Chapter #22

THE EDUCATIONAL AND THERAPEUTIC BENEFITS OF "CONTENT-FOCUSED ACCESSIBLE E-LEARNING MATERIAL" FOR VISUALLY IMPAIRED UNIVERSITY STUDENTS

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ABSTRACT
The idea of "educational therapy" is quite different in Japan compared to foreign countries, especially in the US, where educational therapy is quite advanced. Therefore, this study determines the educational therapeutic benefits of the author's "Content-Focused Accessible E-Learning Material" for English self-learning, based on the concept developed in the US, particularly focusing on visually impaired students. These students experience various difficulties in higher education, such as 1) the absence of learning materials in braille, 2) commercial unavailability of magnification-capable learning materials and digital materials, and 3) lack of text-to-speech function in many learning materials. To study whether the material had any therapeutic benefits for these students, the author obtained feedback from 33 students. The feedback was based on the following questions: (1) technical aspects: Did the material reduce/rid the load/concern they felt; and (2) mental aspects: Did the material increase the willingness/autonomy or decrease anxieties and did they feel accomplished or motivated to improve their longitudinal English self-study? The findings show that the material was beneficial to them in five ways. The goal of this study was accomplished to a considerable degree; the use of this material reduced students' mental burden in learning based on both qualitative and quantitative feedback from visually impaired students.

Keywords: "content-focused accessible e-learning material", educational and therapeutic benefits, english learning, visually impaired university students.

1. INTRODUCTION

In this article, the author uses feedback from visually impaired university students to determine the educational therapeutic effectiveness of "Content-Focused Accessible E-Learning Material." Their comments indicate that they felt they had received significant benefits from this material's existence, and that the absence of or inconvenience of using accessible learning materials had caused hardship for them.

According to previous studies (Abe, 2013; Inagaki et al., 2017; Muto, 2013; Uchida, 2018), "educational therapy" conducted in Japan is defined as in-school interventions designed for mentally and physically disabled children who attend appropriate schools. The main therapy method is movement education and therapy, where teachers sing songs, encourage body movements, and draw pictures with students, along with other therapies.

In domestic studies, the keyword educational therapy does not exist. Movement education and therapy is the Japanese equivalent to the phrase educational therapy and is the primarily teaching method for children or students in special schools in Japan.

Meanwhile, the keywords "educational therapy" and "educational therapeutic" exist in many studies conducted overseas (Hewett, 2019; Kashdan, Robby, & Cecilia, 2005; Marek, 1999; Radecki, 1984; Wiazowski, 2000). As it is presented in these studies, educational therapy could include many of the concepts incorporated in Japanese schools; the phrase educational therapy may simply be more common overseas, particularly in the United States. In the US, some national and private organizations offer educational therapy.

Educational therapy as it is conducted in the US is closely related to the educational therapeutic effects found in the study of "Content-Focused Accessible E-Learning Materials" which the author created and then used with visually impaired university students. Students with visual impairment often struggle when learning English. For example, some question patterns which are typical for sighted students are difficult for visually impaired students to solve or even grasp. They also lack learning materials in higher education levels, such as braille versions of English exercise books. Some students also are unable to utilize technical accessibility options, such as operating a computer screen reader or braille display, especially when their visual impairment is suddenly or gradually acquired.

This article demonstrates how the author's "Content-Focused Accessible E-learning Material" creates an educational therapeutic effect for visually impaired university students. The quantitative assessment was conducted based on the number of students' answers in each derived category, and the results are shown in Table 1 in Section 4.4.1. The qualitative assessment was conducted based on the participants' comments, which are shown in Section 4 .4.2 (a summary chart has also been provided).

2. THE DEFINITION OF "EDUCATIONAL THERAPEUTIC EFFECT" IN THIS STUDY

In this section, the author defines the educational therapeutic effect regarding "Content-Focused Accessible E-Learning Material" based on educational therapy. As mentioned in the introduction, the US contains several organizations, both national and private, which offer educational therapy. The Association of Educational Therapists (AET; http://www.aetonline.org/) defines educational therapy as:

> *What is Educational Therapy?*
> Educational therapy is the practice of providing personalized remedial instruction to children and adults with learning challenges, including but not limited to dyslexia, ADHD, executive functioning deficits, and language, visual and auditory processing issues. The ultimate goal of educational therapy is to foster development of self-confident, independent individuals who feel positively about themselves and their potential as lifelong learners.
> Educational therapists understand the social, behavioral and emotional factors that can impact learning. They have extensive training and experience in administering academic assessments, developing intervention plans, and implementing strategies to addresses challenges with reading, writing, spelling, math organization, and study skill. […] (http://www.aetonline.org/).

As mentioned above, educational therapy has an important role in supporting challenged people and realizing an inclusive society, which is a current global aim. For example, SDGs' fourteen goals also aim for inclusivity and equity among people with

various backgrounds. AET similarly has a strong social mission to improve these ideals among such people as follows:

> *Mission Statement*
> The Association of Educational Therapists (AET) is the national professional association for educational therapists.
> Founded in 1979, AET defines and sets standards for the professional practice of educational therapy. Educational therapists provide a broad range of individualized educational interventions for children and adults with learning disabilities and other learning challenges. (http://www.aetonline.org/).

Other organizations in the US which focus on educational therapy include the National Institute for Learning Development (hereafter "NILD"). NILD's website describes the organization as:

> *NILD Educational Therapy is Research-Driven and Research-Proven*
> Research-Driven? Our Practices? are Evidence-Based Research validates NILD educational therapy interventions that have helped students with learning challenges for over 40 years. Every student is unique. NILD's research-based, individualized approach is unique too (http://nild.org/).

> *Hallmarks of NILD Educational Therapy*
> Teacher's questions and student discussion are critical components of research-based instruction and […] effective teachers… ask students to explain the process they used to answer the questions, to explain how the answer was found. Builds the competence and confidence of students with learning challenges. (http://nild.org/)

Another organization also offers their mission as follows: The similar definitions or missions by private organizations regarding Educational Therapy are also mentioned well. (For example, Ann Martin Center, which unfortunately closed May 2019 after 56 years of providing mental health services to students. (https://piedmontexedra.com/2019/05/after-56-years-of-providing-mental health-services-to-students-ann-martin-center-announces-closure: The year of reference was 2020).

The kinds of benefits that students would obtain through educational therapy are explained below in the explanation by NILD, with a focus on adults. It is important to note that students in higher educational levels are preparing for their futures, including by making progress in English proficiency. Significant indicators for adults who would benefit from educational therapy include the following: (http://nild.org/).

* The adult is experiencing difficulty with learning expected tasks in the workplace.
* The adult notes a need for complicated compensatory strategies to camouflage difficulties with reading and writing in the workplace.
* The adult never attained skill levels needed to function in a workplace that requires reading and writing.
* The adult has difficulty organizing tasks and managing time efficiently. (http://nild.org/)

In this study, educational therapeutic effect based on educational therapy regarding "Content-Focused Accessible E-Learning Material" is defined as follows;

1) to provide remedial instruction to visually impaired students with challenges in studying English.
2) to reduce negative emotions (e.g., wanting to avoid learning English, or experiences of anxiety, anger, frustration, etc.) due to visual impairment through studying "Content-Focused Accessible E-Learning Material."
3) to encourage students to raise their self-esteem regarding university performance.
4) to inspire students to be willing to be a longitudinal learner of English, depending on their career path.
5) to foster development of self-confident, independent individuals who feel positively about themselves and their potential as lifelong English learners.

In this article, these kinds of effects are referred to as educational therapeutic benefits for visually impaired students that can be achieved by studying "Content-Focused Accessible E-learning Material."

3. THE COMMON DIFFICULTIES FACED BY VISUALLY-IMPAIRED ENGLISH LEARNERS IN UNIVERSITY SELF-LEARNING

Students with visual impairment usually use assistive technology which enable them to access learning materials: braille, enlarged characters, text-to-speech function, and PC magnification, among others.

However, none of these devices are perfect for all students, even those with high technical skills. For example:

a) braille
   - There are fewer learning materials for higher education levels. For example, learning materials for TOEIC preparation do not exist, other than a few very old versions on Sapie Library, the bibliographic database for visually impaired people which provides digital talking and braille materials. Visually impaired students have long-standing difficulties in self-learning for TOEIC.

b) enlarged characters
   - For students with severe low vision, using a magnifier for a long time can cause physical and mental exhaustion.
   - Magnification-capable learning materials and digital materials for higher education are not commercially available.
   - Students are required to request that self-learning materials be created.
   - Although several publishers produce online language learning materials, as Adobe Flash Player is used for screen transitions, it is impossible to magnify screens using screen magnification software.

In either case, students must wait for a long time for the materials to be completed. As a result, many students are in peril of losing out on important opportunities during the period in which they are motivated and interested to learn, and need to engage in learning activities.

c) text-to-speech function

・ For many learning materials, the screen reader does not support the text-to-speech function.

In essence, a self-learning environment for students with visual impairment has not been fully developed. In many cases, sufficient progress cannot be made only through "technical accessibility to information". The author has therefore developed what she named "Content-Focused Accessible E-Learning Material," which could solve the problems often faced by visually impaired university students to a considerable degree.

4. EDUCATIONAL THERAPEUTIC EFFECT ACQUIRED BY CONTENT-FOCUSED ACCESSIBLE E-LEARNING MATERIALS BASED ON FEEDBACK COMMENTS FROM THE STUDENTS

4.1. Participants

The author assigned 25 first-year and 8 third-year university students who were visually impaired to study "Content-Focused Accessible E-Learning Material." To study whether the material had any therapeutic benefits for these students, the author obtained feedback from the students.

Students' visual impairment is as follows (total number respectively): blind (4 students), almost blind (3 students), severe low vision (6 students), loss of most of visual field (4 students), low vision (10 students), narrowed visual field (3 students), central scotoma (1 student), night blindness (3 students), and light aversion (1 student). Many cases had combined symptoms of visual impairment.

These students can also be classified into five categories as follows: users of braille (6 students), users of text-to-speech function (6 students), users with almost complete loss of visual field (4 students), other users (low vision, narrowed visual field, central scotoma, night blindness, light aversion) (18 students), users who can read printed learning material without major difficulties (5 students).

These students can also be classified into five categories as follows:

1) users of braille (6 students)
2) users of text-to-speech function (6 students)
3) users with almost complete loss of visual field (4 students)
4) other users (low vision, narrowed visual field, central scotoma, night blindness, light aversion) (18 students)
5) users who can read printed learning material without major difficulties (5 students)

4.2. Pedagogic dimensions of the intervention

First, it might be inevitable for us educators to consider suitable pedagogical interventions when we efficiently manage students' feedback. According to Arimoto (Arimoto, 2017a; Arimoto, 2017b), based on the ERIC database (Arimoto, 2017a; Arimoto, 2017b), there are numerous types of pedagogical interventions for an assessment system.

The following items are in the ERIC database which the author paid special attention: feedback, growth models, sustainability, needs assessment, formative evaluation, home study, instructional material evaluation, participant satisfaction, experiential learning, affective objectives, student-centered curriculum, instructional development/effectiveness/ improvement/innovation, creative teaching, diagnostic teaching, educational therapy,

special classes, teacher effectiveness, student development, student participation, educational needs, educational objectives, outcomes of education, student rights, evaluative thinking, active learning, discovery learning, theory of mind, and, best of all, self-efficacy, self-esteem, and so on, which are especially important factors in teaching visually impaired university students.

Among these educational items, the author paid special attention to educational therapy in this study, which leads to self-efficacy and self-esteem. To teach university students with visual impairments, special teaching methods and careful attention are critical since they have various kinds of difficulties in English learning, as mentioned above. Educational therapy is defined as "Educational practices that contribute to the treatment of students' organic or functional disorders" (e.g., remedial reading instruction that improves self-esteem).

"Content-Focused Accessible E-learning Material" has been proven to have educational therapeutic benefits from students' feedback. For this reason, educational therapy is focused on in this study.

4.3. Feedback questions

Feedback questions to 25 first-year and 8 third-year university students who were visually impaired as mentioned above are the following;

1) Pick up one of the "content-focused accessible e-learning materials" which you think is necessary for you and study at least ten grammatical items
2) Provide feedback both on what is effective and what needs to be improved/revised
3) About this learning material 1
   3.1) Provide the reason(s) why you chose the learning material(s)
   3.2) Did you feel that the learning materials were effective, and did they affect your sense of achievement?
   3.3) Did this material develop your autonomy and fluency for self-learning English?
4) About this learning material 2
   4.1) Has this material reduced your difficulties, anxieties etc. in self-learning English and other things? If Yes, which points were reduced, and how were they reduced?
   4.2) Does this learning material reduce your difficulties, anxieties etc. in longitudinal self-learning English to the future?
5) (voluntary disclosure)
   5.1) What kinds of difficulties and anxieties etc. have you ever experienced due to visual impairment?
   5.2) What kinds of devices and effort have you made to accommodate your visual impairment?
   5.3) Do you think special kinds of accessibility to information in English learning are required? If Yes, what type(s)?

In the author's opinion, Questions 3, 4, and 5 have the closest relationship to educational therapeutic effects.

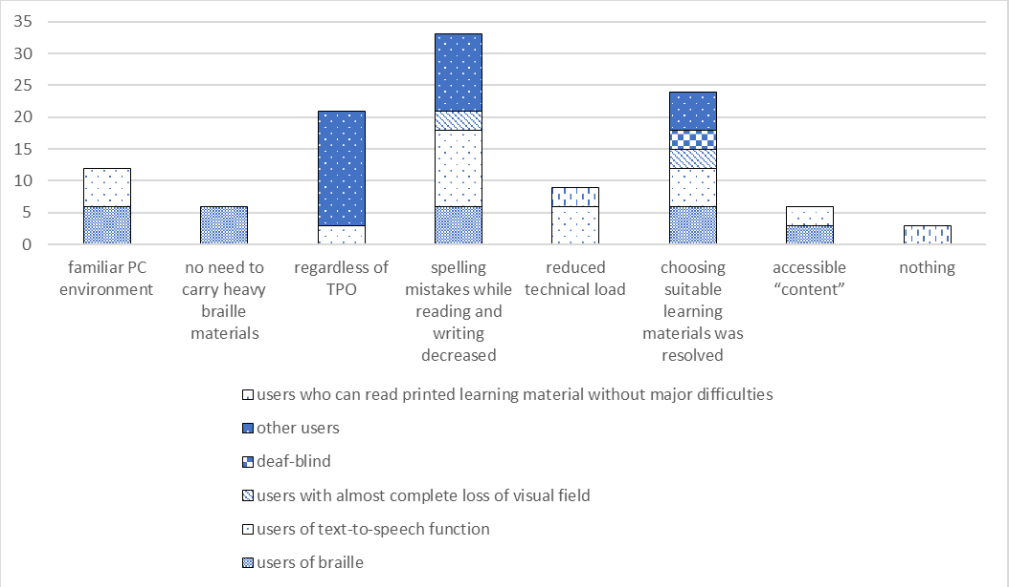
4.4. Findings

4.4.1. Quantitative findings

The quantitative assessment was conducted based on the number of students' answers in each category. The findings show that the material was beneficial to the students in the following ways (Table 1).

The students' feedback comments, which reflected that they were convinced about the educational therapeutic effects caused by "Content-Focused Accessible E-learning Material," were generally categorized into the following five groups: 1. The students could use familiar PC environments, 2. As this material did not focus on technical accessibility, but rather more accessible "content" supported many kinds of visual impairment, it enabled students to study more efficiently. 3. They did not have to carry braille materials, 4. They could study regardless of TPO (e.g. via iPad), and, 5. Spelling mistakes while reading and writing decreased. Additionally, since the students' difficulty in learning English was mainly due to the visual impairment itself, this material reduced their anxiety. The reduced technical load (i.e. creating digital and braille data, physical and mental exhaustion caused by long use of magnifiers, lots of visual line movement) led to a feeling of accomplishment/willingness. The major concern of choosing suitable learning materials was resolved as the learning material was created by the teacher, which motivated them to study English.

Table 1.
Results of the feedback (%).



What it is worth mentioning is that students using braille and those who had no major visual difficulties commented that both could share the same learning material, enabling them to study together. This comment would lead to inclusive education, which has considerable significance for a future society that focuses on inclusivity and equity.

4.4.2. Qualitative findings

The qualitative assessment was conducted based on the students' comments. Comments to Questions 3 through 5 above (pp. 8-9) are as follows.

◆s represent positive comments, and ■ represent negative comments.

◆For us, to get any kind of printed books for English learning is difficult. Although some official HPs like the STEP association prepare past tests, they usually are PDF files, which the screen reader could not accept, and files could not be downloaded by some browsers.
Since this learning material can work on web pages, we can use familiar PC environments like browsers. In addition, this learning material enables us to check correct answers and explanations immediately after answering, different from printed books. These aspects reduce our load. (2 braille users, 1 user of text-to-speech function)

◆We can share exercise questions with users of printed letters, which enables us to study with them.
This aspect benefits us. (1 braille user)

◆I learned how to operate Moodle, which is suitable for learning English. I felt accomplished in my studies with this kind of e-learning materials. (1 braille user)

◆Printed learning materials are too heavy to carry. This learning material got rid of this long-time concern. (1 braille user)

◆Since printed learning materials in braille are often too enormous, I was not willing to look up words in the dictionary, which led to me not learning English. This learning material got rid of this long-time concern. (1 braille user)

◆It becomes possible for me to create comfortable environments using the function to enlarge characters etc. of computers or by using iPad. We do not have to prepare learning materials in enlarged characters by ourselves. This increases efficiency and willingness in learning English. (5 with low vision)

◆I think it very revolutionary for users of text-to-speech function. For those who with low vision, mental and physical exhaustion induced by prolonged use of equipment such as roupe, magnifying device etc. (1 who can read printed learning material without major difficulties)

◆As compared to commercially available learning materials, which are exhausting where letters are too small, mistakes in reading spelling (ex. taking "rn" for "m", "j" for "i") have decreased when using screen magnification. When I could answer many questions correctly, I felt accomplished. (4 with low vision, 1 with severe low vision with almost complete loss of visual field, 2 users of braille, 2 users of text-to-speech function)

◆Though writing task questions are often difficult to answer, we can choose the correct sentence in this material, which provokes a feeling of accomplishment. (1 with low vision)

◆The biggest difficulty in learning English has been caused by visual impairment. Now, as it has been solved by this material, other anxieties have been reduced. (1 with low vision)

◆The digitalization of learning materials which are difficult to purchase personally helps me reduce difficulties and efforts I have long experienced. (1 with low vision, 1 braille user, 1 user of text-to-speech function)

◆Easy access through PC and smartphone, and perfectness of accessibility enables me to develop longitudinal study. (1 with low vision, 1 with severe low vision, 2 users with almost complete loss of visual field, 1 user of text-to-speech function)

◆Easy to use (ex. many links related to questions, explanations), which provokes me to actively challenge myself. (1 deaf-blind user)

◆Enlarged copies of printed materials are difficult to handle and cause asthenopia, and handling magnifying device is sometimes difficult because of visual impairment, which has decreased my autonomy for independently learning English. However, as this material can accept text-to-speech as alternative option even though I feel asthenopia, my autonomy increases. (1 user of text-to-speech function)

◆Special preparation for learning English is not needed when using this material, and having no difficulties related to visual impairment when checking to see if my answers are correct reduces my anxiety. (1 user of text-to-speech function)

◆Since there are various types of questions, I would like to do longitudinal study. (1 braille user)

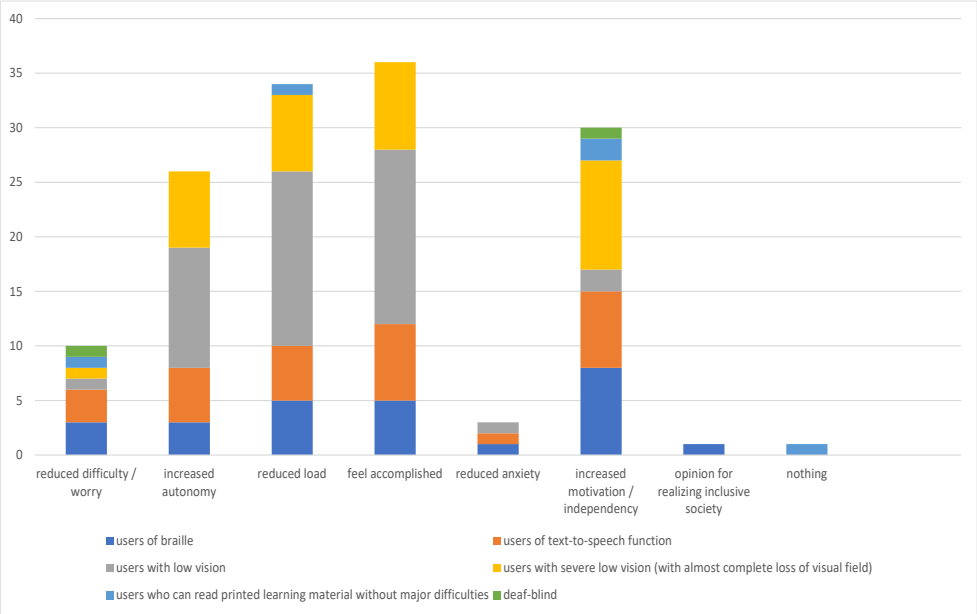
◆Long passage reading comprehension is difficult since it took me a long time to find parts related to questions. This learning material solved this difficulty. (1 braille user)

◆After studying grammar, I could continuously study word lists, which was very useful. (1 with severe low vision with almost complete loss of visual field)

◆For us with visual impairment, the most difficult thing has been the choice of learning materials. I have long worried which materials are the most suitable ones for me, and which ones are the most effective learning materials to master English. This learning material reduces this worry as I can easily access the internet tool created by my teacher. This has become my motivation to study English. (1 with severe low vision with almost complete loss of visual field)

■Nothing. (1 who can read printed material without major difficulties)

Table 2.
A Summary Chart of the Numbers of Students' Feedback Comments (Categorized According to the Factors Related to Educational Therapeutic Benefits).



In conclusion, the goal of this study was accomplished to a considerable degree; accessible learning material that enabled visually impaired students to study English efficiently was created, and the use of this material reduced students' mental burden in learning. Additionally, it is worth mentioning that students using braille and those who had no major visual difficulties commented that both could share the same learning material, enabling them to study together. Students are hoped to continue carrying out a longitudinal self-learning after graduating, as they build their careers.

5. DISCUSSION

Jindal-Snape (2005) tried to train visually impaired students to appropriately evaluate their social behaviors and to solicit feedback from their sighted peers. Jindal-Snape covered social interactions between visually impaired students and sighted students. A similar social interaction with willingness is often seen between visually impaired students. As we can easily imagine, visually impaired people have tight limitations regarding social behavior. However, it is worth mentioning that one trend that is often seen is that visually impaired students acquire awareness (in Japanese, "kizuki") of their new identity in interacting with their visually impaired peers and reconstruct a new self-image. For example, students with low vision naturally assist blind peers even though no teachers have encouraged them to do so. Students assist their peers in managing the things that they can do but their peers cannot. This social behavior corresponds to Jindal-Snape's (2005) conclusion, "it was found that peers were better at giving feedback when prompted by Sameer [= peer], rather than when they were reinforced by me [=Jindal-Snape]" (D. Jindal-Snape, 2005). Jindal-Snape calls this "the process of self-evaluation" by visually impaired students. The author regards

visually impaired students' awareness at her university as "self-image" or "self-esteem" (Hattie, 2012, p. 50). According to Jindal-Snape, this process could be adopted for training for other important actors, that is, teachers and peers, who give feedback to visually impaired students in this kind of environment. The author thinks that visually impaired students' autonomous awareness, as mentioned above, could also be used as feedback for sighted teachers. That is, while sighted teachers tend to regard visually impaired students as "visually impaired students" as a whole, especially as compared to sighted students, in actuality, the students are aware of their new identity and a "change of paradigm" occurs among visually impaired students.

As Chan and colleagues suggested, "the purpose of feedback is to move the student from where he or she is currently performing to where he or she should be performing […]" (Chan, Konrad, Gonzalez, Peters, & Ressa, 2014, p. 125). It has been observed that visually impaired students are aware of where they are currently performing; for example, students with low vision levels were regarded as needing help at an ordinary high school, but they were aware that they had a role in helping blind peers at a university where all of the students had visual impairments. This kind of students' awareness of the "change of paradigm" in their identity was found in their feedback comments. This situation produces expected educational outcomes, and it could be said to have the same educational effect as was referred to by Chan et al. (2014), "Feedback is effective only when it produces the desired outcome, that is, when students are able to move their own learning forward" (Chan, et. al, 2014. p.58).

Hattie and Timperley noted that the most effective methods, i.e. tasks, are the most successful, while praise, rewards, and punishment are least likely to influence success (Hattie & Timperley, 2007, p. 84, pp. 102-103). The authors' attempt in this study has focused on the most sufficient type of learning material in English learning for visually impaired students. Referring to the successful feedback criteria shown above, the author's attempt has been effective to a significant degree.

Hattie and Timperley (2007) also mentioned that feedback is most fruitful when focusing on students' successes rather than on their weaknesses (pp. 102-103). As this study focused on reducing students' technical load, mental burden, and anxiety, it can be said to have been successful.

6. OPPORTUNITIES FOR FURTHER RESEARCH

1) It is hoped that an additional longitudinal study (Hewett, 2019, pp. 4-5). can be carried out to discover whether the participants who have developed autonomic attitudes toward learning English and other subjects have become more confident about self-learning and retain this ability after graduating, as they build their careers.

2) It is hoped that this learning experience will enable visually impaired university students to understand their special needs fully and to ask for the consideration and support they need in inclusive educational situations and society as Hewett, Douglas, and Keil (2016, p.3) mentions as self-advocacy skills.

3) Students' comments demonstrate that, when learning English, some of them change the media so that they avoid misreading of spelling (e.g. expansion percentages, changing from printed materials with magnifying devices to text-to-speech). This seems to be because it becomes more difficult to speculate context as English is not their native language.

7. CONCLUSION

In this article, the results showed that visually impaired students found hope in learning English despite their visual impairment; furthermore, they reduced their technical load and mental burden and improved their autonomy and reduced their anxiety after studying "Content-Focused Accessible E-learning Material." The author's attempt seems to have been considerably successful for visually impaired students.

In addition, the comment regarding the ability to study with those who use printed material would lead to inclusive education, which has considerable significance for a future society that focuses on inclusivity and equity, as Hewett (2017, p. 2), and Hewett, Douglas, McLinden, and Keil (2017, p.89) suggested.

One of the tasks in the author's previous studies was to inspire students' motivation for longitudinal study. This material has, to some degree, solved this problem. This is a significant result.

REFERENCES

Abe, M. (2013). Kokusai Mubumento Kyouikuryouhougaku Kenkyusenta Kenkyu Ronbun. Chitekishougai wo Awaseyuusuru Shikakushogaiyouji no Gengo Shakaisei Skill Kakudai wo Mezashita Muubumento Kyouiku Purorugamu no Kaihatsu ni Kansuru Jissentekikenkyuu. [Practicing Study on Development of the Movement Education Program for Visually Handicapped Infants with Intellectual Disabilities－Case Studies for Expansion of Movement Skills－]. *Jidoukenkyuu, 92*, 19-31.

Arimoto, M. (2017a). Nihon no Kyouiku Assessment Gainenka ni Mukete (Sono1) ― ERIC Database kara no originaruban 「20 no Tobira」 no Katsuyou― [Towards conceptualization of Educational Assessment in Japan: utilization of original "the doors 20" list developed from ERIC database]. *Tohoku Daigaku Daigakuin Kyouikugakukenkyuuka Kenkyunenpou, 65*(2),125-151.

Arimoto (2017b). Nihon no Kyouiku Assessment Gainenka ni Mukete (Sono2) ― ERIC Database kara no originaruban 「20 no Tobira」 no Katsuyou― [Towards conceptualization of Educational Assessment in Japan: utilization of original "the doors 20" list developed from ERIC database]. *Tohoku Daigaku Daigakuin Kyouikugakukenkyuuka Kenkyunenpou, 66*(1), 199-208.

Chan, P. E., Konrad, M., Gonzalez, V., Peters, M. T., & Ressa, V. A. (2014). The critical role of feedback in formative instructional practices. *Intervention in School and Clinic*, *50*(2), 96-104.

Hattie, J., & Timperley H. (2007). The Power of Feedback. *Review of Educational Research, 77*(1), 81-112.

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. New York, NY: Routledge.

Hewett, R., Douglas, G., & Keil, S. (2016, August). *The importance of self-advocacy skills: 'This is what I can do, and these are the adjustments I require'*. Paper presented at the WBU-ICEVI Joint Assembly, Orlando, FL.

Hewett, R., Douglas, G., McLinden, M., & Keil, S. (2016, October). *Developing an inclusive learning environment for students with visual impairment in higher education: Progressive mutual accommodation and learner experiences in the United Kingdom*. Routledge Taylor & Francis Group.

Hewett, R. (2019). Recruiting and Retaining Participants in a Longitudinal Qualitative Study. In *SAGE Research Methods Cases.* https://www.doi.org/10.4135/9781526411112

Inagaki, K., Chikae, H., Koshimura, S., Nozaki, M., Kuribayashi, M., & Wada, M. (2017). Chitekishogai Tokubetsusshiengakkou ni Okeru “Asobi no Shido” ni Kansuru Jissentekikenkyu: Muubumento Kyoikuryouhou no Shiten wo Irete [Practicing Study on “Lesson of Play” for Children with Intellectual Disabilities at the Special School: Utilize Movement Education and Therapy]. *Kyoikujissenkenkyuu: Toyama Daigaku Ningenhattatsukagaku Kenkyuujissen Sougousenta Kiyou, 12*,117-128.

Jindal-Snape, D. (2005). Self-evaluation and Recruitment of Feedback for Enhanced Social Interaction by a Student with Visual Impairment. *Journal of Visual Impairment and Blindness*, *99*(8), 486-498.

Kashdan, S., Robby B., & Cecilia E. W. (2005). *Teaching English as a New Language to Visually Impaired and Blind ESL Students: Problems and Possibilities*. American Foundation for the Blind. McLinden.

Marek, B. (1999). A Blind Child in an English Language Classroom. *A Journal for English Language Teacher Education, 2*(1), 3-8.

Muto, D. (2013). Syogaiji ni Okeru Chiryokyouiku no Rekishitekiigi ― Sandaya-chiryokyouikuin ni oite Sandaya Hikaru ga Nokoshita Fukushi / Hoiku Sisou ― [Historical significance of “Chiryo-kyouiku” for children with disabilities: Welfare and childcare idea that Hiraku Sandaya has left Sandaya-chiryokyouikuin]. *Nnagoya Management Junior College Kiyou, 54*, 59-69.

Radecki, J. (1984). Educational Therapy Defined. *Journal of Learning Disabilities*, *17*(1), 7

Uchida, Y. (2018). Byooga no Hattatudankai ni Kansuru Ichikousatsu. *Kyoikukagaku*. *Saitama Daigaku Kiyou Kyoikugaku*bu, 67*(1)*, 29-41.

Wiazowski, J. (2000, July). *Computers in foreign language class of visually impaired students, visions and strategies for the new century*. Conference conducted at the meeting of the International Council for Education of People with Visual Impairment, Cracow, Poland.

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