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Enhancing EFL Teacher Trainees' Autonomous Development: A Sociocultural and Reflective Approach to Teaching Practice

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Abstract

Today, Japanese teachers of English as a foreign language (EFL) are involved in the English education reform which is promoted by the Japanese Ministry of Education, Culture, Sports, and Technology (MEXT, 2013). The present study aimed to examine how a sociocultural and reflective approach in collaborative teaching practice among EFL teacher trainees could be effective in promoting their awareness of learner development and their own teacher-learner autonomy. A total of 25 third-year student teachers who would like to be EFL teachers in junior or senior high schools after graduation took part in the pre-service teacher education program managed by the author (teacher educator) at a junior high school over a three-year period (2012 to 2014). They collaboratively helped first-year junior high school students to perform a picture-story show (*Kamishibai*) in English and to develop basic EFL skills and autonomy in language learning through group work. Both the teacher trainees and the school students developed portfolios for autonomous teaching and learning. As a result, the trainees raised their awareness of the students' growth in EFL learning and learned how to teach and research through their collaborative and reflective teaching cycles. It is essential for teacher trainees to develop teacher-learner autonomy and to be collaborative thinkers, practitioners, and researchers.

Key words: EFL teacher trainees, teaching practice, collaboration, reflection, autonomy

1. Introduction

As a member of the Faculty of Education at a Japanese university, the author has helped EFL teacher trainees to develop their technical knowledge, pedagogical skills, interpersonal skills, and personal qualities through the integration of theory and practice in pre-service teacher education. The university has developed an original system of teaching practice in the attached schools. In addition to their two-week intensive teaching practicum during the summer holidays, third-year student teachers have their teaching practice on Tuesday afternoon in the first and second semesters (five sessions in each semester). This Tuesday Teaching Practice (TTP) is a more flexible study program that would make it possible for teacher trainees to be more professional through their collaborative and reflective teaching cycles. English in TTP at the attached junior high school is an elective subject and the class

size is much smaller than the usual size (40). We university teachers supervise TTP in collaboration with school teachers.

As a sociocultural and reflective approach to TTP, since 2005, a collaborative, autonomous, and reflective teaching approach (CARTA) has been implemented in the author's TTP program (Kojima, 2008, 2010). The present follow-up study deals with CARTA in the first semesters of 2012, 2013, and 2014, when teacher trainees helped first-year junior high school students, who just started learning English as a regular school subject, not as English activities in elementary schools (Kojima, 2014). The students created and presented a picture-story show (*Kamishibai*) in English during the program so that they could foster their EFL skills and autonomy through positive interdependence. The study aimed to examine how CARTA could be effective in enhancing the trainees' awareness of learner development and their own autonomy as learners of teaching in the community of practice.

2. Theoretical Background

Sociocultural theory which is also referred to as social constructivism (Adelman Reyes & Vallone, 2008) is an approach to understanding how individuals learn and derived, in part, from the work of Russian psychologist Lev Vygotsky and his colleagues. According to Johnson (2009), "the epistemological stance of a sociocultural perspective defines human learning as dynamic social activity that is situated in physical and social contexts, and is distributed across persons, tools, and activities (Rogoff, 2003; Salomon, 1993; Vygotsky, 1978; Wertsch, 1991)"(p.1). Moreover, answering the question, "What does a sociocultural perspective on human learning have to offer the enterprise of L2 teacher education?"(2009, p.3), Johnson elaborates on five changing points of views: (a) teachers as learners of teaching, (b) language as social practice, (c) teaching as dialogic mediation, (d) macro-structures and the L2 teaching profession, and (e) inquiry-based approaches to professional development. These were applied to the CARTA program for teacher trainees.

Regarding learner autonomy, this study emphasizes the social aspect of autonomy in EFL education and favors one definition known as the "Bergen Definition" (Dam, Eriksson, Little, Miliander, & Trebbi, 1990), which defines autonomy as "a capacity and willingness to act independently and in cooperation with others, as a social, responsible person"(p. 102). The growth of learner independence could be supported by learner interdependence (Little, 2000). Some educators in Japan have tried to integrate autonomy with collaborative or cooperative group work in an empirical fashion (Kojima, 2008, 2010, 2013, 2014; Murphy & Jacobs, 2000; Smith, 1998; Usuki, 2007). In this sociocultural approach to TTP, collaboration or cooperation was emphasized in light of the integration of the following key elements: positive interdependence, individual accountability, face-to-face interaction, social skills, and group processing (Johnson, Johnson, & Smith, 1991; Barkley, Cross, & Major, 2005).

Littlewood (1999) distinguishes *proactive* autonomy from *reactive* autonomy in light of *collaborative* versus *cooperative* learning strategies. With collaborative learning strategies

(proactive autonomy), learners have a greater degree of choice and discretion about what and how they should learn. In contrast, with cooperative learning strategies (reactive autonomy), it is still the teacher who sets the agenda for learning, defines what counts as relevant knowledge, selects learning methods, and manages evaluation. In line with Littlewood, teacher trainees in TTP were strongly encouraged to take responsibility for their *collaborative* teaching and help their students to promote *cooperative* learning.

On the other hand, teacher autonomy can be defined at least partially in terms of the teacher's autonomy as a learner, or more succinctly "teacher-learner autonomy" (Smith, 2000; Ushioda, 2009). The Japanese government expects school teachers to continue to learn collaboratively as well as self-directedly in communities of practice. The Central Council for Education (2012) proposes that school teachers should deal with difficult educational issues by collaborating with their colleagues. EFL teacher trainees need to enhance their own readiness, capacities, and control in relevant areas of teacher-learning and to enhance their autonomous development so that they can help students to develop autonomy in language learning (Sinclair, 2009). Johnson (2009) suggests that "a major challenge for the future of L2 teacher education will be to uncover how teachers' professional learning influences their teaching and, in turn, how that teaching influences their students' learning" (p. 116). In the social constructivist classroom in TTP, teacher trainees were advised to learn from school students interdependently, which would help them both to promote their autonomous growth reciprocally.

For pre-service teacher education, the European Portfolio for Student Teachers of Languages (EPOSTL) has been studied in Japan. EPOSTL aims to help student teachers (a) to reflect on the competences a trainee is expected to attain and on the conceptual framework which feeds these competences, (b) to promote discussion among trainees, and among trainees, teacher educators, and mentors, (c) to assist trainees in developing awareness of their strengths and weaknesses related to teaching practice (Newby, Allan, Fenner, Jones, Komorowska, & Soghikyan, 2007). A group of Japanese researchers have developed the Japanese version of EPOSTL (J-POSTL, 2014) for pre- and in-service EFL teacher education. J-POSTL contains some main sections written in Japanese: Personal Statement, Self-Assessment, Dossier, Glossary of Terms, and Users' Guide. It has been employed in this teacher education program for third-year English majors who need to have teaching practice throughout the year and reflect on their own professional development.

For the enhancement of the participants' effective collaboration or cooperation and reflection in every class, each teacher trainee and each student group were advised to develop their working portfolios, which served as an intentional collection of work guided by teaching or learning objectives (Danielson & Abrutyn, 1997). This was a simple model predicated on three fundamental components: reflection, documentation, and collaboration or cooperation (Zubizarreta, 2004). In order to produce a portfolio, trainees were required to make field notes and to write a reflective journal over a period of their CARTA practice. In order to help them to promote their self-reflection, self-evaluation, and documentation on their teaching practice,

the teacher educator checked their portfolios after each session and gave feedback as promptly as possible. Feedback was thought as an important part of the interaction between the teacher educator and the trainees, who both were expected to be reflective practitioners and researchers (Schön, 1983).

In CARTA, reflective practice is central to teacher trainees' professional development. It helps them to analyze and evaluate what is happening in the classroom so that they can not only improve their practice, but also provide better opportunities for their students to learn (Zwozdiak-Myers, 2012). The trainees engaged in reflection-in-action, reflection-on-action, and reflection-for-action (Farrell, 2015). The teacher educator helped them to engage in critical reflection, which would incorporate an understanding of personal experiences within social, cultural and structural contexts (Fook & Askeland, 2007), and to work on trainee group discussions throughout the program in combination with classroom observation and regular journal writing.

3. Purpose

There has not been much research on how teacher education can promote pedagogy for autonomy in the school contexts (Sinclair, 2008). As sociocultural approach to pre-service teacher education, CARTA has been developed and implemented in TTP for almost ten years (Kojima, 2008, 2012). The purpose of this follow-up study was to examine how CARTA in TTP at a junior high school could be effective in raising the teacher trainees' awareness of learner development and their own teacher-learner autonomy over a three-year period (2012 to 2014). The interdependent learning processes are emphasized for CARTA to be able to promote learner and teacher development in the community of learning/practice. "Learner autonomy and teacher autonomy are probably best considered as being mutually interdependent (Usuki, 2007, p. 46). TTP expects the trainees to understand the processes of learner development as well as their own development as teacher-learners.

The following research questions were addressed:

RQ1 How can CARTA raise the trainees' awareness of learner development in TTP?

RQ2 How can CARTA enhance the trainees' teacher-learner autonomy in TTP?

4. Method

4.1 Participants

In the CARTA programs for TTP in 2012 (nine trainees), 2013 (nine trainees), and 2014 (seven trainees), a total of 25 third-year English major trainees were involved, with intermediate to high intermediate levels of English (TOEIC/TOEFL). Almost all of them would like to obtain a teaching license to be a junior or senior high school EFL teacher after graduation. All the trainees must be positively interdependent and collaborate with

one another in TTP.

In addition to these trainees, the following people were involved in this study: a teacher educator (Kojima), junior high school EFL teachers, and a total of 49 first-year junior high school students (15 in 2012, 16 in 2013, 18 in 2014). Although the previous TTP programs (Kojima, 2008, 2010) involved second-year students who were familiar with learning English at the junior high school, these first-year students just finished English language activities in elementary schools. English language activities aim to form the foundation of pupils' communication abilities while enhancing their understanding of languages and cultures, fostering their positive attitudes toward communication, and familiarizing them with the sounds and basic expressions (MEXT, 2008). Taking all of this into account, the teacher educator and the trainees needed to improve the CARTA program.

4.2 Materials

In order to analyze the effectiveness of the CARTA program, the following qualitative and quantitative materials were used: the school students' summative evaluation on CARTA experience and their reflections, the trainees' reflections on CARTA and J-POSTL, and the teacher educator's observations and reflections. Moreover, the trainees and the student groups developed their working portfolios and continued to reflect on their teaching or learning. All of this was collected and analyzed for the final evaluation of the program.

4.3 Procedure

At the beginning of the first semester in 2012, 2013, and 2014, the trainees and the teacher educator discussed how to organize the CARTA program in the attached junior high school classroom. They considered the goals of CARTA in TTP, the activities in each session, the rules of collaborative teaching or learning, and the ways to develop teaching or learning portfolios. The trainees then prepared for teaching materials and students' reflection sheets so that they could carry out the program effectively.

In the morning classes of English teaching methodology, which met for 90 minutes before going to the attached school for TTP, the educator helped the trainees to recognize learner factors or variables, to play various teacher roles in the learner-centered classroom, to consider effective approaches to ELT, and to integrate theory with practice. At the end of the methodology class, the trainee in charge of the whole TTP class on the day explained the teaching plan and asked for the fellow trainees' collaboration.

In each session of TTP in the school classroom, a group of two or three trainees took charge of a group of five or six students and assisted them in working on creating and performing a picture-story show (*Kamishibai*) and reflecting on their cooperative group work. The CARTA programs in 2012, 2013, and 2014 consisted of the following five sessions, which lasted for 100 minutes with a 10-minute break on each day:

Session 1: Getting to know each other, understanding the program (goals, group work,

- portfolios, etc.), and discussing picture stories (plot, characters, etc.) in groups
- Session 2: Writing a story in Japanese and English, and drawing pictures
 - Session 3: Completing a story in English, casting, and coloring pictures
 - Session 4: Characterization through voice and action
 - Session 5: Rehearsal, performance, reflection, evaluation, and feedback

With the support of the trainees in the above five sessions, the school students in three groups shared their ideas about possible situations and developed an English story related to their daily lives, social issues, etc. They also constructed scenes with pictures, considered casting, and finally rehearsed and staged different picture-story shows in front of the classroom. The teacher educator and the school teacher observed individual students and trainees, and facilitated their group work. While observing the students' group work, the trainees took notes and often gave feedback on how well each group was working cooperatively. At the end of each session, not only the students but also the trainees spent 15 minutes reflecting on the day's session together with the students, and then reported their reflections to the whole class. All of them discussed a few problems critically and made sure of new activities in the next session.

Regarding Session 1, for instance, all the participants introduced themselves briefly in English, got to know each other, and shared their ideas about the program. The trainees encouraged the students to consider what kinds of activities and roles they were expected to perform in each session. They explained the students how to develop group working portfolios and how to play individual member roles (chair, recorder, reporter, and monitor), taking into account that the students were unfamiliar with reflective group work. The teacher educator and the school teacher observed what was going on in the classroom.

In Sessions 2 to 5, group work was carried out in light of the following five key elements of cooperative learning (CL):

(1) Positive interdependence

In order to develop the reciprocal relationship, the trainees in each group encouraged the students to establish mutual goals, to assign individual roles, and to share ideas and resources interdependently.

(2) Individual accountability

Each student's contribution was carefully observed and assessed by the trainees. The results were given to the group and the individual. The trainees assisted the students in taking responsibility for their roles in group work.

(3) Face-to-face interaction

For CL to be effective, the students promoted face-to-face interaction in Japanese and English. They explained themselves, discussed their ideas, and shared their feelings in group work.

(4) Social skills

The trainees helped the students to foster social skills through group work. Cooperative skills include negotiation, leadership, decision-making, trust-building, communication, and conflict-management skills, etc.

(5) Group processing

At the end of group work in each session, the students had specific time to reflect on their activities. Listening to each group's monitor, they discussed how well they achieved their goals and maintained effective working relationships among the members. They used their group portfolios for group processing.

While enhancing the students' group work, the trainees improved their instruction collaboratively and reflectively. The teaching cycles involved the following four phases:

Phase 1 (Planning): setting new goals, making a new teaching plan, and assigning teacher roles

Phase 2 (Action): putting the plan into action, and taking charge of each group or the whole class

Phase 3 (Observation): observing the groups and the whole class, taking notes, and collecting data

Phase 4 (Reflection): evaluating CARTA, identifying problems, and improving collaborative teaching

After each session the trainees and the teacher educator had a meeting (90 minutes) and shared their ideas about how to solve the class problems, how to facilitate the group work, and how to carry out CARTA in the next class. The teacher educator helped the trainees to be "teachers as collaborative thinkers" (Engeström, 1994) and to develop their teacher-learner autonomy as well as the students' autonomy.

5. Results and discussion

The results of the CARTA practice are analyzed and discussed in light of the teacher trainees' awareness of learner development and their own autonomous development as teacher-learners in the community of TTP. The following data were mainly taken into account: the students' reflections on their CARTA experience and their answers to the questionnaire asked by the trainees, the trainees' reflections on their CARTA practice, and the teacher educator's observations and reflections. The participants' comments in Japanese were translated into English by the author.

5.1 Teacher trainees' awareness of learner development

Before starting group reflection at the end of each session, the students were asked to reflect on their individual contribution to group work and respond to the following items: (a) I

could attend the group discussion positively; (b) I could express my ideas in the group discussion; (c) I could play my role effectively in group work; (d) I could listen to the others and accept their different opinions. Their ratings in response to each statement were marked on a four-point scale: 4-strongly agree, 3-agree, 2-disagree, 1-strongly disagree. In addition to this self-assessment, they wrote a short comment on the day's work. Some trainees noted that the students tended to assess themselves more highly than they really could. Although there might be some problems in validity and reliability, the majority of the trainees agreed with Trainee A who claimed:

Individual self-reflection activity was effective as a preparatory stage for group reflection. Through individual and cooperative reflection at the end of each session, the students seemed to enhance their metacognitive abilities for autonomous learning. (Trainee A, 2012)

In the last session, the student groups performed their picture-story shows in front of the classroom. The students looked at each group's performance, assessed it, and gave feedback on their efforts. The trainees wanted to assist them in enhancing their self-awareness of how to develop learner autonomy through positive interdependence.

Furthermore, the students were expected to be self-motivated and self-monitoring life-long learners through the response to the final questionnaire for summative self-evaluation of their CARTA experience. The trainees directed the students to read the six items (see Table 1) and circle the appropriate number (4-strongly agree, 3-agree, 2-disagree, 1-strongly disagree).

Table 1. Summative Evaluation of CARTA Experience

| Measure | 4(n) | | | 3(n) | | | 2(n) | | | 1(n) | | | M | | |
|--|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|-----|-----|-----|
| | '12 | '13 | '14 | '12 | '13 | '14 | '12 | '13 | '14 | '12 | '13 | '14 | '12 | '13 | '14 |
| 1. I could attend group work positively. | 9 | 11 | 13 | 5 | 5 | 4 | 0 | 0 | 1 | 1 | 0 | 0 | 3.5 | 3.7 | 3.7 |
| 2. I could express my ideas in group discussion. | 7 | 11 | 13 | 7 | 4 | 3 | 0 | 1 | 2 | 1 | 0 | 0 | 3.3 | 3.6 | 3.6 |
| 3. I could perform my role effectively in the picture-story show. | 5 | 6 | 4 | 6 | 9 | 9 | 4 | 1 | 3 | 0 | 0 | 2 | 3.1 | 3.3 | 2.8 |
| 4. I could learn many English words and expressions. | 10 | 10 | 11 | 5 | 5 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 3.7 | 3.6 | 3.6 |
| 5. I could understand the contents of the other groups' stories. | 7 | 5 | 10 | 6 | 10 | 6 | 2 | 1 | 2 | 0 | 0 | 0 | 3.3 | 3.3 | 3.3 |
| 6. I could find the good points of the other groups through peer assessment. | 9 | 9 | 13 | 4 | 7 | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 3.5 | 3.6 | 3.7 |

Note. N=49 (15 in 2012, 16 in 2013, 18 in 2014). Measure: 4-strongly agree, 3-agree, 2-disagree, 1-strongly disagree.

Table 1 shows that overall, the majority of the school students in 2012, 2013, and 2014 tended to claim “Strongly agree” or “Agree”. Almost all of them claimed to have positive attitudes towards group work (Items 1 and 2). However, as for Item 3, the M score is the lowest every year. Trainee B commented on this:

Frankly speaking, I lacked confidence in enhancing the students' performance skills. In addition, the students could not have enough time to practice individually or collaboratively before performance. We should have paid more attention to how to characterize various picture-story roles through voice and action. (Trainee B, 2012)

Moreover, regarding Item 5, it was not easy for the first-year students who lacked English knowledge and skills to understand the contents of the other groups' stories (M=3.3 in 2012, 2013, 2014). However, Trainee C noticed that several students with high English abilities positively contributed to their group work:

Several students, who had been learning English through private lessons for a long time, seemed to have much higher English proficiency than general first-year students. They voluntarily took a leadership role in translating their stories into English. (Trainee C, 2013)

Although many trainees wondered if they were able to develop the students' English knowledge through TTP, almost all students agreed that they could learn many English words and expressions (Item 4). In order to complete the task, they needed to foster main skills (listening, speaking, reading, and writing) and subsidiary skills (grammar, vocabulary, pronunciation, etc.). Peer assessment also seemed to be very useful for them to critically understand the good points of the other groups (Item 6).

At the end of the questionnaire, the school students were asked to comment on CARTA in Japanese. The following comments were positive:

- *I enjoyed talking and cooperating with the other students from different classrooms. We gradually came to understand each other and did our best to complete the task successfully. (2012, 2013)*
- *With the help of the student teachers, we could learn how to consult the dictionary, how to pronounce and write English words correctly, and how to translate Japanese expressions into English, taking their meanings into account. (2012, 2013, 2014)*
- *I created a picture-story show in English for the first time. We listened to each other and exchanged different ideas to realize our common goal. I was happy when I could*

In order to promote the students' self-direction, we helped them to set their own goals and assess their own progress through positive interdependence in groups. Taking the content of the task, the proficiency level of the first-year students, and their needs into account, we had to implement effective scaffolding for learner autonomy. (Trainee D, 2014)

In the first session, the trainees found that the students were not accustomed to play various roles and take responsibility for their roles in cooperative group work. Group processing is essential for maintaining effective working relationships and achieving final goals. The students were encouraged to use group portfolios and develop metacognitive abilities for learner autonomy. It was necessary for the trainees to consider how to raise the students' awareness of the significance of the key elements of CL throughout the sessions. Moreover, in general, how to read or write in English is not taught in elementary schools. Thus, it might be difficult for the first-year students to perform a picture-story show in English. The trainees needed to discuss how to help the students to develop their English knowledge and skills through the task. Learner-centeredness is the primary focus of CARTA. Thus, teacher-centered or explanatory instruction should be kept to a minimum. Trainee D noted:

- *I could not express myself or play my roles effectively in group work. (2012, 2013)*
- *I often worried about the difficulty of group processing. I was not used to reflecting on individual and group work. (2012, 2014).*
- *It was very difficult for me to compose a story in English, although I found pictures and gestures useful for communication. (2012, 2013, 2014)*

affective factors. The students' negative comments were:

In each year, some students showed negative attitudes towards group work particularly in the first and second sessions. There were some obstacles related to their cognitive and

maintain the reciprocal relationship among the members.

interaction; and c) the students continuously reflected on their group work and managed to autonomy through positive interdependence and social skills through communicative language skills and carry out the difficult task; b) the students were able to enhance their were: a) the students' self-efficacy was enhanced because they were able to foster integrated than they had expected. They discussed why the students appreciated CARTA. Their reasons The trainees were pleased that most of the students evaluated CARTA more positively

- *I understood various differences between English language and Japanese language. I enjoyed creating an original story and performing it in group work without being afraid of making mistakes. (2013, 2014)*
- make myself understood in English. (2012, 2014)*

In the 2nd to 5th sessions, the differences in students' characteristics were evident among the three groups. A few trainees in charge of the same group collaboratively worked on solving their group's problems, promoting effective group dynamics, and facilitating individual student's autonomous development. After each session, the trainees shared the information about each group work and critically reflected on the day's CARTA practice.

5.2 Teacher trainees' development as teacher-learners

Based on collaborative discussion after each session, as a part of the teaching portfolio, every trainee wrote and submitted his or her own reflective journals to the educator. In addition, at the end of the semester, they had a meeting to reflect on CARTA in TTP. The trainees were required to submit their reflective reports on what they learned as teacher-learners. Each of these illustrates a distinctive, yet illuminating perspective on their development as teacher-learners.

Almost all the trainees tended to agree with Trainee E who pointed out the importance of developing her technical knowledge:

I'd like to develop my technical knowledge so that I can be a good EFL teacher. My students often asked me questions related to English grammar, English words and phrases, and how to translate from Japanese into English. However, I couldn't answer these questions with confidence. I need to understand the linguistic systems of English phonology, grammar, and discourse. I know the importance of the integration of the four language skills and the subsidiary skills in EFL instruction, but I myself lack fluent competence in integrated language skills. I should more deeply understand the difference between Japanese and the target language, not to mention the close connection between language and culture. (Trainee E, 2012)

The trainees recognized that they should improve their technical knowledge, language skills, and intercultural competence as needed in the EFL classroom. Although the new Course of Study (2008) emphasizes the integration of the main language skills at junior high level, Trainee E thought that integrating the main skills and the subsidiary skills would make it possible for the students to be exposed to authentic language and to be involved in activities that are interesting and meaningful. As Trainee E implied, intercultural competence is also essential for the trainees to promote their harmonious professional development.

As a sociocultural approach to TTP, CARTA expects all the participants to collaborate with each other and develop learner and teacher autonomy through positive interdependence. Trainee F reflected on his CARTA experience:

In order to develop students' communicative competence and autonomy through positive interdependence, we implemented CARTA in our teaching practice. With the support of experienced teachers, fortunately we could manage to complete our group work. The

students supported each other interdependently to realize their goals. We trainees collaboratively made decisions on a moment-moment basis and responded sensitively to the students. However, I wonder if I will be able to employ this approach in the future classroom. How can I collaborate with teachers in different schools? (Trainee F, 2013)

CARTA encouraged the trainees to enhance students' interaction, cooperation, and teamwork, taking into account individual learning styles, preferences, strengths, and weaknesses. It was not easy for the trainees to give optimal feedback to the students and use appropriate principles of classroom management. The teacher educator and the school teacher observed the trainees' collaborative teaching practice and provided feedback and encouragement in the specific context. To what extent can this model provide an approach basis for future practice in different EFL education contexts? Most of the trainees including Trainee F asked this question. MEXT (2013) encourages in-service teachers to collaborate in communities of practice so that they can improve the social conditions and contexts of schooling. Teacher educators should help them to develop teacher autonomy through collaboration with their colleagues (Engeström, 1994).

Throughout the CARTA program, the trainees engaged in reflection-in-action, reflection-on-action, and reflection-for-action. Trainee G referred to the advantage of implementing portfolios for reflective practice:

The students developed group portfolios and reflected on their activities both in each group and in the whole class. This helped them to improve their group work and achieve their common goals. On the other hand, I developed teaching portfolios during TTP. This was useful for self-reflection, self-evaluation, and documentation on my teaching practice. Collaborative reflection with the other trainees was also useful for my professional development. (Trainee G, 2014)

Teaching portfolios seemed to be an effective tool for the trainees to enhance their autonomous development. In their portfolios, most of the trainees emphasized the advantage of critical reflection through collaborative discussions. Critical reflection was effective in developing greater awareness of not only their own instructional processes and decision making but also students' individual or cooperative learning in the sociocultural context.

In addition to the above portfolios for the TTP program, J-POSTL was also implemented to help the trainees to self-evaluate their own professional competence and skills in EFL instruction before and after TTP. By checking each descriptor in the checklist of J-POSTL, the trainees became more aware of their own professional development. The trainees discussed the results of their responses in small groups and then in the whole class. As Takagi (2015), who implemented J-POSTL in her pre-service teacher education program, also recognized, the trainees "were able to increase their knowledge about teaching English and came to have a clearer image of prospective pedagogical practices"(p. 72). However, it

might be too much of a burden for the trainees at this stage to reflect on all the descriptors and understand the synthetic ways of reflection. In order to promote critical reflection on their TTP, it seemed to be essential to develop different sorts of portfolios for autonomous learning and teaching in the TTP context.

6. Conclusion

This follow-up study on TTP has examined the potential of CARTA, a sociocultural and reflective approach to enhancing EFL teacher trainees' autonomous development as teacher-learners in the TTP classroom. The research questions were: how CARTA can raise the trainees' awareness of learner development in TTP and how CARTA can enhance the trainees' teacher-learner autonomy in TTP. The analysis of research data in 2012, 2013, and 2014 implies that the interdependent relationship among the participants and the collaborative and reflective teaching cycles have the potential to raise the trainees' awareness of the process of their students' autonomous development and to enhance their own teacher-learner autonomy through positive interdependence. The trainees are actually learners themselves in the community of TTP and are likely to promote their professional growth interdependently.

The CARTA program has been implemented in the specific research context for ten years. As Kojima (2012) points out, collaborative autonomy should be interpreted differently by different university or school cultures. MEXT is currently working to incrementally promote educational reform from the primary to lower or upper secondary education stage as a response to globalization (MEXT, 2013). In addition, MEXT expects school teachers to support students' autonomous and cooperative learning inside and outside the classroom. It might be remarked that the trainees in the CARTA program could have an appropriate basis for future practice in different EFL education contexts. A variety of sociocultural and reflective approaches to teacher education for in-service EFL teachers as well as pre-service teachers need to be developed so that they can enhance their professional competence and autonomy as collaborative thinkers, practitioners, and researchers.

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音韻的音節における曖昧母音の脱落の妥当性について

Schwa Vowel Reduction in Phonological Syllables

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Abstract.

In this paper, I show that schwa vowel reduction in English occurs in phonological syllables in addition to phonetic syllables. It is commonly said that there is a distinction between phonetic syllables and phonological syllables in syllable structure of languages as suggested by Takebayashi (1973): Phonetic syllables are based on the degree of sonority level of each segment. Phonological syllables, on the other hand, are not based on the degree of sonority level of each segment but the specific segmental order in individual languages. Even though there is much evidence for this dichotomy, it can be said that schwa vowel reduction in English is adequate from the viewpoint of phonological syllables based on the wrong sequences of each segment inventory in English language. Finally, I conclude that the knowledge of the fact that the occurrence of schwa vowel reduction in English pronunciation within the domain of (new) phonological syllables revised by the author is very important for learners of English.

Keywords: schwa vowel, reduction, phonetic syllables, phonological syllables, sonority sequences

1. はじめに

本稿では、英語における出現頻度の非常に高い母音である、曖昧母音(schwa vowel)における脱落現象について音節構造の観点から考察を行う(cf. Jones (1918))。また、ここでは、竹林(1973,1996)にしたがい音節構造を音声的音節構造(phonetic syllables)と音韻的音節(phonological syllables)の2つに分割することにする¹。前者の音声的音節構造とは、理論的音節や典型的音節と呼ばれるもので、音声的に漸強音から始まり、緊張は頂点に到達した後、緊張が弱化して漸弱音にて終了するものを指す。つまり、口腔の開口度が漸次増大し

て最大に達し、漸次減少する構造であり、分節音のきこえ度(sonority)にも対応するものである。

一方、後者の音韻的音節とは、前者の持つ緊張度の増減や、開口度の変化等などの特徴または制約を守っていないものを指す。通常、英語の分節音により構成される英語の音節構造は、先に述べた音声的音節構造の制約を基本として構成されているが、一部の現象においてはかならずしもこの構造に準拠していない場合がある。その例として代表的なものが強勢を担わない母音である曖昧母音の脱落である²。

そこで、本稿では、曖昧母音の脱落という現象が、基本的には通常音声的音節構造に基づいて起こる現象ではあるが、きこえ度などによる英語本来の分節音の連続を構成しないような音韻的音節構造においても生起するという事実を検証することにする。また、本稿では、分節音のきこえ度(sonority)という観点からではなく、音節構造の普遍性、すなわち、無標な構造なのか、それとも有標な構造を持つのかという観点から音節構造を音声的音節構造と音韻的音節構造に再定義することとし、そこから英語の学習者にとって好ましい子音連続の発音を分析し、検討を行う。

2. 歴史的にみる曖昧母音脱落現象

現代英語では、強勢を持たなくなった母音が曖昧母音へと変化するが、歴史的背景においては、強勢を持たなくなった曖昧母音は最終的には消失してしまうことがある。

例えば、現代英語の発音が[neim] “name”と発音されている語も古英語の時代には基本的にはローマ字読みによってすべての文字が読まれて [na:me]と発音されていたが、大母音推移³というおおきな長母音に関わる変化が英語に起きたために、綴り字と発音の間に大きなずれが生じた(“name”の場合、強勢を持つ母音は(単)長母音から二重母音へと変化した)。このような歴史的変化の段階で、強勢を持たなかった語末の[e]という母音は曖昧母音へと変換し、最終的には、単語の認識度の重要性が低い語末という位置で、最終的に脱落、消失している。このような英語では通時的な変化における母音脱落が生じることから、現代英語における本稿での共時的な母音脱落の生起も英語の話者にとっては、妥当なものであると考える。以下の図を参照されたい。

(1)

“name” [na:me] → [na:mə] → [ne:m] → [neim]

3. 現代英語における曖昧母音脱落現象

本節では、現代英語の発音における曖昧母音の脱落に関する現象についてのデータをまず概観することとする。英語の曖昧母音の出現率は非常に高く、Knowles (1987)によれば、イギリス英語の調査では、この曖昧母音がすべての音のほぼ10%を占めているという結果が報告されている。ここでの調査結果では、母音が音の全体の40%を占めているというデータも示されており、母音の出現率の約25%が曖昧母音であるということになる(清水他(2003)を参照のこと)⁴。

この曖昧母音はその他の英語の母音とは、おおきく異なった特徴を持っている。それは、英語の母音体系の中で、曖昧母音以外の単母音が単語の生成段階や派生段階などにおいて強勢を失った場合に、それらの母音は基本的に曖昧母音へと変化するというものである。この曖昧母音の音色は、日本語の「ア」に近いというように指摘されている場合が見られるが、実際の英語の発音とは異なっているので、注意する必要がある。

このように、一定の音価を持たない曖昧母音の発音法について、どのようにすればよいのかという、難しい問題がある。しかしながら、清水他 (2003)によれば、一般的には、「力を抜いて、綴り字から想像される音を発音する」や「弱くあいまいに、綴りが a ならば「ア」、e ならば「エ」、o ならば「オ」と言えば英語らしい発音となる」というように説明がなされている。では、以下の図も参照されたい。

(2)

- a. [a]bout → [ə] = [ア] (清水他 2003)
- b. c[o]ndition → [ə] = [オ] (清水他 2003)
- c. hol[i]day → [ə] = [イ] (兼弘 1975)
- d. s[e]lect → [ə] = [エ]

このように、曖昧母音の発音については、正確な英語音声学の知識を持った上で、十分な教育的配慮がなされなければ、英語学習者にとっては習得しがたい音声（母音）の1つとなっているように思われる。そのような観点からも、清水他(2003)によって指摘された曖昧母音の正しい発音についての指導方法の内容は重要なものと考えられる。

4. 音声的音節と音韻的音節における曖昧母音の脱落

曖昧母音の脱落現象は、以下に見られるような場合が挙げられる。これらの例で見られる現象は通常の発話速度、また速い速度での発話において観察される。特に、以下に示すように、第2音節に強勢がある時の最初の頭子音音節内で起きる。このような母音の脱落は、音韻理論の枠組みでは、Donegan & Stampe (1979)の自然音韻論(Natural Phonology)の基本概念の1つである「弱化過程」のである「削除」という観点からも説明される。

(3)

- a. police [pəli:s] → [pl-]
- b. beleive [bəli:v] → [bl-]
- c. parade [pəreid] → [pr-]
- d. suppose [səpouz] → [sp-]

(大高 1998)

上記で見られる、曖昧母音の脱落は一般的なものである。そして、この曖昧母音の脱落によって、きこえ度の観点から英語の語頭子音の連続として好ましくないものは(3d)で見られるような摩擦音+閉鎖音の連続である。分節音のきこえ度の強さは一般的に以下のように

に定義されている（尚、Selkirk (1984)では「無声摩擦音」はきこえ度に基づいて[s] > [f, θ]のように2つに分類されている点に注意すること）。

(4) きこえ度

母音 > 流音 > 鼻子音 > 無声摩擦音 > 有声摩擦音 > 無声摩擦音 > 有声閉鎖音 > 無声閉鎖音
(Selkirk 1984)

このようなきこえ度の強さに基づき、頭子音連続や尾子音連続とともに、音節構造は構築されている。

本稿では、竹林(1973, 1996)などで示された音声的音節と音韻的音節の概念を音節内部の分節音の連続の自然性という観点から再度、分析を試みるものである。すなわち音節構造としてより普遍的な構造とそうでない音節構造を区別することであり、前者は言語習得(音習得)の観点から無標である(単純な構造) CV 音節構造(音声的音節)と定義することが可能である。

本稿で、主張する中心的概念1つである、CV 音節構造の普遍性は、Carr (1999)や Demuth (2014)によれば、以下のように定義されている。

(5)

- a. It appears that the most basic syllable structure in human languages is CV syllable structure, with a single onset consonant followed by a vowel.
- b. CV-type syllables appear to be the syllable types that human children first utter when they begin to speak (e.g. [ba], [ma]) regardless of what language their parents speak.
- c. In many cases of aphasia, where post-stroke patients have suffered damaged to their speech, CV syllable structure also appear to be the sort that first begin to appear as the patient recovers his or her speech...
- d. Coda consonants are much more likely to undergo loss of articulation in the course of historical development of languages than onset consonants. (Carr 1999)
- e. Children typically acquire onset consonants before coda consonants.

(Demuth 2014)

これは、清水(1978)において、Schane (1972)が以下のような自然な音韻規則の1つとして提案していると述べている点と一致しており、この考え方は妥当と考えられる。

(6) 最適音節構造規則(Preferred Syllable Structure Rule)

好ましい音節構造 → CV(CV)₀

(清水 1978)

一方、後者は有標な構造(複雑な構造)を持つCCV構造(音韻的音節)であると定義することが可能となる⁵。これは、英語と同じゲルマン語系であるオランダ語の音節構造習得過程において、Boersma and Levelt (2000)では、以下のようにCV構造からいくつかの段階を

へて CCV 構造が習得されると指摘している⁶。

(7)

CV → X → Y → Z → CCV

(Boersma and Levelt 2000 を一部改変)

これらの再定義に基づく概念をまとめると以下のように図示することができる。

(8)

a. 音声的音節 → (CV 構造：単純な構造)

b. 音韻的音節 → (CCV 構造：複雑な構造)

このように、2つの音節構造が認められることで、従来のきこえ度の概念などでは、うまく説明ができなかった単語（音節）の頭子音構造がうまく説明ができることを指摘する。

以下の図をご覧ください。

(9)

a. police [pəli:s] → [pl-]

b. beleive [bəli:v] → [bl-]

c. parade [pəreid] → [pr-]

d. suppose [səpouz] → *[sp-]

e. tomato [təmeitou] → *[tm-]

f. tonight [tənit] → *[tn-]

g. potato [pəteitou] → *[pt-]

上記の例において、(9a)~(9c)では、曖昧母音の脱落でも、頭子音連続はきこえ度の観点からは問題ないものとして取り扱われている。が、(9d)においては、先にも述べたが、摩擦音+閉鎖音という連続はきこえ度の適切な連続が阻止されているにも関わらず、実際に英語の発音として容認されている。それゆえ不適格を示す*マークが付与されている。

一方、(9e)(9f)(9g)においては、(9d)と同様に曖昧母音が脱落しているが、きこえ度の連続は閉鎖音+鼻音や閉鎖音+閉鎖音の連続という構造できこえ度の観点からは問題はない一方、曖昧母音脱落によって構築された*[tm-]、*[tn-]、*[pt-]という頭子音連続は、英語という言語における語頭の子音連続として許されていない子音連続となり、不適格を示す*マークが付与されている。このように英語の持つ個別の子音連続の制約や、きこえ度の観点からでは、不適格である場合いが少なくなく、これらの例を統一的に処理することはできなかった。しかしながら、本稿で提案された新たな音韻的音節構造を認めることで、これらの例を適切に説明することができる。

したがって、(9)に挙げられているすべての例を、本稿で再定義した、音韻的音節(CCV 構造)という概念によって処理すると、すべての例が統一的に、音韻的音節という概念によって以下のように処理することが可能となり、実際の英語話者の発音における音節構造を

より正しく記述することができる。

(10)

- a. police [pəli:s] → [pl-] → (CCV : 音韻的音節)
- b. beleive [bəli:v] → [bl-] → (CCV : 音韻的音節)
- c. parade [pəreid] → [pr-] → (CCV : 音韻的音節)
- d. suppose [səpouz] → *[sp-] → (CCV : 音韻的音節)
- e. tomato [təmeitou] → *[tm-] → (CCV : 音韻的音節)
- f. tonight [tənaɪt] → *[tn-] → (CCV : 音韻的音節)
- g. potato [pəteitou] → *[pt-] → (CCV : 音韻的音節)

上記の図表から分かるように、従来のきこえ度を基本とした音声的音節や、旧来の音韻論的音節を用いて曖昧母音の脱落を分析するよりも、普遍的な観点から見た、音声的音節と音韻的音節に再区分することで、統一的に曖昧母音脱落後の音節構造（頭子音連続）の適格性をうまく説明することが可能な事が分かる。

5. 結語

以上のように、本稿では竹林(1973, 1996)などで提案された音声的音節と音韻的音節の区分によって英語の曖昧母音脱落現象を説明するよりも、本稿で提案した、新たな音声的音節と音韻的音節に再区分した中での、新たな音韻的音節の概念を援用すれば、英語の曖昧母音脱落現象後の頭子音構造（音節構造）の適格性を統一的で、かつ的確に説明できることを論証した。

また、このような分析による子音連続の発音は、英語母語話者の典型的な特徴であることから、英語学習者にとって必要不可欠な発音であり、本稿での音韻的音節構造を認めることで、英語学習者がこの音節構造を習得することを目指すことは妥当であると、考えられる。

なお、さらにここで援用した音韻的音節という概念が、その他の英語の音変化等の音声的变化にどのように応用でき、かつ分析手法となるのかは、今後の課題としたい。

注

¹ 竹林(1973)によれば、音声的音節(phonetic syllable)と音韻的音節(phonological syllable)を分けて考えたのは、M. Grammont (1933: 97-104) *Traite de Phonetique* であると指摘しており、また服部(1951)でもこの事実は詳しく紹介されている。

² 曖昧母音以外に単母音の[i]は強勢を担わない場合でも、曖昧母音化せずに維持される場合がある。

³ 14世紀から16世紀にかけて英語に起こった母音変化で、すべての英語の長母音の調音位置が前方と後方でそれぞれ上昇し、高母音は二重母音化した現象のこと。

⁴ 曖昧母音の脱落に関して、ウェールズ語(Welsh)では音声学的な根拠としての1つとして、Buczek (1998)によれば、曖昧母音を除く10個の母音が対立する母音素性として[tense]、

[open]のいずれかが指定されて、安定しているのに対して、ウェールズ語の曖昧母音はいずれの母音素性をもが指定されていないことが指摘されている。

⁵ 有標で複雑な構造であっても、CCVの子音連続を持つ音節構造は英語話者にとっては、難しいものではない。

⁶ Boersma and Levelt (2000)では、音節構造の習得段階がさらに詳細に説明されているが、本稿においては、関わりのある必要な部分のみを図示している (X,Y,Zは任意の段階を示している)。

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Intonation Phrases in the Use of Closed Captions for Deaf and Hard-of-Hearing Students in EFL Classes

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Abstract

In this paper, I discuss the displaying of captions in the instruction and testing of listening skills for deaf and hard-of-hearing (DHH) students in an English as a foreign language environment. I compare two methods: 1) presenting captions in a scrolling manner, and 2) presenting captions in language chunks, or intonation phrases. I report on two experiments, one conducted with subjects who have full hearing to confirm which style of captions is easier to comprehend and the other designed to measure the anxiety DHH students feel depending on the way captions are presented. The anxiety of DHH students was measured by recording students' heart rates and in interviews. The results suggest language presented in intonation phrases is not only easier to comprehend, but also results in DHH students feeling more comfortable under test conditions.

Keywords: Deaf and hard-of-hearing (DHH) students; intonation phrases; computer-assisted language learning; anxiety

1. Introduction

1.1 Teaching deaf and hard-of-hearing students

The importance of providing equal opportunities for all students has been underlined in recent years with an increasing number of students who have some kind of disability attending university. Tertiary institutions must go beyond simply constructing barrier-free facilities, and maintain a learning environment enabling students with special needs to take any class with any student. In late 2012, the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) decreed that all educational institutions provide equal opportunities for students with disabilities to receive the same quality of academic instruction as able students (MEXT, 2012). According to MEXT's report, the number of Japanese university or two-year college students with some kind of disability more than doubled from 4,937 in 2006 to 10,236 students in 2011. This increase also included deaf and hard-of-hearing (DHH) students, the number of which registered at university or two-year colleges rose by 356 to 1,556 in the same five-year period. In order to meet the needs of these students, MEXT initiated an "inclusive

education system” directing academic institutions to provide learning environments that allow students with such disabilities to receive the same quality of education and freedom of career choice as any student. As a result, teachers and staff at such institutions are required to consider methods of allowing students with disabilities to integrate smoothly into the general curriculum and classes. One area in which it has proven to be a major challenge for this to occur successfully, especially in the case of DHH students, is in second language education.

As expressed by Fukuda (2009), the literature on teaching English as a foreign language (EFL) in Japan to DHH students is rather limited. Suggestions and advice for assisting with the skills required to improve listening comprehension proficiency are even more limited. There are, however, some reports on methods undertaken by various institutions within Japan. According to Fukuda (2009), one of the most popular approaches to enable a smooth transition into regular classes for DHH students, is a note-taker system, which has been introduced at many universities. Such a system requires a staff member or another student from the university who has no hearing impairments to summarize what the teacher has said during class and take notes for the DHH student, either in a note pad or on a computer. Even though Fukuda (2009) expresses concern that DHH students are required to arrange all the notes together like a jig-saw puzzle in order to make sense of the lesson, a recent investigation by Hosono, Suto, Osugi and Matsufuji (2012) suggests that the note-taker system is in fact seen as the most effective by DHH students. In the survey conducted by Hosono et al., 63 DHH students were asked to list the most effective methods of support enabling them to understand and participate in EFL classes. The results indicate that a note-taker was the most effective method, followed by talking to friends, displaying the lesson content on a screen via a projector, using PowerPoint® and translation into sign language. In addition to this, participants in the survey were asked to indicate methods they would like to try to help them become more involved in regular lessons. Note-taking via computer, followed by video with captions were seen as the two methods participants were most eager to use in class.

While considering this interest in the incorporation of computer technology, in the remainder of this paper, I compare two methods of presenting passages, discussing which results in DHH students participating more easily in listening tests and instruction in EFL classes at regular universities. The methods suggested in this paper reflect the preferences indicated by participants in the study conducted by Hosono et al. (2012), proposing the use of computer technology to present chunks of language, allowing DHH students to experience the same kind of listening tests as their peers who do not have hearing impairments.

Training the listening skills of DHH students can be challenging. Various methods have been used to allow DHH students to participate in listening practice. Fukuda (2009) suggests that listening practice could incorporate speed-reading, giving DHH students a written script to read while others in the class practice authentic listening tasks. Fukuda adds that such speed-reading activities will train DHH students to prepare for reading subtitles when watching movies. The focus on reading, rather than listening, in EFL classes reflects the advice of Tsoneva and Makrieva (2011), who argue that it is imperative for teachers of DHH students in an EFL environment to focus only on the reading and writing skills of their students, and ignore the listening and speaking

skills. However, with the use of computer technology to add captions to videos timed at the same rhythm as natural English speech, it is possible to create listening tests for DHH students in an authentic way, allowing them to ‘hear’ language in a similar way to students with full hearing.

One common way of adding captions to a video, and often used in English proficiency tests for DHH students, is to have the words scroll across the computer or television screen as students attempt to comprehend the message racing by before their eyes. This method, however, is not advisable due to the difficulty of reading the sentences, as well as the unauthentic rhythm of speech that does not reflect the way a native speaker of English would make such utterances. Instead, the content of the listening test should be displayed on a computer or television screen in intonation phrases, also referred to in the field of phonology as sense units, breath groups, intonation units and tone groups, animated by computer to appear and disappear at the same timing and speed of natural speech.

1.2 Intonation phrases

The importance of Intonation Phrases¹ (IPs) when presenting information orally has been well documented in previous research not just in the English language. In a study looking at the importance of IPs conducted in Japan, Sugito (1999) made a 70-second recording of a television broadcaster reading a piece of news and digitally removed all pauses from one copy of the recording. Sugito then had 20 members of the general public listen to the news report twice, once without the pauses removed and once with the pauses removed. Reactions from listeners indicated that although there were no problems comprehending the news report with pauses, once the pauses were removed, it became too fast and listeners were unable to understand what was being said. Sugito stresses that adding pauses in language allows humans to reintegrate information in their short-term memory and consequently process it into their long-term memory. Therefore, unless pauses are used in speech, the interlocutor does not have enough time comprehend the speech they have heard.

The length of an IP is often at the discretion of the speaker at the time utterances are being made. Tench (1996) explains that in usual speech, IPs generally last between one and two seconds. Therefore, within one utterance, a speaker may make one, or many more IPs. Wells (2006) explains that an IP will typically contain only one or two accented words, however it is possible for one IP to have up to five. Due to the variety in length of IPs, it is necessary to consider the relationship between IPs and grammatical features for the purposes of providing spoken English in written form for the purposes of DHH students. Wells reports that the influence of grammar on the length of IP is clear in some cases. For example, pauses are commonly observed at the end of sentences, between clauses and “anywhere where it will make the grammatical structure clearer” (2006, p. 193). See Wells (2006) for a list of the grammatical features of IPs.

1.3 Research questions

Considering the importance of IPs in spoken language for within the above research context, in this paper, I aim to gain a deeper understanding of which method of presenting listening test

scripts (i.e., in IPs, or scrolling without pauses) is easier to understand and causes less anxiety for those taking the test. I address the following research questions (RQs):

RQ1: Is a passage presented in IPs more intelligible than one presented without pauses?

RQ2: Do DHH students feel less anxiety when reading a passage in IPs than a passage presented without IPs?

Through the first RQ, I hope to gain an understanding of whether a text presented in IPs reflects the kind of language those with full hearing are used to. The author predicts that, like the findings of Sugito (1999), the deletion of necessary pauses in language, even when presented in a printed version on a computer screen, will result in listeners experiencing difficulties in comprehension, regardless of whether they are native speakers of English or not. This will then support the author's suggestions that language presented to DHH students in the written form should be done so in IPs, providing a more authentic example of language.

The author also expects to see similar results in the second research question, based on the suggestions of Hosono et al. (2012) that DHH students found the note-taker system to be most effective method of participating in regular classes and were eager to try a note-taker system via computer. As note-takers are only able to provide short chunks of information at one time, not a continuous breathless clutter of words, it may reflect the method preferred by DHH students, thus decreasing the possibility of increases in anxiety throughout the listening exercises.

It is hoped that by answering these two research questions, a deeper understanding of the way language should be presented to DHH students when using closed captions, one that reflects the way English is uttered by native speakers, will be reached.

2. The Study

2.1 Study 1

The first RQ asks whether a passage presented visually in IPs is indeed more intelligible than a passage scrolling across a computer screen without IPs. In order to find an answer to this question, I conducted an online survey similar to that reported on by Sugito (1999), comparing a passage presented twice: with and without IPs.

2.1.1 Participants

A total of 60 examinees voluntarily participated in the survey. The survey was created using the free software Google Forms and included items asking whether the participants were native speakers of English and if they had any hearing impairments. The mother tongue of participants was asked in order to resolve whether any differences existed depending on their first language. Because I wanted to obtain the opinions of those without hearing impairments for this study, the data of those participants who indicated they had a hearing impairment (i.e., one) were removed from the analysis, resulting in data from 59 participants to be analyzed for this study. Of these

participants, 27 (i.e., 47.76%) were non-native speakers of English (NNS) and 32 (i.e., 52.24%) were native speakers of English (NS).

2.1.2 Procedure

In the survey, participants were shown a 78-word passage twice: once with the content scrolling across the screen, and once shown in IPs. Both passages lasted 35 seconds and were silent. Although not instructed to do so, participants were able to watch the videos multiple times if they wished. After watching the videos, participants were asked to indicate which they felt was easier to understand. Finally, participants were given an option to provide feedback regarding the reason for their choice of video. The survey took participants between two and three minutes to complete, depending on whether they added a comment or not.

2.1.3 Results and discussion

The first RQ in the present study asks whether a video presenting a passage in IPs is easier to comprehend than a video presenting a passage without pauses. As displayed in Table 1, four participants (i.e., 6.78%) indicated a passage without IPs to be easier to read, while 55 participants (i.e., 93.22%) elected the passage in IPs to be easier.

Table 1 Comparison of presentation style of passage

| Video Preference | All subjects | NS | NNS |
|------------------|--------------|----------|----------|
| | <i>N</i> | <i>N</i> | <i>N</i> |
| Without IP | 4 | 3 | 1 |
| In IP | 55* | 29* | 26* |

Note. * $p < .001$; IP: intonation phrases; NS: native speaker of English; NNS: non-native speaker of English.

Although the results quite obviously show a much higher preference for a passage with IPs, a non-parametric chi-squared test was conducted to see whether the video presenting a passage in IPs was statistically easier to understand than a video presenting the script scrolling across the screen. The results of the test were, as expected, significant, $\chi^2(1, N = 59) = 44.09, p < .001$. In a follow-up analysis, the responses of both NS and NNS were measured using a non-parametric chi-squared test. The results indicated that both NS, $\chi^2(1, N = 32) = 21.13, p < .001$, and NNS, $\chi^2(1, N = 27) = 23.15, p < .001$, found the passage in IPs to be statistically easier to follow.

In addition to statistical backing of whether passages presented in IPs were easier to understand than those without pauses, participants were given an option to comment on reasons for their choice of video. A total of 12 (i.e., 20.34%) participants made comments in the survey. All of these comments were made by those who had chosen the video presented in IPs. Table 2 shows a list of comments related to the choice of video made in the survey.

Table 2 List of comments related to the reasons behind participants' choice of video

| Video choice | NS or NNS | Comment |
|--------------|-----------|---|
| In IP | NS | Number 1 was far too fast to be read, so I couldn't answer any question about it. Number 2 was at first quite easy to read but became a bit difficult at the end. |
| In IP | NS | I could read number one, but I felt it would be bit fast for someone for who is learning English. For the second video it felt like the pauses were a bit unnatural, but that it went at a better pace. |
| In IP | NNS | I've got dizzy to read the first one (sic). When I read the second one, I felt like I was listening to a careful statement with a soft nice voice and felt like there were breaks between the sets of words in each pages (sic), but the first one (sic) I almost felt like someone is yelling at me with no pause. |
| In IP | NNS | Number 2 was easier to read because the sentences were cut into phrases. |

Note. IP: Intonation Phrases; NS: Native speaker of English; NNS: Non-native speaker of English; Number 1: Passage presented without IP; Number 2: Passage presented in IP.

Both the statistical data presented in Table 1, and qualitative data in Table 2, clearly show that, similar to the reactions of subjects in the study conducted by Sugito (1999), a passage presented without pauses, presented visually (or orally), does not allow enough opportunity for the reader (or listener) to cognitively process the inputted information and comprehend what has been read (or heard). The qualitative data provided in comments by participants in the study reinforces the necessity of IPs in order for language to be comprehensible. Similar opinions are held in other studies. Wells (2006), for example, suggests that although native speakers of English tend to make allowances for errors related to the sounds of English spoken by learners of the language, they are not, however, so forgiving on problems related to intonation, the point of language being focused upon in this study of a silent listening test. Likewise, Frazier, Carlson and Clifton (2006) argue that words must be joined together into phrases, almost musically, in order for language to be comprehensible. Frazier et al. (2006) continue, adding that this is not only essential in spoken communication, but is also apparent in silent reading, the method of testing listening proficiency in the present study. Such importance laid upon IPs from a theoretical viewpoint give weight to comments from participants in this study, both NS and NNS, that the passage presented without pauses was too fast to comprehend and caused the readers to feel dizzy.

From a pedagogical perspective, the inclusion of intonation markers allows teachers to demonstrate intonation patterns that are fitting for certain situations (Kelly, 2006), encouraging learners to realize that, as mentioned by the third participant's comments in Table 2, speech with IPs seems to be softer and friendlier, whereas utterances without breaks in speech appear to be full of anger and the listener feels he or she is being yelled at.

In sum, both the quantitative and qualitative data obtained in Study 1 suggest that a passage presented in IPs is indeed easier to understand than one presented without breaks. Furthermore, participants in the study commented on the difficulty of the passage without breaks, due to its seemingly high speed. This was true for both native and non-native speakers of English.

2.2 Study 2

The second RQ seeks an understanding of whether a passage presented in IPs results in lower anxiety in deaf and hard-of-hearing (DHH) students than a passage presented visually without pauses.

2.2.1 Participants

Five DHH students attending a university in northeast Japan voluntarily participated in the present study. There were two males and three females and their ages ranged from 19 to 24 ($M = 20.80$). Four participants were undergraduate students and one was studying in graduate school. The level of students' ability to hear varied from having moderate hearing loss at 58 decibels (dB) to having no hearing at all at more than 130dB.² Table 3 shows a description of the participants in this study.

Table 3 A description of the participants in the present study

| Participant | Gender | Age | Hearing ability | |
|---------------|--------|-----|-----------------|-----------|
| | | | Left ear | Right ear |
| Participant 1 | Male | 21 | 68dB | 58dB |
| Participant 2 | Male | 24 | 90dB | 110dB |
| Participant 3 | Female | 20 | 70dB | 100dB |
| Participant 4 | Female | 19 | 81dB | 82dB |
| Participant 5 | Female | 20 | 80dB | >130dB |

Note. dB: decibel.

2.2.2 Procedure

In order to gain an understanding of the degree of anxiety participants felt while reading the passages, the researcher conducted interviews in the participants' native language (i.e., Japanese), in which the participants were required to read English passages either displayed in IPs or without pauses. Before the interview began, all participants agreed to be video recorded during the interview and to wear a Polar RCX5 Heart Rate Monitor. This heart rate monitor was chosen, as it would provide second-by-second idiodynamic patterns in participants' heart rate during the interview. In recent research in second language learning motivation (e.g., Dörnyei, 2009; Dörnyei, MacIntyre & Henry, 2014), there has been a call for more dynamic approaches, even considering changes in a subject's levels of motivation and anxiety second-by-second. The method of using a heart rate monitor has proven to be an accurate indication of physiological reactions to being

frightened or surprised (MacGill, 2014) and a constantly changing anxious state (e.g., Gregerson, MacIntyre & Meza, 2014) and thus was used in this study.

The participants were given a choice of either the interviewer speaking directly to them, or using a speech-to-text application preinstalled in an iMac® computer, which would convert language spoken by the interviewer into text and read by the interviewee. All participants declined the speech-to-text option and were able to converse with little difficulty by a combination of sounds and lip reading. The interview began with participants being asked a few random questions in order to help them feel relaxed. Using a Keynote® presentation on a 27-inch iMac® computer, the participants were presented with six different colored spheres, each of which had a page link to one of three passages, which were displayed either in a scrolling no-pause style, or in appearing and disappearing IPs. All passages, regardless of the style they were presented in, took 24 seconds to complete. This time was chosen, as it was the average time for three native speakers to read each of the three passages at natural speed. Between each passage, participants were given approximately 20 seconds to prepare for the consequent passage. After the sixth passage, participants removed the heart rate monitor, which was immediately synchronized to the Polar Personal Trainer website, (see <https://www.polarpersonaltrainer.com> for further details). The website provided a line graph displaying changes in the participants' heart rate throughout the interview. Any spikes in the heart rate (i.e., a sudden increase of more than 10 beats per minute) were discussed with the participant while watching the recorded video of the interview to gain an understanding of the reason for the sudden increases. The increase of 10 beats was considered performance inhibiting, as a slight increase in nerves may not necessarily be detrimental for students (Xiao & Wong, 2014). The entire interview lasted approximately 25 minutes.

2.2.3 Results and discussion

Three main patterns emerged from the interviews with participants in the present study. First, Participants 1, 4 and 5 all displayed anxiety reading passages without pauses, both in an increase in heart rate when the passages were displaying on the computer screen and in the following questions, when they commented that they felt anxious about not being able to understand the content. Similar to the subjects in Sugito's (1999) study, participants explained that the text scrolling across the screen without pauses was too fast to comprehend. Figure 1 displays an example of this with the heart rate of Participant 1 increasing from 58 beats per minute (bpm) to 82bpm when faced with the first passage scrolling across the screen, two minutes into the interview. Although such a rise in bpm was not observed during the second scrolling passage at three minutes, a second spike was noticeable with the participant's heart rate increasing from 69bpm, to 88bpm at four minutes into the interview when Participant 1 was once again faced with a scrolling passage. Although some minor spikes were observed when passages appeared on the screen in IPs, such as at the 06:00 point in the heart rate graph of Participant 1 (Figure 1), the rise was not abrupt enough to be considered a substantial increase in the participant's anxiety.

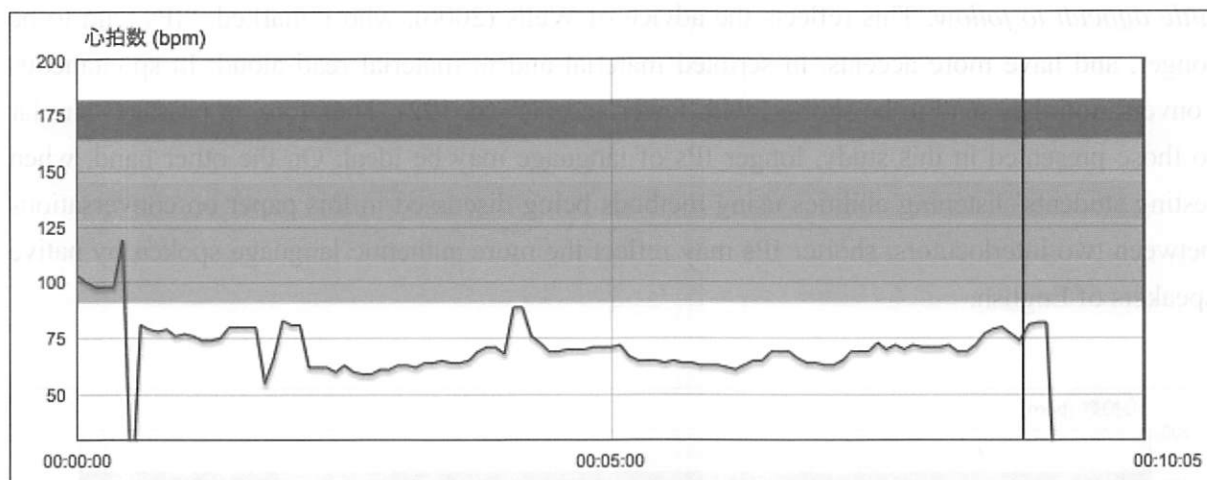


Figure 1. Changes in heart rate during the reading test with Participant 1. The vertical y-axis displays the average heart beats per minute. The horizontal x-axis shows the movement of time during the reading test. Participant 1 was presented with scrolling passages without pauses at the 02:00, 03:00, and 4:00 points in the reading test, and with passages presented in IPs at the 05:00, 06:00, and 07:00 points during the reading test. The reading test concluded at around 08:00, after which the heart rate monitor was removed.

In order to confirm the rise in heart rate bpm was due to the participant’s anxiety rather than some other emotion, immediately after the reading tests concluded, the heart rate monitor was synchronized to a computer and the participants were asked to speculate on reasons for the spikes in their heart rate while also watching the video of the completed readings tests. Once again, a common theme of concerns with pace and inability to comprehend the content appeared in participants’ explanations for increases in their heart rate: *I felt really anxious, because I could not work out the answer* (Participant 1); *I found it difficult, almost impossible, to put the information in my mind* (Participant 4); *I had no idea from the beginning, so just gave up* (Participant 5). Physical signs of anxiety were also visible when, for example, Participant 4 leaned forward and squinted her eyes when faced with a scrolling text. On the other hand, when presented with a text in IPs, she leaned back in her chair, with a more relaxed expression on her face.

At the end of the reading test, when asked whether participants would rather the scrolling text without pauses or the passage presented in IPs in a classroom or proficiency test, both Participant 1 and Participant 5 expressed a preference for the latter, explaining: *It seemed slower and easier to understand* (Participant 1) and *The scrolling method is too quick* (Participant 5). Participant 4, on the other hand, indicated a preference for the scrolling method despite both outer and inner displays of anxiety (i.e., physical expressions of confusion, inability to comprehend the text and increases in heart rate during the scrolling passages). She did, however explain her preference as one due to experience with the scrolling method: *I am used to this way, so I think I like it better. However, if I got used to the appearing disappearing way, I may come to prefer it.*

An interesting comment from Participant 5 came when she suggested that *having chunks of language is better, but if they become too short, like one or two words, the passage can become a*

little difficult to follow. This reflects the advice of Wells (2006), who remarked, “IPs tend to be longer, and have more accents, in scripted material and in material read aloud. In spontaneous conversation they tend to be shorter, with fewer accents” (p. 192). Therefore, in passages similar to those presented in this study, longer IPs of language may be ideal. On the other hand, when testing students’ listening abilities using methods being discussed in this paper on conversations between two interlocutors, shorter IPs may reflect the more authentic language spoken by native speakers of English.

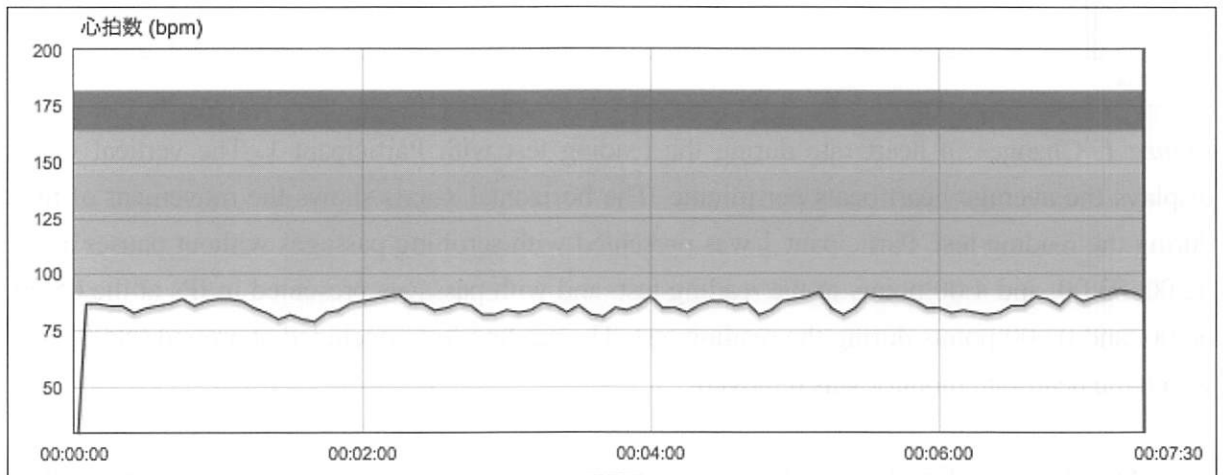


Figure 2. Changes in heart rate during the reading test with Participant 2. Participant 2 was presented with scrolling passages without pauses at the 01:30, 03:30, and 05:30 points in the reading test, and with passages presented in IPs at the 02:30, 04:30, and 06:30 points during the reading test. The reading test concluded at around 07:30, after which the heart rate monitor was removed.

A second pattern observed in the interview was one that was relatively static (see Figure 2). This steady state, without any significant spikes or dips in heart rate bpm, was also observed in a study measuring participants’ levels of anxiety in an interview situation (MacIntyre & Serroul, 2014). This may have been due to a number of reasons, such as his being more mature than other participants, or simply he may have had a calm personality. Another possibility is that the participant arrived approximately 10 minutes late for the interview. When he arrived at the interview room, he was quite out of breath. Despite efforts by the interviewer to help the participant to relax (e.g., drinking tea and having a casual conversation), the average heart rate bpm remained relatively high (i.e., 87bpm) throughout the entire interview. In a more relaxed state, spikes and dips in the participant’s heart rate bpm may have been more salient. The deeper reasons for the relatively calm reaction of the participant are, however, beyond the scope of this study.

During two passages without IPs, a gradual rise lasting 45 seconds from 77bpm to 90bpm at the 01:40 stage of the interview and a sudden dip and spike from 91bpm to 82bpm and back to 90bpm starting at the 05:10 stage were observable. However, according to the regulations designated by the author prior to the interviews, these were not large enough to be considered

significant shifts in the participant's anxiety levels. It is worth mentioning, however, that both of these increases in heart rate bpm were during the same scrolling passages causing rises in participants' anxiety in the previous section of this paper: one about Australian football, and the other about the *katakuri* flower (i.e., Fawn Lily). The passage that did not result in any statistically measurable changes in anxiety included the word *Japan* early, which may have made the interviewee feel more comfortable about the passage he or she was about to read.

Despite there being no significant spikes or dips in Participant 2's heart rate bpm, after the interview, the researcher did ask his opinion related to the two styles of presenting a passage. Similar to the feedback presented by the participants previously discussed in this paper, Participant 2 also showed a preference for passages with IPs: *The scrolling way was too fast and difficult to understand; The short pauses helped to make those passages easier to understand.*

The final pattern observed in this study presents a rather roller-coaster-type of heart rate bpm with several dips and spikes appearing throughout the interview (see Figure 3). The most salient spikes are from 65bpm to 79bpm at the 03:45 mark, when the participant is asked to read a passage about the *katakuri* flower presented in a scrolling fashion and again from 67bpm to 81bpm at the 08:10 mark when she is presented with the same passage in IPs.

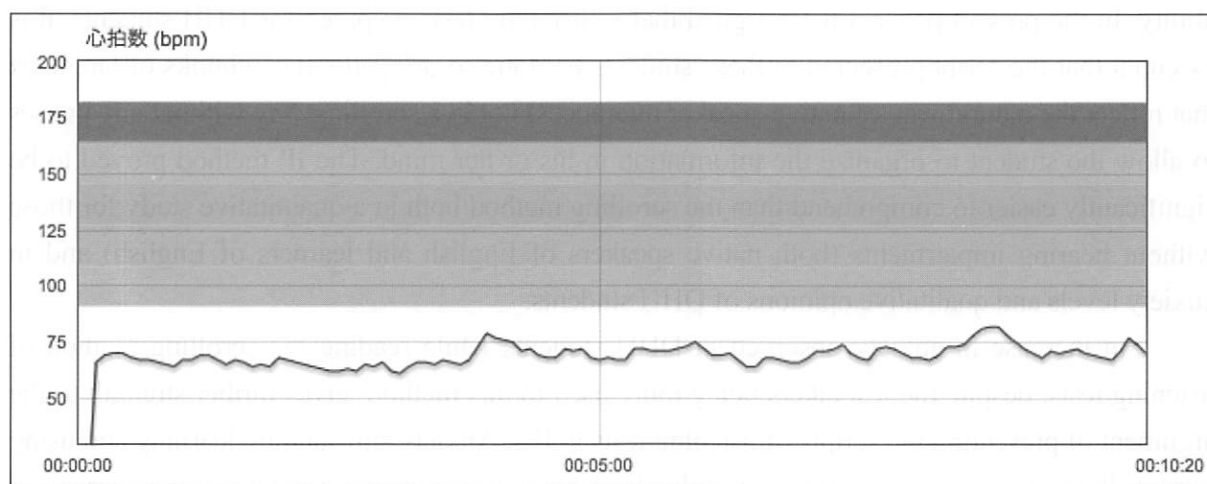


Figure 3. Changes in heart rate during the reading test with Participant 3. Participant 3 was presented with scrolling passages without pauses at the 03:40, 05:45, and 06:50 points in the reading test, and with passages presented in IPs at the 02:30, 04:40, and 08:00 points during the reading test. The reading test concluded at around 09:00, after which the heart rate monitor was removed.

The inconsistency of heart rate bpm that had not been seen in the other patterns make it difficult for any conclusions to be met based simply on these figures. When asked to compare the passages presented in IPs and those without pauses, especially the *katakuri* passage, Participant 3 showed a preference for the scrolling style, saying *the passages without pauses are easier to read, and it is hard to understand the appearing and disappearing style because it is difficult to join the meaning of the short phrases.* Again, as mentioned by Participant 5 and commented on earlier in this paper, due to the scripted-style of passage used in this study, it may have been a better

reflection of the natural rhythm of English if IPs had been presented in longer chunks, rather than the shorter ones used. Participant 3 did add, however, *the passages without pauses are still difficult to read. If you miss one word, you cannot catch up and guess what the story is about.*

4. Conclusion

Creating an EFL environment that reflects the nature of language produced by native speakers of English in a natural setting is a constant challenge for instructors. When it comes to testing, in particular providing listening tests for those who have hearing impairments, it can be especially difficult. However, authenticity in listening context, notably in testing, is at the core of success or failure to improve the language ability of students, and there have been calls for more than half a century when Carroll (1961) called for “less attention paid to specific structure-points or lexicon than to the total communicative effect of an utterance” (p. 37). Bachman (1990) appeals for language tests to be created that “mirror the ‘reality’ of non-language use” (p. 301). McKay (2006) even goes as far as to suggest listening tests should include background noise or music and hesitation in speech in order to create a more purely authentic indication of students’ listening ability. In the present paper, I have argued that in listening tests prepared for DHH students, it is essential that the script presented to these students be done so using IPs (i.e., chunks of language that reflect the natural way of native-speaker utterances) not in a scrolling way without any pauses, to allow the student to organize the information in his or her mind. The IP method proved to be significantly easier to comprehend than the scrolling method both in a quantitative study for those without hearing impairments (both native speakers of English and learners of English) and in anxiety levels and qualitative opinions of DHH students.

An increase in anxiety observed in DHH students while reading the scrolling method of listening tests, despite the test takers being more used to this method, gives further strength to the argument of presenting the scripts of listening tests in IPs. Anxiety surrounding learning and using foreign languages has proven to be an Achilles heel for many students, causing them to freeze or their minds to go blank despite their knowing the answers to items they are being tested on (MacIntyre & Gardner, 1994). Several studies (e.g., Horwitz, 1988; Onwuegbuzie, Bailey, & Daley, 1999; and Gregersen & Horwitz, 2002) discuss the hardships and resulting poor performance that students experience when their anxiety levels increase. In the present study, a trend was observable in which the heart rate, a previously proven reliable indication of anxiety, of students reading a listening test script presented in IPs only rose significantly enough to be considered a sign of anxiety once in fifteen passages (i.e., three IP passages presented to five students), whereas passages without pauses scrolling across the screen saw significant increases almost half of the time (i.e., seven times out of 15 passages). These dynamic patterns of anxiety observed during the interviews conducted and reported upon in this study reveal the possibilities of underperformance that may occur in DHH students due to a listening test script being presented in a scrolling fashion without cognitively required pauses.

The results of the present study also provide guidelines for how closed captions used in flipped classroom videos can be presented to improve comprehension of content not only for DHH students, but for students with full hearing as well. The flipped classroom, a method in which lesson content usually explained to students in the classroom is instead presented in video format via media-sharing websites such as YouTube allowing classroom time to be used to provide more individual instruction has been suggested by the author as a more effective way of increasing students' efforts to study as well as their language proficiency (Leis, 2015). When this method was used in an English composition class for university students studying English as a foreign language, which included DHH students, all students expressed satisfaction with this approach to teaching (Leis, 2014). Further research is required to deepen the understanding of this method and its benefits for DHH students, especially those studying in an EFL environment.

With a stronger call for equal opportunities in education to be given to all students, regardless of any disability they may have, it is imperative for language instructors to search for teaching methods that will create a classroom environment in which every student is provided with the same, or as similar as possible, standards of teaching. In the case of DHH students, it may be, admittedly, difficult to conduct the same listening tests as those for students without hearing impairments. However, with the use of technology, presenting passages in IPs, timing longer chunks of language for speech-style material and shorter chunks for conversations to reflect the speed and rhythm of the natural speech of native speakers of English, makes it possible for such students to experience the same kind of listening tests and practice as his or her peers. The use of IPs in closed captions not only reflects the natural way English is uttered by native speakers, but also reduces the anxiety DHH students feel when taking listening tests, enabling them to perform to their full potential. It is essential, therefore, to make use of such IP-presented passages for DHH students, in order for language instructors in an EFL environment to create authentic materials, thus enabling every student under their wing to fly high in their language learning experience.

Notes

1. An Intonation Phrase is designated by Nespor and Vogel (1986) and others as one the prosodic categories.
2. The degree of a human's hearing loss can be described in decibels (dB). According to the American Speech-Language-Hearing Association, hearing from -10dB to 15dB is described as normal, hearing loss from 16dB to 25dB as slight, 25dB to 40dB as mild, 41dB to 55dB as moderate, 56dB to 70dB as moderately severe, 71dB to 90dB as severe and more than 91dB as profound (2014). Similar classifications are also presented in Japan, with 25dB to 50dB being described as slight, 50dB to 70dB as moderate, 70dB to 100dB as severe and more than 100dB as profound (Miyagi University of Education Disability Support Center, 2014). Further details regarding hearing impairments can also be found at the PEPNet-Japan website: <http://www.a.tsukuba-tech.ac.jp/ce/xoops/>.

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 - Leave margins of 1 inch (2.5cm) on all sides of every page. There are 40 lines to a page.
 - Use 12-point Times New Roman.
 - References

<Examples>

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Other Languages. (ERIC Document Reproduction Service No. ED 411680) .

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VandenBos, G., Knapp, S., & Doe, J. (2001). Role of reference elements in the selection of resources by psychology undergraduates [Electronic version]. *Journal of Bibliographic Research*, 5, 117-123.

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3. 英文 200 語以内の abstract を添える。
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The abstract should provide the reader with a brief preview of your study based on information from the other sections of the article. All abbreviations and acronyms need to be defined. Every sentence should be clear and informative. An abstract should be brief and not exceed 200 words.

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Key words: autonomy, critical thinking, learning style, motivation, teacher education

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1. Introduction (Language Policy)

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The introduction presents the problem being investigated and describes the research approach. When writing the introduction, the background to the study has to be described. While relevant literature should be presented, this does not need to be an exhaustive historical review. The intention is to show a logical continuity between earlier and current work. If controversial issues are included, this should be done fairly. The introduction should describe the purpose and rationale of the study. Once the research topic and related literature have been presented, this is then followed by an explanation of the research approach used to solve the problem.

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2. Method

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The purpose of the Method section is to describe how the study was done. Furthermore, the description should enable readers to determine the reliability and validity of the results obtained, as well as to replicate the study if necessary. This section is generally divided into labeled subsections, which usually describe the participants or subjects, the materials, and the procedure.

(Space)

1.1. Participants

The APA manual (2001) emphasizes that a description of the research subjects is needed so that the results can be evaluated and comparisons be made. The sample should be representative.

(Space)

1.2. Procedure

The subsection on procedure should summarize each stage of the research project.

(Space)

3. Results

(Space)

The data collected should be summarized in the Results section. A description of the data should provide enough detail to warrant the conclusions.

(Space)

3.1 Tables and figures

When describing the data, it is important to use the most appropriate medium to display the information clearly and economically. Summarizing the results and the analysis in tables or figures is generally preferable.

(Space)

Table 1. Correlations between the language and xxxxxx

| Case | Sub-item 1 | Sub-item 2 | Sub-item 3 | Sub-item 4 |
|-----------|------------|------------|------------|------------|
| 1 | 1 | 3 | 4 | 2 |
| 2 | 1 | 3 | 4 | 2 |
| 3 | 2 | 3 | 4 | 1 |
| 4 | 2 | 3 | 4 | 1 |
| Mean rank | 1.9 | 3.1 | 3.5 | 2 |

(Space)

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(Space)

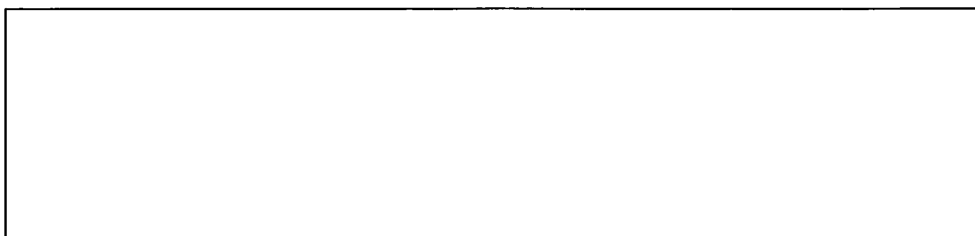


Figure 1. Comparison of English proficiency

(Space)

4. Discussion

(Space)

Once the results have been presented, these are then discussed in detail, particularly with reference to the original research hypothesis. The Discussion section should begin with a clear statement of support or nonsupport for the original hypothesis. It should also highlight the importance of the findings.

(Space)

5. Conclusion

(Space)

You are encouraged to conclude your paper with commentary on the importance of your findings. This section also describes the limitations of the study and provides suggestions for further research.

(Space)

References

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Anderson, J.R. (1985). *Cognitive psychology and its implications*. New York: W.H. Freeman.

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Appendix

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