first intensive description of this phenomenon was established by Rutschky (1977), who termed it ‘black pedagogy’. The word ‘black’ does not refer to the method, but to the results: the frequently subconscious psychological effects to which it can lead.

The persistence and consequences of black pedagogy are well-illustrated in the findings of Hungarian research on the topic (Hunyady, M. Nádasi, & Serfőző, 2006). Not only do participants (between 20 and 90 years) report the same experiences, in many cases negative experiences were still vivid many decades after they had occurred. Most examples related to assessment (when grades were given), unfair grading, the consideration of irrelevant circumstances and unreasonable distinction. The other typical aspect of this phenomenon is discipline. Teachers often shamed pupils verbally and administered humiliating punishments, and in some cases even tortured them. There was, for example, the appalling case of what was known as ‘the most – the most table’. This involved a teacher deciding that every week the class would vote for the most skilled, most awkward, most diligent, laziest, tallest, shortest, lightest, heaviest, etc. pupils. The results were then displayed on the wall. This method was used to create conflicts and tension between pupils. Furthermore, those with the worst assessment felt ashamed or humiliated.

There are also many examples of black pedagogy in the aforementioned Annual Reports. For example, the following occurred in the 21st century in a Member State of the EU: a teacher punished an unmanageable pupil by forcing him to kneel by the blackboard with his arms held in the air during the lesson. In many other cases teachers assessed pupils by making comments related to their abilities and family background in public and in the presence of the class (or parents). It is also common for an isolated (usually disabled or Roma) child to be left alone and/or that classmates are directly or indirectly encouraged to isolate the child in question. All of these phenomena violate respect for human dignity. They qualify as mental or physical torture, inhumane or degrading treatment or punishment,

and violate personal rights, respect for private and family life, the protection of reputation, and the protection of personal data. Teachers must therefore learn what the term ‘respect for human dignity’ means and how it should be implemented in practice, and understand that their actions may also be illegal.

3.2.3. Migration

Migration is a challenge for education from two perspectives: on the one hand from immigrant students, and on the other from the recipient community (domestic students). The conflicts between these two are natural because of linguistic difficulties, as the immigrant students often do not speak the recipient country’s language. The foreign culture also causes problems, as the unknown may appear strange or scary. This can easily lead to conflicts. Often different religions and degrees of religiousness among pupils also lead to difficult situations. These differences often cause aversion to ‘the other’ or, in more serious cases, racism and xenophobia. Janta & Harte (2016) add education-related problems (challenges) such as educational achievement to this list, because immigrant students’ knowledge is generally at a lower level. Moreover, teachers use the local language, which the immigrants do not understand. These differences result in social isolation.

According to Leon (1996), under these circumstances, it is not surprising that the self-esteem of these students is very low. The journey (often as refugees) to the new country involves an interruption in schooling and throws those concerned into a new environment. This may have a negative impact on pupils’ proficiency. They also have many personal problems, i.e financial problems, problems with health and nutrition, family tragedy, loss of relatives, etc.

It is not only the immigrant pupils that are unable to handle these situations, but the home students, too. As a result, they often turn against the immigrant students. As several (legal) cases have shown, they may call them mean, hurtful names, exclude them from friendship groups, or completely ignore them. In many instances immigrant students have been hit, kicked, pushed, shoved around, or locked indoors. In more serious cases they were called mean names and comments were made about their religion, race or skin colour, or the same was done via computer or e-mail messages or pictures/cell-phones. Few immigrant students complained, because the other students told lies or spread false rumours about them and tried to make others dislike them. All of these phenomena are a pure offence against human dignity: discrimination, breach of protection of reputation, personal data, and freedom of religion. It is important to note that the same can occur in the opposite direction, however this is much less typical. By focusing on respect for human dignity, the teacher will be better able to handle these cases. Students can learn to show tolerance towards each other, and to respect and accept others’ differences.

3.2.4. Digitalization

Opinions differ on current technological developments, especially on digitalization. For some, digitalization is a blessing but for others it is a curse. Those in favour say that it helps promote education. Nevertheless, it is also challenging in that context because teachers must learn how to handle these tools, and both teachers and schools need technical assistance (to develop their professional skills) and financial support (Rabah, 2015). Furthermore, although it means new methods, at the same time it also means new duties for the teachers. Opponents of digitalization emphasize its harmful effects, which can endanger human relationships through isolation, and the new tools it provides for violence (mobbing, bullying), mainly via social media (e.g., Facebook, Instagram, YouTube).

Digitalization can provide a platform for harassment, e.g. on Facebook (as mentioned previously in relation to aggression). Social media (e.g., Facebook) abolishes the borders between school and home, time for learning and free time. The students' responsibility for disciplines is connected to the school. The practice shows that there are cases where breaches are committed by students after school time but connected to school (offensive comments on Facebook). For instance, when students abuse their teachers or criticize their schools using obscene words on social media. These comments can offend the human dignity or typically the personal rights of teachers (also the schools, which as organizations also have personal rights). Respect for human dignity can also help teachers teach students how to make proper use these new technological opportunities.

4. THE ROLE OF EDUCATION IN DEVELOPING KNOWLEDGE OF RESPECT FOR HUMAN DIGNITY

In the process of learning about respect for human dignity and general moral issues, both family and teachers play a crucial role. However, students spend most of their time in school. Teachers therefore can and must set an example of what acceptable behaviour is. This does not mean merely following or not violating the rules. Teachers can show students how a real citizen acts assertively and at the same time respects the law and ethics – especially human dignity and fundamental rights. The role of teachers is also significant because they can set a good example to the students. Moreover, it is important to teach students how to develop their knowledge of the law.

The question is how teachers can achieve this. This is where universities and their teacher training programs come into play. With no previous knowledge of the issues, teacher training students do not have knowledge of their rights or basic legal norms in general. Therefore, universities must teach them about their rights (basic knowledge of the law), how to improve their knowledge of the law, become conscious citizens and, in particular, teach their students how to acquire the aforementioned skills.

The following two examples from Eötvös Loránd University could promote these objectives.

The 'Anxiety versus ego strength project'³ is based on the theory that our world is full of challenges, demands and dangers (see 3.1.). Social media and several interest groups permanently exaggerate the real dangers in our everyday lives or create fake dangers. Nevertheless, danger increasingly occurs unexpectedly. Under these circumstances the most exposed groups in society (children, disabled people, elderly people) need help. From the point of view of our topic, this means helping people to act independently, to recognize the real and fake dangers, to prepare for these dangers and to control the course of events.

As a result of this project, several interventions will be developed: handouts, curricula and training programs which aim to develop pedagogical awareness, increase knowledge of inclusion in school, help teachers to recognize (sexual) abuse (mainly in early childhood) at an early stage, and prepare students and teachers for crisis situations. These interventions will help develop consciousness and knowledge of the law. Education scientists, psychologists (social, clinical, school psychologists), intercultural education scientists and psychologists, sociologists, and lawyers will cooperate to reach these goals by offering an interdisciplinary approach to the topic. During this project, they will also investigate the ingredients of perceived safety, and develop intervention tools and programmes for different actors and institutions operating at various segments of social safety.

The other project is a pilot course devised by the author of this chapter: ‘The legal and ethical frameworks of the teaching profession’. The course began in September 2018; therefore, we are not yet able to report our conclusions and can only provide information on the development process. Our goals are to help students learn about and follow the relevant norms for schools and teaching profession as a whole, help them understand them, apply them and analyze them critically. For the latter, legal theories and principles – including fundamental rights – are essential. Teaching law to non-law students obviously requires special methods. First of all, legal texts must be translated into comprehensible language. Case studies from schools are also presented in order to demonstrate the connection between rules and everyday life. All the case studies are directly or indirectly connected to human dignity, thereby allowing the course to acknowledge the presence and/or role of human dignity in cases.

5. CONCLUSION

In summary, we can conclude from the aforementioned links between current challenges and education as well as respect for human dignity that there are numerous crises occurring at all levels and in all areas of our lives. These crises are most serious for children. We have a duty to help children handle these situations and develop their behavioural skills. The family clearly plays a key role in this process, but teachers and schools are just as important. It is the task of universities to prepare (future) teachers for this work. Teacher training programmes must therefore include courses which teach student teachers about their own rights and obligations and teach them to pass this on to their students. Including these courses, it is important to stress that respect for human dignity is not only a legal norm or elevated theory, but a concept which provides direction and offers a standard to follow in our everyday lives. It must be an essential element of the curricula of both schools and teacher training courses.

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AUTHOR INFORMATION

Full name: Zoltán Rónay

Institutional affiliation: Ph.D., Associate Professor, Eötvös Loránd University, Faculty of Education and Psychology, Institution of Education, Budapest, Hungary

Institutional address: H-1073 Budapest, Kazinczy u. 23-27, Hungary

Short biographical sketch: Zoltán Rónay was born in 1976 in Budapest, Hungary. He graduated in 1999 as a lawyer at Eötvös Loránd University Faculty of Law. He is Ph.D. on law and political sciences (University of Szeged Doctoral School of Law and Political Sciences, 2017). Previously he were in practise as solicitor. Between 2006 and 2015, he served as secretary general of Eötvös Loránd University. Today he is associate professor at the same university's Faculty of Education and Psychology in Institution of Education. As a university lecturer, he regularly has many courses in Pedagogy BA, Educational Science MA, Community Coordination BA, Sports manager and recreation and health promoter BSc. He is a supervisor in Education Doctoral Programme. Apart from these regular courses, he has founded several optional courses. He has more than hundred published publications in Hungarian, English and German, including book chapters and an own monography.

¹The chapter is the extended version of the keynote presentation with the same title which was given at the END 2018 Conference in Budapest, Hungary on 24th June 2018. The introduction is the same as the abstract of this paper, and is published here: Carmo, M. (Eds.). (2018). *Book of Abstract International Conference on Education and New Development (END 2018)*, Lisboa: World Institute for Advanced Research and Science

² It must be stressed that there can also be aggression outside of school

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Chapter #18

THE IMPLICATIONS OF ARTS EDUCATION ACTS FOR PROFESSIONAL MUSIC TRAINING PROGRAMS: THE TUT EXPERIENCE

Hua Hui Tseng

Music Department, Tainan University of Technology, Taiwan

ABSTRACT

Professional music training programs are confronted with major changes in the sociocultural and educational landscape. In response to Taiwan's societal challenges, such as current issues about Music Education Policy, the Ministry of Education, Taiwan, amended the Arts Education Act (AEA) that outlines the curriculum for study in the performing arts in 1997. The AEA of 2015 is a sequel to the Special Education Act of 1984 that was designed to apply relevant theories to curriculum standards for education reform in Taiwan. The Acts are founded on the belief that high expectations and setting goals will result in success for gifted and talented students. The reauthorization mandates that funds, knowledge of art, and art-related courses be incorporated following the model of artists-in-residence projects. The purpose of this case study is to revisit and examine policymaking within the context of professional music training programs by describing and analysing the history of arts education in Taiwan and the current policymaking framework implemented at the Tainan University of Technology (TUT), Taiwan. The conclusion drawn is that education institutions can provide a conceptual framework for understanding the implications of the AEA of 2015 for professional arts education in both the legal macro- and microenvironments.

Keywords: education policy, arts education act.

1. INTRODUCTION

The history of the Arts Education Act (AEA) in Taiwan is a story about Gifted and Talented Education (GATE) opportunities and characterized by an identification procedure viewed as competitive by parents and teachers and standardized tests that have served to limit access to those opportunities (Wu, 1989). Initial reflection on professional music training programs suggest a need for promoting effective educational benefits with respect to music education in policymaking instead of musical works and their dissemination, thinking more diversely about musical practices, and expanding the various contexts for music education. However, music education policy for revising schools' curriculum reveals the pervasive role of youth music culture; the public's ignorance of music educators, researchers, and scholars' voices; and music education as a field of conflicting forces.

In this paper, it is argued that if professional music training programs are to be inclusive in ways that provide access to high-quality, professional artistic and cultural productions for all students, understanding high levels of competence in music policymaking is required. Analysis of the perspectives embodied in the more comprehensive idea of music education in the Taiwan Arts Education Act (AEA) may facilitate an understanding of the implications for new audiences of open art education that go beyond just the potential implications of policy shifts for music education (Wright,

2012) that are focused on the conflicting forces in society and education system and incorporate “potential changes and challenges for music education in the wake of these policy changes” (Christophersen, 2015, p. 365). Christophersen (2015) contends that political commitment to external arts and culture programs aimed at schools, together with the prominent position given to artists and the field of culture in arts education that is directed primarily at improving and challenging music education, undermines the possible implications for conceptualising professional music training programs that value creative expression, attract elite guest artists, and offer students personalized instruction that has pedagogical emphasis on communicating with an audience (Breivik & Christophersen, 2013). It is important that music learning bring about consequential benefits, and music educators have an ethical responsibility to meet the life-long musical needs of all students (Jorgensen, 2007; Regelski, 2012; Rickson & Skewes McFerran, 2014).

After World War II, leading and engaging in advocacy efforts for arts education in Germany and the USA prospered because successful policies made constructive cooperation among relevant institutions and their representatives possible (Jank, 2009; Scheneider, 2009). In the early 1960s, the same tendency became evident for the development of the designated administrative authorities for arts education in Taiwan, which implemented a project for cultivating talent competence that is unique in the world (Ministry of Education, Taiwan, 2017).

Taiwan’s special education has a history of over 100 years that can be roughly divided into five stages. In the foundation stage (before 1962), Taiwan’s special education dates back to 1889, when a school for the visually impaired (later changed to one for the speech and visually impaired) opened in Tainan, enrolling the visually impaired and teaching them to read the Bible in Braille and make crafts. The establishment of schools for the hearing and visually impaired ushered in a new era of special education and paved the way for future developments. Motivated by the suggestions of the National Education Convention in 1962, administrators of two elementary schools in Taipei started an enrichment curriculum for gifted students in 1963 (Tsai & Shih, 1997). In 1971, an elementary school in Taichung City started a special class for gifted students. These students were enriched in mathematics, science and the Chinese language (Shu, 1978). To explore the characteristics of gifted students and develop appropriate, effective forms of education, the Ministry of Education began experimental programs for gifted students in 1973. Over time, these programs have gone through three stages. These stages, which included policies and guidelines, played an important role in the recent development of education for gifted students in Taiwan.

The Experimentation Stage (1962-1983), the first stage of the program, was designed to provide special education for gifted elementary students. This occurred between 1973-1979. The second stage (1979-1984) of the program was designed to extend special education to gifted students at the junior high school level. The programs included talented students in music, art and dance. The third stage of the program occurred from 1982 to 1989. In addition to services that were included in the second stage, the third stage included opportunities to accelerate through the grade-level sequence by skipping school years (Ministry of Education, 1982). In the third stage of the program guidelines and related statute, the school years for each level, including elementary, junior and senior high schools and colleges, can be shortened by up to one year each for each level; gifted students can therefore complete a college education and earn a bachelor’s degree at the age of eighteen. Without acceleration, they would be twenty-two years old before earning a bachelor’s degree (Tsai & Shih, 1997).

In the Legislation Stage (1984-1996), efforts in special education focused on the diagnosis and evaluation of special students, placement of students in the communities they were based, and promotion of research so that both disabled and gifted students had access to education suitable for them. In 1984, the Special Education Act was enacted. The Act established standards that regulate the promotion of special education to safeguard students' rights and interests.

In the Development Stage (1997-2007), pursuant to a White paper, the Special Education Act was amended in 1997, increasing the categories of disabled students to 12, with those for gifted students increased to 6. The Arts Education Act of 1997 was directly related to Taiwan's art education reform (Lau & Li, 2013). In 1997, a new milestone, the Arts Education Act, was enacted, which provided a solid foundation in music education in Taiwan for all students (Ministry of Education, Taiwan, 1997). It stated the following:

The purpose of art education is to cultivate artistic talent, enrich the spiritual life of the citizens, and to raise the level of culture... Arts education is implemented in the following three ways: Professional arts education offered at schools; general arts education offered at schools; arts education offered to the public. (p. 147)

The "TUT experience" began in 2001 and refers to working with the seven-year program from high school directly to a bachelor's degree in vocational education that includes arts, music and dance programs. The "TUT experience" is the nation's first specialized vocational institution for music education. The Music Department takes a maximum of 70 students per year. Currently, the Department comprises divisions such as piano, voice, string, wind, and percussion instruments. Auditions are held in March. With respect to student recruitment, the Department judges recruited students independently based on their diversity and flexibility to avoid becoming rigid and biased. The professional music training programs, which have redefined music as a diverse practice, challenge selected students to deal with music and varied musical practices, a feature that is reinforced through using multiple measurement/assessment tools with respect to performing requirements and establishing partnerships (industry-academia cooperation/collaboration) that promote the development of alternative pedagogies and practice-based strategies that are sufficiently flexible to meet a much wider range of musical needs. Examples of partnership activities are the Working with the Career Development Plan and the development of a partnership model within the "Become a Yamaha Music Education System Teacher."

1.1. Policies for gifted and special needs students

The Arts Education Act (AEA) announced by the Ministry of Education in 1997 states that performing arts are part of arts education. The aim of the AEA is to promote the cultivation of artistic talent, enhance the public's understanding the arts, strengthen the public's sense of aesthetics and creativity, enrich the public's spiritual life, and raise the overall level of culture. The situation today is very different. A *5-Year Plan for the Development of Special Education: 2016-2020* (Ministry of Education, Taiwan, 2016) and an *Action Plan for the White paper on the Education of Gifted Students* (2008) were drawn up, with the Special Education Act amended accordingly, to provide quality educational opportunities, create fine educational environments, and meet students' individual needs (Ministry of Education, Taiwan, 2016). In November 2015, legislator Pi-Han Chen pointed out that often arts curriculum have been replaced with major subjects (for example, Math and English classes) and examinations by schools (United News, 2015). How can schools set up talent classes for students and practice ability-groupings? To open art education to

new audiences requires new approaches in arts education. It is important that the applicable evaluation and mechanisms of rewards and punishments be established to eliminate inadequate education and ascertain with clarity what arts and aesthetic sensibilities are.

The Arts Education Act (AEA) of 2015 is reshaping arts education in Taiwan. The aim of the AEA is to improve the public's understanding of the arts and enhance their sense of aesthetics. According to the art education law, art education falls into one of the following categories: Education at a professional art institution, art education at a regular school, and social art education (Ministry of Education, Taiwan, 2018). In this paper, a professional art institution's arts education policy issues in terms of the diversity of musical practices and the various contexts of music education are approached by first considering the political context for the AEA, then discussing some core views that are implicit in the arts education program in Taiwan, and finally, reflecting on the possible implications and challenges these contexts constitute for professional music training programs.

2. BACKGROUND

A stated goal of the Policy of Art Education (2005) for the population in Taiwan is to experience the inspiration of aesthetic perception and creativity for as long as they are living. One of the seven learning areas in the *1-12 National Basic Education Curriculum Guidelines* (2014) in Taiwan is the Arts and Humanities curriculum, which comprises the visual arts, music, and performing arts. Although the area is allotted relatively few contact hours (3 hours) in school (except for professional music training programs), it is still a compulsory subject during the first 12 years of schooling. The music curriculum is focused on three main areas: Performing music (including singing, dancing, and playing instruments), listening to music (including music history and verbalization), and composing music (including improvisation); it covers a wide range of musical genres and activities. The Seven-Year Coherent College of the Tainan University of Technology's (TUT) music department was established in 1998. A coherent sequence requires that at least 184 credits are completed in the first five-year program of study (junior-high school or junior college level), and at least 96 credits are completed in the final two years advanced level of study (junior and senior undergraduate level) in music training.

The AEA of 2015 is a sequel to the Special Education Act of 1984 that was designed to enact theories relevant to curriculum standards in education reform in Taiwan. Christophersen (2015) noted that that scholars in music education such as Gande and Kruse-Weber (2017), Bozalek and Biersteke (2010), and Levin (2010) have called for increased attention on policy studies. Policies can be useful tools for effecting change (Morse & Struyk 2006), but policy analysis, which shapes and informs policy recommendations, has not yet been widely employed by music education scholars who have called for widespread changes to curricular content and pedagogical approaches to understand policy implications for various aspects of arts education theory. Researchers have considered how policies related to the governance of school systems and the learning environments in schools are associated with performance in arts education and equity at the country and school levels (Tsai & Shih, 1997). This case study draws upon such research to describe the Taiwanese political context for the AEA policy.

3. THE MEANINGFUL MUSIC EDUCATION CONTEXT FOR THE POLICYMAKING

Policymaking is not entirely a bureaucratic add-on. Shively (2015) asserted as follows:

Constructivism, as both an epistemological view (Duffy & Jonassen, 1992) and a theory of learning (Fosnot, 2005), provides us with fertile ideas for considering learning and teaching in music classrooms and other music learning settings. It is about how we make meaning of our experiences and come to know the world. (p. 129)

Drawing attention to the importance of integrating learning through an Arts Special Education program is not a new phenomenon. Eisner (1985, as cited in Kieffer, 1996, p. 14) claimed John Dewey (1859-1952) mentioned how curriculum should be “interconnected and interdependent.” As a conceptual framework, it makes sense to use Shively’s (2015) constructivist view of learning and teaching for finding a balance between progressive and traditional views of music education to evaluate the curriculum integration process of the Arts Special Education program in Taiwan. It is anticipated that such a conceptual framework will, if selected and expertly applied, make an important contribution to curriculum integration research for Arts Special Education as well as to the broader field of teaching methods, be a pragmatic approach, and provide a means for accessing feedback about the evaluation of the Arts Special Education program.

4. HISTORY OF ARTS SPECIAL EDUCATION POLICY

Art represents humanity’s dreams, traditions, and cultures. Ansalone (2004) asserted, “Education has always held the promise of upward social mobility, economic stability and equality” (p. 37). Art education is a means to enrich and uplift both individuals and the culture of the communities of which artists are part. Art education can deepen the cognitive growth of learners whilst facilitating an understanding of and involvement in interculturality.

Several concerns arise with respect to the policies and practices of Arts Special Education for art, music, and dance students in Taiwan. One issue is “the perceived incompatibility of equality and excellence in a climate of competition for limited financial resources” (Frydenberg & O’Mullane, 2000, p. 78). Ideally, the needs of gifted art, music, and dance students should be accommodated within the usual formal institutional provisions of the school system so that no need to form a separate special program for gifted students exists. Kieffer (1996), for example, specifically advocates an “interconnected and interdependent” system (p. 6), and in a holistic educational learning practice, an interdisciplinary curriculum should be allowed and encouraged (Browning, 1994).

The situation in Taiwan is far from ideal, however. To understand current developments pertaining to Arts Special Education policy in Taiwan and place it in its context, a short historical overview of music education development in Taiwan is necessary. Cheng (1998) noted that Taiwan’s music education development can be divided into five stages.

Stage 1 started in 1624 and lasted some 236 years. Between 1624-1661, the Netherlands and Spain occupied Taiwan. They established churches and schools. Their missionaries used the Christian gospel to teach sacred music to the native peoples. Koxinga (a great Chinese general) defeated the Dutch and claimed Taiwan in 1662. Koxinga had a closed cultural policy that excluded Western arts and music. Thereafter, all contact with Western culture was broken off. During this first stage, Western music as an intentional

channel to enrich Taiwanese civilization was restricted. So, the cultural impact to strike the shores of Formosa from the West came in two waves, the first in the 17th century by way of Holland through Dutch colonizers and missionaries, where the idea of the chorus, or multipart-singing ensembles, was first introduced to Taiwan during the 17th century, and second, when the Dutch made Taiwan a colony. Western music, however, was not widely introduced to the Taiwanese citizens in this first stage. It was only late in the 19th century, that Stage 2 was initiated by predominantly Christian missionaries (Ku, 2012).

In Stage 2, from 1860-1895, after the signing of the Treaties of Tianjin in 1858 by the Chin Dynasty (Cavendish, 2008), Western music was allowed in Taiwan for the second time. The Christian Presbyterian missionaries from England and Canada established Presbyterian churches in Tainan and Danshui and had their own schools. They taught a music curriculum, using music to bridge the language barrier. Music education was developed systematically by means of these schools' music curriculum and through active missionary work. This created a love of Western music in the hearts of Taiwanese citizens.

In Stage 3, from 1895-1945, after signing the Shimonoseki Treaty, China ceded Taiwan to Japan in 1895 (Cheung, 2017). Japan selected an entirely Western education system of elementary and secondary schools. An institute for teachers' education was set up, and a music curriculum established. Japan, as the ruler of China and Taiwan, actively set in action the new music curriculum. This provided a solid basis for Taiwan's future music education.

In Stage 4, from 1945-1987, Taiwan separated from Japan, its colonial ruler. The Kuo-Ming Tang government retreated from mainland China to Taiwan and promoted its former education and school system, establishing a music department in higher education and an enlarged music curriculum in secondary schools. At this stage, there were some changes; for example, music teachers came from various locations in the world, which tended to promote cultural and artistic awareness. During this time, in a normative dimensional sense, a change occurred: Music education became more respectable, even prestigious, and at the same time, more exclusive and even slightly elitist (Lau & Li, 2013).

In Stage 5, 1987 to date, arts education advocates have attempted to integrate a dignity culture into the culture of the public, with an emphasis on diversification (Ministry of Education, Taiwan, 2005). Currently, arts education's form in Taiwan is not only focused on developing students' creativity but also emphasizes artistic cultivation that can be combined with students' life interests and social development phenomena. This form of music education reflects cultural trends and promotes students' environmental sensitivity. The system involves three key elements. The first element is education for curriculum design (Kieffer, 1996), which reflects constructivist type, multiple learning relationships. The second element is education for collaborative performances (Kieffer, 1996), which combines the efforts of different departments, such as music and dance, that were formerly separate and competitive. The third element is education that includes cross training, such as giving dancers better and more in-depth grounding in the basics of music history and classical music theory.

5. CULTURAL POLITICAL CONTEXT FOR PROFESSIONAL MUSIC TRAINING PROGRAMS

Professional music training programs are formal collaborations between the Ministry of Culture and the Ministry of Education (Ibata-Arens, 2012). The political backdrop for the Arts Education Act (AEA) of 2015 is therefore both cultural and educational. Since the fields of culture and education share several characteristics and objectives, such cross-political cooperation can be perceived as both natural and logical. For instance, the purpose of arts education is to cultivate artistic talent as well as enhance understanding of

the public about the arts, strengthen their sense of aesthetics and creativity, enrich their spiritual lives, and raise the overall level of culture. The foundation for the program was already laid in the 1997, when the importance of cooperation between the fields of culture and education was emphasized in a series of political documents, including White papers, strategic plans, action plans and the national curriculum. As a result, various local cultural initiatives for students were created. The development culminated with the foundation of the Arts Education Act as a national policy in 2015.

The program is deeply rooted in Taiwanese post-war cultural policy strategies. On the one hand, attempts have been made to ensure democratization of culture by making Arts education accessible to the general population, for example, professional arts education and general arts education are offered at schools, and arts education is offered to the public (Ministry of Education, 2015). On the other hand, local cultural democracy has also been supported (Wu, 1989), leading to an emphasis on cultural diversity, accessibility, and participation (Gande & Kruse-Weber, 2017; Ju, 2013; Wang & Kuo, 2010). These cultural policy ideals of maintaining both fine art and more vernacular cultural expressions and participation are evident in the Arts Education Act. Gande and Kruse-Weber (2017) noted that professional music training programs are confronted with major changes in the sociocultural and educational landscape (Smilde, 2009, 2012, p. 99). Higher music education has had to deal with transferable skills and entrepreneurship, and cross-genre collaborations are becoming more important (Smilde, 2009, p. 1).

6. IMPLICATIONS OF THE ARTS EDUCATION ACTS

Knowledge of arts education acts has implications for policy and professional arts education. It is important to realize that teachers are not the only ones who should be familiar with the arts education acts. As Jank (2009) points out, the school administration, principals, and other stakeholders need to possess an awareness of their potential involvement in policies because successful policy makes constructive cooperation among relevant institutions and representatives possible. Moreover, Cole (1990) found the two conceptions of academic achievement inadequate in helping educators to think about learning, concluding that educators need to formulate an alternative conception that integrates divergent views of achievement, carries clear instructional implications, and focuses on long-term educational goals (Cunningham & Cordeiro, 2003). Individual teachers in the arts education faculty might be used to provide insight into and develop effective and meaningful professional arts education policy. Extending this view to professional music training programs, it is essential that teaching and learning music be structured in a way that both encourages personal, hands-on experience and contextualizes that experience in relation to historical, cultural, and social dimensions. The TUT experience enables learners to construct and act on their own understandings.

One of the most immediate and powerful implications of AEA is the realization that education requires that universities, colleges, junior colleges, and senior high schools for arts education implement a single-track educational system after receiving approval from the designated administrative authority for arts education (AEA, 2015, Article 7). The training program is not about ensuring that students have enough statutory requirements or musical works and support in various contexts; rather, the emphasis is on necessary music education policy as well as encouraging and developing music teachers' abilities to participate in music education policymaking.

7. CONCLUSION/DISCUSSION

Art education curriculum is a continually evolving process that is subject to both historical forces and the needs of the stakeholders involved. The programs include talented students in music, art and dance. Arts education policy has changed over the years in Taiwan to re-envision music education by paying attention to engaged learning as conceptualised within constructivist ways of knowing, and the TUT has endeavoured to accommodate that policy by adopting a constructivist approach that includes the various stakeholders. The TUT has used constructivism as a lens for examining their practices. This examination should lead to continual refinement of teaching practices—teaching practices in which learning and teaching have a symbiotic relationship (Shively, 2015).

It is important to recognize that professional music training programs require a cooperative approach. There is a need for policymakers and administrators to adjust values, aims, content, strategies, and methods to the various contexts and societal functions of music and music education. As Jank (2009) suggests, it is necessary to design a set of activities that will enable successful cooperation for hard policies (such as decisions concerning cultural and education policies) and soft policies (such as university admissions criteria and curricula). This recognition may be facilitated with knowledge on the part of policymakers, teachers, and administrators of arts education about the policy implications for professional music training programs.

While most of the interest groups have agreed with McCool (1995, p. 396, as cited in Cooper, Fusarelli, & Randall, 2004, p. 8) that theories guiding policy should be practical and “directly relevant to applied policy problems,” it is clear that not all Arts Special Education learners are in programs with the same outputs. Part of educators’ responsibilities is to ensure “a system that models good assessment practice as it audits local fitness” (Cunningham & Cordeiro, 2003, p. 227) and encourage a more constructivist learning environment with the development and implementation of policies.

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AUTHOR INFORMATION

Full name: Hua-Hui Tseng

Institutional affiliation: Tainan University of Technology, Taiwan

Institutional address: No. 529, Zhongzheng Rd., Yongkang District, Tainan City 71002, Taiwan.

Short biographical sketch: Hua-Hui Tseng is a Professor of the Graduate School of Music and Music Department at the Tainan University of Technology, Taiwan (TUT). She was previously Director of the Library of the TUT (August 2007-July 2013) and Dean of the College of Fine and Applied Arts of the TUT (August 2006-July 2007). Her passion is piano music research with a keen interest in 20th century piano music. She is from Kaohsiung, Taiwan. Her Master's Degree in Piano Performance was completed at the University of Portland, Oregon in 1982. Her Doctoral degree in Educational Leadership was completed at University of Phoenix, Arizona, in November 2008. The Educational Ministry of Taiwan honored Tseng for her accomplishments in the production of multi-media educational materials in 1998 (Bronze Medal) and 2000 (Gold Medal). In 2006, Tseng was invited to join the Higher Education Evaluation and Accreditation Council of Taiwan as an evaluator until 2013.

Section 4
Projects and Trends

Chapter #19

PROMOTING MOBILE LEARNING THROUGH THE ESTABLISHMENT OF A MOBILE LEARNING COMMUNITY

Lixun Wang

The Education University of Hong Kong, Hong Kong SAR

ABSTRACT

With the fast development of mobile technologies, mobile learning has been adopted by more and more students and staff in higher education institutions. This chapter reports on a project which aimed to promote mobile learning in higher education. In order to find out students' and teachers' experiences and perceptions of mobile learning in a tertiary institution in Hong Kong, over 100 students and around 50 staff members across different disciplines were surveyed online, and follow-up interviews were carried out. The research findings suggest that both students and staff were generally positive towards mobile learning. Based on the findings, students and staff were invited to form a mobile learning community and share their mobile learning or mobile-assisted teaching experiences through various activities, such as writing app reviews, compiling mobile learning e-portfolios, participating in sharing sessions and offering seminars about mobile learning. To facilitate sharing among community members, a website titled 'Mobile Learning @ EdUHK' has been created to showcase good practices of mobile learning. The framework of creating and maintaining a substantial Mobile Learning Community (MLC) will be summarised. It is hoped that our study will shed some light on how mobile learning can be promoted effectively in higher education institutions.

Keywords: mobile learning, mobile learning community, higher education, Hong Kong.

1. INTRODUCTION

Teaching and learning in the 21st century has experienced the substantial growth of wireless and mobile technologies which has changed “the delivery of knowledge through the digital learning from distance learning (dLearning) to electronic learning (e-Learning) and eventually to the mobile learning (m-Learning) model of today” (Bidin & Ziden, 2013, p. 721). Sharples, Taylor and Vavoula (2007, p. 4) define mobile learning as “the processes of coming to know through conversations across multiple contexts among people and personal interactive technologies”. Kukulska-Hulme (2014, p. 12) points out that mobile learning “has undergone a significant transformation due to rapidly growing ownership of smartphones and tablets, accompanied by the proliferation of apps, social networks and mobile-friendly open access resources”. Mobile devices (e.g., smartphones, tablets, apps, etc.) which are widely available, more convenient, and less expensive (Wu et al., 2012), have greatly enriched and assisted students' subject learning in higher education, especially in Hong Kong where there is free Wi-Fi service in many public places and people can get relatively cheap data packages for smartphones with Internet access (Wang & Ma, 2017). Through mobile technologies, students in higher education can learn anytime, anywhere (Chan et al., 2006; Wong & Looi, 2011). Students' in-class learning experiences are

connected with those out-of-class (Lai & Gu, 2011), which helps to contextualise the learning and facilitate students' academic success (Kukulska et al., 2011). Rich place-based learning experiences would be greatly enhanced if the power of mobile devices were fully embraced (Searson, 2014, p. xiii). Wu et al. (2012) report that mobile technologies have recently been widely implemented in teaching and learning diverse subjects at different education levels. However, caution is needed when using mobile technology in teaching and learning; otherwise, its effectiveness is in doubt. Scott McQuiggan, Jamie McQuiggan, Sabourin and Kosturko (2015, p. 1) comment that mobile technology "offers a plethora of features and benefits that enable it to break the educational system wide open, engaging students in new ways and making educational experiences more meaningful, if schools can effectively utilise structured, integrated approaches for implementation of this new technology".

As English is the major medium of instruction in Hong Kong tertiary education, our study links mobile technologies with subject learning through English and showcases the vitality and creativity of tertiary students of different levels (undergraduates, masters, doctorates) and from different disciplines (Science, Social Science, Education, Arts and Humanities, etc.) in mobile learning. A broad definition of mobile technologies will be adopted in this study: various mobile devices (ordinary phones without internet access, smartphones with internet access, laptops, Tablet PCs, MP3s/MP4s, and handheld electronic dictionary) connected to a network and equipped with online technologies (Ma, 2016). The participants come from different contexts with different learning intentions, and therefore, they need different things for learning. This ultimately results in creating the mobile learning community, a new form of learning environment, which "leads learners share daily practice to exchange collaborative reflection via mobile networks. Learners who have memberships can improve their levels of reflective practices based on situated learning theory. They develop social product extend beyond individual project" (Lee, 2015, p. 69).

The Department of Computer Science at the University of Illinois developed the Mobile Learning Communities (MLCs) in 2010 to enable students to share trusted educational services with each other via iPods, cell phones, and other handheld mobile devices. Moreover, students are encouraged to develop MLC software applications and to share these applications with other students. It is hoped that students will have a new avenue for collaborating with classmates and making new connections through the Mobile Learning Community (<https://cs.illinois.edu/news/illinois-faculty-developing-mobile-learning-community>). During the 2013-2014 school year, the Winston-Salem/Forsyth County Schools (WSFCS) in the US introduced the Mobile Learning Communities Program (MLCs): Bring Your Own Device model to achieve the following goals: (1) Enhance student learning by integrating digital resources to create, communicate, and collaborate in 21st Century spaces. (2) Help students achieve media literacy mastery and aid in the development of positive online, safety practices, and digital footprints. (3) Leverage the use of all types of digital resources to engage students and extend learning beyond the four walls of the classroom. (4) Provide a digital-rich learning environment for students (Sherrill, 2013). Similarly, one of the objectives of our project is to further develop a mobile learning community among tertiary students and academic teaching staff, motivating them to use mobile technologies in learning and teaching various tertiary level courses. In this case, learners from diverse disciplines contribute, share resources and information and learn together with the help of mobile technologies, which is not only seen as "facilitating members' practices and communication but also playing a central role in advancing their learning" (Wang & Ma, 2017, p. 21). This paper reports on a project which aimed to promote mobile learning in higher education through the Mobile Learning Community (MLC).

2. STUDENTS' AND TEACHERS' EXPERIENCES AND PERCEPTIONS OF MOBILE LEARNING

Over the past decade mobile learning has grown from a minor research interest to a series of significant projects in schools, workplaces, and museums etc. around the world (Lam & Duan, 2012). It has become increasingly important to investigate how mobile devices and learning software/apps facilitate teaching and subject learning in tertiary institutions, and how mobile learning can be promoted effectively in higher education. Our research focus is on the development of mobile learning in local tertiary institutions. Most recently, Lai and Gu (2011) investigated Hong Kong university students' use of technology outside the classroom to self-regulate their language learning. Dukić (2015) conducted a research on undergraduate and graduate students enrolled in Library and Information Science (LIS) study program at the University of Hong Kong through an online questionnaire survey to give an overview of smartphone use for academic learning in higher education. A case study carried out by Ma (2016) investigated a group of twenty-five Hong Kong university language learners, making use of a selection of rich data from multiple sources as well as concrete evidence of the learning process supplied by the participants themselves. The above studies showed the researchers' interest in understanding students' experiences and perceptions of mobile learning, but teachers' experiences and perceptions of mobile learning was not discussed.

In our study, both teachers' and students' experiences and perceptions of mobile learning were examined. Quantitative and qualitative research methodologies were used to investigate mobile learning and mobile-assisted teaching practices among students and lecturers in the Education University of Hong Kong (EdUHK). For quantitative methodology, both students and lecturers were invited to fill in an online questionnaire survey respectively. We received 49 responses from lecturers of various departments; while 110 students from different disciplines (Science, Social Science, Education, Arts and Humanities, etc.) responded to our survey. The qualitative data was collected through the follow-up individual interviews with both students and lecturers. Each individual interview lasted for about 30 minutes and we interviewed 11 teaching staff (22.4%), and 35 students (31.8%).

The research findings suggest that both students and staff were generally positive towards mobile learning as around 75% of the respondents from both groups thought mobile learning should be encouraged in subject learning and teaching. Teachers (81.6%) agreed because mobile technologies can allow them to engage students in learning in a flexible manner, and encourage this learning to continue outside classroom. Moreover, mobile devices can increase students' interest and motivation in learning (71.1%). Meanwhile, students (70%) agreed that mobile learning would be a more flexible method of learning as it could be done anytime, anywhere. Their agreement is also reflected in the follow-up interviews. For examples, Student 1 (S1) said, "In Year 1, a teacher used Edmodo in class, asking us questions and we needed to give responses. I think we were more involved in the learning process." S2 pointed out, "Our peers used 'Kahoot' in their presentation, asking us questions and we were eager to answer them. It was fun and we enjoyed it." S3 said, "I enjoy watching YouTube videos which can help conceptualise my mathematical knowledge." Teacher 1 (T1) stated, "Facebook is a useful learning platform. I tried to establish a group on Facebook to facilitate students' learning."

Apart from agreeing that mobile learning should be encouraged in subject learning and teaching, there were reasons for disagreement as well. The majority of teachers (90.9%) and students (60.7%) thought usage of wireless handheld devices in classrooms will distract students' attention and traditional face to face teaching is more effective than mobile learning. T2 stated, "I do not allow them to use mobile phones in class as I am afraid they use their phones to communicate with their friends, distracting their learning." T3 said, "About 5 to 7 years ago, it became usual for my students to have mobile phones in school, and university teachers started to have debates with the students whether or not to use the mobile devices in the classroom. The first response is that students would be distracted. I still have colleagues both in Hong Kong and the United States feel that way about mobile devices, so do I." T4 expressed, "I know some students would visit Facebook or do other things but I think it depends on the attractiveness of the topic. If your teaching topic is attractive, then I believe students would take the lesson seriously and would not do other things with their mobiles." T5 stated, "We are getting devices around, so I think asking students to keep phones away is a bad idea." S4 said, "Sometimes the teachers do not allow us to use the mobile devices in class because they do not know what we are doing during the lessons, and maybe because some of us are studying, but some are on WhatsApp or Facebook..." S5 pointed out, "In one of my courses, printing out notes is one of the course requirements by the teacher. Maybe she is afraid we will be distracted by mobile devices." S6 said, "I'd rather print out the notes myself as I like writing on paper while listening to teachers. Also, I do think traditional teaching is better than mobile learning." S7 expressed, "I prefer taking notes on paper because if I jot down notes on laptop, I am afraid I will lose focus, you know teenagers are always addicted to social media. I find my peers looking through websites during the lessons."

Smartphones with internet access and laptop computers were considered the most useful mobile devices for preparing or carrying out subject-related activities by both teachers (70.2%) and students (67.3%). The former mostly used those devices to prepare teaching materials at home and in office (about 60%). However, the majority of students pointed out that most teachers only used desktop computer in classroom teaching, showing the PowerPoint slides or videos and only two student interviewees stated that their teachers, apart from using computers, used mobile devices as well. S8 said, "I don't have any teachers who use mobile devices in teaching." S9 expressed, "I have two teachers who use iPad. One is to show us the apps for teaching in an English course. The other one shows us his PPT slides and photos on his iPad via the projector." Students, in some cases, used more than one mobile device inside and outside the classroom. S10 said, "I usually use smartphone on public transport to read articles and during lessons to look for definitions of some difficult words. Tablet is used in class to look through the PowerPoints and to read eBooks, and I use laptop at home to do assignments and revisions."

Meanwhile students mostly used smartphones with internet access and laptop computer at home/dormitory (81.8%) and during lectures/tutorials (76.4%). In addition, lecture PowerPoint slides (71.8%) and course-related videos (64.5%) were the two teaching materials that students were interested in accessing on a handheld mobile device. Fewer students were interested in accessing interactive educational games (35.5%) and course related online discussion/interaction (40.9%) on a handheld mobile device. The reasons might be the interactive educational games were not attractive to tertiary students and they were not interested in doing online discussions. Most student interviewees pointed out that they did online discussions only because this was one of the course assignments required by teachers on Moodle.

Regarding the biggest obstacles to the use of mobile technologies in teaching and learning, teachers thought they were: 'limited storage' and 'size inconvenience'. The latter (smartphone's small screen) was considered one of the major barriers to using smartphones for academic learning by students at the University of Hong Kong (Dukić, 2015). Meanwhile 'lack of training' and 'devices too varied' were the two biggest obstacles considered by students. It is interesting to find out that three teacher interviewees showed their intention of learning more about apps for teaching through seminars or workshops. Meanwhile, lack of training was considered the least obstacle by teachers, as one of the teacher interviewees (T6) stated, "It is easy to use mobile technologies to assist teaching once you have time to do it, but you need to invest time." However, Scott McQuiggan et al. (2015) point out the importance of training for teachers because they consider it is not a way to make the best use of the mobile devices if teachers are not given guidance and training. Students considered 'lack of training' the biggest obstacle. Some student interviewees indicated that they would usually try out different learning apps by themselves and would delete those they thought were useless while keeping those that were helpful.

In general, teachers were more willing to pay a reasonable price for an app that would facilitate their teaching, while students would rather look for free resources/substitutes unless they were required to buy certain apps/online resources by the teachers/institution. Moreover, both teachers and students shared the same view that the use of mobile technologies to support teaching and learning would become popular and even a trend in the coming future. However, it would take more time for teachers to adapt to the use of mobile technologies in teaching as many of them were not familiar with certain apps/software for teaching. According to the teachers, appropriate use of mobile technologies was very important, especially in teaching as the overuse of mobile technologies in teaching would bring negative effects on student learning. In addition, mobile technologies were good tools to engage students in learning if the learning activities were associated with sound learning strategies and pedagogical goals. On the other hand, according to the teachers, the ineffectiveness of using mobile technologies in subject teaching and learning was that using mobile technologies in the classroom required teachers to spend a substantial amount of time planning for the lessons, and training with the hardware before classes began. Moreover, some technical problems might arise during class, such as network failures and individual students having problems with the hardware, which required the teacher to troubleshoot the issues as well as instructing individual students on how to resolve problems.

3. THE MOBILE LEARNING COMMUNITY (MLC)

Through the research findings, a rich collection of teachers' and students' mobile learning practices was obtained, such as their favourite mobile devices for teaching and learning purposes, frequently accessed online teaching and learning resources, various teaching and learning apps and tools, strategies for self-regulating their mobile learning, and perceived difficulties associated with mobile learning. Based on such rich information, a Mobile Learning Community (MLC) was formed, which is similar to the one established by the Department of Computer Science at the University of Illinois, to encourage the community members to share information and resources of mobile learning with one another. To strengthen the community membership, a website (<http://corpus.ied.edu.hk/ml-eduhk/>) was launched to accommodate and share diverse mobile learning information and resources contributed directly by students and teachers. This website serves as the main platform to disseminate mobile learning information and

allows community members (students and teachers) to share mobile learning resources, to share their valuable insights and to disseminate good practices to other students and teachers who are interested in mobile learning. The current website features the following sections: homepage, sharing sessions, students' e-portfolios, app reviews and useful links.

The mobile learning homepage features an introduction that informs the visitors of the different resources available on the site. Visitors can also click on the 'membership' hyperlinks (for students or teachers) to fill in the membership form and become a member of the MLC. Quick Links are provided as well so that members can get access to various sections of the website easily.

A series of knowledge sharing sessions in the form of seminars/workshops on mobile learning given by staff and experts within our institution and from outside the institution were organised to further disseminate project outputs. During the project period (2016-2018), eight seminars on mobile learning were organised: two were given by internal teaching staff while six sessions were offered by external experts in the field around the world. A student sharing session was held to disseminate students' practices and experiences in using mobile technologies in language learning and subject knowledge learning. As students and staff might not be able to attend these sharing sessions due to time conflicts or other constraints, video recordings of the seminars have been made available online, which provides opportunities to all community members to learn and benefit from these valuable sharing sessions. Such meaningful and interactive sharings form the main learning activities for community members.

The 'App Reviews' section features 120 language and subject learning app reviews contributed by students of different majors. The apps introduced by students are divided into seven categories: Listening (21), Reading (15), Vocabulary & Grammar (26), Dictionaries (20), Phonetics & Pronunciation (2), Speaking (17), and Others (19). Apart from a basic introduction to the app being presented, a critical review is provided with clear information on both the strengths and weaknesses of the app. Information such as language skills addressed and intended learner levels (beginner, intermediate or advanced) is also included. For downloading purpose, app icon, and the hyperlink to the app can be found in the app review.

An e-portfolio is "a digitized collection of artefacts including demonstrations, resources, and accomplishments that represent an individual, group or institution" (Lorenzo & Ittelson, 2005, p. 2), which can be used for critical reflection and learning purposes. One of the functions suggested by Lorenzo and Ittelson (2005) is to share teaching philosophies and practices. Therefore, our project aims to collect e-portfolios of rich and diverse evidence of students' and teachers' mobile learning and teaching experiences that facilitate deep, critical self-evaluations of the learning and teaching experiences, which help students and teachers to further strengthen their subject knowledge learning and their course teaching respectively through the use of mobile technologies. A rough template was provided to guide their e-portfolio building. In the template, the following elements are included: subject area, focus of learning/teaching, apps used, strategies employed when using the apps to assist learning/teaching, artefacts as evidence (icon of apps, screenshots, audio/video clips about the mobile learning/teaching experience, etc.), and reflection on learning/teaching. The e-portfolios consisted of multimedia resources: text files, audio files, video clips and artefacts (e.g., screen shots or e-notes). The Mobile Learning E-portfolio Competition for students was held during the project period to collect students' mobile learning e-portfolios so as to share their experiences in using mobile devices to learn English and subject knowledge. In the competition, students had to create an e-portfolio using any platform (e.g., Google Sites, Mahara, Sway, etc.), write one to two app reviews

(at least 200 words each) explaining how the apps were used to help learn English or other subject knowledge, write a personal reflection (at least 150 words) on how mobile technologies facilitate learning and include relevant images (e.g., screenshots of the apps), and produce short video clips about the apps so as to illustrate their own learning experiences. When recording the video, students could use English or Cantonese, and a transcript of the speech needed to be provided and shown under the video (alternatively, students could provide subtitles in their video clips). The e-portfolios were assessed in the following four areas: Content, Layout, Organisation and Language. Altogether, 20 e-portfolios from students were collected in 2017, and another 15 were collected in 2018, which were uploaded onto the website.

However, no teachers' e-portfolios have yet been collected. Hall and Hord (2001) consider change in education as a complex process that takes a minimum of three to five years, while large-scale innovations take longer time. In general, teachers seem to be more conservative in adapting to technology. Moreover, they may consider producing e-portfolios time-consuming when they are loaded with numerous work related tasks, and learning how to use technology effectively is challenging and time-consuming as well. Instructors incline to use technology that requires considerably more preparation time, and it is hard to provide instructors and learners access to technologies that are easy to use (Herschbach, 1994). In this case, our project team needs to think of the ways to motivate teachers to produce e-portfolios about mobile assisted teaching, or may even try to boost their acceptance of technology. Lee (2000) states that "the next generation of students will feel a lot more confident with information technology than we do".

As for useful links, we provide the community members with web links in the following areas: Dictionaries, Listening & Speaking, Reading & Writing, Grammar & Vocabulary, Others, including International e-News Websites and Local e-News Websites. Visitors can access those websites easily by clicking on the links.

4. EVALUATING THE EFFECTIVENESS OF THE MLC

Three sets of assessment tools were developed to evaluate the effectiveness of the mobile learning community: (1) a questionnaire to collect participants' views on the various community activities organised by the MLC, i.e., various sharing sessions/seminars/workshops on mobile learning; (2) an online survey form to collect users' views on the MLC website; and (3) an evaluation form for evaluating the overall effectiveness of the MLC, which were completed by two invited experts in the field of mobile learning. To find out if the MLC is operating effectively, various community activities have been evaluated. Standard evaluation questionnaires were developed and handed out to the participants at the end of each activity. The data collected show that on average 97% of the participants agreed or strongly agreed that the sessions were worth attending and provided them with valuable information about how mobile technologies facilitate language learning and subject learning. Some participants left very positive comments, as can be seen as follows:

"Insightful ideas provided. Many useful cases to introduce the theories."

"Wonderfully shared! Great learning experience."

"Thank you for the sharing. It's helpful and applicable. Please continue your great job!"

"I have never heard of this kind of technology in education field before. Great insights."

"Thank you for the talk."

An online evaluation form was designed and uploaded onto the website to invite all website visitors (members or non-members) to evaluate the effectiveness of our mobile learning resources published on our MLC website. The form intends to gather both quantitative and qualitative data regarding users' perceptions of various mobile learning resources. An 8-item questionnaire coupled with two open-ended questions was designed and hosted on the website. The 6 Likert scales are: Strongly disagree (1), Disagree (2), Partly Disagree (3), Partly Agree (4), Agree (5), and Strongly Agree (6). Question items include the following: 'The content presented on the Website is informative for mobile learning/teaching'; 'I am inspired by the content presented on the website for mobile learning/teaching'; 'The website is well-designed.' etc. We received 41 responses: 30 students and 11 teaching staff. The respondents were asked to rate the website in terms of eight aspects. The third aspect 'The content is easy to understand.' received the highest mean score of 5.29; while the sixth aspect 'The website is well designed.' received the lowest mean score of 4.85. The most favourite section on the website was 'Sharing Session' (70.73%) and the next was 'Students' e-Portfolios' (65.85%), 'App Reviews' (60.98%), 'Useful Links' (24.29%) and 'Home' (4.88%). On the whole the respondents were satisfied with the website as no negative responses were received. Some of them remarked that the sections of app reviews and students' e-portfolios were helpful and students' work were very creative and inspiring. One student commented, "As we know, there are plenty of self-learning software and free courses online, but how we can benefit from these resources is in doubt. This project shows us other students' real experiences in the use of these resources and their improvement. Moreover, they also prove the strong aspects of each app, which can help other students to choose the one that fit themselves." The respondents welcome the 'Sharing Session' as they could get more information about mobile learning through listening to the talks given by different speakers.

Two experts in the field of mobile learning were invited to formally evaluate the effectiveness of the MLC activities and the MLC website, and the feedback received is very encouraging. The MLC website is considered a very successful platform for resource sharing, for nurturing the growth of the MLC and for promoting mobile learning in general. One expert concluded:

"Overall, the freely and publicly available website provides a valuable resource for not only students and teachers within the university, but also the general public who may be interested in learning more about the advantages and values of mobile learning."

As for the MLC activities, one expert commented:

"The activities and information hosted through the project are multifaceted and help to promote students' and teachers' mobile learning and teaching through various venues: affective support (peer experience sharing); capacity support (specific resource recommendations and reviews); social support (the concept of a mobile learning and teaching community); and cognitive support (guidance on mobile learning). Thus, the support provided on the site was quite comprehensive and targeted various components that are critical to enhancing students' and teachers' engagement with mobile learning."

5. CONCLUSION

To build up a Mobile Learning Community is challenging as it targets at recruiting members from various departments (teachers) and disciplines at different levels (students) and there is a gap of acceptance of technology between teachers and students. To establish a successful mobile learning community, a number of key factors need to be considered: we need to recruit proactive community members who are the driving force of the activities organised by the MLC, establish a Mobile Learning Community website as a platform for resource sharing and idea exchange, organise a wide range of student and staff sharing sessions on mobile learning, make a positive impact on students' learning and staff development, and evaluate the effectiveness of the mobile learning community. Only through a concerted effort of members of the whole community, can we promote mobile learning effectively. It is hoped that our study will shed some light on how mobile learning can be promoted effectively in higher education institutions. Although the project has completed, the website is still freely accessible to the public, and the author has applied for a new project related to mobile learning, hoping to continue promoting mobile learning among students, and at the same time engage teachers further by promoting good practices of mobile-assisted teaching.

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AUTHOR'S INFORMATION

Full name: Lixun Wang

Institutional affiliation: The Education University of Hong Kong

Institutional address: Department of Linguistics and Modern Language Studies, The Education University of Hong Kong, 10 Lo Ping Road, Tai Po, N.T., Hong Kong

Email address: lixun@eduhk.hk

Short biographical sketch: Dr. Wang Lixun is Associate Professor in the Department of Linguistics and Modern Language Studies at the Education University of Hong Kong. He has published widely in areas such as corpus linguistics, computer-assisted language learning, e-learning, and multilingual education, in reputable journals such as *System*, *Language Learning and Technology*, *Education and Information Technology*, *International Journal of Bilingual Education and Bilingualism*, and *International Journal of Multilingualism*. He is the author of *Introduction to Language Studies* (2011) and co-author of *Academic Writing in Language and Education Programmes* (2011) and *Trilingual Education in Hong Kong Primary Schools* (2019).

Chapter #20

ON THE POSITIVE EFFECT OF RABBIT-ASSISTED INTERVENTIONS IN CLASSROOM ENVIRONMENT ON THE ANXIETY OF PUPILS

Marcell Molnár, Réka Iváncsik, & Barbara Di Blasio

University of Kaposvár, Institute of Special Education and Institute of Environmental Science and Nature Conservation, Hungary

ABSTRACT

In our study the effect of rabbit-assisted interventions on the anxiety of first grade pupils of elementary school was investigated during a 24-week period. The rabbits were involved in the classroom according to the following pattern: 6 weeks without rabbit, 6 weeks with rabbit, 6 weeks without rabbit, 6 weeks with rabbit. After the end of each 3-week period anxiety of pupils were measured by a standardized test. These actions were performed in two different classes; one with pupils in the general population and another one containing mainly pupils with special education needs; we called the latter the integrating class. Our study shows the beneficial effect of a classroom application of rabbit-assisted interventions, as the anxiety of pupils became significantly smaller in the middle and at the end of each 6-week intervention period. Moreover, this positive effect was particularly prominent in the integrating class. Our findings support the assumption that the increasing practice of animal-assisted education is reasonable and that rabbits can be helpful assistants in education, since stress interferes with learning and performance in students.

Keywords: rabbit-assisted activities, anxiety, classroom research, evidence-based research.

1. INTRODUCTION

There has been a lot of research in animal-assisted pedagogy in the literature. These resulted in diverse results in several aspects. One of them was the proven positive impact of animal assisted pedagogy on the anxiety level and the level of depression of pupils. However, most of the studies involved dogs, and only a very few attempted to involve other animals. The involvement of rabbits seems to be particularly scarce (1 out of 25, see Brelsford, Meints, Gee, & Pfeffer, 2017).

Studies on animal-assisted activities have recorded the protective effect of the relations between animals and humans by using several methods. The presence of the animal, its spontaneous behavior, its ability to social interactions are promoting the educative as well as the therapeutic processes (Topál et al., 2009; Fine, 2001; Freund, McCune, Esposito, Gee, & McCardle, 2016). The onset of the initial studies on AAIs (Animal Assisted Interventions) may be estimated for the second half of the 20th century, about the early sixties. Since that time, the involvement of animals appears more frequently in the pedagogical practice and in health care as well as in the social care for the elderly (Meints, Brelsford, Gee, & Fine, 2017). The related terminology is as follows:

AAI includes all of the interventions performed with the involvement of animals in the process of development of abilities or in therapy.

AAA (Animal Assisted Activity) represents an interactive training facilitated by the participation of animals. In the course of this procedure, the presence of the animal exerts a beneficial effect for the general condition and for the activity of both healthy and ill patients. Concerning its purpose, the interaction might be either of recreational or of pedagogical character, for improving the quality of life or for establishing the motivation of the client. Training activities facilitated by animals do not represent direct interventions. In the majority of the cases, the presence of animals plays a role of increasing the comfort of the participants. Under such conditions, the presence of animals may reduce distress caused by isolation, promotes social interactions, facilitates communication skills; moreover, the disposition to empathy might also be supported. In the course of AAA interventions, the development of the spontaneity plays a considerably bigger role than in therapeutic practices.

AAP (Animal Assisted Pedagogy) or by another terminology AAE (Animal Assisted Education) is a procedure in which a trained pedagogue, who is experienced in the animals' behavior and who is conscious of his/her own pedagogical purpose, conducts the educative process with the intention to accomplish his pedagogical concept. The educational aspect here includes the aimed effect for the cognitive skills, too, besides the social and emotional skills.

AAP is an emerging recent trend in Education Science. It is supported by the trend that research, in general, is becoming more and more interdisciplinary in nature. Numerous studies in well-developed countries are devoted to the investigation of classroom applications of human-animal interactions (HAI), in the course of pedagogical practices. According to these, domestic and even non-domestic animals can be involved in the teaching process, both in a direct and an indirect way. Involving animals in classroom has become particularly frequent in the educational and teaching programs for early childhood and for the primary schools (Fine, 2015; Kazdin, 2011; Gee, Fine, & Schuck, 2015).

Animal-assisted interventions (AAI) can be applied in particular school activities, as well as for therapeutic and preventive purposes. In reply to a series of on-line questionnaire collected in the USA in 2015, teachers listed several species which they have applied in their educational programs, namely: fishes, guinea-pigs, hamsters, crabs, reptiles, rabbits and even other unusual species such as ferrets for example (Gee, Griffin, & McCardle, 2017; Gee, & Schulenburg, 2017).

One can observe an increasing trend of the conscious practical usage of HAIs for pedagogical purposes, although, besides the increasing interest in these new facilities, some difficulties still remain: Examples are the lack of standardization of intervention procedures, the lack of guidance in conducting HAIs studies in schools, small sample sizes of the studied groups, inadequate or no control groups. Some of these difficulties are originated partly from the large number of variations of different types of HAIs such as working with animals (veterinarians), animals as pets, animals in entertainment, research with animals, animal law and animal rights, or animal assisted therapy/interventions (Erdman et al. 2018). On the other hand, lack of standardized protocols and lack of an exact methodology for animal-assisted teaching represents a further problem. Besides, animals' presence in classroom could be either real or virtual (by using ICT), they can be involved either without any particular preassigned goal or with a well-defined purpose, etc. Also, the inapplicability of exact, positivistic methods for some related evaluations renders these investigations difficult.

The therapeutic application of dogs and horses is already widely used and well-recognized, mainly in individual therapy in psychology. The use of the AAIs for special pedagogical purposes (for special education of handicapped children) has also been around for a longer time, so it is no longer a peculiar technique in special education (O'Haire, 2013). HAIs are well-established and possess elaborated protocols in the treatment of Attention

Deficit/Hyperactivity Disorder (ADHD), or in the treatment of emotional and behavioral control of juveniles (Pelham & Fabiano, 2008). In Austria it is already a legally recognized option to involve the teacher's own pet in AAIs in classroom (Bundesministerium für Bildung und Frauen, 2014). There, at least empirically, the positive influence and the efficiency of AAIs is acknowledged. However, a well-justified proof of it along with a solid methodology is still to be developed.

2. BACKGROUND OF OUR RESEARCH

Studies of Wilson (1984) has led to the concept of biophilia which concerns the reduction of distress and anxiety, in particular in relation to the decrease of pulse rate and blood pressure. According to his view, human beings have a genetically determined tendency to establish contact with other living creatures. On the base of this presumption, humans instinctively focus on the phenomenon of life or on life-like vital processes, in order to increase the chance of the perspectives for their survival. According to the statement of the author this may be of evolutionary origin. The appearance of animals simultaneously represents a link and a tranquillizing agent for the client (Kruger & Serpell, 2006).

These findings have motivated our choice to investigate anxiety of pupils in relation with AAIs. According to our assumption, the presence of animals and the direct contact with them may act as an aid to establish an optimal state of mind, facilitating the learning processes and reducing anxiety. Therefore, according to our assumption, those children who have direct connection with rabbits during an educative training become more competent concerning their achievement and may show better progress in their learning attitude at the end of such developmental trainings, compared to the control periods.

We have chosen the rabbit for our investigations since there is little related experience with them in the literature (Brelsford et al., 2017), rabbits are easily kept and cheap. Rabbits need no particular training as opposed to dogs, for example. Rabbits represent a much smaller challenge for the teachers than bigger animals. Also, children are keen to get in touch with them, motivated by their former tale experiences, too.

The following factors/difficulties influenced our research design:

1./ The young age of the tested pupils posed a methodological problem, since in Hungary only a few standardized instruments are available for this age group.

2./ It is not easy to maintain such classroom conditions which ensure that the effect of the rabbit itself is measured and not the effect of other factors.

3./ Teachers in Hungary have to maintain a certain pace in their teaching strictly in accordance with the curriculum of the taught subject, and they have little opportunity to deviate from the prescribed schedule. Besides, teachers have to divide their attention between their regular teaching job (timetable, teaching methods, class size, teaching subject etc.) and the design of the ongoing animal-assisted research.

4./ Even in case of an existing positive effect of the AAI on pupils (e.g., on their social skills, mood, anxiety, etc.), it might not readily be seen as an immediate improvement in their marks, which is the basis of evaluation in school.

5./ The general attitude for school research projects in Hungary can be characterized as risk avoiding from the point of view of both the school directors (principals) and the teachers, and the parents.

6./ The ethical requirements of handling animals render such projects even more troublesome. Obeying the numerous rules concerning the selection, keeping, and nursing of animals represents further difficulty for the researchers.

3. METHODOLOGY AND RESULTS

Our hypothesis was that rabbit-assisted interventions decrease the anxiety of first grade pupils. We investigated first grade pupils in elementary schools (age: 6-7, 51 pupils). The pupils came from two elementary schools, and hence two different classes have been involved. The first class, which we will refer to as *majority school*, contained pupils in the general population (no problematic children). The second class which we will refer to as *integrating school* had mostly children of special education needs (vulnerable children with learning difficulties). The two classes were investigated simultaneously.

The effect of a rabbit-assisted intervention on the anxiety of the pupils was investigated during a 24-week period in both classes. One rabbit was involved in each classroom according to the following pattern: In both classes the experimental period started with a 6-week period without rabbit, followed by 6 weeks with a rabbit, then again 6 weeks without rabbit, then finally 6 weeks with a rabbit. In the two animal-assisted periods, the rabbits were continuously present in the classroom, they were nourished and cleaned by the children. In addition, once a week a special course was organized for the pupils: University students of special education held a cognitive training, each topic was focused on rabbits. Pupils then had the opportunity also for a direct contact with the rabbit, to touch and to caress them.

In both the animal-assisted and the control periods, the anxiety state was measured in the middle of the six-week period and at the end of it. We used the Child Behavior Checklist, CBCL (see, Achenbach, 1991), a qualified test. This questionnaire is suitable for screening emotional lability and behavioral disorders of pupils of 7-14 years and was standardized on the data of 1600 Hungarian children (Perczel, Kiss, & Ajtay, 2005). The tests were evaluated by experts in pedagogy. The total score of the test is 60. According to the standardized test, pupils over 35 scores are classified “anxious/stressed children”, between 30 and 35 scores “slightly stressed children”; below 30 “of normal anxiety/stress level”. Only the results of those children were taken into consideration who participated in all ability tests (27 pupils, 19 in the majority school and 8 in the integrating school).

3.1. Results

Figure 1.
Change of pupils' anxiety level.

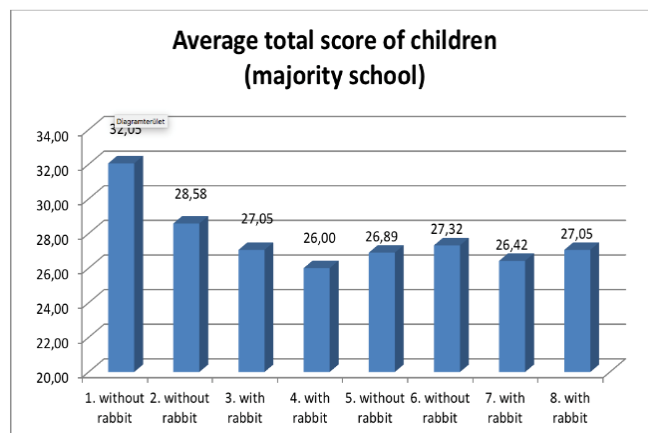
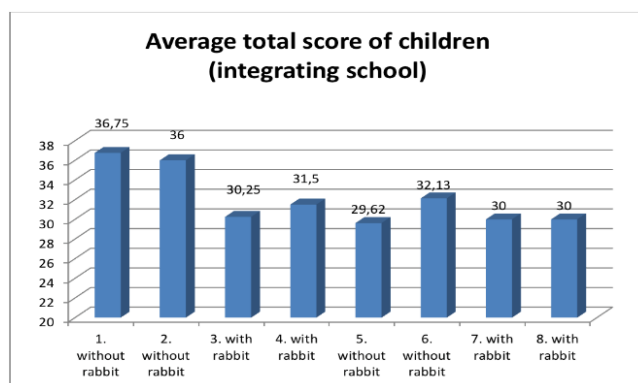


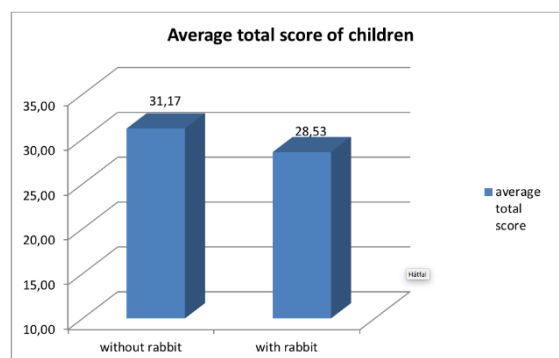
Figure 2.
Change of pupils' anxiety level.



The average score of the stress level in the beginning of the scholar term remained below 35 in the majority school. Then a decrease was detectable in the first six weeks period between the first and second tests, which can be attributed to the professional pedagogical activity of the teachers. In consequence of their efforts, the adaptation to the new environment was successful in this group. After this period the following pattern was observed: a decrease in score was characteristic for all the animal-assisted periods, whereas a more pronounced increase in score was observed in all the non-assisted periods. This tendency was even more pronounced in the integrating school. The effect of the professional pedagogical activity can be observed in this group, too, but with lower intensity than in the other group in the initial period. However, the third test (in the middle of the first rabbit-assisted period) indicated a significantly bigger reduction of stress level than that of the majority school group.

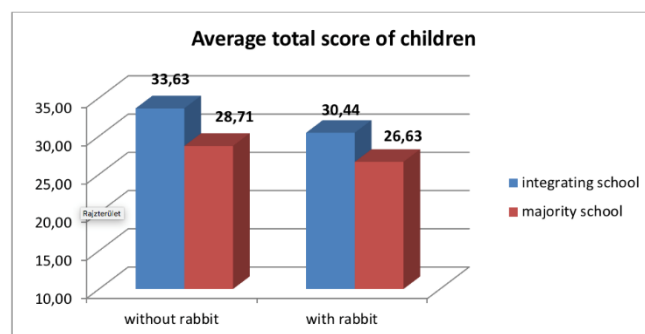
The difference of the results in the two schools demonstrate that the high stress level in the integrating school could have been reduced by rabbit-assisted education, too, although, their stress level did not reach the lower level of the majority school group. According to the classification, the integrating group moved from “anxious/stressed” to “slightly stressed”. On the other hand, in the majority school the classification of the group changed from “slightly stressed” to “normal”, in response for the same intervention.

Figure 3.
Children's average anxiety level in the rabbit assisted vs the non-assisted periods.



Summarizing the scores of all the animal-assisted and control periods, an 8.45% difference in score was detectable between the animal-assisted and the control periods. This means a 2.64 score difference in average in favor of the assisted periods vs. the non-assisted ones. As a consequence, the average of all pupils (including both groups) moved from “slightly stressed” to “normal”.

Figure 4.
Children's average anxiety level in the majority and the integrating schools.



We also compared the extent of the changes in each school separately. The presence of the rabbit induced a 9.48% improvement of the stress level in the integrating school, while in the majority school the improvement was 7.24%.

As expected, there were big differences in the scores and the changes of scores of individual pupils. Pupils were classified into three groups according to their initial anxiety score. Then we investigated the change in the scores of these groups. For the group of “stressed” pupils, their average showed an improvement of 5.06% in the rabbit-assisted period with respect to the control period, as shown by their respective average scores of 36.19 and 31.13. This resulted in their classification change from “stressed” to “slightly stressed”. Some of them improved as much as 19-20 scores by the end of the intervention, and the average improvement has reached 10 scores.

Table 1.
Group of anxious children.

Ø – rabbitless period, R – rabbit assisted period, Ø avg – average of rabbitless period, R avg - average of rabbit assisted period, d (%) – difference in %

	1st child	2nd child	3rd child	4th child	5th child	6th child	7th child	8th child	
Ø	48	40	50	44	52	37	39	41	
Ø	46	40	50	43	41	26	34	30	
R	34	31	32	40	40	31	31	27	
R	42	26	37	38	37	21	23	25	
Ø	36	21	40	40	36	20	22	24	
Ø	41	22	41	39	36	27	25	27	
R	46	20	35	31	36	21	21	29	
R	41	20	37	40	39	20	20	25	
									avg
Ø avg	42,75	30,75	45,25	41,50	41,25	27,50	30,00	30,50	36,19
R avg	40,75	24,25	35,25	37,25	38,00	23,25	23,75	26,50	31,13
d (%)	2,00	6,50	10,00	4,25	3,25	4,25	6,25	4,00	5,06

On the Positive Effect of Rabbit-Assisted Interventions in Classroom Environment on the Anxiety of Pupils

In the “slightly stressed” category, a 1.94% improvement was observed; here the improvement was not as pronounced as in the “stressed” group. Some of the pupils in this group made a 7% improvement, some others did not show any change at all.

Table 2.
Group of less anxious children.

	9th child	10th child	11th child	12th child	13th child	14th child	15th child	16th child
∅	34	32	32	31	31	33	33	34
∅	36	29	21	28	29	29	31	25
R	33	25	24	26	28	29	27	22
R	29	38	21	20	28	32	28	28
∅	32	31	26	20	22	32	27	29
∅	36	32	29	20	26	36	30	23
R	24	31	28	20	28	35	28	27
R	24	31	27	20	31	35	26	24

∅ avg	34,50	31,00	27,00	24,75	27,00	32,50	30,25	27,75	29,34
R avg	27,50	31,25	25,00	21,50	28,75	32,75	27,25	25,25	27,41
d (%)	7,00	-0,25	2,00	3,25	-1,75	-0,25	3,00	2,50	1,94

For pupils in the normal category, only an immaterial (0.68%) improvement was observed. For most of these pupils, no change in stress level was registered. Moreover, in some cases, a slight negative effect of the presence of the rabbit was registered. For this group, the animal-assisted training seems to be unnecessary; apparently, they can manage the stress caused by school on their own. Occasionally, the presence of the rabbit may even disturb them in their learning activity.

Table 3.
Group of normal stress level children.

	17th child	18th child	19th child	20th child	21th child	22th child	23th child	24th child	25th child	26th child	27th child
∅	24	29	28	24	29	29	22	24	29	28	26
∅	22	39	20	21	28	29	22	28	29	29	26
R	20	36	22	22	30	28	20	25	26	20	27
R	26	33	20	21	29	33	20	22	26	20	23
∅	21	36	22	22	32	25	22	36	27	20	27
∅	25	33	20	20	31	26	23	33	26	22	27
R	25	38	20	20	32	32	21	22	29	20	23
R	25	42	20	20	35	33	21	26	28	20	24

∅ avg	23,00	34,25	22,50	21,75	30,00	27,25	22,25	30,25	27,75	24,75	26,50	26,39
R avg	24,00	37,25	20,50	20,75	31,50	31,50	20,50	23,75	27,25	20,00	24,25	25,57
d (%)	-1,00	-3,00	2,00	1,00	-1,50	-4,25	1,75	6,50	0,50	4,75	0,68	0,68

Below we post the result of the t-test on the difference of the two schools, with significance level $p < 0.0001$.

Table 4.
T-test, between schools.

School	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
Majority		152	27.6711	6.2145	0.5041	20.0000	52.0000
Integrating		64	32.0313	8.1493	1.0187	20.0000	50.0000
Diff (1-2)	Pooled		-4.3602	6.8412	1.0194		
Diff (1-2)	Satterthwaite		-4.3602		1.1366		

School	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Majority		27.6711	26.6751 28.6670	6.2145	5.5856 7.0041
Integrating		32.0313	29.9956 34.0669	8.1493	6.9416 9.8698
Diff (1-2)	Pooled	-4.3602	-6.3695 -2.3508	6.8412	6.2499 7.5570
Diff (1-2)	Satterthwaite	-4.3602	-6.6165 -2.1039		

Method	Variances	DF	t Value	Pr > t
Pooled	Equal	214	-4.28	<.0001
Satterthwaite	Unequal	95.246	-3.84	0.0002

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	63	151	1.72	0.0078

Below we post the result of the t-test on the difference between the rabbit-assisted and the control periods, with significance level $p < 0.0001$.

Table 5.
Assisted vs. non-assisted periods.

N	Mean	Std Dev	Std Err	Minimum	Maximum
108	2.4074	5.4224	0.5218	-10.0000	18.0000

Mean	95% CL Mean	Std Dev	95% CL Std Dev
2.4074	1.3731 3.4418	5.4224	4.7831 6.2606

DF	t Value	Pr > t
107	4.61	<.0001

Below we post the result of the d-values on the difference between the group of anxious, slightly anxious, and normal anxiety level pupils, with significance level $p < 0.0098$.

Table 6.
D-values, anxious, slightly anxious, and normal anxiety level.

Class Level Information					
Class	Levels	Values			
Anxiety	3	slight anxiety			
Number of Observations Read					216
Number of Observations Used					27

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	91.0843519	45.5421759	5.64	0.0098
Error	24	193.8187500	8.0757813		
Corrected Total	26	284.9031019			

R-Square	Coeff0 Var	Root MSE	d Mean
0.319703	120.9750	2.841792	2.349074

Source	DF	Type I SS	Mean Square	F Value	Pr > F
Anxiety	2	91.08435185	45.54217593	5.64	0.0098

4. FUTURE RESEARCH DIRECTIONS

The question whether AAIs in classroom promote or not pupils' *learning success* was set as the primary goal of our long-term research. As a first phase, our first pilot investigations suggest the beneficial effect of rabbit-assisted interventions for the *stress level* of pupils of first grade. Next, we are going to perform the same investigation with a much larger number of participants. In order to make further steps, first the teachers who are involved in our research should gain a solid methodological know-how about the proper involving of animals into particular phases of the teaching process. It is also our goal to investigate the effect of rabbit-assisted interventions on further emotional skills and social competencies, and ultimately, on learning success. To that end, a standardized set of methods, which fit to early childhood's psychological features and cognitive skills should be developed, too.

5. CONCLUSION

Our pilot research suggests the beneficial effect of rabbit-assisted activity on the anxiety of first grade pupils. Our study also suggests that the beneficial effect has a positive correlation with the strength of anxiety of pupils measured at the beginning of their first school year: For the stressed pupils the rabbit-assisted intervention was very beneficial, for the slightly stressed pupils it was beneficial, whereas for pupils with normal stress level the intervention was mostly neutral. The comparison of the two groups (majority school vs. integrating school with children of special needs) shows the significantly greater extent of benefit of the rabbit-assisted intervention for the latter group. The comparison of the teaching periods with or without the rabbit clearly shows in both groups the decrease of the stress level in the rabbit-assisted periods, and the increase of the stress level in the control periods. Summing up, our findings indicate that rabbit-assisted methods, in general, does have a complementary role in pedagogy. In particular, rabbits may successfully be applied in the regular educational process.

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AUTHORS' INFORMATION

Full name: Marcell Molnár, PhD

Institutional affiliation: University of Kaposvár, Hungary, Faculty of Agricultural and Environmental Sciences

Institutional address: 7400 Kaposvár, Guba S. Street 40. Hungary

Short biographical sketch: Marcell Molnár is an associated professor, an agricultural engineer and ethologist. The main line of his teaching and research is ethology, well-being of animals, ornithology, ethology and breeding of pets, exotic animals, and the investigation of human-animal rapport.

Full name: Réka Iváncsik

Institutional affiliation: University of Kaposvár, Institute of Special Education

Institutional address: 7400 Kaposvár, Guba S. Street 40. Hungary

Short biographical sketch: Réka Iváncsik is an assistant lecturer, a teacher of special education, a hippo-therapist, and a dog-assisted therapist. Recently she is a PhD student in the Doctoral School of Stock-Raising Sciences, Faculty of Agricultural and Environmental Sciences, University of Kaposvár. The main line of her teaching and research is pedagogy with integration-inclusion, and animal assisted pedagogy and therapy

Full name: Barbara Di Blasio, PhD

Institutional affiliation: University of Kaposvár, Hungary, Institute of Special Education

Institutional address: 7400 Kaposvár, Guba S. Street 40. Hungary

Short biographical sketch: Barbara Di Blasio is an associate professor who has ample prior special educator experience practice. Her field lies in Education Science, in particular she is interested in learning and teaching success and efficiency. Her results are applicable both in higher education and in special education; in particular in psychopedagogy. Her mission is to support teachers in their professional work by also taking into a close account of pupils' needs.

Chapter #21

INTERDISCIPLINARY PROJECTS IMPLEMENTED IN THE ENTREPRENEURIAL SCHOOL

Four crucial steps

Maude Boulanger¹, Marie-Claude Rivard², & Rollande Deslandes³

¹*Department of Psychology, Université du Québec à Trois-Rivières, Canada*

²*Department of Human Kinetics, Université du Québec à Trois-Rivières, Canada*

³*Department of Education Sciences, Université du Québec à Trois-Rivières, Canada*

ABSTRACT

Entrepreneurship education appears to be a promising avenue for developing entrepreneurial skills (e.g., leadership, motivation, teamwork) and the school is targeted because young people are considered as key players in promoting economic growth (European Commission, 2013). One of the appropriate teaching methods for achieving academic and entrepreneurial goals is the project-based learning (P-BL). The P-BL is also the prioritized strategy to implement interdisciplinarity in schools and it appears that entrepreneurship is a privileged context for realizing interdisciplinary projects in order to give meaning to the learning experience. Based on the framework of Proulx (2004), the objective is to describe the processes of implementation of interdisciplinary projects in the context of the entrepreneurial school. Eight individual interviews were conducted with school staff from one entrepreneurial school. Our results show that the teacher assumes a key role as a supervisor throughout the interdisciplinary project in making sure that the education program objectives are achieved. However, the lack of collaboration between the teachers remains a challenge in order to help them with the realization of these projects. Interdisciplinary projects correspond to a non-traditional and promising method of teaching; solutions are identified in the discussion to optimize the implementation and thus ensure the sustainability of these projects in this entrepreneurial context.

Keywords: interdisciplinarity, project-based learning, entrepreneurial school, qualitative methodology, case study.

1. INTRODUCTION

One of the primary goals of the school is to promote the educational success of as many students as possible through the three missions proposed by the Ministry of Education of Quebec (Ministère de l'Éducation du Québec - MEQ, 2006). The first mission of instruction promotes academic success while the second and third are aimed at socialization and qualification of students, respectively. Educational achievement is thus a global concept that considers students' personal and professional successes (Lapostolle, 2006).

It seems that one of the most important variable that can influence students' academic success is motivation (Nevala & Hawley, 2011). To this end, students who are motivated by learning at school are more involved in the proposed activities, and they actively participate in classes and spend time and effort for the realization of learning activities (St-Pierre, 2013). Hidi (2001) adds that student interest and perceived usefulness would partly determine engagement, quality of learning and academic performance. According to Deci

and Ryan (2000), there are three types of motivation: intrinsic motivation, extrinsic motivation and also amotivation. Intrinsic motivation leads to an activity or project, for example, because it is intrinsically interesting, useful and enjoyable for the person. Extrinsic motivation is divided into four levels from the least to the most self-determined (external, introjected, identified and integrated regulations). Amotivation supposes that a person remains indifferent to an activity and participates in it mechanically and without demonstrating interest. In short, there is no motivation to act. These three types of motivation can be easily observed and transferred to the education community (Deci & Ryan, 2000). For this purpose, learning that is intrinsically motivated by the pupil is superior in terms of quality than extrinsically motivated learning (Lepper, Corpus, & Iyengar, 2005). In this sense, if students complete their school activities by choice and pleasure, the chances of success are higher than doing activities for external reasons or by internal pressure (Guay & Vallerand, 1997). In this context, it is necessary to emphasize on teaching contexts where students can explore, discover and learn while optimizing their intrinsic motivation (Guay & Vallerand, 1997). With this in mind, it is important for teachers to diversify their teaching and assessment practices to promote better learning and support student motivation (Martin & Dowson, 2009). Several initiatives are therefore put in place in schools to promote educational success and support the motivation of students, including entrepreneurship education.

2. BACKGROUND AND CONTEXT

A promotion of entrepreneurial culture has been taking place in different countries to stimulate and diversify economic growth. This tendency is present, among others, in Europe (European Commission, 2013), United States¹ and Canada (Secrétariat à la Jeunesse, 2004, 2016). It seems that entrepreneurship education appears to be a promising avenue for developing entrepreneurial skills among young people, such as leadership, motivation, teamwork (European Commission, 2013; Ministère de l'Éducation, du Loisir et du Sport - MELS, 2006). The school is targeted in order to give tools and develop entrepreneurial spirit and skills among young people because these are considered as key players in promoting economic growth (European Commission, 2013; Secrétariat à la Jeunesse, 2016).

It seems that the appropriate teaching method for achieving academic and entrepreneurial goals is the project-based learning (P-BL) (Ministère de l'Éducation, du Loisir et du Sport - MELS, 2005). Proulx (2004) defines project-based learning as a process of acquiring and transferring knowledge in which the student must anticipate, plan and realize an observable project. Blumenfeld and his colleagues (1991) and Thomas (2000) add and emphasize that there are two essential components to realize the projects at school. The first one is that there must be a starting question or a problem to solve in order to organize and conduct the activities. The second is that the realization of these activities must lead to a final product. Project-based learning, according to Perrenoud (1998), is a class-led collective enterprise that leads to concrete production. This enterprise includes a set of tasks in which students have to get involved and play active roles. In this line of thought, school entrepreneurship is precisely a project culture in which students act to produce something new (MELS, 2005). The project-based learning is a teaching method that can have positive repercussions for students, such as better understanding of the topic, more in-depth learning, improved communication skills, more effective teamwork and

¹ <https://www.nfte.com/what/mission>

greater motivation to learn, among others (Bell, 2010, Proulx, 2004). From this perspective, the realization of these projects increases the interest and motivation of the students because they can solve concrete problems by finding real solutions with their peers (Bell, 2010; Blumenfeld et al., 1991).

The project-based learning is also the prioritized strategy to implement interdisciplinarity in schools (LeDoux, 2003), and Hasni (2010) adds that the P-BL is the teaching method that better characterizes interdisciplinarity. According to Mansilla (2005), interdisciplinarity allows the integration of knowledge and the thinking patterns of two or more school subjects in order to produce cognitive advancement, such as solving a problem or creating a product. Lenoir (2013) adds and states that interdisciplinarity as the action of linking several disciplines at the curricular, didactic and pedagogical levels and the establishment of different links of complementarity and cooperation in order to promote integration of learning processes and knowledge. Hasni and his colleagues (2008) emphasize that interdisciplinary teaching is based on utilitarian purpose, that is translated through the link with the concrete and life outside the school context and pedagogical-affective purposes, such as increasing student motivation and diversification of pedagogical approaches.

3. RELEVANCE AND OBJECTIVE

To our knowledge, there have been few studies that have addressed the qualitative perspectives of school staff in order to have a thorough understanding of the processes and steps involved in implementing interdisciplinary project in the context of entrepreneurial school. It appears that entrepreneurship is a privileged context for the realization of interdisciplinary projects in order to help the student to give meaning to the learning experience, acquire new knowledge (Pépin, 2011) and increase motivation (European Commission, 2013; MELS, 2006). The report of the European Commission, Education, Audiovisual and Culture Executive Agency and Eurydice (2012) reiterates Pépin's (2011) findings and highlights that the majority of educational activities implemented to develop entrepreneurial skills use interdisciplinary methods. Thus, the objective of this study is to describe the processes of implementation of interdisciplinary projects in the context of the entrepreneurial school.

4. CONCEPTUAL FRAMEWORK

The steps for project implementation developed by Proulx (2004), inspired by LeDoux (2003), serve as theoretical and methodological foundations for this study. This conceptual framework consists of four steps related to the implementation of pedagogical projects: (1) Preparation, (2) Implementation, (3) Evaluation, and (4) Disposition. The first step aims to clarify the educational intention, to choose the themes of the project and to structure the major stages of it. When the project is implemented, it's necessary to create student teams to be able to collect all the information and resources available (step 2). At this step, an emphasis is placed on project coordination and supervision from the teacher's point of view. During the third step, evaluation processes are also implemented by the types and the evaluation methods being used. The project concludes with the disposition and presentation of the project to the class, to the school and/or to the community (step 4).

5. METHODS

This research prioritizes a qualitative case study methodology that focuses on a limited number of cases that are considered significant given the specific objective of the study (Merriam, 1988). This descriptive case study aims to describe a phenomenon in depth in its real-world context and to adopt a linear-analytic structure (Yin, 2018). In this study, the case is an entrepreneurial school where teachers have prioritized project-based learning to implement interdisciplinarity. The school welcomes students from elementary to secondary levels and integrates an entrepreneurial component into its success plan and uses educational projects, in which many interdisciplinary projects have been deployed for more than five years. It should be noted that there was a first phase of this research project where focus groups were conducted with school staff members of the school (principals and teachers). Two main objectives were targeted during this first phase: 1) describe the perceptions of interdisciplinarity by school staff as well as the facilitating and binding conditions for the realization of interdisciplinary projects; 2) describe the methods of collaboration of the educational community and teaching practices related to the realization of interdisciplinary projects. Following the analysis of the results of this first phase, we carried out a second phase of the project to examine in greater depth some aspects related to the implementation of interdisciplinary projects and this chapter refers to this one.

For this specific study, we conducted eight individual interviews with school staff (principals and teachers) in order to meet the specific objective of this study. We made sure to have a representativeness of the school environment according to the school levels, the subjects taught and the functions of the key players (principals, tutors, specialists). This type of interview gathers the opinions and points of view of participants to facilitate understanding and interpretation of realities (Poupart et al, 1997). This instrument allows deepening and understanding of the studied phenomenon since it focuses and gives direct access to the lived experience of participants (Savoie-Zajc, 2009, Yin, 2018). The interview is an essential instrument to use in a case study because we are primarily interested in the human being and his actions (Yin, 2018). The individual interviews included 18 questions aligned with Proulx's four steps (2004). More specifically, the first step (preparation) involved five questions, the second step (implementation) included seven questions, the evaluation (step 3) was discussed through three main questions and the disposition (step 4) was discussed via three questions. Before conducting the individual interviews for this study, we validated the interview questions with a representative sample of our participants. The duration of these interviews varied between 25 minutes and 61 minutes and they were recorded.

The qualitative data were analyzed using Boutin's strategy (2007). This method of Boutin (2007) is divided into four stages: 1) preliminary readings of the data and establishment of the list of statements; 2) grouping statements into predetermined categories (based on a conceptual framework); 3) identification of sub-categories; and 4) interpretation and description of results. This analysis procedure uses predetermined categories in the literature. For this study, Proulx's (2004) four steps (preparation, implementation, evaluation, disposition) are the starting categories and the NVivo 10 software was used as a support to conduct these analyses. A validation process (with two judges) was achieved and the percentage obtained was 95%, as recommended by Yardley (2008). Following these analyses, we were able to interpret the data by generating explanatory propositions of the studied case (Gagnon, 2005).

6. RESULTS AND DISCUSSION

6.1. Preparation

Our results show that the teacher assumes a key role as a supervisor throughout the interdisciplinary project preparation in making sure that the education program (EP) objectives, the competencies related to the school disciplines involved in the projects and the goals of entrepreneurship are achieved. A teacher makes this observation: “*When you develop an interdisciplinary project, everyone (every teacher) must be taken into account because there is a specific curriculum to be followed in each discipline [...] we have to make sure to include the key elements of the content for each targeted school subject*” (Teacher 1). LeDoux (2003) has rightly emphasized the key role of the teacher as a pedagogical supervisor between the student and the learning to be acquired in the project. For his part, Proulx (2004) points in the same direction by emphasizing that the teacher has four main roles in project-based learning (coach, facilitator, motivator, evaluator) and that through these roles, he must ensure that there are learnings made throughout the project. First and foremost, the interdisciplinary project must meet the disciplinary and entrepreneurial objectives in order to take advantage of the potential of this type of project. It is important, however, to give some latitude and autonomy to the students in the choice of the theme or subject to be exploited in the project in order to raise their intrinsic motivation from the beginning of the project (Bell, 2010; Proulx, 2004).

6.2. Implementation

According to the participants, there are interesting collaborations mainly between specifically secondary teachers, which greatly facilitate the integration of several school subjects into interdisciplinary projects (Hammond & McCallum, 2009). On the other hand, the lack of collaboration between the elementary teachers remains a challenge in order to help them with the realization of the interdisciplinary project. To this end: “*It is not strong [the collaboration], there is none. We are all caught up in our own project [...] but when you are in a project, to help the other in his/her project, it is difficult*” (Teacher 5). In our judgement, it is necessary to increase collaboration between school staff members. In this regard, Hasni (2010) highlights that one of the most important conditions for the implementation of interdisciplinarity is the commitment and availability of teachers to work together during the project. We could more emphasize the importance of this collaboration in preservice teacher education programs so that this practice would be more present and valued. Why not take advantage of teaching internships so that students can work on an activity or a project where the collaboration between teachers would be put in the foreground? This avenue linked to preservice teacher training needs to be deepened.

6.3. Evaluation

Teachers take advantage of the implementation of interdisciplinary projects to evaluate students. The assessment is meant to support student learning (formative evaluation) and recognition of competencies (summative evaluation) functions (Fourez, Maingain, & Dufour, 2002). During the implementation of interdisciplinary projects in the entrepreneurial context, teachers tried to match the assessment of school disciplines and entrepreneurial skills to achieve the goals of the EP and the objectives of entrepreneurship and thus maximize the potential of these projects. Based on analyzes of interviews, participants found that the interdisciplinary projects are a non-traditional method of teaching and this result is consistent with the literature (Hasni, 2010) that interdisciplinarity

is associated with risk teaching contrary to traditional and disciplinary teaching. One teacher stated: *“Yes it can be difficult to manage [interdisciplinary projects in an entrepreneurial context] because we are more in a traditional classroom but it is another learning process that can be very interesting”* (Teacher 1). According to the participants, this way of teaching by interdisciplinary project brings interesting effects on students: *“The project develop their motivation, involvement, autonomy, responsibility and I think they take consciousness [the students] that there are learning they need”* (Teacher 6). It is interesting to note from this result that the effects mentioned refer to both, academic learning and the development of entrepreneurial skills. This finding agrees with the literature in relation to the positive consequences of this type of project, including increased intrinsic motivation of students (Bell, 2010; Hasni et al., 2008). In this line, project-based learning is an engaging and motivational approach for students that promotes involvement, interest and investment in learning (Bell, 2010).

6.4. Disposition

For this final step, it is important to present the outcome of the project to the school and community members and even parents who were project partners: *“First, the school council, which is partly composed of parents, is informed of the progress of the projects. It is a mode of diffusion. [...] and we have an open house day in May inviting the whole community”* (Principal 2). This step is important since the first goal is to arrive at a concrete product at the end of the interdisciplinary project (Perrenoud, 1998) and thanks to these formal presentations, the students are motivated to carry out the project in order to have an interesting product to present to their family, friends and community members. In other words, from the preparation to the project's disposition, the teacher must find interesting pedagogical formulas to support student motivation. A formal discussion is also held at the end of the project between the teacher and the pupils in order to go over the learning that developed in relation to the disciplines and the entrepreneurial skills. Asked about the desirable improvements to be made to encourage the implementation of interdisciplinarity, a recommendation draws our attention that it can be difficult for a teacher who starts in an entrepreneurial school to implement an interdisciplinary project in addition to performing all the other tasks expected in education: *“More released time to work with a student committee, to set the stages, to set a timetable. We move forward and try to close things up as we go along. Long-term planning is not possible”* (Teacher 3). This observation emphasizes the importance of closer collaboration between teachers in order to share teaching strategies (Erickson, 1996) and reduce isolation, among others (Pompson, 2005). Moreover, this observation reiterates the importance of emphasizing the possibilities and modalities of collaboration between teachers at the preservice teacher training program.

7. FUTURE RESEARCH DIRECTIONS

It would be interesting to gather pupils' perceptions of the process surrounding the implementation of interdisciplinary projects in the context of the entrepreneurial school. The students are considered as key players in these projects and their point of view is important to achieve the academic and entrepreneurial objectives and to ensure the sustainability of these projects. Focus groups could be conducted to gather their viewpoints on the integration of interdisciplinarity into projects. With this in mind, it would be important to see the long-term impacts of these interdisciplinary projects in terms of learning development and entrepreneurial skills, whose primary goal is to combine interdisciplinarity and entrepreneurship.

8. CONCLUSION

Using Proulx's (2004) theoretical framework, the aim of this study was to describe the implementation processes of interdisciplinary projects in the context of an entrepreneurial school. Following the discussion, each step brings its own challenges in line with the consolidation and sustainability of interdisciplinary projects in an entrepreneurial context. It seems that the steps related to implementation (step 2) and evaluation (step 3) are more complex and require more time and planification from the teachers than the other steps. In relation to the lack of collaboration (step 2), it would be interesting for the teachers of the same cycle (e.g., 3rd and 4th years) to be able to carry out an interdisciplinary project together in order to share the tasks (and thus reduce workload) and find solutions together for the problems encountered. Thus, the benefits would be numerous for both teachers and students. The teachers try through the interdisciplinary project to evaluate learning related to school subjects and entrepreneurial skills (step 3). It would be important to have formal meetings between teachers to ensure appropriate evaluation of learning from the disciplines (according to the EP) and the development of entrepreneurial skills. In other words, a reorganization of the work by the employer to facilitate the collaboration between teachers is essential to implement a pedagogical innovation as the interdisciplinary project in the entrepreneurial school. Despite the fact that the implementation of interdisciplinary projects represents a non-traditional teaching method, the combination of interdisciplinarity and entrepreneurship is profitable to encourage the development of disciplinary learning and entrepreneurial skills, such as motivation. Entrepreneurial school is an innovative context and Proulx's (2004) four steps provide a good description of the implementation of interdisciplinary projects.

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AUTHORS' INFORMATION

Full name: Maude Boulanger

Institutional affiliation: Université du Québec à Trois-Rivières

Institutional address: 3351, boul. des forges, C.P. 500, Trois-Rivières (Québec), G9A5H7, Canada

Short biographical sketch: Maude Boulanger, Ph.D. (c) is a doctoral student in psychology and a lecturer at the Bachelor of physical education and health program at the Université du Québec à Trois-Rivières. Her master's studies focused on collaboration between the school and the family as part of the Healthy Schools approach. This approach favors, among other things, the educational success of students. The subject about collaboration in her doctoral studies focuses on another initiative that promotes educational success: the deployment of interdisciplinary projects in the context of entrepreneurial school. Her research interests also include project-based pedagogy, physical activity and methodology approach using qualitative analysis.

Full name: Marie-Claude Rivard

Institutional affiliation: Université du Québec à Trois-Rivières

Institutional address: 3351, boul. des forges, C.P. 500, Trois-Rivières (Québec), G9A5H7, Canada

Short biographical sketch: Marie-Claude Rivard, Ph.D., is an associate professor at the Department of Human Kinetics, Université du Québec à Trois-Rivières. She holds a doctorate in physical activity intervention from Université Laval, Quebec. Her research focuses on health education from the perspective of healthy lifestyles and on teacher training in physical and health education. Professor Rivard is a regular researcher at *Groupe interdisciplinaire de recherche appliquée en santé (GIRAS)* at the Université du Québec à Trois-Rivières and *Centre de recherche et d'interventions sur la réussite scolaire au Québec (CRIRES)*.

Full name: Rollande Deslandes

Institutional affiliation: Université du Québec à Trois-Rivières (UQTR)

Institutional address: 3351, boul. des forges, C.P. 500, Trois-Rivières (Québec), G9A5H7, Canada

Short biographical sketch: Rollande Deslandes, Ph.D. is an Emeritus and Associate Professor who obtained a B.Ed at McGill University, a Master's in Social Work and a Ph.D. in Educational Psychology at Laval University, Quebec. She has been doing research for the past 25 years on school, family and community collaboration in relation to youngsters' learning, autonomy, educative success, and in the contexts of homework, learning assessment practices, etc.. She received a Research Excellence Award from UQTR in 2004 and she has been the francophone editor of the Canadian Journal of Education for six years (2012-2018). A regular researcher at the CRIRES Research Center since 1997, she has also edited two volumes on *International perspectives* regarding *Family-School-Community Partnerships*, London (UK) and N.Y.: Routledge (2009, 2013).

Chapter #22

DESIGN THINKING APPLIED IN HIGHER EDUCATION *D-Think*, a European Project for Innovating Educational Systems

Katja Tschimmel & Joana Santos
ESAD, College of Art and Design, Portugal

ABSTRACT

As a response to continual social and technological transformations, many academic, governmental and private organisations call attention to the need for urgent changes to educational systems. Because of its collaborative and creative approach, its cross-disciplinary and human-centeredness, Design Thinking is seen as a useful mindset and method to face the challenge of a new learning paradigm. Between 2014 and 2017, seven institutional partners from six different European countries developed the Research Project *D-Think*, supported by the Erasmus+ Programme of the European Commission. The goal of the *D-Think* project is the promotion of the application of Design Thinking as an innovation method to rethink not only learning/teaching methods but also pedagogical approaches, learning spaces or the role of educators. In this wider context an open access training course for Higher Education Institutions (HEI) educators and Vocational Education Training (VET) professionals was developed, through which they can learn how to apply Design Thinking tools and how to get into the designer's mindset.

Keywords: design thinking, research, higher education, innovation, toolkit.

1. INTRODUCTION

The world is facing unprecedented social, economic, political and environmental challenges, driven by accelerating globalisation and a faster rate of technological developments. Based on this continuous transformation, many academic, governmental and private organisations are emphasising the urgency of changing the educational system. Students have to be prepared for jobs that have not yet been created, for technologies, that have not yet been invented, and to solve social problems that have not yet been anticipated. In this context, *The Future of Education and Skills 2030* project (OECD, 2018) points out that students “will need a broad range of skills: cognitive and meta-cognitive skills (e.g. critical thinking, creative thinking, learning to learn and self-regulation); social and emotional skills (e.g. empathy, self-efficacy and collaboration); and practical and physical skills (e.g. using new information and communication technology devices)” (p.5). Already in 2009, under the EU *Forum University Business Dialogue* (COM, 2009), there was a consensus on the need for comprehensive change to curricula and learning methods and for the inclusion of transversal and transferable skills, so that students can be prepared to be the agents of change. HEI (Higher Education Institution) and VET (Vocational Education Training) institutions need to maintain their efforts to reposition themselves in the emerging learning landscape. They must experiment with new formats and strategies for learning and teaching to be able to offer relevant, effective and high-quality learning experiences in the future (Redecker et al., 2011). Because of its collaborative and creative approach, its cross-disciplinary and human-centeredness, Design Thinking is seen as a useful mindset and method to face the challenge of a new learning paradigm. In this international context, the

European project *D-Think – Design Thinking Applied to Education and Training* emerged, having the goal of promoting the application of Design Thinking as an innovative method for rethinking pedagogical approaches, learning spaces, learning/teaching methods and/or the role of educators.

1.1. The design thinking concept

Design has always been a catalyst for change and for innovation. In the last decade, it has rid itself of its function merely in product creation, to widen its activities into the innovation process in general, whether in service, social or educational innovation (see Brown, 2009; Martin, 2009; Noweski et al., 2012; Tschimmel, 2012;). It is now accepted that any kind of business or organisation can benefit from the methods used by designers. In earlier work (Tschimmel, 2012), we affirmed, and still maintain, that Design Thinking (DT) relies on the designer's capacity to consider at the same time: 1. Human needs and new visions of living well; 2. Available material and technical resources; and, 3. The constraints and opportunities of a project. DT is based on the ability to combine empathy for the context of a problem, creativity in generating ideas and solutions, and rationality in matching solutions to the context. Design Thinking is a holistic and user-centred method, based on design cognition and design learning, that enables teams to enact positive change in the world. Today, it is understood as a way of thinking in multi- and interdisciplinary teams, driving transformation and innovation by looking for new perspectives and solutions. Design Thinking not only offers a systemised way to innovate products, services and processes, but also helps to foster a culture of creativity. And the belief in our own creative thinking capacity lies at the heart of innovation and of education and learning.

1.2. Design thinking applied in higher education

The need for educational reform has led to much research, which has documented the value of experiential learning, creative problem solving and design thinking, and increased relevance and motivation in learning. Projects such as *Design Thinking for Educators* (Riverdale & Ideo, 2012) or *Thinking & Acting Like a Designer* (Diefenthaler, Moorhead, Speicher, Bear, & Cerminaro, 2017) with their case studies, mindset and toolkit, have already proved that Design Thinking is able to offer research, creativity and learning tools, capable of boosting collective intelligence, novel & adaptive thinking, transdisciplinarity, empathy with an audience, and many other skills employers and organisations seek today. Research studies on behalf of Education and Culture of the European Commission, such as “Future Learning Spaces” (Punie & Ala-Mutka, 2007), “The Future of Learning: New Ways to Learn New Skills for Future Jobs” (Redecker et al., 2011) or “The Future of Education and Skills 2030” (OECD, 2018) show that the Design Thinking methodology can be an important contribution in a new vision-building process for educational systems. The OECD (2018) Learning Framework 2030 presents a complex concept, when it calls for “the mobilisation of knowledge, skills, attitudes and values through a process of reflection, anticipation and action, in order to develop the inter-related competencies needed to engage with the world” (p.6). This challenge requires the construction of a knowledge base for redesigning curricula. A change of curricula is based on an analysis of the ecosystem of many stakeholders: “Students, teachers, school leaders, parents, national and local policy makers, academic experts, unions, and social and business partners have worked as one to develop this project” (OECD, 2018, p.7).

Working deployed within this challenge, Design Thinking can help with the exploration and organisation of diverse information; through visualisation, mapping and prototyping tools, and by helping to make sense of and tackle ill-defined problems. Thus, DT can be of great help in re-designing learning environments, structures, processes and contents. Planning and implementing different learning strategies to address diverse generational learning needs, is complex and needs time. Moreover, different generations of students have different learning styles. People learn more when the teaching method is consistent with their learning style. This changes the perspective of education: a diverse learning ecosystem in which learning adapts to each learner instead of learners trying to adapt to training environments is the new model for education. Design Thinking is an effective method for finding answers to this challenge, by recreating new learning proposals in a collaborative process. In addition, the designer's empathic mindset and collaborative working approach can enrich the reflection on the educators' new role as 'learning facilitators'.

2. THE BACKGROUND OF THE *D-THINK* PROJECT

The *D-Think - Design Thinking Applied to Education and Training* project was conceived to answer the above identified specific challenges that the EU and the world are facing nowadays. According to Redecker et al. (2011), many of the changes depicted have been foreseen for some time but they have come together now in such a way, that it has become urgent and pressing for policymakers to consider them. The *D-Think* project is a kind of proposition of a fundamental shift in the learning paradigm for the 21st century world. It is also a response to the European Commission's search for personalised, collaborative and informal learning, by offering a Toolkit, the application of which could lead to a holistic changes in HEI or VET institutions, by redesigning curricula, pedagogies, assessment, teacher training, etc. The project also aims to orient educators, through the use of Design Thinking, to find out what kind of knowledge, skills, attitudes and values are needed for today's students, as well as how educational systems can effectively develop them.

This is the background against which, between 2014 and 2017, seven institutional partners from six different European countries developed the Research Project *D-Think*, supported by the Erasmus+ Programme of the European Commission. The seven partners are the Portuguese Design College ESAD/CIFAD (project leader and the general coordinator), Advancis Business Services (Portugal), Vaasan Ammattikorkeakoulu VAMK (Finland), ISTUD Business School (Italy), Akademia Humanistyczno-Ekonomiczna Łodzi (Poland), Venture Hub (Spain) and the European Foundation for Management Development (Belgium). The target group for the project includes HEI professors and staff, VET providers, educators and staff, adult educators, professional trainers and key-stakeholders in DT and Education. The *D-Think* project was designed with the aim of promoting a wider use of Design Thinking as a transversal learning method, by developing and making available an innovative open access digital course. The main achievements of the project include the *Research Report D-Think* (Tschimmel, et al., 2015), the *D-Think Toolkit* (Tschimmel et al., 2017) and the m-learning Course on DT applied to Education and Training (available at <http://www.d-think.eu/> & <https://dthink.worldclass.io>).

2.1. Objectives

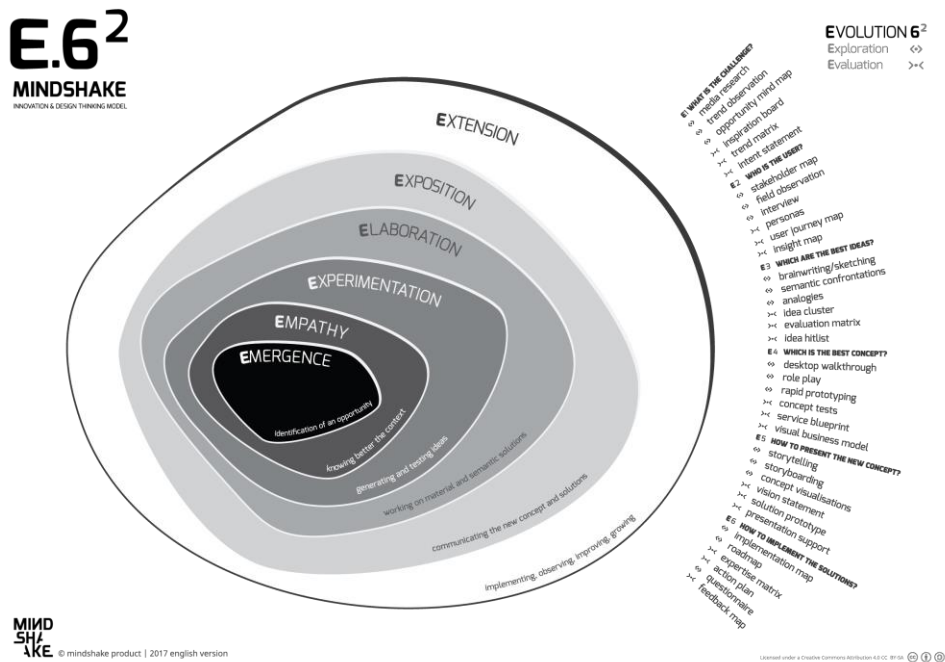
The goal of the *D-Think* project is to promote the application of Design Thinking as an innovation method to rethink not only learning/teaching methods but also pedagogical approaches, learning spaces or the role of educators. Focusing on the redesign of education and on the change of educators' mindset, the objective of the project was not to teach

educators how to teach Design Thinking to their students, but to apply it themselves to improve the educational system. In this context, a training course was developed, through which HEI educators and VET trainers can learn how to apply Design Thinking tools and how to get into its mindset. The main achievements of the project include the above mentioned Research Report, the Toolkit and the m-learning Course.

2.2. Methodological approach

The method we applied in the research process for the development of the *D-Think* course material was Design Thinking itself. By applying the DT model *Evolution 6²* (Mindshake, 2016), the research team went through different DT phases, applying several tools of Design Thinking, such as Trend Analysis, Collaborative Mind Maps, Field Observation, Interviews and Rapid Prototyping. The whole research process is described in the *Research Report D-Think* (Tschimmel et al., 2015, pp. 24-53).

Figure 1.
 The Evolution 6² Model, normally in 6 colours, here in a black and white version (Mindshake, 2016).



Mindshake’s Design Thinking Model, *Evolution 6²* (E.6²) was developed between 2012-2015 by Katja Tschimmel, the research leader of the *D-Think* project, as the result of her research studies about the creative processes in design. The model has been applied in product and service development, workshops, coaching sessions, research projects, and methodology lessons. Since 2015 the E.6² model has been registered under *Creative Commons Attribution 4.0 International License* in the version ‘by-sa’.

The model is called *Evolution 6²* because the creative process is an evolutionary and iterative process in which a lot of individuals and situations are interacting. ‘E6’ implies that in English the name of every stage of this six phased model starts with an ‘E’: Emergence, Empathy, Experimentation, Elaboration, Exposition and Extension. Since there are also moments of Exploration (divergence) and Evaluation (convergence) in every phase of the model, the model is called E.6². The E.6² model mainly distinguishes itself from other DT models, by the visual inclusion of the DT tools: 6 tools for every of the 6 E-phases, thus in total 36 tools (see http://mindshake.pt/design_thinking). During the research process, other well-known Design Thinking models have also been analysed, such as IDEO’s 3 I model and HCD model (Brown & Wyatt, 2010), the Double Diamond model from the British Council (Design Council, 2018), the Design Thinking model of the d.school (Hasso-Plattner Institute/Stanford University, available at <https://hpi.de/en/school-of-design-thinking/design-thinking/mindset.html>) and finally the DT Toolkit for Educators designed by Ideo in collaboration with the Riverdale School (Riverdale & Ideo, 2012). The analysis and comparison of these models permitted the optimisation of the different tools introduced to the *D-Think* Toolkit and the m-Learning course, contained in the six E-phases of the E.6² model.

During the development of the *Research Report*, literature review and data analysis on new teaching methods and pedagogical activities were carried out, as well as on the application of DT in Education. This research allowed the definition of the theoretical framework of the study, and above all, the construction of the different scenarios to be presented in the Toolkit: “Setting the Pedagogical Framework”, “Setting-up and Revising a Curriculum”, “Developing Contents”, “Setting the Assessment”, “Designing the Learning Spaces” and “The Role of Facilitator”. It emphasised the need to rethink all aspects of teaching performance, from the pedagogical project of the school to the classroom space and dynamic.

3. THE D-THINK TOOLKIT

The *D-Think Toolkit* (Tschimmel et al., 2017) is intended to be an active workbook to support the use of Design Thinking as a method of renewing educational approaches and methodologies, to update and learn how to redesign learning experiences, and to promote a mindset which encourages innovation.

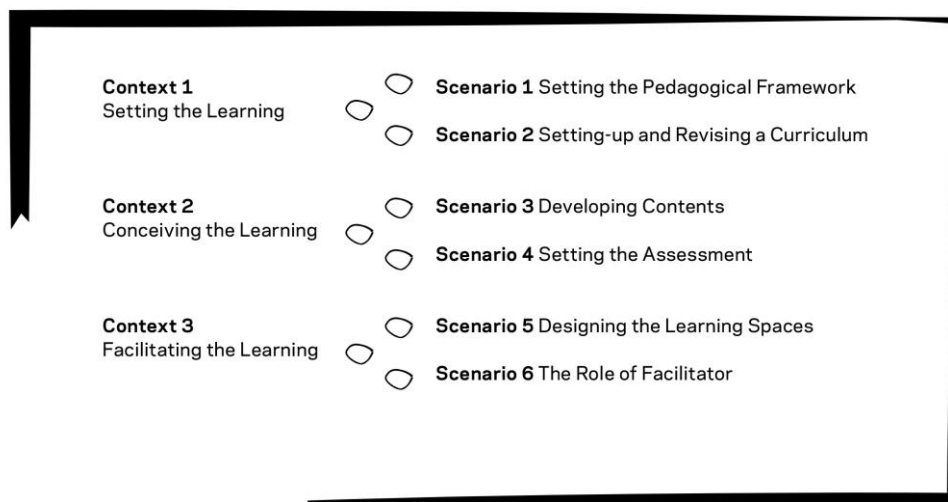
The toolkit was conceived as a way of stimulating the application of the DT tools by educators and trainers in different and relevant educational contexts. As a result, the research group conceived three educational contexts with two scenarios in each context. In the first context, “Setting the Learning”, one scenario is related to the Pedagogical Framework, and the other to Revision of Curricula. The first scenario, “Setting the Pedagogical Framework” should include the expectations and the core systemic principles of the institution. The outcome of the DT process could be, for example, a list of procedures and practices for the installation of new teaching habits, aligned with the institutional values, and with the support to students ‘learning improvement’. In the “Setting-up and Revising a Curriculum” scenario, the DT process starts with the understanding of where and how a certain course fits within the educational system and its broader programmes. A possible outcome of the DT process might, for example, be a new description of the learning and teaching context, or an improved curriculum for an academic course.

The second context of the toolkit, “Conceiving the Learning”, is dedicated to two scenarios: “Developing Contents” and “Setting the Assessment”. Contents may be varied, including printed and digital materials, and live performances, such as classes, games or events. In the learning contents development, the focus should be on the construction of meaningful learning experiences that simultaneously engage and challenge students and their teachers. One of the main challenges in designing and creating learning experiences is to define what has to be accomplished, and to ensure not only a combination of the content and the instructional methods, but also the assessment. Assessments are a central element in education, which can affect decisions about results, assignments, improvements, instructional needs, curriculum, and, in some cases, even funding and certifications. But the way the assessment system works today is not inspiring students to improve their learning activities. Instead of being focused on quantitative evaluation, qualitative feedback would be better suited to the diversity of the learning ecosystem.

The last two scenarios of the toolkit are related to “Facilitating the Learning”, by first “Designing new Learning Spaces”, and second by rethinking “The Role of the Educator/Facilitator”. When working to deliver innovative learning experiences, educators and organisations need to rethink the way learning spaces are organised. As a consequence of globalisation and new technologies, the requirements for a learning environment have changed considerably. In order to fit the 21st century learning framework, spaces should be sufficiently diverse to accommodate different learning styles. As for the role of the educator, he/she should be more a facilitator than a teacher in the traditional way. The last scenario and the proposed DT tools would help educators to define better the role and the tasks of the educator as a facilitator of learning experiences, providing the intellectual, physical and emotional growth of students.

Figure 2.

The different contexts and scenarios of the D-Think Toolkit (Tschimmel et al., 2017, p. 24).



Each of these six scenarios follows the six E-phases, having used between eight and twelve DT tools for the whole process.

The *D-Think Toolkit* is part of the open access m-Learning course (available in six languages), an innovative digital course that was designed with the same structure, but uploaded with videos and exercises that guide and allow the testing of different contexts and scenarios. The contents are available not only online for mobile use, but also for computer screens and tablets, increasing the range of possibilities of use.

4. VALIDATION OF THE PROJECT

Throughout the project, diverse activities of validation of the different results were developed. During the elaboration of the *Research Report D-Think* (Tschimmel et al., 2015), several interviews with HEI educators and VET trainers were carried out, which showed that most of them are neither familiar with the emerging educational trends nor with Design Thinking, but that they feel the urgent need of a change in education and training. The final outcome - the Toolkit and the Platform - were validated in three ways: 1. a “Train the Trainer” Course, a training activity for seven facilitators, to prepare them for the m-learning pilot sessions and future training course exploitation, 2. a Pilot Course with 104 participants, and 3. a Multiplier Event, which took place in five countries, and at which the project was presented and discussed with the local Educational communities.

The assessment was a key part of the methodology of the face to face “Train the Trainer” Course, and it was structured as a three step process: STEP 1 - a quick questionnaire was administered before the beginning of the course, to get some general information about participants’ profile, familiarity with Design Thinking, and individual’s expectations and engagement; STEP 2 - a discussion within the group of participants to get qualitative feedback at the end of the course; STEP 3 - a customer satisfaction questionnaire, completed by participants some weeks after the end of the course. Through the evaluation procedures and analysis, it was possible to conclude that the overall satisfaction with the course was good, as confirmed by 85% of the participants; the same percentage of participants also considered that the knowledge acquired is applicable for their professional life. Some final suggestions for improving the “Train the Trainers” course were also offered, resulting in a report for future editions.

Additional training activities also took place during the project, namely the M-learning Pilot Course. The pilot training was conducted online in order to test the m-learning course and gather feedback for improving the *D-Think Toolkit*. In addition to this online pilot session, partners also organised local face-to-face sessions that allowed the participants to observe, perceive, and identify the dynamics that arose from the face-to-face experience. The pilot session was organised for 104 (online) participants and it engaged HEI professors, professional trainers, and other educators from all the countries of the partnership and other European countries.

Finally, the multiplier event *D-Think Journeys*, which took place in five of the partnership countries with 272 participants involved. The *Journeys* were intended to: present the project’s main results for stakeholders and potential end users; allow the discussion of other initiatives related to DT applied to education and training; collect support to ensure the continuity of the project. The satisfaction of the participants with the events was assessed through a questionnaire which revealed that the majority of the participants were satisfied or very satisfied with the events. They found Design Thinking, the toolkit and the course very interesting and useful. The general impression was good and most of the participants believed that Design Thinking may be a powerful tool in planning new curriculum and teaching methods.

5. CONCLUSIONS

The main conclusion of the *D-Think* research project was the consensus that Design Thinking can be applied in education and training in the same way as it is used in the field of product innovation or management. We also recognised that Design Thinking is more than a method for innovation or a model focusing on structuring an educational innovation process. The project reveals that Design Thinking is also a creative and critical attitude with a future oriented mindset focused on collaboration, empathy, playfulness and continual learning; a mindset every HEI educator should have internalised.

The positive feedback from the three validation activities showed that around 80 % of the participants evaluated the course material as an effective support to try out and to learn the method of Design Thinking applied in an educational context. Participants feedback also confirmed that the *D-Think* project provides access to an innovative pedagogical methodology in line with EU priorities (learner centred learning; innovative pedagogical concepts), which can be used in formal, informal and non-formal educational contexts.

A final conclusion emerged during the Toolkit and m-Learning Course development is that the Design Thinking method presented in the *D-Think* Toolkit and m-Learning Course facilitates effective education by: fostering a mindset that drives transformation; offering model educational scenarios to follow; allowing the creation of one's own pathways and toolkit; permitting selection and creating solutions for building on experience and pathways; being custom-made, adaptable and flexible; and being for all educators interested in redesigning their educational perspectives, strategies and methods.

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AUTHORS' INFORMATION

Full name: Katja Tschimmel

Institutional affiliation: ESAD Matosinhos / Mindshake / Porto Business School

Institutional address: Avenida Calouste Gulbenkian, 4460-268 Senhora da Hora, Matosinhos, Portugal

Short biographical sketch: Katja Tschimmel works and researches in two realms: the business (Mindshake - Consultancy and Training in Creative Thinking and Design) and the academic (ESAD Matosinhos, Porto Business School, Laurea University). Having a Ph.D in Design and a Masters in Applied Creativity, she researches in the fields of Creativity, Innovation, Design Thinking and Education, in all of which she has years of experience. Publishing regularly in the area of creativity and design, she is the author of the Design Thinking model *Evolution 6*, with which she coaches creative processes of start-ups and in innovation departments of numerous companies. She coordinated the European research project *D-Think* (Design Thinking applied in Education and Training) between 2014 and 2017.

Full name: Joana Santos

Institutional affiliation: ESAD Matosinhos / ESAD-IDEA

Institutional address: Avenida Calouste Gulbenkian, 4460-268 Senhora da Hora, Matosinhos, Portugal

Short biographical sketch: Since 2009, Joana Santos is the Pedagogical Deputy Director and the Director of the Master in Design at ESAD. Since 2017 she is a member of the ESAD-IDEA board – Research in Arts and Design. Joana has a PhD in Interior Architecture from Polytechnic of Milan (Italy) since 2004. She has coordinated design events, conferences and exhibitions, both nationally and internationally. Between 2014-2017 she was the project manager and a researcher of the European Project *D-Think* (Design Thinking Applied to Education and Training). Her research is in the field of Design Thinking and Design Education.

Chapter #23

CHALLENGE IN CLASSROOMS: MORAL REASONING AND EMOTIONAL COMPETENCE

Carmen Mañas Viejo
University of Alicante, Spain

ABSTRACT

This article presents the first fruits of research focused on pupils in their first year at Secondary School. Its main aim is to explore the possible relationship between moral development, as understood by Kohlberg, and the impact that the components of emotional intelligence described by Baron-Cohen (e.g. self-concept, empathy, flexibility and control) have on moral detachment. At a cooperative school in the province of Alicante (Spain), following Kohlberg's method and through an action-research design, we presented 11 dilemmas and a BarOn questionnaire (EQ-i YV-S) to be resolved by a small group of 25 boys and girls (ca. 12-14 years old) during their tutoring session. The obtained results show that the whole group was at the same level of moral reasoning, but at different sublevels. We also found that the same individuals who are at lower sublevels obtain lower scores (below the group average) in the four analysed emotional components (intrapersonal level, interpersonal level, stress management and adaptability). Use of moral dialectics in the classroom promotes cognitive progress, social responsibility and decision-making at a critical developmental moment.

Keywords: secondary school, moral development, emotional intelligence, early teenage.

1. INTRODUCTION

The news constantly bombards us with reports of the disruptive behaviour of boys and girls at secondary schools, young people between the ages of 14 and 18, in whom a certain moral disengagement seems to have set in (Ortega, Sánchez, & Menesini, 2002). By pursuing this idea, based on the concept of moral disengagement proposed by Bandura in 1991, which links the learning and internalisation of social standards with a certain ability to regulate how our emotions behave, our aim is to explore the possible link between moral reasoning and emotional competencies. There is an increasing number of studies which aim to further explore the impact that emotional awareness has on moral behaviour and how the development of moral behaviours encourages individuals to control their primary, reactive and egocentric responses. It may therefore be assumed that this increases the ability to reason and judge one's own actions and those of others. Emotional intelligence, in other words emotional awareness, and managing emotions can have a positive effect on the prosocial use of psychological resources, which belong not only to an individual but also other people and even groups (Hakkak, Nazarpouri, Mousavi, & Ghodsi, 2015).

2. BACKGROUND

Our theoretical framework is supported by biological contiguity and Piagetian psychology (Piaget, 1948) and the proven connection, which Kohlberg established in 1984, between intelligence (capacity for reasoning) and the ability to argue logically in relation to

a situation that creates some kind of conflict or dilemma (Gibbs, 2013). We take a position on an eclectic evolving theoretical framework, in which biological contiguity is as important as interaction with the environment and the experience that this leaves in each person, defending ethical contextualisation (Gilligan, 1982; Gilligan, 2013) in that experience, so that it is possible to compare ethics of justice with ethics of equity.

For Kohlberg (1984), development occurs in a complex interaction of active self-reflexive processes based on knowledge of oneself and experiences of interaction with the social environment. He structures the development of moral reasoning into three major levels, namely the Pre-conventional, Conventional and Post-Conventional levels. In each level, he establishes two types of sub-phases or stages. The biological development of boys and girls in interaction with their family, at school and with their peers opens up the path from one cognitive and moral structure to another, from a capacity to perceive and interpret reality to another more mature and complex one. Kohlberg links moral reasoning with the quality of cognitive stimuli, experience and role-taking, in the sense that Mead gives to this type of experience. This entails highlighting both the cognitive and emotional aspects in the structural and organised construction of social relationships in which people are involved. One of the keys to moving from one moral reasoning to another is promoting dialogue, dialectics: giving boys and girls the opportunity to take on different roles, passing on experiences to them and allowing them to participate in judging and assessing them (Hersh, Reimer, & Paolitto, 1984).

After the family, school is the second level of socialisation, and it is where most children around the world learn concepts, standards and values that help them to function appropriately in the society in which they are growing up. At school teaching and learning is a continuous and overall process. Since the nineties, the importance of socio-emotional education has been explicitly stated in the description of goals, procedures and evaluation of the knowledge, competencies and attitudes shown at school. Authors such as Salovey and Mayer (1990), who follow the tradition of Thorndike (1920), Wechsler (1949), Maslow (1943), Payne (1985) and Gardner (1998), try to incorporate emotional intelligence into human cognitive abilities. This incorporation of emotional abilities and skills, which are developed in the social and personal spheres, has provided an important stimulus for change and renewal in education, both from a methodological and conceptual point of view. This new approach involves incorporating affective and emotional aspects as variables which have a positive or negative impact on performance at school (Alzina, 2013; da Silva, 2017) and on social and personal success (Hakkak et al., 2015).

Every emotion predisposes us in a different way to an action; the major emotional structures are built as we experience the external reality through our body (Wallon, 1975). Fear, anger, laughter or sadness are emotions that are universally recognised by people belonging to different cultures (Levenson, Ekman, & Friesen, 1990). But most emotional expressions are learnt in a specific sociocultural environment (Fernández-Abascal & Palmero, 1998). Positive emotions, such as happiness and the pleasure of social recognition, also improve the ways in which we use our cognitive resources, equip us with social resources and active strategies for coping with emotional dilemmas; in general, understanding and being able to manage them help the personality to mature (Fernández-Abascal, 2015). Emotions can suddenly activate a significant amount of psychological resources. These adaptive processes are activated every time the body detects danger or a threat to its balance. Therefore, they are not static but change according to the demands of the surroundings, through action based on experience. The work of Daniel Goleman (1996) marks a turning point in the consideration of Emotional Intelligence as a key factor in achieving social success. According to Goleman (1996), EI has two facets:

the intrapersonal dimension requires a person to perceive and express their own emotions correctly, while the interpersonal dimension requires people to correctly interpret the emotional expressions and reactions of others, thereby achieving appropriate or empathetic interaction.

Baron-Cohen (1997) detaches himself from the cognitive-developmental construct and suggests studying Emotional and Social Intelligence from a multifactorial approach that relates more closely to aspects linked to personality (Alzina, 2013; Pacheco & Berrocal, 2015). He defines it as a set of personal, social and emotional abilities and skills that influence one's ability to meet the demands and pressures of the environment, as well as overall well-being and emotional health (Ugarriza, 2001). BarOn defines the components of Emotional and Social Intelligence using five major factors – intrapersonal, interpersonal, adaptability, stress management and general well-being. Each of these major factors refers to certain abilities and skills. Therefore, emotional self-knowledge, self-expression, emotional regulation, self-development and independence define the intrapersonal factor; this factor refers to the ability to be aware, to understand and to relate to others and one's environment. The interpersonal dimension refers to the ability and skill to handle strong emotions and control our impulses. Social relations and social commitment define this interpersonal factor. The Adaptability factor is defined by developing the ability to resolve conflict in a flexible and realistic way; finally, controlling stress and impulses is defined by the diversity of strategies to cope with stress.

Using this theoretical model, BarOn designed the Emotional Quotient Inventory (EQ-i), a self-report with 133 statements to respond to on a five-point Likert-style scale, ranging from 1(=Agree) to 5(=Disagree). (For example, "What happens to other people matters to me", "Some things make me very angry", "I can give good answers to difficult questions"). The test gives a total score as a Quotient (EQ), which reflects overall emotional intelligence. It also provides a specific score for each of the five major factors, as well as an individual score for each of the 15 subscales. It is simple to interpret; the higher the score, the better a person responds to the dilemmas which they face on a daily basis or suddenly and unexpectedly. However, the length and wording of the questionnaire make it difficult to obtain and interpret the data, and, in 2002, BarOn and Parker (2002) developed the emotional inventory for young students aged between 6 and 18 (EQ-i:YV), comprising 60 Likert-style statements for responses on a scale from 1 to 4 (1= Never and 4= Always). Both scales have been translated in more than 30 countries, and many validation studies (Parker, Keefer, & Wood, 2011) have verified the factorial structure of the Baron-Cohen (1997) theoretical model by means of confirmatory factor analysis. The study conducted by Ugarriza, in 2001, is particularly noteworthy; it includes an abbreviated EQ-i: YV- S scale with 30 statements for response on a 4-point Likert scale and a factorial structure in accordance with the theoretical model described by BarOn (Ugarriza & Pajares, 2005). This study has been validated in Spain (López-Zafra, 2014, p.31; Esnaola, Freeman, Sarasa, Fernández-Zabala, & Axpe, 2016), and we decided to use it as it is a short version with adequate consistency indices. It is recommended for use particularly in situations where there is a lack of time, when researchers do not want to tire out the participants and if it is going to be used in combination with other tools. All these features make it well suited to our study.

Nowadays, nobody doubts that Emotional Intelligence has two dimensions, namely competence and ability. However, in order for this emotional intelligence to be visible, action, and specifically, prosocial action is needed (Wang, Lei, Liu, & Hu, 2016).

3. DESIGN

We proposed conducting an exploratory study following the guidance that Blatt & Kohlberg (1975) gives on the applicability of his theory to education. We chose to carry out the study in a private secular secondary school in the province of Alicante, which is set up as a cooperative in which both teachers and students are part of the company, and it is implied that everyone is concerned with providing and obtaining a good education. We decided, together with the school guidance unit, that our study would have an action research design and that it would be carried out in a tutorial hour shared by two groups (A and B), including half of group A and half of group B, with the aim of maintaining inter-class relationships among students. Our population universe is made up of the pupils from the selected school, and the sample is selected, purposive and non-probabilistic. The total number of male and female pupils who attend the tutorial is 28, and 25, those who brought the informed consent form from home, remained (17 boys and 8 girls). Their ages range between 12 (6 girls and 4 boys), 13 (11 boys and 2 girls) and 14 (2 boys).

4. OBJECTIVE

We have a twofold objective: on the one hand, we would like to explore the possible relationships between moral reasoning and emotional competencies and, on the other, provide the teachers with accessible dialectic tools that are useful for educational psychology intervention.

5. PROCEDURE

During their regular tutorial hour, with their usual teacher, and supported by a voluntary student and the centre's guidance counsellor, the activity was explained to them, and they were given a questionnaire with 10 dilemmas+1. They were presented with a series of situations in which we asked them to state how they would behave and to write an argument explaining their choice. Dilemma 11 was prepared by the tutor and the guidance counsellor, as they had just learned about a case of cyberbullying involving a girl in the group that took part in our study. The dilemma was worded as follows: "Imagine that you are in a class Whatsapp group, and several classmates with whom you get along well insult and belittle another classmate who you do not like. What would you do? (underline the selected response and write an argument to explain your choice)

a) You defend the classmate even though you do not like him/her and your friends will be angry with you?

b) You stay out of it and do nothing, allowing the insults and belittling to continue."

Dilemma 11 was prepared by the tutor and the guidance counsellor, as they had just learned about a case of cyberbullying involving a girl in their year. The 11 dilemmas were prepared following Kohlberg's method, contextualised to suit the interests that scientific literature indicates are relevant for the age group that we are studying and which we could refer to as early adolescence (friendship, social responsibility, respect in romantic relationships, respect for others, relationships with authority, relationships with the forbidden, distribution of time, online bullying, etc.). The ten dilemmas +1 are real dilemmas with the solution limited to two options and at least one argument to justify the stance taken. Students were given 35 minutes to respond. Once they had all finished, they were given the short version of the BarOn questionnaire, considering that it was an excellent tool for preparing a simple and thorough study on the emotional competencies of a small group of early adolescents. Our session finished at this point, but the class group continued working.

6. DISCUSSION

We will now comment on significant aspects that were observed when analysing the results. To solve the dilemmas, 24 of the 25 subjects were placed at the Conventional Level, while only one remained at the Pre-Conventional Level. Similarly, we found that 24 of the 25 subjects reached the average level in the scores on the Inventory, except one, the same 12-year-old boy. We observed how the same person who did not manage to resolve dilemmas properly did not achieve an intermediate score on the inventory, which shows a potential link between an emotional deficit and a deficit in moral/prosocial reasoning.

Only in 3 of the 11 dilemmas were significant differences observed in the solution. However, within the same level, two big blocks were identified in the group, corresponding to the two stages or sub-phases which make up the Conventional Level. These dilemmas covered cyberbullying, failing, telling on someone and proposing early sexual relationships. These issues are highly relevant in the current context and support the link between reaching a certain level of moral reasoning and proper management of emotional competencies, education about which will undoubtedly be a determining factor in moral reasoning and development (Proroković, Nikolić, & Šimić, 2017).

The direct scores obtained in the Inventory by each of the 25 subjects enable us to position the subjects within the group itself in each of the four evaluated skills (Intrapersonal, Interpersonal, Stress management, Adaptability). Thus, we can observe how the whole group, except our subject number seven, obtains a score above the possible average; and, once again, 14 of the 25 young people are above the group average in each of the skills, and 13 below average. Once again, a link between moral/prosocial reasoning and the level of emotional and social intelligence can be seen. We found it relevant that 100 percent of our subjects were at the same stage for role-taking responsibility. All of them, without exception, prioritise their role over their individual position, while when acting without a role, 10 of the 25 (including 5 of the total number of 8 girls) respond in a less empathetic, more selfish way while avoiding social responsibility. It would certainly be interesting to look further into the importance of granting roles and responsibility to boys and girls of these ages, as Kohlberg already stated. The results obtained in our study are in line with the results achieved by Garaigordobil and De Galdeano (2006) on the importance of role-taking in the acquisition of prosocial behaviours by both genders.

In addition, we would like to suggest that it would be worthwhile to further gender differences, since the reviewed scientific literature usually predicts higher results for emotional and social intelligence in girls than boys. However, in our study more than 60% of girls were below the group average in emotional intelligence and obtained lower scores in intrapersonal skills and their acquisition. After evaluating a programme which fostered emotional intelligence in a group of adolescents, Sarrionandia and Garaigordobil (2017) noted that they did not find any significant differences with regard to sex. Perhaps the fact that sometimes gender differences are analysed, while on other occasions sex differences are studied, is creating confusion. Although they are related, sex and gender are not exactly the same.

To conclude, it is worth highlighting that the lowest scores were obtained in intrapersonal skills and adaptability skills, while the highest scores were in interpersonal skills and stress management. This is in line with the evaluated moral reasoning. It could also indicate that it would be worth working on emotional self-awareness, assertiveness and self-actualisation with this group. We think that each subject's personality and optimism influence these scores, as well as the high value given to the social image that we present, or want to present, during this developmental stage. These are all factors to continue studying, which the tutor could certainly draw upon for a more specific and effective intervention.

7. CONCLUSIONS

Moral dilemmas, which are closely connected to reality and contextualised to everyday life, are an excellent educational psychology resource not only for evaluating moral reasoning but also for forming a moral judgement, accounting for and becoming aware of one's own hierarchy of values, in short, to grow in self-knowledge and social responsibility. Debates on the hierarchy of values can provide us with an opportunity to compare the ethics of equity with universal, non-gendered, ethics, at a turning point in the expression of sex and gender differences. Emotional intelligence is an overall term, which is used for both women and men; however, emotions are subjective reactions with three physiobiological, cognitive-experiential and emotional evaluation components. The skills that society demands of males and females are not the same. It would be of interest to continue exploring and enhancing knowledge of gender differences, rather than sex differences, as gender is a social construction, and differentiated emotional education is a key factor to analyse. It is emotional education, education with meaning, which, from childhood, shapes and defines the behaviour that is suitable and permitted for the sex and the situation experienced. In addition, it may be concluded that adopting prosocial roles provides experiences which encourage and motivate girls and boys to gain some perspective on their reality and that of their surroundings, thereby giving them moral reasoning and a tendency towards action with a broader and more positive social resonance.

Attaching importance to student participation in the school community means giving them the opportunity to grow up while feeling that they are part of the school organisation. Morals are not taught they are built in everyday life from daily moral behaviours.

We know that this is a small, exploratory study with many limitations, but as part of the action research design, combining the two tools (solving dilemmas and the BarOn inventory) was very useful to identify the emotional management needs of the group and of each one of its members.

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AUTHOR INFORMATION

Full name: Carmen Mañas Viejo

Institutional affiliation: University of Alicante

Postal address: Calle del Aeroplano, 1, 03690 Sant Vicent del Raspeig, Alicante, Spain

E-mail address: Carmen.mavi@ua.es

Short biographical sketch: PhD in Psychology from the University of Zaragoza, tenured professor at the University of Alicante. She teaches at the Faculty of Education (Degree in Early Childhood Education and Degree in Primary Education) and at the Faculty of Law (Degree in Criminology). She has been secretary of the Faculty of Education, director of network services and director of the scientific peer-reviewed journal *Feminismo, s*. She currently coordinates the COEDUCA University Innovation Network and leads the GIPEC Research Group in Evolutionary Psychology and Criminology as its principal researcher.

Chapter # 24

CHALLENGES FACED BY FEMALE LEARNERS FOLLOWING AN ENGINEERING CAREER IN SOUTH AFRICA

Corina-Maria Mateescu¹ & Dorina Ionescu²

University of South Africa, South Africa

¹*Department of Chemical and Civil Engineering,*

²*Department of Mechanical and Industrial Engineering*

ABSTRACT

The objective of this study is to examine the specific problems that arise in a society with patriarchal attitude toward women and their choice of a future career. Within the University of South Africa (UNISA) College of Science, Engineering and Technology (CSET) started a community engagement programme called GirlPower in 2009. To understand better the hurdles faced by the female learners while choosing an engineering career, the authors carried out a survey among a sample of 74 future female engineering students, currently part of the “GirlPower” group. It emerged that although 99% of the female learners enrolled for mathematics and physical science only 32 % intend to continue with engineering studies at tertiary level. The big problem is parental and society attitude toward a female child being “able” to study engineering. Looks like our female engineers just “disappear”. The current survey shows a relatively bleak picture of the future of female engineers even if the schools in Johannesburg area are among the best in the country. Based on the present survey the authors will attempt to suggest some solutions to the problems faced by female learners.

Keywords: female learners, engineering career.

1. INTRODUCTION

The challenges to ensure fair access across the whole spectrum of the society to engineering education are multi-faced, and not unique to South Africa. The student’s rate of success in tertiary education is directly linked to the quality of high school education and the parental / community attitude toward tertiary education. Through a study (Ionescu, 2011) done by the author in 2013 over a large sample of engineering students, it was found that in South Africa the parental attitude toward tertiary education is very positive but the ability of a child to enrol for tertiary education is restricted by poverty and sometime lack of career guidance at high school level. The study carried out by the authors, reflects some of the daunting realities that young women are facing if they want to pursue an engineering career. The South African society although still very divided along economical and racial lines, agrees over the fact that engineering is not exactly a “right” career path for a woman.

Today all career opportunities in engineering are opened to women, which make sense as 51% of South African population is female (Mid-year population estimates, 2017). For the industry to ignore over 50% of the available human resources would be suicidal in the global competitive environment. To the credit of most companies, the bursaries for engineering education are deliberately targeting women belonging to the previously disadvantaged communities. Women protection and promotion policies are fundamental toward attaining real freedom and empowerment. Despite the Constitutional protection that the women enjoy,

our extremely patriarchal society has a problem tolerating women in the engineering field. To date the average proportion of female students in the engineering field are only about 20 – 25 % (Ionescu, 2010).

2. HIGH SCHOOL CHALLENGES

2.1. What to study

In the present survey several questions were asked relating to career choice as shown in table 1.

*Table 1.
Reasons to follow an engineering/ science career.*

What is your reason to follow an engineering / science career											
Roll model in the family (a family member is an engineer / scientist and you would like to follow in his/her steps)			From your childhood you dreamed to become an engineer/scientist			Did you ever receive any advice regarding your career choice while in the high school?			You were offered a bursary with the condition to study engineering/science		
yes	no	N.A	yes	no	N.A	yes	no	N.A	yes	no	N.A
12%	83%	5%	7%	56%	37%	65%	26%	9%	8%	90%	2%

Considering the data in table 1 there is no really clear reason emerging for choosing the engineer career. Looks like the career choice advice received in high school by 65 % of the students may have played a role but then 90 % of the students were not offered any incentives by means of a bursary to follow the engineering path. The present survey had only female students, members of the “GirlPower” group, and relates to a survey conducted among male students at the University of Johannesburg shown in tables 2 and 3

*Table 2.
Discrimination and gender relation, male students only.*

Discrimination and gender relation, male students only (128)								
Is the engineering profession not suitable for women because:			See female engineers as a treat to male job security			The women should stay at home and perform traditional family care duties		
Is dangerous	Too physically demanding	na (no answer)	yes	no	na	yes	no	na
14	16	98	18	107	3	12	112	4
11%	12,5%	76,5%	14%	84%	2%	9%	88%	3%
Government women promotion policies discriminate against male engineers			Objection against engineering career for a close family member					
yes	no	na	yes		no		na	
51	71	6	23		100		5	
40%	55%	5%	18%		78%		4%	

Table 3.
Who will you choose to educate?

As the head of household with scarce resources, who will you choose to educate				
	A male child	A female child	both	No answer
Female students (32 students)	2 6%	26 81%	0 0%	4 13%
Male students (128 students)	108 84%	2 1,5%	2 1,5%	16 13%

The potential female engineering student is handicapped from start due to the patriarchal society in which they live. A male household head will send to study engineering 84 % of male children and only 1.5 % of female children. Although the answers listed in tables 2 and 3 tend to be “politically correct”, the underlying trend is that the male engineers are weary to say at least, by female competition for engineering jobs. In a survey carried out by the authors among industry people in senior management position, remarkably the middle-aged males were 100 % against the engineering profession for a female close relative. The reason for this opinion was mainly that the working environment is not suitable for women, too ruff, dangerous, too physically demanding etc. The real reason is that in a patriarchal society like ours, a wife or daughter “belongs” to the family head who decides what is best for her.

2.2. What the school can offer

Table 4.
What the school can offer.

At your high school did you study:											
Mathematics and Physical Science?			Mathematics literacy?			Were there offered in your school any engineering subjects such as technical drawing, mechanics, etc.			Did you have access to a computer and learned computer skills during high school?		
yes	no	N.A	yes	no	N.A	yes	no	N.A	yes	no	N.A
82%	8%	10%	14%	54%	32%	29%	19%	52%	52%	46%	2%
How do you feel about the teaching at your high school											
Do you have the feeling that you are unable to keep up the pace and you feel left behind			Do you study every day?			Do you study only before tests and exams?			Do you have subjects that you just do not understand?		
yes	no	N.A	yes	no	N.A	yes	no	N.A	yes	no	N.A
82%	8%	10%	14%	54%	32%	29%	19%	52%	47%	51%	2%
Do you have a library at your high school?											
Do you know how to use the library facilities (to look for a book using the computer in the library)?			How many times per week you go to study in the library?			Is the library staff helpful and polite toward you?			Are you also using the community library?		
yes	no	N.A	2-3	1	0	yes	no	N.A	yes	no	N.A
12%	78%	10%	1%	50%	49%	44%	7%	49%	7%	71%	22%

In the modern age that we are living in, the most worrying problem is the lack of electronic equipment and internet access in the high schools. Considering that the Girl Power students are from schools in Johannesburg in the rural area the problem is amplified many folds. Also, the self-study skills that a learner should acquire in high school is not happening with only 12 % of students using the library facilities and 49 % never going to the library. Unfortunately, the situation did not improve at all over the years. Table 5 (Ionescu, 2014) shows the results of a survey done in 2014 and the computer literacy improved by only 11 % over the last 3 years.

Table 5.
Subjects offered by schools.

HG mathematics HG physical science (offered at school)			SG mathematics SG physical science (student choice)			High grade mathematics and physical science teachers employed at the school		
yes	no	na	yes	no	na	yes	no	na
92	20	2	28	76	10	70	21	23
81%	17%	2%	25%	67%	8%	62%	18%	20%
Engineering subjects offered at school			Aces to computer literacy at school			Some of the students are from technical colleges, which explains the “na” (no answer) regarding high school subjects		
yes	no	na	yes	no	na			
30	80	4	47	64	3			
26%	70%	4%	41%	56%	3%			

2.3. The integration of practical engineering / science experiments in the high school curriculum

Proving theoretical concepts through laboratory experiments is extremely important for the future engineer. The science notions become less abstract and helps understand them better. Unfortunately, the “Virtual laboratory experiments” are not an option as only 52 % of the students have access to a computer. Table 6 shows the results of the current survey.

Table 6.
Who is performing the laboratory experiments?

Do you have a science laboratory at your high school?											
Do you know how to use the laboratory equipment?			Is only the teacher demonstrating the laboratory experiments?			Are the learners allowed to perform the laboratory experiments?			Were you provided with a science kit at the beginning of the term?		
yes	no	N.A	yes	no	N.A	yes	no	N.A	yes	no	N.A
65%	30%	5%	64%	32%	4%	32%	64%	4%	40%	58%	2%

Because in 64 % of the cases only the teacher can perform the science experiments, the laboratory role is diluted. Becomes something unattainable with students losing interest and not paying attention. The Engineering Council of South Africa (ECSA) as a regulatory body of engineering teaching, requires as compulsory a minimum of three relevant laboratory experiments to be performed by each student. The results in table 7 shows just how important the laboratory experiments are (Ionescu, 2014).

Table 7.
The relevance of laboratory experiments in engineering modules.

The relevance of laboratory experiments in engineering modules								
The students struggle to handle the laboratory equipment			The laboratory experiment is relevant for all mechanics of machines modules			The laboratory experiment is relevant for all strength of materials modules		
yes	no	na (no answer)	yes	no	na	yes	no	na
6	94	14	92	8	14	98	2	14
5%	83%	12%	81%	7%	12%	86%	2%	12%
The laboratory experiment is relevant for all fluid mechanics modules			The laboratory experiment is relevant for all thermodynamic modules			The laboratory experiment is relevant for all mechanical engineering manufacturing modules		
Yes	no	na	yes	no	na	yes	no	na
98	2	14	99	1	14	90	10	14
86%	2%	12%	87%	1%	12%	79%	9%	12%
The integration of the laboratory experiments into module enhanced the students understanding of the module and their academic performance								
Yes	No	Na						
90	10	14						
79%	9%	12%						

In South Africa, the Engineering National Diploma programs have the work integrated learning (WIL) module as part of the qualification, whereby a whole year is spent in industry. Due to a total lack of basic engineering skills of the majority of our future engineering students, the industry placement is very difficult as the industry tend to see them as a liability. However, all efforts must be done in this regard as the WIL in tertiary education and laboratory experiments in high schools helps with understanding of difficult modules as per below table (Ionescu, 2014).

Table 8.
Work integrated learning experience.

After work integrated learning the general understanding of engineering profession was enhanced			After work integrated learning the students' academic performance was enhanced		
yes	no	na	yes	no	16%
16	3	5	13	5	6
67%	12%	21%	54%	21%	25%

3. SENIOR CERTIFICATE GRADUATES IN SOUTH AFRICA

The high school graduates are facing many challenges and unfortunately political interference. According to South Africa’s matric pass rate: 2007 – 2017 the pass rate fluctuated around 70 %. The matric pass rate has shown major improvement sanctioned by the ruling party – hitting an all-time high of 78.2 % in 2013 – which sent alarm bells ringing among academics, who claim to have not seen any real improvement in the quality of South African education over time (South Africa’s matric pass rate: 2007 – 2017, 2017). Table 9 shows the matric pass rates statistics over 10 years as compiled by the Department of Education of South Africa.

*Table 9.
Matric pass rate.*

Year	Pass rate	Change	Year	Pass rate	Change
2007	65.2%	-1.3	2013	78.2%	+4.3
2008	62.5%	-2.7	2014	75.8%	-2.4
2009	60.6%	-1.9	2015	70.7%	-5.1
2010	67.8%	+7.2	2016	72.5%	+1.8
2011	70.2%	+2.4	2017	75.1%	+2.6
2012	73.9%	+3.7			

This official statistic is refuted by the opposition party because the official pass rate does not tell the full story – ignoring the large percentage of students who drop out before they write the matric exams. Equal Education (a non-profit organization) has described the matric pass percentage as a superficial and misleading indicator of public education quality.

“The pass rate reflects only the performance of those learners who managed to stay in school for 12 years and obscures how many dropped out along the way,” (South Africa’s matric pass rate: 2007 – 2017, 2017) while the Basic Education Department has systematically failed to address learner retention. For a broader perspective, a cohort matric pass rate should be used. Equal Education defines the cohort matric pass rate as the percentage of learners in grade 2 who pass matric 11 years later.

Of the 1,022,853 grade 2 cohort enrolment, only 629,155 students registered for the matric final exams. This is a dropout rate of 38.49 %. When one considers only the 534,484 grade 12 students who wrote matric, this dropout rate increases to 47.75 %. The 2017 cohort matric pass rate, which Equal Education has referred to as the true pass rate, is therefore 39.25 % and this is cause for serious concern (South Africa’s real 2017 Matric pass rate 39.25%, 2017).

Table 10.
Cohort pass rate.

Year	Registered for matric exams	Pass rate	Cohort enrolment in gr. 2	Cohort pass rate
2017	629,155	75.1%	1,022,853	39.25%
2016	674,652	72.5%	1,081,652	41.98%
2015	667,925	70.7%	1,118,690	41.65%
2014	532,860	75.8%	1,109,201	37.2%
2013	562,112	78.2%	1,111,858	40.42%
2012	511,152	73.9%	1,012,892	38.07%

3.1. Female matric / engineering graduates in South Africa

Among all this political turmoil interfering with basic education the most vulnerable are the female students. If a female student is failing high school the family most likely will stop sending the female child to school. Fortunately based on different statistics the female learners are performing better than the male learners although they have less support from family and society. Once the female child graduate from high school, enter a tertiary engineering and graduate, her problems do not stop. After graduation the young engineers do not struggle to find employment as there is a shortage of engineers worldwide and especially in South Africa. However, based on a survey conducted among engineering companies (Ionescu, 2013) an inexplicable picture emerges. Looks like our female engineers just “disappear”. Judging by the engineering graduates’ numbers, the female engineers represent about 21,5 % of the total number of graduates. However, in the working place, an engineering company with 420 employees and not one female engineer employed, is common occurrence. One of the major engineering businesses surveyed, employs 46 women, amounting to about 30 % of the total staff complement. This percentage promotes a skewed view of female employment rates, as in reality there are no female engineers and only 5 female machine operators. The other 41 female staff members are cleaners, kitchen helpers, etc. The reality confirms that implementing women friendly legislation is not enough and more radical measures are called for. The current legislation requires businesses to report on the number of women employed but does not require them to specify the job descriptions of these women. As a result, the businesses meet some government targets without contributing toward women empowerment. Most small and medium sized companies do not have any female engineers in their staff complement.

One of the very large international company just started a tertiary education bursary scheme, a graduate development program and a campus engagement initiative. However, the company recruited 34 engineering bursars out of which only 9 were female (26, 5 %). A company whose main business is civil engineering and plant commissioning agrees that the industry is tough. The company’s work is contractor work therefore the engineers must go where the work is. This is difficult for working mums as they need to move and travel. Many of the male engineers do not move their families but go home in weekends. As the women engineers do not want to be treated differently from their male colleagues, the company encourage this trend which conflicts with the women role as home maker, wife and mother.

4. MEASURES TO BE TAKEN TO CORRECT THE PROBLEM

- Increase in number of bursaries offered to female students.
- Introduction of engineering subjects such as technical drawing, mechanics, etc. in high school curriculum
- Computer literacy must be a compulsory subject in high school, obviously backed by computer hardware availability in all schools. The urban schools generally are well equipped while most rural schools are totally deprived. A staggering 46 % of students (table 4) enrol for engineering studies without ever touching a computer before.
- An urgent need to address the shortage of well qualified teachers able to teach mathematics and physical science.
- Educate the high school learners about the importance of choosing mathematics and science courses if their career choice will be engineering.
- The number of women employed should be reported together with their qualification and the job they perform to avoid skewed statistics,
- In-house training for new employees should be prioritized to groom them for management positions,
- The balance between work and family life should be promoted.

5. CONCLUSION/DISCUSSION

Generally, the schooling of female children in South Africa is difficult. The main problem is the patriarchal society in which the female children exist. It is current occurrence to send a female child to study professions perceived as suitable for women such as nursing, social work and school teaching. There is a need for a radical change in attitude toward the professional freedom of the female students in family and society. The mining industry is a major employer in South Africa but before the Mines Health and Safety act of 1996 women were allowed underground only as members of service delivery teams (Ionescu & Buisson-Street, 2008). The harsh physical work environment (+ 3km underground) was considered unsuitable for women and throughout Africa there is a belief that if a female goes underground, the stones (minerals) will disappear. However in spite of everything the first woman was awarded a Blasting certificate in 1999. Currently there are many female miners and mining engineers. On a lighter note in our survey the Girl Power students were asked if they consider South Africa as a first world country when it comes to shopping and the overwhelming answer was yes (92 %).

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AUTHORS' INFORMATION

Full name: Corina-Maria Mateescu

Institutional affiliation: Department of Chemical and Civil Engineering, University of South Africa

Institutional address: Cnr Christian de Wet & Pioneer Avenue, Roodeport, Johannesburg, South Africa

Short biographical sketch: Corina M Mateescu is a Lecturer in Chemical Engineering Department at the University of South Africa (UNISA) and Work Integrated Learning Coordinator. She obtained in 1995 Bachelor of Engineering: Chemical Engineering, from University of “Babes-Bolyai”, Faculty of Chemistry and Chemical Engineering, Cluj-Napoca, Romania, 5 years, full time. Mrs. Mateescu joined University of South Africa, Johannesburg, South Africa on the 1st of January 2010. Previously she worked for University of Johannesburg from July 2006 -31st December 2009. Her research interest areas are in phase equilibrium measurement and computation, energy and environment. She is a team leader of a Community Engagement Project-GirlPower a project to enable, educate, and motivate girls to explore, enjoy and become more proficient in mathematics, science and technology. She is also member of Regional Coordinating Committee at Chemical Industries Education & Training Authority, CHIETA.

Full name: Dorina Ionescu

Institutional affiliation: Department of Mechanical and Industrial Engineering, University of South Africa

Institutional address: Cnr Christian de Wet & Pioneer Avenue, Roodeport, Johannesburg, South Africa

Short biographical sketch: Dorina Ionescu is a senior lecturer in Mechanical and Industrial Department at the University of South Africa (UNISA). She obtained her MSc Engineering from University of Iasi Romania and is currently studies towards PhD in Engineering at a university of Johannesburg, South Africa. Mrs Ionescu's Scientific publications: Journal Publication 8; international conference proceedings publications 23; National and International Conference presentations 20 and one book. Mrs Ionescu is Professional Engineer register with Engineering Council of South Africa. She is part of Technology Programme Accreditation working group; Technology Programme Qualifications Evaluation working group; Chair of Engineering Standards Committee. She received Best Poster Award, Lille, France 2008 and Awards received by postgraduate master's research projects supervised: South African design excellence award 2006 (SABS DISA AWARDS) First prize “Smart Award 2006” of South African Institute of Civil Engineers 2006; sponsored by SA National Road Agency and SANLAM.

Chapter #25

MANAGEMENT OF BEHAVIOR PROBLEMS OF CHILDREN WITH AND WITHOUT DISABILITIES: TOWARDS PARENTAL TRAINING AND INTERVENTION PROGRAMS IN GREECE

Leonidou Pagona & Kartasidou Lefkothea
University of Macedonia, Greece

ABSTRACT

The role of the family is extremely important in a child's social development. Parenting style and strategies can be either a protective factor or a risk factor (Earle, 2013). Therefore, the purpose of the present study is to investigate the opinions of parents on the use of behavior management strategies. This study asked (a) which strategies parents used to manage behavioral problems and (b) if there were differences in the use of such strategies between the parents of children with disabilities and the parents of children without disabilities. Parent Practices Interview (Webster-Stratton, 1998b) was used as an instrument in this particular study in which 110 parents of children with and without disabilities have participated. The sample was randomly selected and came mostly from cities in Central and Northern Greece. The results show that, in general, parents manage behavioral problems mostly by using positive verbal discipline strategies, which contradicts Harman and Blair's (2016) previous study, according to which parents manage behavioral problems by stating clear expectations. Also, there seems to be no statistical significance regarding parenting practices between the parents of children with and without disabilities, except for the subscale of appropriate discipline: parents of children with disabilities are using more such strategies.

Keywords: parents' opinions, behavior management strategies, children with and without disabilities.

1. INTRODUCTION

The role of the family is extremely important in a child's social development and it can be a protective factor, as with an effective parenting style. It can also be a risk factor, though, as with a harsh and inconsistent parenting style, thereby generating or escalating behavioral problems (Earle, 2013; Aunola & Nurmi, 2005; Patterson, & Dishion, 1985). Those are often the hardest child's problems to deal with (e.g. Earle, 2013). Of course, discipline techniques and parents' attributions about child behavioral problems are considered to affect the development and persistence of conduct problems (Dix, 1993). Parenting style and techniques have formed the aim of various studies (e.g. Aunola & Nurmi, 2005; Snyder, Cramer, Afrank, & Patterson, 2005).

There seems to be a correlation between parenting style and children's behavioral problems, and indeed a correlation between conflicting aspects of a parenting style (for instance the mother's affection in combination with her authoritarianism which conveys confused messages to the child) that increases behavioral problems (Aunola, & Nurmi, 2005). Certainly, no one could state that parenting a child is an easy task and the demands of everyday care, emotional distress, interpersonal difficulties, financial problems and adverse social consequences, all add stress for the parents of children with disabilities

(e.g. Gupta & Singhal, 2004). Precisely, because of family stress and distress, but also because of negative attributions, the use of positive discipline strategies to manage behavioral problems at home appears to be a great challenge.

2. BACKGROUND

In the first place, parents' perception of what constitutes a problem forms a research question of its own. According to studies (e.g. Turnbull & Ruef, 1996), two main areas dominate in parental answers: dangerous behavior and difficult to manage behavior, with dimensions such as observable attitudes, parental views and third-party opinions. The result of the difficulty in management is that parents often feel ineffective in their parenting role.

Parents' self-efficacy is then shaped accordingly. According to Bandura (1989), parents' self-efficacy should incorporate both a level of specific knowledge about child upbringing and a degree of self-confidence in their ability to perform the behaviors defined by their role. It appears therefore that research in this field play an important role in shaping parents' style of education (e.g. Coleman & Karraker, 1997; Sanders & Woolley, 2005). High self-efficacy is a predictor for positive parenting practices and it is also a mediating variable on the consequences of important research correlations into the quality of parental education such as poverty, temperament of the child, stressful situations (Coleman & Karraker, 1997). On the other hand, in Sanders and Woolley's research (2005), low self-efficacy has been shown to be associated with at times over-reaction (harsh discipline) and softness (permissive and inconsistent discipline).

According to previous studies, discipline techniques and parents' attributions about child behavioral problems are considered to affect the development and persistence of conduct problems (Dix, 1993). As mentioned by Snyder, Cramer, Afrank and Patterson (2005), many mediation and moderation models have been formulated and interventions for children with behavioral problems through parent training have been designed. More specifically, according to mediation models, interventions targeting parents' discipline practices are sufficient, as those practices are considered to have been the main contributor to children's behavioral problems and, also, to parents' hostile attributions. On the other hand, according to moderation models, interventions must change both the parents' attributions concerning behavioral problems and their discipline practices, since, despite possible improvement in practices, it may be difficult to create or maintain parents' behavioral changes if hostile attributions are still present.

Thus, there are 3 types of parenting styles according to studies (Aunola & Nurmi, 2005; Patterson & Dishion, 1985):

- a) Authoritarian: parents are demanding, but not responsive; they expect their orders to be obeyed without explanation, they favor punitive methods and they do not encourage verbal "give and take" with the child;
- b) Authoritative: parents are both demanding and responsive; they monitor and impact clear standards for conduct; they are assertive, but not intrusive, and they share their reasoning behind their policy with the child;
- c) Permissive: parents are highly responsive, but not demanding or directive; they are lenient, set no behavior rules and avoid confrontation.

Other researchers also add the neglecting/uninvolved type (Earle, 2013) according to which parents are neither responsive nor demanding and seem not to care what their children do or become. Noteworthy, though, is Earle's (2013) observation which emphasizes that this categorization omitted important factors, such as the environment and the child and the interaction between each other, as parent-child relationships are not just a result of parenting style, but the result of a multiplicity of factors that need to be specified.

As far as Greece is concerned, ever since 1962, when the first “Parent School” (the term used in Greece for “Parent training program”) was founded in Athens according to French standards, many parent training programs –in terms of prevention- are being implemented in almost every city in Greece by the Parent School in Athens or other private bodies such as Municipalities, Parents and Guardian Associations, Schools and others (Konstantinidis, 2011). Unfortunately, though, most studies concerning programs’ effectiveness remain unpublished and the research results of the published ones, mostly concern the assessment of effectiveness through use of satisfaction questionnaires/scales (Konstantinidis, 2011). Only few studies have utilized standardized measures and questionnaires when evaluating their parent training programs (e.g. Giannopoulou, Lardoutsou, & Kerasioti, 2014; Konstantinidis, 2011; Konstantinidis, Gkogka, & Mavreas, 2008).

Significant issues like self-esteem, behavior problems and child development are being discussed in many parent training programs implemented in Greece (Prevention Center PYXIDA (2010), as mentioned in Konstantinidis, 2011), but without first studying the practices that parents already use. The lack of a questionnaire in Greek might be a hindering factor. Apart from the research on programs’ effectiveness and prior to design and implementation of such programs, it is of great importance first to specify the strategies and techniques used by parents.

3. OBJECTIVES

The aim of the current research is to investigate Greek parents’ opinions on their management of their children’s behavioral problems. Specifically, to achieve this purpose, the following research questions were formulated:

- a) Which strategies do parents use to manage behavioral problems?
- b) Are there differences regarding the use of behavior management strategies based on existence and the categories of disability?

4. METHODOLOGY

4.1. Participants

Participants in the current survey were 110 parents/ caregivers from Central Greece (31.5%), Northern Greece (57.7%), Southern Greece (5.4%) and the Greek islands (5.4%). Mothers mostly completed the questionnaire (83.8%). Only 12.6% of respondents was fathers and 3.6% were guardians, who are authorized to act as the child’s parent. In the current study, the term *parents* will include both biological parents and guardians of a child.

Regarding the children about which the questionnaires were completed, 64.8% were boys and 35.2% were girls. The age groups and the percentages were as follows: 0-5 years old (1%), 6-14 (95%) and 15-20 (4%). As for the diagnosis, there were 54.9% children without disabilities and 45.1% with disabilities, of which: 23.9% with autism, 0.9% with cerebral palsy, 5.5% with Asperger syndrome, 7.3% with mental disability, 6.4% with ADHD and 1.8% with learning difficulties.

4.2. Instrumentation

Parents completed the Parent Practices Interview (PPI: Webster-Stratton, 1998b, 1998c), which was utilized in this study. The instrument is a 72-item questionnaire adapted by Webster-Stratton from the Oregon Social Learning Center’s Discipline Questionnaire and

revised for young children. The Copyright of the instrument belongs to the Incredible Years project (IY), which is a series of interlocking, evidence-based programs for parents, children, and teachers, supported by over 30 years of research by Webster-Stratton and her scientific team. The goal is to prevent and treat young children's behavior problems and promote their social, emotional, and academic competence. The programs are used worldwide in schools and mental health centers, and have been shown to work across cultures and socioeconomic groups (<http://www.incredibleyears.com/>). Indeed, Incredible Years project is listed as a validated, evidence-based program by many organizations, as stated in the official project's website (<http://www.incredibleyears.com/about/awards-and-recognition/>).

The instrument was translated into Greek with the back-translation method after written permission from and in cooperation with the Incredible Years project' Administrative manager. Only some, mainly, linguistic changes were made, such as adding articles, because in Greek they cannot always be missed out.

The Parent Practices Interview is composed of seven subscales:

- a) Appropriate Discipline (12 items),
- b) Harsh and Inconsistent Discipline (15 items),
- c) Positive Verbal Discipline (9 items),
- d) Monitoring (5 items),
- e) Physical Punishment (6 items),
- f) Praise and Incentives (11 items)
- g) Clear Expectations (6 items).

The items in each section are offered on Likert scales, different for each section e.g. ranging from: 1- "Never" to 7- "Always" or from 1- "None or almost none" to 5- "All or almost all", depending on the type of question. Scoring directions were retrieved from the IY program's official web page (<http://incredibleyears.com/for-researchers/measures/>).

4.3. Procedure-analysis

The survey was conducted during the school years 2015-16 and 2016-17. Initially, the participants were informed about the aim of the survey in writing. The questionnaires were completed anonymously, either in written form or in Google form made available online by the researcher. The answers were analyzed with the statistical package SPSS 24.0 to extract results from the research questions.

Reliability score for the whole questionnaire, measured with Cronbach's Alpha, is $\alpha=.768$, suggesting that there is satisfying internal consistency ($\alpha \geq .70$) (George & Mallery, 2003). It must be mentioned though that the instrument has not yet been weighed on the Greek data so that by means of factorial analysis there would be subscales. Thus, the analysis was made on the basis of the subscales mentioned on IY's official website (<http://www.incredibleyears.com/for-researchers/measures/>) and that is possibly the reason for low reliability scores for some of them. The reliability of the subscales for the current study is presented in descending order, as follows:

- «Harsh and Inconsistent Discipline» $\alpha=.846$,
- «Physical Punishment» $\alpha=.792$,
- «Appropriate Discipline» $\alpha=.762$,
- «Clear Expectations» $\alpha=.687$,
- «Praise and Incentives» $\alpha=.568$,
- «Positive Verbal Discipline» $\alpha=.276$
- and «Monitoring» $\alpha=.188$.

5. RESULTS

Based on the results, parents mostly use *Positive Verbal Discipline* (M=4.98) and *Praise and Incentives* (M=4.08). *Appropriate Discipline* (M=3.73), *Monitoring* techniques (M=3.33) and *Harsh and Inappropriate Discipline* (M=3.00) are the next most used techniques, whereas *Clear Expectations* (M=2.32) and *Physical Punishment* (M=1.27) seem to be the least preferred strategies.

At the level of individual items, regarding the subscale *Positive Verbal Discipline*, the most preferred technique seems to be “discussing the problem with the child or asking questions, in case of their child hitting another child” (M=6.29) and the least preferred technique is praising children when they do well (M=2.64). In the subscale *Praise and Incentives*, when the child behaves well or does a good job, parents state that they quite often give their child a hug, kiss, pat, handshake or “high five” (M=6.52), and the least used technique on the same occasion is giving points or stars on a chart (M=2.41). Regarding the subscale *Appropriate Discipline*, parents state that when their child fights, steals or lies, they will most likely punish their child (M=5.64) and they would least likely have the child correct the problem or make up for his/her mistake in case of non-compliance (M=1.85). In the subscale *Monitoring*, parents state that 75% of the time they know where their child is when s/he is away from their direct supervision (M=4.31), while within the last two days their child was involved in activities outside the home without adult supervision for less than half an hour (M=2.28). In the subscale *Harsh and Inconsistent Discipline*, Greek parents state that if their child hit another child, they would most probably raise their voice, scold or yell (M=4.12) and they would least likely ignore their non-compliance (M=2.08). As for *Clear Expectations*, parents seem to slightly agree that they have made clear rules or expectations for their child about going to bed and getting up on time (M=4.20), while, when their child misbehaves, they sometimes give the child extra chores (M=2.66). Lastly, concerning *Physical Punishment*, when their child misbehaves, they seldom slap or hit their child (but not spanking)¹, and they almost never slap or hit their child (but not spanking) in case of non-compliance (M=1.15).

In addition, T-tests and One Way ANOVA tests revealed that parents of children with disabilities use more *Appropriate Discipline* strategies than parents of children without disabilities (M=4.04 versus M=3.64) (statistical significance was $p=0.036<0.05$). Concerning the use of *Clear Expectations* strategies from parents, statistical significance ($p=0.035<0.05$) was pointed out between the children’s gender with parents using more such strategies with boys (M=2.42) than with girls (M=2.13). There is also a statistically significant difference ($p=0.013<0.05$) between mothers and fathers concerning *Monitoring* of children (M=3.24 versus M=3.90).

As for differences among groups of children depending on the type of disability, statistical significance ($p=0.001$) was revealed concerning the use of *Praise and Incentives*: they are used more with children with learning disabilities (M=5.50) and least of all with children with cerebral palsy (M=3.54). We must also note that *Clear Expectations* strategies seem to be used more with children with learning difficulties (M=3.50) and less with children without disabilities (M=1.99) with statistical significance ($p=0.001$).

Furthermore, Pearson correlation coefficient statistical analysis revealed quite noteworthy associations between certain variables (mean score for each subscale). There seems to be a negative correlation between *Positive Verbal Discipline* and *Harsh and Inconsistent Discipline* ($r=-0.29$, N=104, $p=0.003<0.005$) and between *Positive Verbal Discipline* and *Physical Punishment* ($r=-0.21$, N=104, $p=0.033<0.05$). Positive correlations were pointed out between *Physical Punishment* and *Harsh and Inconsistent Discipline*

($r = 0.50$, $N=106$, $p=0.001<0.005$), between *Positive Verbal Discipline* and *Appropriate Discipline* ($r=0.22$, $N=106$, $p=0.027<0.05$), between *Positive Verbal Discipline* and *Praise and Incentives* ($r=0.25$, $N=104$, $p=0.01<0.05$) and between *Clear Expectations* and *Praise and Incentives* ($r = 0.40$, $N=106$, $p=0.001<0.005$).

6. FUTURE RESEARCH DIRECTIONS

Results of the current research contribute to the specific field in as much as it is a fundamental step for the designers of parent training programs to obtain information about parents' behavior management strategies before the design or implementation of any program of this type. Especially in Greece, it is -to the best of our knowledge- the first study on this issue, so it is important that we weigh the questionnaire on the Greek data, so that then it could be used prior to the design of any future parent training program. Our current research is based on subjective measures, though, thereby posing a risk for overstating positive behavior (Gupta, & Singhal, 2004). Therefore, the aim of a future research could be obtaining and comparing data both from observation measures and questionnaires about parenting practices. In addition, the number of participants may be adequate, but a further research with a larger number of participants could allow for more accurate generalizations.

Moreover, obtaining information about parents' discipline practices and their attributions about their child's behavioral problems is a core issue for the design and implementation of parent training intervention programs: it could form the focus of future research. Specifically, the results of the present research could be used as a basis for the design of a parent training program on the management of problem behavior.

7. CONCLUSION/DISCUSSION

The results of the present research were examined in comparison with results in other countries since, to the best of our knowledge; this is the first study in Greece that examines parents' management strategies of their children's behavioral problems.

Regarding the first research question, on which management strategies parents use, according to the current study, Greek parents state that they mostly use *Positive Verbal Discipline strategies*, which is not consistent with previous studies of Harman and Blair (2016) in North Carolina, U.S.A., according to which parents manage behavior problems by stating *Clear Expectations* or another study in Colorado, U.S.A., the results of which showed that parents mostly use *Monitoring strategies* (OMNI, 2011). This difference could be explained in terms of different cultural contexts or even different methodological choices in each study. Unfortunately, no similar research has been conducted in Greece, so that the results could be compared within the same cultural context.

Answering the second research question, concerning possible differences in the use of behavior management strategies between the parents of children with disabilities and the parents of children without disabilities, results from the current study indicate no statistical significance, except for the subscale of *Appropriate Discipline* with parents of children with disabilities using more such strategies. This result is in line with Putnam, Sanson and Rothbart's study (2002) which concludes that parents with difficult children try to exert more positive efforts with them. However, Nicholson, Fox and Johnson (2005) state that parents of children with behavioral problems tend to use more punishment in general (both verbal and corporal) and harsher techniques than other parents. Results on this issue still seem ambivalent and this might be explained by differing methodological choices.

In contrast to other research (Kerr, Lopez, Olson, & Sameroff, 2004; Straus & Stewart, 1999; Smetana, 1989) according to which the gender of both parent and child is important in terms of *Harsh Discipline* and specifically, boys at all ages seem to be more likely to receive harsh physical discipline (Straus & Stewart, 1999), the current study has shown a statistically significant difference in the use of *Clear Expectations* strategies, with parents using more such strategies with boys than girls.

As for the subscale *Harsh and Inconsistent Discipline*, the parents of children with and without disabilities state that if their child hit another child, they would most probably raise their voice, scold or yell, and they would least likely ignore in case of non-compliance. This result is consistent with the study conducted by Norlin, Axberg and Broberg (2014) which postulates that there was no difference in harsh parenting practices between parents of children with and without disabilities. It is also in accordance with Patterson and Dishion's study (1985) which indicates that parenting practices associated with the development of conduct problems include inconsistent and harsh discipline, and low nurturing. In addition, parents state that they consider punishing their child when he or she fights, steals or lies, probably because these actions are considered important deviant behaviors and parents might want to be stricter in the hope of curbing them.

Furthermore, as far as *Physical Punishment* is concerned, parents in this research state that when their child misbehaves, they seldom or almost never slap or hit their child (but not spanking). This is quite a significant outcome because, even though some researchers relate *Physical Punishment* with immediate obedience, it contains no message about alternative, appropriate behavior, it focuses the child's attention away from the consequences of their behavior for others and, according to a meta-analysis of 27 studies, it is highly correlated with child aggression (e.g. Gershoff, 2002).

Moreover, according to Pearson Correlation Coefficient analyses, parents who state that they use *Physical Punishment* also use *Harsh and Inconsistent Discipline* strategies and vice versa. This result is consistent with previous research (e.g. Patterson, 1982 and Snyder, 1995, as mentioned in Gershoff, 2002). According to the aforementioned research, it is logical, and even expected, for the problem behavior to escalate, rather than diminish, as a result of harsh and inconsistent discipline. Therefore, a vicious circle of negative reinforcement is created, as the parent reacts with corporal punishment and continues, being reinforced negatively by the child's temporary compliance. As a result, the problematic behavior constantly worsens.

Further analyses of Pearson Correlation Coefficient revealed quite enlightening correlations between certain variables (between average scores of each subscale), as presented further on. Parents who favor the use of *Positive Verbal Discipline* strategies to manage their child's behavioral problems seem to use less *Harsh and Inconsistent Discipline* strategies or *Physical Punishment*, as stated by other research as well (Hastings & Grusec, 1998): this is possibly related to the parents' objectives for their child's socialization. Parents who aim for their child's immediate compliance, for example in the case of the child or others being in danger, might resort to physical punishment and other punishment methods, even though the parents' need to teach the child how to identify and avoid risks might not be met. In contrast, parents use *Positive Verbal Discipline* strategies when their target is long-term and child-oriented, when they want the child to be taught through logic, dialogue and attempts to compromise aiming to instill standards of conduct (Hastings & Grusec, 1998).

Moreover, the relationship between *Positive Verbal Discipline* strategies, *Appropriate Discipline* strategies and *Praise and Incentives* seems directly proportional. This result was expected since all the aforementioned strategies are directly related to (and are indeed part of) the Positive Behavioral Support approach, which refers to providing warmth and

sensitivity, emotional experiences and possible rewards for positive behavior (Waller et al., 2015). Therefore, they also are intervention elements in various parent training programs (e.g. Webster-Stratton, 1998a).

Another interesting result from the current study is that *Praise and Incentives* is not the most preferred strategy for parents generally, but parents of children with learning disabilities use it more than parents of children with any other type of disability. Children with learning disabilities are vulnerable to low self-concept (Elbaum & Vaughn, 1999) and it may be that parents attempt to boost their children's self-esteem by praising them. Another noteworthy result concerns *Clear Expectations* strategies: they seem to be used more for children with learning difficulties, even more than for children without disabilities. Possibly, parents of these children facing the impact of processing deficits associated with Learning Disabilities (Rourke & Fisk, 1981) feel the need (or may have been advised by experts) to clearly state their expectations to their children.

In conclusion, Greek parents in this study state that, overall, they use *Positive Discipline strategies*, either in the form of *Positive Verbal Discipline* or *Praise and Incentives*. However, to a lesser extent, they also use *Harsh and Inconsistent Discipline* strategies without any differentiations between children with or without disabilities and regardless of the child's gender or age. Preference for positive methods of discipline is particularly encouraging, as it is scientifically proven that a child-centered parenting style, high levels of positive family relationships and warmth, parental supervision, rule-setting and positive reinforcement of appropriate behaviors are associated with fewer behavioral problems, increased self-confidence, better academic performance and cognitive development (Hutchings et al., 2007). On the contrary parenting practices that have been found to have negative effects on emotional and behavioral adaptation include tough and inconsistent discipline, high levels of criticism, poor supervision, poor child care and lack of warmth in parent-child interaction (Patterson, DeBaryshe, & Ramsey, 1989).

Taking everything into consideration, even if this is the first study in Greece on this issue, we hope that it will be a starting point for further research on how parents choose to manage their children's behavioral problems. Moreover, the results of the current study contribute to global research in this specific domain since it is essential for researchers who design parent training programs to gather information on parents' management strategies prior to any design or implementation.

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AUTHORS' INFORMATION

Full name: Leonidou Pagona

Institutional affiliation: PhD student in Special Education, Department of Educational and Social Policy, University of Macedonia (Greece).

Institutional address: University of Macedonia, 156 Egnatia Street, GR-54636 Thessaloniki, Greece.

Short biographical sketch: She has a degree and a Master in Special Education, Department of Educational and Social Policy of University of Macedonia and is a Phd Student at the same Department. She has been working as Special Educator at primary schools since 2002. She has published on Special Education in proceedings of Greek and international conferences. Her current research interests include: Special education approaches, Behavior problems, Intellectual disability, Social Skills, Design and Implementation of intervention programs.

Full name: Kartasidou Lefkothea

Institutional affiliation: Associate Professor in Special Education, Department of Educational and Social Policy, University of Macedonia (Greece).

Institutional address: University of Macedonia, 156 Egnatia Street, GR-54636 Thessaloniki, Greece.

Short biographical sketch: She has a B.A. in Preschool Education, Department of Preschool Education, Aristotle University of Thessaloniki and Ph.D. in Special Education, University of Cologne,

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Germany. She teaches under- and postgraduate courses on Special Education. She has studied music in a Private Conservatorium - Degrees in Harmony and Counterpoint. She has worked as Special Educator at a Special School, as a Preschool Educator in West Attica and as a Music teacher at Music High School in Katerini, Greece. She has published on Special Education in Greek and international Journals. Her current research interests include: Special education approaches, Music education of students with disability, Perceptual motor development and skills, intellectual disability, Social Skills, Self-determination and Transition.

¹One of the common arguments parents use to defend their use of spanking is that “Spanking is not hitting – and certainly not abuse” (Gershoff, 2017). “Slap or hit your child (but not spanking)” and “Give your child a spanking” are two of the practices, about which parents are asked in Parent Practices Interview. *Hit* means striking someone (<https://en.wikipedia.org/wiki/Hit>), but *spanking* means the act of striking mostly the buttocks of another person, generally with an open hand (<https://en.wikipedia.org/wiki/Spanking>). So spanking is indeed a form of hitting (and a popular one in U.S., as in 2016 76% of men and 66% of women agreed that a child sometimes should be spanked (Child Trends, 2018). They are being dealt separately within the questionnaire, possibly due to their slight difference in meaning, but they both are considered *Physical Punishment* practices.

Chapter #26

A PROBLEM-BASED LEARNING APPROACH TO DIVERSITY

Peter Stevenson & Rita Day

Department of Business Studies, St. Mary's University College Belfast, Northern Ireland

ABSTRACT

Diversity is a positive approach to the systematic, fair and objective management of workforce diversity. Diversity can be triangulated into discrimination, difference and dominance. The objective was to achieve a better understanding of disabilities by working on a real-life case study. Students in this study attended a conference with other students from various European countries working together in order to find a solution to the case study during the three-day time frame.

Students needed to be open minded, willing to listen to the opinions of others in order to build upon their understanding of culture and behaviours and immerse themselves in a different way of life. The method was problem-based learning using the seven-step approach of clearing difficult or unclear words and terms, defining the problem, analysing the problem, reorganising the problem systematically (constructing a mind map), defining aims of learning, searching for information and reporting.

Following the investigation, students then determined that the case was a case of unlawful harassment and discrimination. The students highlighted the key findings and outcomes of their case study through a group poster presentation with each student having an opportunity to articulate his or her findings to the wider audience.

Keywords: diversity, disability, discrimination, harassment.

1. INTRODUCTION

The two key aims of problem-based learning (PBL) are, firstly, to establish a cohesive and an integrated knowledge of a realistic problem and, secondly, the application of problem-solving skills by having students acquiring and utilizing their knowledge to solve this problem (Larmer, 2015). Students and their prospective employers value PBL because it can be subject-specific or generic in nature and can enhance student topic knowledge at the same time as giving them a toolbox of work-related skills (Adams, 2014). PBL is a teaching pedagogy which is student-centered, using a didactic method and a hybrid approach between education and working, or practice. It encompasses active learning in a multi-disciplinary way. PBL gives a practical insight into a creative and innovative teaching approach. Although PBL is not a widely used approach, it does offer didactic skills development for students in any disciplinary area (Savin-Baden and Wilkie, 2006). It enhances digital information literacy skills, critical thinking skills, collaborative shared resources and the exchange of key ideas. The multi-phenomena approach to this study, uses student-gathered information from group discussions and the verification of the process through the subject matter expert intervention. It offers a lateral and contemporary, pedagogical way forward in education and in real-world problems (Bratton & Gold, 2017).

2. BACKGROUND

The study was developed following the delivery of the case study at a Human Resource Conference and the recognition from peers. It delivered a more informed understanding of diversity. This conference was attended by European delegates and hosted in Enschede in the Netherlands. The PBL approach was further investigated as part of the Education and New Developments (END) conference proceedings in May 2018. A problem-based approach was preferred rather than a project-based approach, as it offered a multi-disciplinary level as opposed to a single-subject approach.

The foundations of the problem-based approach as a contemporary phenomenon dates to 1928 and the work of John Dewey and William Kilpatrick (Edutopia, 2014). It enables higher order thinking skills and participants to have more control over the project development, exploring real-world problems and control over the outcome and results.

PBL was further developed in the 1960s to enable students to learn about a new topic through working together in a group to solve a problem. As with any work in groups, it can lead to conflicts of interest and different viewpoints and the topic of diversity can be very subjective, often resulting in more than one opinion and answer. According to (Savery, 2016 p.9), “PBL is an instructional (and curricular) learner-centered approach and empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem”.

In this study, students take a very subjective approach to the problem. Students had to decide if the key character was discriminated against based on his or her disability (Kingston, 2018). This led to student discussion, debate and argument and collaboration at a multi-disciplinary level, using the diversity case study as the foundations.

3. OBJECTIVES

The objective was to determine if a group of students from different cultural backgrounds could form a successful working group and find a solution to a problem within the area of diversity, using a case study, i.e., disability. The study hoped to establish if the process and participation in PBL could improve critical thinking skills and working in an unstructured way, leading to a better way of learning.

3.1. Purpose and research question

The study aimed at investigating the students’ understanding of diversity within their own countries, using the conference as the learning platform. The case study had a unique approach because rather than the facilitator asking the questions, the students had to decide what questions needed to be asked in the first instance and then through the learning journey decide if these were the correct questions to reach a final decision and satisfactory outcome for the case study.

To attain the shared purpose, the following research questions were identified:

1. To find out if students from different countries can learn together.
2. Do students using PBL need scaffolding in the learning process?
3. What type of learning occurred?

3.2. Participants/process

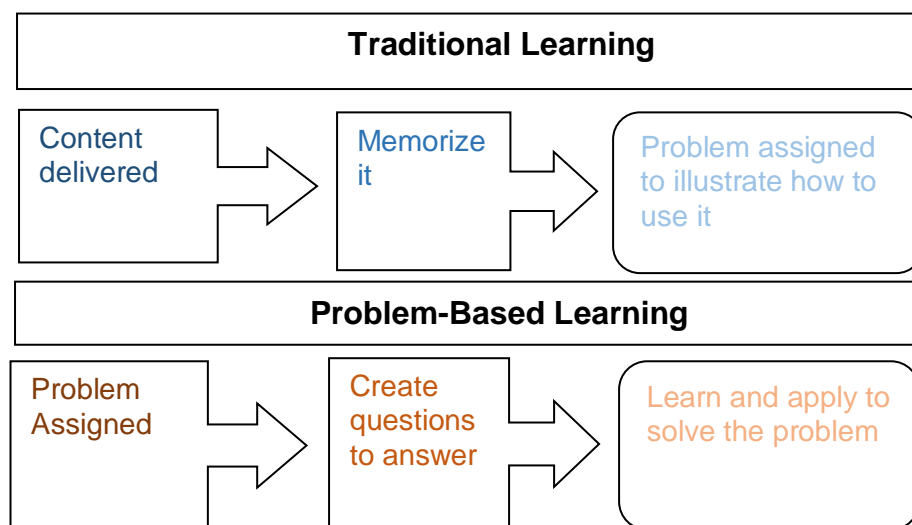
The study was made possible by the voluntary participation of approximately sixty third-level students in the HUMINT Student Conference on Diversity Management, with a subgroup, who were studying disability, of ten students (both genders) studying business or human resource management (HRM) and from the following institutions: University of Applied Sciences BFI Vienna, Austria; University College, Leuven, Belgium; Metropolia University of Applied Sciences, Finland; University de Bretagne Occidentale, Quimper, France; St. Mary's University College, Belfast, and Saxion University of Applied Sciences, the Netherlands. The conference platform allowed for an authentic, interdisciplinary approach to partners within academia and industry.

3.3. Theoretical framework

As part of the European Human Resource Conference, groups of students worked on a disability case study. This setting gave the groups the opportunity for enhanced cultural experience through dialogue with other nationalities, working together and learning about their own approach to group work, (Beetham, 2016) discusses the 'open community' and finding and evaluating relevant, quality-rich media to enhance knowledge delivery and promote student engagement from a range of creative sources, and, in doing so, it develops and improves upon 'information' and 'media' literacy skills. The group used the seven-step method of PBL:

- i. Clearing vague or unclear words and terms
- ii. Defining the problem
- iii. Analysing the problem
- iv. Systematically reorganising the problem: constructing a mind map
- v. Defining the aims of learning
- vi. Searching information
- vii. Reporting

Figure 1.
Traditional Learning versus Problem-Based Learning.



3.4. Research methodology

Within the PBL approach, the research methodology was based on the proposition that students had to devise the correct questions. PBL uses a structured approach to define the problem: designing a scenario or case study around the issue, tuning it according to the specific topic, facilitating the dialogue and exhibiting the work. The framework above forms the basis of the approach and compares it with the traditional educational model (Savin-Baden, 2003).

The project was launched on the first day and offered an entry into the topic of diversity, and the tutor facilitated the initial discussions by asking open-ended driving questions, inviting a guest speaker along, and challenging the participants' understanding of disability, all with the specific purpose of stimulating a discussion, exploring cultural complexities and interrogating the project question to determine if it was correct to dismiss the character named Zelda Law, on the grounds of discrimination (see case study).

The participants' foundations were further explored and built on in-depth enquiry into the research area and developing knowledge and topic understanding. The research was student driven through contact with subject matter experts, library research, discussions and relevant lines of enquiry.

The study adopted a qualitative case study research design because it provided the opportunity to study diversity within the participants' contexts (Baxter and Jack, 2008). The group was issued with a case study based on the Stevenson and Hennessey Clothing Company. This fictitious company name and fictitious student name, Zelda Law, was used as the background to discuss a young student with a prosthetic arm and her disability case. The tutor explained any unknown wording, statements and concepts, the problem was defined, and the group then had to dissect the case study. The structure of the approach was three-pronged: (1) personal: the case viewed from Zelda Law's perspective. (2) human resources: the case was viewed from the human resource management's (HRM) perspective and (3) international: the case considered from different national perspectives. The students then formulated and performed self-study assignments to find answers.

Finally, the answer was exhibited through a presentation to peers within other topic groups and to the wider audience at Saxion University of Applied Sciences. This enabled the students to take their ideas beyond the classroom and ensured that they invested time and invested effort into the project through the anticipation of a wider audience.

3.5. Problem design

The role of diversity is a key issue in Human Resource Management; this study within a small international group helps to illustrate the evolution of diversity as a triangulated approach into discrimination, difference, and dominance and the complexity of the nature.

Students gathered information and relevant data and discussed these in the groups using content analysis and applying narratives. An unstructured interview with a guest speaker, purposively chosen because of his subject matter knowledge, was also used. At no point during the research collection stage or problem design stage did the students solve the problem by answering questions: they needed to devise the questions using the prompts from the scaffolding process. This approach uses higher order thinking skills and demonstrates a high level of facilitation skills in listening, questioning and feedback. The approach uses a questions-to-answers approach instead of an answers-to-questions approach, and, therefore, the physical space had to be considered.

The physical space in this scenario was formal within a classroom, but the social learning space amongst the participants was informal, using soft seating and group work. The students were given the materials and, using a lateral environment, worked through the facts available to them.

3.6. Quality issue

The case study research before and during the conference, as well as the questions with the subject matter expert (SME), were used to triangulate the methods. This, according to (Yeasmin and Rahman, 2012) is a strategy which can assist the researchers to increase the validity of their evaluation and findings.

3.7. Role of the tutor

In PBL, the tutor becomes the facilitator, stimulating creativity and engaging the students in the educational process. The tutor is not transferring information but rather directing the students to read specific topic literature and documentation, seeking primary research SME advice and by developing their critical literacy skills through qualitative secondary research on the internet. In this study, the tutor discussed the various levels of diversity management, such as workforce diversity, behavioural diversity, structural diversity and business/global diversity.

3.8. Traditional system versus PBL

The traditional focus is on the knowledge and whether learning is being directed and led by the tutor. The PBL approach is didactic and does not stem from a one-approach-fits-all mentality, but rather a group dynamic must be achieved before the learning can take place. In the traditional system the tutor has control of the room, and content is defined and prescribed by him or her whilst the student takes a more passive role, often as a scribe. However, in the PBL approach the student has an active role, the content is determined by the research used to tackle the problem, the students are responsible for the learning and focus is on the student skills and attitude, as is the outcome. Students need to develop this critical voice and be able to outline the four key functions: research, reflection, re-examination and reformulation (Carr, 2016).

Figure 2.
Gold Standard PBL, Buck Institute for Education, 2015.



Problem-based learning requires students to work collaboratively in teams to seek solutions to multi-layered, real-life problems. This approach compels students to consider issues more broadly and acknowledge, perhaps for the first time, alternative views of the topic/case study.

3.9. Scaffolding the PBL process

The students were placed in small groups and within the groups there were strong individuals; it was therefore difficult to ascertain if different countries brought different approaches. Having read through the case study, the students then composed the following set of six question areas. This involved teamworking skills, listening skills, an appreciation of cultural diversity within the group and understanding that all opinions matter. A problem-based approach was preferred rather than a project-based approach as it offered a multidisciplinary level as opposed to a single-subject approach.

Facts and disability

1. What are the facts of the case?
2. Was Zelda Law disabled?
3. What is a disability?
4. Did the company (with their attitude) make Zelda Law disabled?
5. Was there an inequality or an injustice?

Recruitment Procedure

1. Was the company selection process appropriate?
2. Did the company promote equality of opportunity?
3. Was Zelda's recruitment systematic, fair and objective?
4. Did they follow the correct procedures i.e. job description, person specification, recruitment advertising, application process, shortlisting & interviewing, selection testing?
5. Was her training appropriate?
 - a. Did the HRM department give her bad advice i.e. contrary to company policy

Looks Policy

1. Can the company have a looks policy?
2. Is a looks policy discriminatory in law?
3. Did the looks policy discriminate against Zelda?

Communication

1. Was there a problem with the company's communication system?
2. Did the line manager behave appropriately?
3. Was there a problem with the line manager training?

Case Study

1. Does Zelda Law have a case against the company?
2. Was she discriminated against because of her disability?
3. Was she discriminated against, indirectly discriminated against, harassed or victimized?
4. What legislation helps you answer these questions?

Comparison – Introduce Riam Deane

1. Is there European legislation appropriating to the case?
2. Would the selection procedure have been carried out differently in different countries?
3. What is the relevant legislation in your country regarding the case?
4. Would the court have found a case of harassment?

The range of questions devised by the students shows the spectrum of possible outcomes, based on real-life events, alongside the complexity of the situation and the vast range of solutions. This study clearly demonstrated that there was not one optimum solution but a range of solutions.

The project dissemination was through students presenting this as a group to peers through posters. The group had to discuss the poster presentation and interact with the audience; this also led to additional questions and stimulated a conversation around their approach and outcome.

The research questions have been answered and addressed through the achievement of different students working collaboratively together on a shared project. The students do use PBL to scaffold the learning process, but they do so autonomously and through self-learning and, ultimately, a new pedagogical learning approach occurred. The posters below are some examples of the presentations:

*Figure 3.
Poster on Disability from the conference.*



Figure 4.
Poster on Diversity from the conference.



4. FUTURE RESEARCH DIRECTIONS

The next evolutionary step might be to create a digital artefact rather than a poster. The participants were instructed to use posters to exhibit their findings, and a limitation of this PBL was not giving the participants voice and choice. This was mainly due to two reasons: not knowing the students' ability levels and level of PBL experience. A recommendation for future PBL may be for students to use twenty-first century competencies, such as digital technology, to exhibit or showcase the work.

This digital capture would enable PBL to showcase academic, professional and personal development. The ability to use PBL as a content curation tool would mean that in addition to a digital artefact, there would also have been the enhancement of literacy and digital skills (Beetham, 2016). The authors are in contact with the Buck Institute for Education in the hope of designing some case studies for the future.

5. CONCLUSION/DISCUSSION

PBL promotes active learning, engages students and allows for higher order thinking (Savery, 2006). In this study, the students explored a real-world problem and sought to find answers through the completion of a case study. It was important to place the activity as part of a case study and therefore within a conceptual or cognitive framework. On the penultimate day, the tutor revealed the identity of Zelda Law in the case study as Riam Dean, a British law student with a prosthetic limb, who was removed from her job at a London Abercrombie & Fitch shop floor because she violated their 'looks' policy. The group then reached the conclusion that the case was a discrimination case rather than a disability case. Dean's dismissal was a consequence of unlawful harassment arising "not from treating the claimant differently from non-disabled associates [by enforcing the 'looks' policy], but in treating her the same in circumstances where it should have made an adjustment" according to (Topping, 2009).

“When PBL was successfully implemented, these barriers were overcome through insightful leadership, broad-based faculty ‘buy in’ and ownership, and recognition of the need for faculty and students to have sufficient time to learn from their own experiences by trial and error and make modifications that promote reflective adaptation to new learning/teaching methods” (Schwartz, Mennin, & Webb, 2002 p.171).

The entire student group did not reach a consensus, but this diversity of opinion is just as acceptable. The student feedback was very positive, citing PBL as an effective and efficient method of enhancing communication and problem-solving skills and an ideal opportunity to meet people from other countries and to help appreciate cultural diversity. The students also felt that individual opinions were heard and expressed and helped to understand the complex nature of international relationships.

The opportunities for replication possibilities within a larger audience come through dissemination in the students’ own educational establishments. The longitudinal study is through papers such as the END conference. The case study finished with a poster session, to showcase the students’ work, and the team pitching their solution to the case.

PBL is a creative, innovative, teaching approach. According to (Patton and Robbin, 2012) projects also draw students and topics closer together so that students experience learning as an integrated whole, rather than as a series of independent and separate learners and apply their knowledge in a directed manner. The project enabled the students to engage with industry, the community and business. PBL helped bridge the divide between intellectual ability and practical skills and merge the pedagogical practices into a unified approach.

The study did not reach a consensus amongst all the student participants. This demonstrates both the complexity and subjectivity of the study, and how subjectivity is the key driver because a range of range of small problems will contribute to answers for the overall picture.

The recommendations include gathering as much empirical data as possible using a mixed methodological approach of qualitative analysis and quantitative analysis during the session and at the end of the process. This would lend itself to purposeful sampling to address the ‘how’ and ‘why’ questions.

There could be a change in how students present the findings, perhaps in the form of a report or a PowerPoint presentation at a PBL student symposium, rather than a poster.

Further research could be done into the level of impact which culture and bias have on PBL, perhaps developing a strategy to help overcome, or at least reduce, bias within the groups.

Finally, tutors could design a rubric to help scaffold the learning with the overall design and planning to align and standardise the approach, to manage the activities and to scaffold the student learning and, finally, to identify the key contemporary pedagogies gleaned from this approach.

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APPENDIX 1

The case study is shown below:

The Company **Stevenson and Hennessey Clothing Company**

Stevenson and Hennessey are now a worldwide clothing chain with more than 1,000 branches and a turnover last year of £2 billion pounds sterling (€2.32 billion). Stevenson and Hennessey are a business that do things differently. The business marketing campaign specifically targets the young with a cool-kid look that involves perfect bodies, flawless faces and super fun trips to the beach with an equally gorgeous boyfriend who can't keep his hands off you. The ultra-low-cut shorts and draped flannel tops are a 'must have'.

When the chain recently opened a store in Belfast, Northern Ireland, it was clear this was a business that 'did things differently'. Topless male models with Olympian physiques stood at the doorway. Skinny blond girls in miniskirts gyrated on the shop floor. All the staff exuded a youthful beauty that was as disconcerting as it was unrealistic, yet eager youngsters entered in droves to snap up the stylish clothes.

Stevenson and Hennessey were not ashamed of its marketing approach. The chief executive Brigid Showuni stated, "We go for the cool kids. A lot of people don't belong and can't belong. Are we exclusionary? Absolutely".

The business operates an ‘appearance/look policy’, and all new employees are given a 45-page handbook listing in minute detail the company’s strict ‘look policy’. This booklet dictates that hair should be natural, with no excessive dye, curling or straightening. Fingernails should be no more than a quarter of an inch long and make-up limited to natural foundation, blusher and lip balm. All new employees are given a uniform of jeans and a polo shirt although the company handbook does state that sales associates can wear their own clothing if it is in the ‘Stevenson and Hennessey’ style.

All the stores are identical and structured with three different types of team:

- A Visual team – individuals who are employed to travel around the stores checking that the shop and its staff ‘Look up to scratch’.
- An Impact team – an individual’s time is split between the shop floor and the stock room – folding clothes, helping customers and replenishing stock in the store.
- A Model team – employed for their appearance, given the task of personal shoppers to help customers, and briefed with closing the sale – effectively glamorous sales assistants.

The Employee – Zelda Law

Zelda law was employed by ‘Stevenson and Hennessey’ to work in their Belfast store in 2009. She is an attractive young lady, 22 years old, who had just completed a BA Liberal Arts degree in St. Kevin’s University College, Belfast, a college based in the United Kingdom. Zelda was simply looking for a part-time job to help pay off her debts before entering the world of work. She was giving serious consideration to becoming a model, having been told by many friends that she was ‘highly attractive’. Zelda was born in the United Kingdom; her parents both came to England from the Middle East.

The situation – the facts from an unfortunate first week in Employment

Zelda Law was born in 1987. An ‘amniotic band’— a constriction in the womb— meant she was born without a left forearm and was fitted with her first prosthetic limb at three months old. As she grew up, she learned touch rugby, street dance and basketball and joined the school debating team. She removes her arm only to sleep and shower. In the early days Zelda had great difficulty getting a prosthetic limb which was the correct colour. Modern technology has made this much easier.

In May 2009 Zelda Law was interviewed for the position of Impact Associate at Stevenson and Hennessey. She states, “The application form was simple, only asking for my name, address and email. It did not ask if I had a disability, which I found surprising.” At the interview Zelda wore a long-sleeved dress that hid her arms and she did not mention her disability. A polaroid picture was taken of her and seven other applicants. She received a job offer to work fifteen hours per week at £6.50. (€7.54 per hour). Delighted, she turned up for her induction day and was given the ‘look policy’ booklet. At the end of the meeting she whispered to the human resources man that she had a prosthetic arm and asked whether

she could wear something to cover the join. She was told to wear a white cardigan to cover her disability.

However, matters came to a head a few days later. On her second shift a worker from the visual team approached Zelda and demanded she remove her white cardigan. She told the visual team worker that she had permission to wear it. A few minutes later the shop manager came to Zelda and said, 'I can't have you on the shop floor as you are breaking the look policy. Go to the stockroom immediately and I'll get someone to replace you.' Later, Zelda was asked if she was prepared to work in the stockroom until the winter uniform arrived, which would hide her disability. She said no and with sadness resigned from her job within the company.

Statement from Stevenson and Hennessey (after the event)

S & H has a strong anti-discrimination and anti-harassment policy and is committed to providing a supportive and dignified environment for all its employees. We are committed to equality, fair employment and regularly train all our staff in the appropriate legislation. We feel we comply with the requirements of the Disability Discrimination Act fully and regret this unfortunate situation which arose with this employee. We will also review our communication policy and store manager training and consider, from a corporate viewpoint, if we need to make improvements. This will also involve a full analysis of our human resource management function to ensure it is robust and appropriate. Our recruitment processes will be given attention. However, in this instance we feel we did nothing wrong.

Statement from Zelda Law (after the event)

"It made me feel as though the store manager had picked up on my most personal, sensitive and deeply buried insecurities about being accepted and included. Her words pierced right through the armour of 20 years of building up personal confidence about me as a person and that I am much more than a girl with only one arm. She brought me back down to earth to a point where I questioned my self-worth. My achievements and triumphs in life were brought right down to that moment I realised that I was unacceptable to my employer because of how I looked. I have never encountered the stark reality of this attitude, but deep down I have always feared this, and in that moment my worst fears were realised. My entire perception of my own self-worth was shattered. It was a moment of clarity and pain. I am seriously thinking of taking a case against Hennessey and Stevenson to an employment tribunal because of the treatment I received within the company".

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AUTHORS' INFORMATION

Full name: Peter Stevenson

Institutional affiliation: St. Mary's University College

Institutional address: 191 Falls Road, Belfast BT12 6FE

Short biographical sketch: Peter Stevenson is a senior lecturer in the Business Studies department at St Mary's University College, a college of Queen's University Belfast. A qualified teacher with thirty years teaching experience, he teaches Accounting, Marketing, Human Resource Management and Subject Application within the BA Liberal Arts and Post Primary Education degrees. He has researched and published on the themes of Innovative Change Management, Continuous Improvement (CI), Small-to Medium-sized Enterprises, Entrepreneurship, the Global Dimension to Education and Problem-Based Learning.

Full name: Rita Day

Institutional affiliation: St. Mary's University College

Institutional address: 191 Falls Road, Belfast BT12 6FE

Short biographical sketch: Rita Day is a lecturer in the Business Studies department at St. Mary's University College, a college of Queen's University Belfast. She teaches on both the BEd and Liberal Arts degrees on the following topics: Human Resource Management, Organisational Behaviour and Marketing and Strategy. Rita has worked in the higher education (HE) and further education (FE) sectors and worked as Senior Lecturer in Southampton Solent University for several years. Rita worked in industry for over 10 years before going into academia.

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