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### Supporting Extensive Listening with Mobile Technologies

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#### Introduction

Listening is an essential yet overlooked dimension in foreign language (FL) acquisition (Feyten, 1991). According to Stephens (2010), L1 speakers receive literacy skills training only after they have established a foundation of auditory-oral skills, whereas FL learners are disadvantaged because four language skills are often introduced at the same time. To compound the problem, in the researcher's teaching context, *viz.* Taiwan, English is taught as a foreign language, with little exposure outside the classroom; and school curricula have been plagued by the washback effect of nationwide entrance exams because only reading and writing skills are tested, all of which rendering unfavorable conditions for developing auditory-oral competence. Even though listening behavior is not visible, listening fluency entails learners' capability of regulating mental processes easefully to comprehend and/or to respond to what is heard (Rost, 2014). To develop learners' listening fluency and sustain their motivation in EFL listening, this study set off to investigate the effects of using digital audiobooks augmented with varying forms of support on EFL learners' listening fluency.

Extensive listening has received fresh attention in the past decade. Renandya and Farrell (2011) define extensive listening (EL) as the activities that provide learners with abundant comprehensible and enjoyable listening input. EL can take widely varying forms, ranging from self-directed pleasure listening outside the classroom to teacher-led listening exercises, provided that there is ample comprehensible listening input over a sustained period of time. Rost (2011) argues that the key to developing listening fluency is constant practice and abundant input over time. As promising as EL may seem, there has been little empirical evidence on the efficacy of EL on developing listening proficiency. Gobel and Kano (2014) showed that reading-while-listening (RWL) had a significant effect on reading rate and vocabulary recognition, but the positive effect did not carry over to general English proficiency (as measured by the Test of English as a Foreign Language, TOEFL). Chang and Millett (2014) confirmed that simultaneous listening and reading was more effective in enhancing listening fluency than reading-only or listening-only input modes; they nonetheless stressed that follow-up exclusive training on listening skills is still necessary lest learners rely solely on written input. Jones and Plass (2002) found that L1-English learners of French recalled the listening materials better when listening was supported by both written and pictorial annotations, compared with either annotation alone or no annotations.

## Method

### Participants

The study used a convenience sampling of three intact classes as part of a compulsory Freshmen English course at a Taiwanese university. This course consisted of a listening module, a speaking module, and a reading and writing module, each taking one to two contact hour(s) per week. It is to be acknowledged that this study is part of an action research project looking into the efficacy of mobile technologies on the four language skills; this paper only reports on the listening performance. A total of 112 EFL undergraduates participated in the study. Learner proficiency was at the B1 level on the Common European Framework of Reference for Languages (as measured by the Test of English for International Communication, TOEIC, as their placement test). English proficiency as one of the graduation requirements is a common practice in Taiwanese tertiary education.

The three classes were randomly assigned into one of the three input modes and received that particular mode of pedagogical mediation throughout the semester. The input modes are as follows:

- (1) Listening to audiobooks only (AO group): using school-owned tablet computers, learners listened to digital audiobooks without accompanying written texts.
- (2) Listening to audiobooks with matching electronic books (AE group): using the same tablet computers, learners listened to digital audiobooks while reading the electronic version of the audiobooks. Amazon audiobooks and e-books can be synchronized to allow simultaneous listening and reading.
- (3) Listening to audiobooks with matching electronic books augmented with real-time highlighting (AEH group): learners listened to audiobooks while reading the electronic version of the audiobooks. In addition, Amazon provides 'Immersion Reading' function, which highlights the text in an e-book as it is being played as an audiobook. Also using school-owned tablets, this group listened to audiobooks as they read accompanying texts on e-books, with the real-time highlighting feature switched on.

### The Pedagogical Mediation

The pedagogical mediation was implemented in a compulsory English listening module which had two contact hours per week for 18 weeks. The three intact classes were randomly assigned into one of the three input modes. In each weekly session the instructor would begin with a review of the segments covered in the previous week, followed by distributing worksheets and allowing five minutes to preview the glossary and guiding questions on the worksheets. Having ensured the students' readiness to proceed, the instructor would then ask students to play the designated segment on their tablets. Each designated segment lasted for approximately ten minutes. The instructor would signal students to pause for intervals, so as to provide answers to the questions, check students' comprehension, or make clarifications if necessary. Such regular intervals not only provided scaffolding but also prevented learners' fatigue from incessant listening input. All three classes received the same pedagogical mediation outlined above, but with varying forms of support. The pedagogical mediation persisted for 15 weeks, covering two digital audiobooks.

### Listening Materials and Guiding Questions

Two digital audiobooks on public speaking skills were selected to be the study materials for this course: *The presentation secrets of Steve Jobs: How to be insanely great in front of any audience* (Gallo, 2009) and *The storyteller's secret: From TED speakers to business legends, why some ideas catch on and others*

*don't* (Gallo, 2016). The print length for the former is 272 pages and listening length is 257 minutes, while the latter has 289 pages and a 494-minute listening length. The selected audiobooks are neither commercial textbooks geared towards listening skills training, nor simplified authentic materials, such as graded readers. The rationale for choosing these audiobooks is twofold: (1) the topic of public speaking skills is compatible with the learners' needs as giving an oral presentation in English is part of the requirements for their speaking module in the same course, but the speaking performance is beyond the scope of this paper and will be discussed elsewhere; (2) practical guides such as these audiobooks are expository in nature, and thus have a clear structure starting with the exposition of ideas, followed by examples to support the idea, and/or step-by-step procedures to achieve the stated objectives. The exposition discourse helps to ease beginning listeners into authentic audiobooks, as compared to more literary texts.

Before each session, students would be given a worksheet containing a glossary and guiding questions, in order to help them predict and contextualize the listening materials. For example,

Which is NOT mentioned as one of the functions of a story:

- (A) To illuminate
- (B) To illustrate
- (C) To inform
- (D) To inspire

The guiding questions were ordered with the flow of the narration. The participants were asked to answer the questions while listening as a form of scaffolding, rather than an assessment of their listening comprehension.

### **Pre-post-tests**

A teacher-made pretest based on the study materials was administered before the course. Audio clips drawn from the prescribed audiobooks were played once, and students were required to answer 50 multiple-choices questions while listening. All participants completed the pretest within one hour. A post-test was administered at the closure of the course. The post-test did not draw on the audiobooks studied but another audiobook on the same subject matter, *viz.* public speaking skills. The rationale for using different texts for the post-test is to avoid the practice effect and to see whether the participants' listening fluency can be transferred to different texts on a similar topic. The audio clips for the post-test was also played once, and all the participants completed 50 test questions within one hour. In addition, as TOEIC is one of the graduation requirements at this particular university, simulated TOEIC listening tests (100 items) were administered before and after the pedagogical mediation, in order to see if the learning effects could be carried over to general listening proficiency.

## **Results**

The descriptive statistics of pre-post-tests scores are tabulated in Table 1. The test scores did not follow the normal distribution, so non-parametric tests were conducted. Medians instead of means are reported.

TABLE 1  
Descriptive Statistics of Test Scores

		Teacher-made pretest (max.=100)	Teacher-made post-test (max.=100)	TOEIC pretest (max.=495)	TOEIC post-test (max.=495)
AO (n=38)	<i>Mdn</i>	31 (31.18)	58 (58.61)	240 (232.63)	252.50(260.26)
	<i>SD</i>	3.84	8.53	61.02	61.19
AE (n=37)	<i>Mdn</i>	33 (32.24)	77 (76.57)	220 (231.22)	270 (276.76)
	<i>SD</i>	5.60	9.81	54.49	54.23
AEH (n=37)	<i>Mdn</i>	30 (30.65)	81 (81.08)	235 (235.68)	280 (296.89)
	<i>SD</i>	4.54	13.25	66.29	72.31

Note. Means are in brackets

Wilcoxon signed-rank test was performed to compare the test scores within groups. Results show that the participants made considerable progress on the teacher-made post-test: the AO group improved from a median score of 31 to 58; the AE group increased from a median score of 33 to 77; and the AEH group's score progressed from 30 to 81 (Mdn). The three groups increased markedly in the post-test scores, all significant at the  $p < .001$  level. More importantly, the effect sizes<sup>1</sup> were large for all groups (AO:  $r = -.51$ ; AE:  $r = -.50$ ; AEH:  $r = -.50$ ), suggesting a substantial effect as a result of the intervention.

In terms of the simulated TOEIC listening tests, all groups also performed better after the intervention, the AO group progressed from a median score of 240 to 252.5 points; the AE group increased from a median score of 220 to 270 points; and AEH group's score went from 235 to 280 points (Mdn). The three groups made measurable progress on the TOEIC post-test, all significant at the  $p < .05$  level. The effect sizes on the simulated TOEIC tests were evident, albeit not as impressive as those on the teacher-made tests. The magnitude of effect was small for the AO group ( $r = -.28$ ), while the other two groups had medium effect sizes (AE:  $r = -.37$ ; AEH:  $r = -.47$ ).

The Kruskal-Wallis test was used to compare post-test scores across groups. The results confirm that there was a significant difference in the teacher-made post-test scores across groups ( $H(2) = 54.51$ ,  $p < .001$ ). To further identify where the difference(s) lay, a post-hoc Mann-Whitney test was conducted on the three pairs of comparison. Bonferroni correction was used, so a critical value of .05 divided by 3 (i.e. the number of tests conducted) was accepted. Accordingly,  $p < .0167$  was accepted as significant. The AO group scored significantly lower than the other two groups on the teacher-made post-test (AO&AE:  $U = 118$ ;  $p < .001$ ;  $r = -.59$ ; AO&AEH:  $U=100.5$ ;  $p < .001$ ;  $r = -.60$ ), but the two groups did not differ from each other statistically (AE&AEH:  $U = 540$ ;  $p = .118$ ;  $r = -.15$ ). As compared with the AO group, both AE and AEH groups had fairly large effect sizes, indicating that listening with accompanying texts did have a significant impact on listening fluency. Also, a small effect size was found between the AE group and AEH group, suggesting modest practical significance of real-time highlighting, despite the insignificant statistical difference.

All groups made progress on the TOEIC listening post-test, but the scores did not differ significantly across groups ( $H(2) = 4.01$ ,  $p = .135$ ). Although the statistical differences among groups did not reach a significant threshold, a closer look at the effect sizes showed that the magnitude of the pedagogical effects was small but certainly not trivial (AO&AE:  $U = 585.5$ ,  $p = .21$ ,  $r = -.12$ ; AO&AEH:  $U = 526.5$ ,  $p = .06$ ,  $r = -.18$ ). It is worth noting that the effect size is more indicative of practical significance, as compared to statistical significance tests, because the former is independent of sample size (cf. Norris, 2015). The results indicate that listening with accompanying texts did have pedagogical value in practice, but the texts highlighted in real time only had a negligible effect on learners' scores of the TOEIC listening test.

<sup>1</sup> Cohen's (1988) rule of thumb for interpreting effect sizes:  $r = .1$  (small effect);  $r = .3$  (medium effect); and  $r = .5$  (large effect).

## Discussion

Results show that extensive listening to audiobooks for a sustained period of time did have positive effects, as all learners' listening fluency increased after the pedagogical mediation. However, the degree of learners' progress on listening fluency varied with the input mode they received. Table 2 summarizes the effect sizes found within groups and between groups.

TABLE 2  
*A summary of effect sizes*

		Teacher-made tests	TOEIC
Within-group comparison	AO (pre-post)	large	small
	AE (pre-post)	large	medium
	AEH (pre-post)	large	medium
Between-group comparison	AE & AEH	small	N/A
	AO & AE	large	small
	AO & AEH	large	small

All three groups made considerable progress on familiar materials, as evidenced by large effect sizes between the teacher-made pre-post-tests. The intervention also had medium effects on the AE and AEH groups' listening performances on unfamiliar materials (as measured by TOEIC listening tests); the magnitude of effect was small for the AO group but not negligible. In general, regular listening to audiobooks over a sustained period of time facilitates learners' listening fluency on familiar materials as well as unfamiliar ones, regardless of whether there is reading support. Extensive listening to audiobooks *per se* is beneficial for developing overall listening proficiency. Such a finding provides evidence for Renandya and Farrell's (2011) call for pedagogical instruction to include extensive listening.

While the within-group comparisons show the effectiveness of the EL pedagogical mediation, the between-group comparisons indicate the efficiency of different support types. As shown in Table 2, a small effect size was found between the AE group and AEH group on familiar texts, suggesting that real-time textual highlighting did have a modest effect in practice, even though such an effect did not transfer to unfamiliar texts. Real-time highlighting provides input enhancement to focus learners' attention to the written and spoken texts in tandem; because of such directed attention, *input* is more likely to become *intake* and hence *learning* (Smith, 1993).

Both groups with reading support outperformed the AO group, with large effect sizes on familiar materials and small effect sizes on unfamiliar ones, indicating that listening to audiobooks with accompanying texts is more effective than listening to audiobooks alone. Broadly speaking, learners receiving multiple modal input performed significantly better than those who had only listening input. Such a finding lends support to Rost's (2014) claim that multiple modes of presentation will enhance input and promote comprehension. The result is not surprising, considering that bi-modal input (aural and written) increases the total exposure to the texts and hence better comprehension (Cheetham, 2017). The finding is also congruent with Jones and Plass (2002) in the sense that multiple modal input leads to better comprehension.

Nonetheless, as beneficial as listening with accompanying texts is, learners might become over-reliant on the written texts over time. Teachers should gradually reduce the amount of reading support while increasing the listening-only activities; and students should also be encouraged to shift their attention from the written texts to the spoken ones as they move toward higher levels of listening proficiency.

### Augmenting EL with Scaffolding Devices

As Vandergrift (2007) observes, scaffolding devices play a pivotal role in the listening instructional design. In this EL project, a range of scaffolding devices contributed to the learners' increased listening fluency: (1) the worksheets allowed learners to predict types of information and words that are likely to

occur in listening input and hence promote comprehension; (2) the guiding questions were in the form of multiple-choices questions – MC questions are attested to be more effective in contributing to listening success than open-ended questions (Chung, 2002); (3) listening input was segmented into ten-minute sessions, followed by discussion and/or clarification before continuing. Such intervals allowed learners to discuss with peers, verify their hypotheses, and make modifications if necessary; and (4) it may well be that using mobile technologies to support learning is not uncommon in this setting, which lowers the learners' affective filter toward listening to authentic materials (Gay, 2000) and allows increased learning to take place.

### **Choosing Materials for EL**

As many students in this cohort may have instrumental motivation to learn English, *viz.* to fulfill the curriculum and/or graduation requirements, it is considered suitable to choose materials with more practical value to meet their needs. Graded readers would have been appropriate for learners at this proficiency level as well, but many graded readers are adapted from literary texts and thus less compatible with the needs of this group of learners. Also, practical guides such as the ones used in this study have a clear structure for listeners to follow the flow of ideas – the guides present an oral presentation technique, one at a time, and then illustrate it with real-life examples. For instance, in one chapter one author suggests listeners to 'create a Twitter-like headline'; he exemplifies the idea quoting Steve Jobs' words 'Today Apple reinvents the phone' and goes on to explain how such a simple line made a phenomenal success in media. Moreover, developing oral presentation skills is such a generic topic that the learners are able to activate their prior knowledge, draw on conceptual frameworks for inferencing, and thus free up attentional resources for processing linguistic input. Taken together, the positive results here seem to suggest that audiobooks on familiar subject matter with exposition discourse can be a good starting point for extensive listening to authentic materials, even for beginning listeners.

### **Conclusion**

Drawing on authentic materials, this EL project aimed to provide learners with ample comprehensible input, with varying forms of support to enhance the input, promote learners' comprehension and eventually increase listening fluency. Findings suggest that regular contact with digital audiobooks over a sustained period of time facilitates intermediate EFL learners' listening fluency on familiar materials, and such progress is also evidenced with novel texts. In terms of support type, listening with accompanying texts is more beneficial than listening only; the real-time highlighting function adds value to comprehending the texts at hand, but the enhancement does not necessarily translate to increased overall listening fluency in the long term. The findings have important pedagogical implications for teachers to (1) provide regular accessible listening input, with grade-appropriate scaffolding, over sustained periods of time; (2) experiment with a wider range of authentic materials for listening skills training; and (3) sensitize learners to the need for themselves to make cognitive commitment toward understanding the input.

However, this study has a number of limitations to be addressed in future research. Despite the positive results yielded in this study, more learners with a greater variety of learner profiles from a broader range of learning contexts are needed to increase the generalizability of the results. Also, developing listening fluency is an incremental process, so it would be worth exploring the long-term effects of using authentic digital audiobooks on listening skills training.

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