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The Effects of Transcription Exercises on Complexity, Accuracy, and Fluency

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Introduction

This report contains a description of an instructional intervention to improve the speaking ability of a participant attending weekly lessons at his company's offices. The intention was to raise awareness of speaking errors, which would lead to greater use of self-monitoring. This in turn would lead to more frequent self-correction. Complexity, accuracy, and fluency were assessed in order to evaluate whether the intervention had any effects.

In the literature review, I examine literature relevant to the present study. Following this, the methods section reviews the context, participant, activities, and data collection and analysis involved. The results and discussion sections then provide the data that was collected along with an interpretation of the results seen in the study.

Literature Review

In this section, an overview of the literature is provided that influenced the design of the present study. Research is also examined that included elements similar to those found in the present study. Based on the literature, a hypothesis was formed regarding the expected outcome of the educational intervention.

As a foundation for helping students to improve their speaking ability, Swain's (2005) output hypothesis influenced the design of the current study. Swain stated that for learners to improve their spoken or written output, they had to be pushed to engage in these sorts of activities. By being required to engage in output that is just beyond the learner's level of competence, it will lead to further development. In addition, Swain emphasized output as an integral part of the learning process. The noticing function is the claim that by engaging in output, learners will notice gaps in their knowledge, which refers to the inability to express themselves adequately with the current knowledge they possess. Additionally, Swain's theory incorporates the metalinguistic function. This is the idea that using language to reflect on the language produced by oneself or others can aid second language learning.

In his paper, Ellis (2009) reviewed the use of planning in task cycles in language classes. The effects on proficiency were described and although not a panacea, a number of benefits were observed. Among these were raised awareness by students and the attendant focus on form. Although transcribing a recording of one's speech does not fall under the category of planning, it could be argued that similar

benefits to planning could be derived. By having students look back on their utterances and then make corrections, it might alert them to recurring errors in their speech and increase the desire to speak with greater accuracy. Learners might also become aware of the repeated use only of very simplistic sentence patterns, which could encourage them to increase the complexity of their oral output.

Within spoken output, there are a number of features that can be focused on. However, speech much first be broken into manageable parts in order to perform an analysis. The unit adopted by Foster, Tonkyn, and Wigglesworth (2000) is the AS-unit. It allows researchers to observe online planning, as pauses often indicate syntactic boundaries. However, the AS-unit is flexible enough to account for multi-clause units, as speakers might also plan these, which can be an important indication of a speaker's proficiency. Indeed, as learners improve in proficiency, they typically produce a greater number of AS-units with more than one clause.

Once the goal of improving a student's speaking ability through the use of speaking activities has been set, it becomes necessary to determine how exactly such improvement can be measured. Ellis and Barkhuizen (2005) provide a clear overview of the distinct aspects of speaking which can be measured. The three aspects described are accuracy, complexity, and fluency. Certainly, more than one aspect can be targeted, and it is typically desirable for a learner to improve in all three areas, but the authors make clear that development can occur in one or two while the other area or areas do not. The distinct ways in which these aspects of speech have been evaluated by various researchers is also described in the report.

Of particular significance to the present study was the research performed by Foster and Skehan (2013). In that study, participants were required to transcribe their output after a task and note any mistakes. The following week, the students engaged in a different speaking task with the same partner from the previous week. Accuracy increased along with complexity. However, no effect was found on fluency. It was argued that attention allocation was affected by the participants' anticipation of the post-task activity.

Another study with even more direct relevance was the one by Qian (2014). That study was carried out to determine the effects of post-task transcription activities on spoken performance. A total of eighty participants, who were Chinese second-year university students, were divided into four experimental groups and one control group. The experimental groups each performed one type of post-task activity with a one-week interval between the tasks. These were individual or paired transcribing that involved either producing just a transcription or transcriptions along with revisions. Performance on the tasks was evaluated according to complexity, accuracy, and lexical performance. The finding was that transcribing produced more accurate and complex language, with paired transcribing also increasing the amount of syntactic complexity. Revision had the effect of improving accuracy but decreasing complexity.

The above studies provide the background for and examples of the use of transcription exercises to help learners improve their oral output. However, the context and participant in this study are completely different from those in the reviewed literature. Although the study by Qian (2014) will be used as the basis for my own study, there are some notable differences. First of all, it is not possible to include any paired transcribing activities as my own lessons are in a one-on-one context. Also, although Qian found that revision led to increased accuracy along with decreased complexity, this study differs in that a second round of revision will occur that is led by the teacher. Therefore, the following hypothesis is proposed: Transcribing spoken output followed by two rounds of revision, the first done individually with the second led by the teacher, will lead to increased accuracy and complexity in oral production, but the effect on fluency will be minimal or nonexistent. This hypothesis differs from Qian's findings with the belief that having a teacher help revise a transcription will not lead to reduced complexity due to a greater focus on accuracy, and that the teacher can help direct the student's attention to the more complex forms contained within the revised transcription.

The aim of this study is to add to the literature on the use of transcribing and revision to help learners improve their spoken output. At present, little research exists regarding this approach to speaking pedagogy.

Methods

This section contains an explanation of how the study was conducted. Firstly, the context is given. Often the context of a course has a major impact on the results seen when an intervention is attempted to improve a particular aspect of a learner's language ability. Next, information about the participant himself is provided. By providing insights into his language needs and motivations, it might help to account for the success or failure of the intervention in question. Following this, an explanation of the learning activities is provided to show what activities the participant was engaged in to improve his language proficiency. The final two sub-sections are data collection and analysis. These explain the kinds of data that were collected and how they were analyzed.

Teaching Context

These lessons take place at a company's offices in Osaka immediately after working hours. Employees can freely sign up each week for a 30-minute one-on-one lesson that the company pays for. Although attendance is not always regular, a specific group of students are the only ones who show up for lessons. I had originally been substituting for another teacher on a periodic basis over the course of more than a year, which then increased in frequency to approximately once a month for about three or four months. At that point, the classes were offered to me on a weekly basis, and I became the regular teacher. This occurred a few weeks before this study commenced.

There is no set curriculum for these lessons. Therefore, with the intermediate-level students, I decided to continue the format of the lessons they had been following for more than a year. The students would bring in materials, typically a news article they had found online, and we would discuss the contents and related topics, and the students could ask questions about vocabulary or other features which were unclear. The beginner-level and pre-intermediate students had started coming to lessons only about two months prior, and I felt the TOEIC preparation materials they were using did not match up with their needs, so I decided to use textbooks at two different levels that covered the four skills of speaking, listening, reading, and writing. I received approval from the students before these changes were made.

Participant

The participant in this study was a 62-year-old Japanese man. He was at an intermediate proficiency level when the study was conducted. Mr. Ito (a pseudonym) is working for a company which produces parts for automobiles. He was required to retire when he was 60 due to the company's policy regarding set retirement ages for its employees. However, he decided to continue working on a more limited contract, as is allowable at many companies in Japan.

He does not use English at work; rather, he is personally motivated to improve his English-speaking skills. He enjoys travel and has been to many different countries. Furthermore, he has expressed the desire to continue traveling when he finishes his current working agreement with his company at the age of 65. One of his daughters is planning on going on a working holiday in Australia this year, which suggests that Mr. Ito might have stressed the importance of English to his family.

The participant regularly attends lessons and has shown an enthusiasm for improving his English. He often asks questions about the reading materials he brings in or about language features that he is curious about. In addition, our warm-up chats often lead to the teaching of vocabulary or a grammatical feature that he would like clarification for.

Unfortunately, Mr. Ito does not have opportunities to practice speaking in English outside of class. This means that his practice time is limited to only 30 minutes per week. Additionally, he seems resistant to reading articles from BreakingNewsEnglish.com, a website that I have recommended in part because of the audio recordings which can be accessed with all of the news articles. Despite encouraging him to use

this website several times, he continues to bring in articles from a different website which are very compact and vocabulary dense, making them difficult to comprehend at times.

Learning Activities

The activities chosen for this study were either already being used in the regular lessons or were directly related to them. That is, for homework Mr. Ito would find an article online and read it. He would then bring it to the lesson, and he could ask me about any difficult vocabulary, sentences, or discourse features. Then, he would summarize it for me and make a recording using his smartphone. At this point, we would discuss the article and any related topics that came up.

Before the next lesson, Mr. Ito listened to the recording of his summary, and then transcribed the first minute. He would then study his transcription and correct any mistakes he noticed. In the following lesson, he would bring his transcription to class and I would look at it and offer a few additional corrections. He also brought in a new article so that we could repeat this cycle. This means that after the first treatment session, he would be both studying corrections from an article he had summarized the previous week and summarizing a new article he had brought to the lesson that day.

Data Collection

Data was collected at three times. The pre-treatment collection involved telling the participant at the beginning of the day's lesson that a recording of him would be made while he spoke for approximately five minutes about his job. I informed him that the recording would be used to help measure his improvement in speaking over time. It was explained that the talk could include any aspect of his work including his job duties, his coworkers and bosses, and the company itself. Mr. Ito was informed that he would be given three minutes to prepare and that he could write some notes to help him, but that he would not be allowed to use the notes while speaking. I used my own voice recorder to make the recording, and at the conclusion of his monologue, we used the remaining lesson time to discuss some of the information he had provided. However, no feedback was given on the appropriateness or accuracy of the contents of the speech that was recorded.

Later, post-treatment data was collected twice. The first instance was immediately after the treatment sessions. Approximately one and a half months after the pre-treatment data collection, Mr. Ito was informed at the start of the lesson that another recording of him was going to be made. He was told that I after I had analyzed the recording, I would provide some feedback. Repeating the format of the pre-treatment recording, he was told that he would be speaking for five minutes about his job, and that he would have three minutes to prepare and write some notes if he wished, but that he would be unable to use these notes once he began speaking. Once more, I made a recording using my voice recorder.

Post-treatment data was then collected a second time, the week following the first post-treatment data collection. Once again, Mr. Ito was informed at the beginning of the lesson that he would be speaking about a topic for five minutes and would be recorded. This time, though, the topic was things he enjoys doing in his free time, which was explained as weekends and the time before and after work. He was informed that he was free to talk about hobbies or any other activities that he enjoyed. He then confirmed that free time meant anytime that he does not have to work and then began to prepare for three minutes. Once again, I recorded him with my voice recorder.

Analysis

From the recordings taken prior to the treatment sessions and after their conclusion, a one-minute section was transcribed and analyzed. Specifically, the section from 1:00 until 2:00 was examined. The reason for this was to use samples which were consistent across the recordings that provided examples of the participant performing at his best. Had the section used been at the very beginning of the recording,

then it might have included more pauses and filled pauses as he was finding the words to begin his monologue. Similarly, there could have been more disfluencies if the section analyzed had come later in the recording as he searched for additional details to provide.

Mr. Ito's speech was analyzed in order to determine whether complexity, accuracy, and fluency had changed as a result of the treatment sessions. Two types of complexity were examined, grammatical and lexical, in order to provide more comprehensive insights into whether this aspect of speech had been affected. To determine the amount of grammatical complexity, the number of clauses per AS-unit was calculated. For lexical complexity, the type-token ratio was calculated using Vocabprofile (Cobb, 2017), which is based on the programs developed by Heatley, Nation, and Coxhead (2002). Both of these measures are in line with assessment measurements presented by Ellis and Barkhuizen (2005).

As for accuracy, the measure used was the number of words per error, in line with one of the measures used by Tonkyn (2012), and all types of grammatical, syntactical, and word choice errors were included. Finally, to determine fluency, the speech rate, i.e., the number of syllables spoken per minute was tallied. This was one of the measures of fluency listed by Segalowitz (2010).

Results

In this section, I explain the results obtained from the analyses described in the above section. The table

TABLE 1
Results of Pre-Treatment and Post-treatment Analysis

Speaking Feature	Pre-treatment	Post-treatment 1	Post-treatment 2
Clauses per AS-unit	1.1	1.43	1.5
Type-token ratio	0.61	0.61	0.60
Words per error	6.18	4.92	6.56
Syllables per minute	99	87	77

provides a summary of the data obtained. The following will feature a description of the notable figures.

As seen in the table, the number of clauses per AS-unit in the post-treatment recordings increased significantly compared to the pre-treatment monologue. In contrast, the type-token ratio was stable, and the only change observed was the very slight drop by 0.01 in Post-treatment 2. Words per error did not differ much between the Pre-treatment and Post-treatment 2 recordings, though this ratio dropped by more than one word in Post-treatment 1. Lastly, syllables per minute dropped in Post-treatment 1 and then decreased again in Post-treatment 2.

Discussion

In this section, an explanation of the results is provided. An interpretation is provided followed by an examination of the study's hypothesis. At the end of this section, the limits of the present study will be described.

Findings

Complexity, as measured by clauses per AS-unit, increased markedly in the two post-treatment recordings, while the type-token ratio remained stable. The finding regarding clauses per AS-unit is in line with the findings by Qian (2014). This provides further evidence for the use of transcribing exercises to increase the amount of syntactic complexity used in learners' oral output. However, the results found in this study concerning lexical complexity were similar to Qian's, where lexical diversity did not

significantly change between the two performances. Lexical sophistication did improve in that study, although this feature was not considered in the present research.

It seems reasonable to suppose that when learners reflect on a transcription composed primarily of short utterances, they might make an effort to link more clauses into longer sentences in subsequent speaking opportunities. On the other hand, the use of lexis depends greatly on the topic being discussed, and although focused vocabulary study might be undertaken, the newly learned words might not apply to a given speaking task.

There was no noticeable improvement in the ratio between words and the number of errors. In the first post-treatment recording, this ratio actually worsened, but then improved in the second post-treatment recording. This can be contrasted with Qian's (2014) results, which showed clear improvement among the experimental groups. To account for the somewhat puzzling result seen in the first post-treatment recording, it is necessary to consider the contents of that monologue. Although it was the same topic as the pre-treatment recording, his job, Mr. Ito decided to discuss very different aspects of it. The first time he discussed his work, the details generally pertained to his own time at the company and some of his routines. In contrast, in the second monologue he spent the time that was included in the transcription talking about his immediate supervisor and the section head. This could explain the seeming discrepancy observed in the data.

Lastly, the measure of fluency used, the speech rate, indicated that there was a sharp drop-off in the number of syllables uttered per minute. An argument could be made based on the observed clear increase in syntactic complexity and the possible increase in accuracy that the participant's attention was focused on these two aspects of speech, so therefore he could not also attend to fluency. Foster and Skehan (2013) explain that working memory and attentional resources are limited, so focusing attention in one area might lead to adverse performance in another. Perhaps that is what is at work upon considering the divergences in the data.

Therefore, the study's hypothesis, *transcribing spoken output followed by two rounds of revision, the first done individually with the second led by the teacher, will lead to increased accuracy and complexity in oral production, but the effect on fluency will be minimal or nonexistent*, is only partially confirmed. Complexity increased while accuracy did not. In addition, there was an effect on fluency. However, this effect was a decrease in fluency across performances.

Limitations

This study has a number of limitations. The first is that it involved only one participant. Certainly, this restricts the generalizability of any of the findings to other learners. In addition, this study occurred in a particular teaching context which is quite different from a typical classroom lesson. In the lessons described in this study, learners are free to attend based on their availability and there is no set assessment. Students can largely decide on their own what materials will be used and what the learning goals should be.

Additionally, only three recordings were made over the course of a month and a half. A longer study might have yielded different results. Finally, after sections of the recordings were transcribed, four measures were used to determine the complexity, accuracy, and fluency of the speech. Other measurements might have provided additional details, thus providing better insight into the performance in question.

Conclusion

This report is a study of the use of transcribing exercises followed by revision and the effects these have on the complexity, accuracy, and fluency of a language learner's oral output. It included a review of literature relevant to the study and provided the rationale. This was followed by descriptions of the

methods used including the context, participant, activities used, and the data collected along with an analysis. The results section included the measurements taken, and lastly, the discussion section provided an explanation of the findings and described the limitations of the study.

It is hoped that this study helped to fill a gap in the literature on the use of transcribing activities to improve aspects of learners' speech. The transcriptions made of the participant's monologues in this study could be used for further analysis using other measures, or the transcriptions could be expanded by including longer sections of the recordings. Further research in this area could also include longitudinal studies.

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