



THE IMPACTS OF TECHNOLOGY ON THE DEVELOPMENT OF L2 ORAL FLUENCY IN HIGHER EDUCATION IN VIETNAM

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Abstract. This article is a part of my dissertation project, which examines teachers' and students' perceptions on the factors influencing the speaking fluency of L2 students in universities in Vietnam. This article was conducted to investigate factors that impact the development of L2 speaking fluency in higher education in Vietnam. Specifically, the current study is on the impact of technology in developing oral fluency in higher education in Vietnam. The mixed-methods research design was created for this purpose. The data was collected via close-ended questionnaires from thirty students and thirteen teachers and semi-structured interview questions with six instructors. The findings indicate that the use of technology in teaching and learning is both essential and mandatory in order to increase student engagement and motivation to study. In addition, the findings reveal that technology can help students improve their communication skills and speaking fluency.

Keywords: speaking fluency, technology, L2 oral fluency, teachers' perceptions, students' perceptions

I. Introduction

Language as a means of communication allows people to communicate their thoughts, feelings, and facts. In this way, English serves as a bridge between people of various cultures, beliefs, and countries. One of the most crucial abilities students must develop to learn English is speaking skills, especially speaking fluency. Chastain (1988) believed that speaking is "a vital factor in developing each language competence and imparting culture knowledge" (p. 271). In the same way, Kormos and Dénes (2004) indicated that the primary goal of a second language learner is to communicate and convey the target language in fluent and accurate ways. Thus, being fluent is considered an essential quality of an excellent L2 learner.

Advances in technology have also been introduced into the teaching and learning of the second language in this new millennium; in addition, this modern technology has been proved to

play a role in contributing to learners' speaking fluency development. A number of previous studies have explored how technology can be necessary for developing a second language, especially for improving speaking fluency. The article which builds on the findings of my dissertation, aims to explore the technological factors that affect English learners' oral fluency in Vietnam. Moreover, the researcher believes that something new can always be found in different contexts and situations.

2. Literature review

Admittedly, the pedagogic model plays a crucial role in the English learning process as it is one of the decisive factors in education quality. Together with the traditional teaching pedagogy, both teachers and students are encouraged to use the technological tools as a learning tool to provide extra learning practices to enhance their speaking competence and speaking fluency. From the teachers' perceptions, they are aware of the potential of the internet and technologies in promoting the teaching and learning process (Braul, 2006; Dang, 2011; Lillian & Doan, 2008; Nguyen, 2012; Peeraer, J., & Petegem, P. Van., 2010; Parvin & Salam, 2015); nonetheless, the application of these technologies into the language skills have not been ultimately adopted for the teaching practices and reasonably limited (Dang, 2011).

A large number of studies have been associated with the use of technologies in informal and formal settings of English-speaking countries to enhance speaking fluency (Bahrani, 2011; Blake, 2009; Nakaya & Murota, 2016; Razagifard, 2013; Son, 2013; Wang, 2014). For example, the language software to develop speaking performance is CALL (Computer-assisted language learning) and CMC (computer-mediated communication), which are indispensable in English teaching. CMC has more potential for use in foreign or second language classrooms, according to the previous research (Bahrani, 2011; Nakaya & Murota, 2016). In general, CMC refers to communication that a universal translator mediates (Kost, 2008, cited in Razagifard, 2013). Traditionally, text-based CMC is divided into two categories: (1) asynchronous CMC and (2) synchronous CMC (Abrams, 2003, cited in Razagifard, 2013). Similarly, Bahrani (2011), technologies in the EFL context, were to explore the efficacy of audio/visual mass media exposure as a potential resource of language input in the EFL background on speaking fluency and social interaction as a resource of language input in ESL background on speaking fluency. Forty participants for each context (Iran and Malaysia) were selected from 100 participants after they all had a speaking fluency pre-test. The one-year experiment results showed that the participants exposed to audio/visual mass media technologies performed better than the other participants. This means that audio/visual mass media technologies have more effects on speaking fluency and help promote language learning.

With the changes in modern technology, as an innovative way to develop language use, material technologies, such as the computer, mobile phone, MP3 player, are becoming prevalent in second/foreign language learning environments. Nakaya and Murota (2016) investigated the spreading of the mobile application for listening and scaffolded autonomous summary speaking (MALS) and evaluated its effectiveness for developing oral fluency after the participants used the application for six consecutive days. They found that MALS promotes the learners' grammatical encoding so that they might develop their speaking fluency. In addition, the technologies for language learning have been identified as valuable learning tools to support the learners' speaking accuracy and fluency. Suro and Ono (2016) appraised the use of Text-to-speech (TTS) technology to improve Japanese English learners to speak fluently and accurately. The significant findings that came out from their research are that "the initial learning strategies are affected by the system-based speaking practice and a sign of successful learners who can speak accurately and fluently with a wider variety of strategy use." (p.38). The technologies provide the learners with different communication contexts and features to represent the authentic input materials (Bahrani & Shu Sim, 2012). Consequently, it is believed that the students actively engage in the technologies to learn and practice their language learning, which can be a superior tool to improve L2 learners' oral fluency (Razagifard, 2013, p.277).

In Vietnam, although there are still some factors that limit the use of technology in teaching and learning, technology provides second language students with a good learning environment and sharing interactive activities with teachers. In addition, the technologies for language learning have been identified as valuable learning tools to support the learners' speaking accuracy and fluency (Le, 2018). After a six-week online course, his research revealed that "the students perceived that they had become more fluent and remembered more words in their speaking" (p.vii). Similarly, the technologies provide learners with different communication contexts and features claimed to represent authentic input materials.

2.1 Framework

The theoretical framework exploited in this current research is the input hypothesis, which is one of the five hypotheses accounting for acquiring a second language. This model was developed and published by the linguist Stephen Krashen in 1977.

According to this theory, language acquisition occurs only when the message being transmitted is understood. In other words, the primary purpose is to focus on what is being said rather than the form of the language. This indicates that when a language is taught, it is best comprehended while being used to transfer messages rather than being taught for conscious learning. More importantly, the 'comprehensible input' is the most important aspect of the input

hypothesis. Learners are exposed to comprehensible input, and they gain linguistic competence by understanding the written and spoken language input.

Thus, the input hypothesis can be used as a theoretical framework in this study to show how technology affects the development of oral fluency in second language learners. Learners can use technological gadgets and software applications to improve their speech fluency and acquire data. Learners receive input in the form of speech and writing via these devices, producing output in the form of improved oral fluency and other communication skills.

Regarding the problems L2 speakers face in developing their speaking fluency, this article looked into the impact of technology in increasing English speaking fluency for L2 speakers. The purpose of the article will be to answer the following research questions.

1. What is the role of technology in developing speaking fluency for L2 speakers from the teacher's and students' perceptions?
2. How are students' and teachers' evaluations of the technological factors influencing EFL learners' oral fluency?

3. Method

3.1 Participants

The study participants were chosen from a population of 30 students in the second semester of 2020–2021 school year, and 13 teachers in charge of English major at the Faculty of Foreign Language at a university in Da Nang City. They were both males and females, ranging from 19 to 20 years old in the same course. In addition, the student participants completed four English language courses. All participants were enrolled in the English language program's third semester. They had all completed the "English Speech Training" and "Advanced English Grammar" courses. The study's student participants were doing a Bachelor's degree in English. The majority of them had begun learning English when they were between 5 and 12. These students spoke Vietnamese as their first language.

Regarding the questionnaire survey, cluster sampling was conducted to select the participants of the study. According to the student lists, 40 students were expected to be the participants in the current study. However, only 30 out of 40 responses were received after delivering the questionnaire. This was due to some students skipping class and others failing to complete and return their responses.

Regarding the interview survey, thirteen teachers were teaching all major English subjects in the second semester. Six of them were chosen at random for in-depth interviews on speaking

fluency. They were all full-time instructors, with ten females and three males ranging in age from 27 to 55 years old, with a total teaching experience ranging from 5 to 25 years.

3.2 Design of the study

The data for this study was gathered using a mixed-methods approach, with questionnaires and a semi-structured interview. A descriptive survey was designed to explore the technology's role in improving speaking fluency from teachers and students' evaluation at the Faculty of Foreign Languages at a university in Da Nang City. The purpose of this descriptive survey was to find out what role technology plays in speaking fluency and how English-majored students and teachers regard technology as a contributing element to speaking fluency.

Questionnaires were instruments that provided participants with a series of questions or statements and their responses to marking each statement with a tick using a 5-point Likert Scale rating system as follows: Strongly Agree = 5, Agree = 4, and No opinion = 3, Disagree = 2, Strongly Disagree = 1 for negative statements and vice versa for positive statements. The teachers and students that put a tick under the numbers 5 and 4 (Strongly Agree and Agree) confirmed that they had positive attitudes based on the frequency of their responses and the total percentage of teachers and students who highly agreed. Questionnaires were cost-effective, rapid, and practical for a large-scale study. They could help the research obtain longitudinal data from individuals in a short amount of time (Mackey & Gass, 2005). They were thought to be valuable tools for acquiring information. Two sets of questionnaires were used to collect data from the students and teachers in this study. These questionnaires used in the study are adapted from Alsulami's (2016).

Interview responses could be developed and clarified to find more in-depth information on the themes (Bell, 1993). In this study, interviews were used to gain insights into the teachers' subjective experience and, opinions on the impact of technology on developing speaking fluency. The adaptability of the interview was a key benefit, as it allowed the interviewer to follow up on ideas and examine responses. A semi-structured interview was employed to cross-check the questionnaire data and collect detailed explanations for the teacher respondents' attitudes toward the topic of the current study.

3.3 Procedures of data analysis

The current study's descriptive survey was done in the second semester of the academic year. The questionnaire was distributed to students in speaking classes during the second semester. In addition, teacher interviews were conducted in order to obtain more detailed information for data analysis. The questionnaire was given to students in speaking classes in the second semester of the academic year to get a holistic view of the role of technology in providing

opportunities for the students to improve their English speaking fluency. In semester two of the academic year, the questionnaires with 40 items were hand-delivered to 30 English-speaking respondents in the last week of the course. It took the respondents 20 minutes to complete the questionnaire. The survey was completed with the support and collaboration of the teacher responsible for the selected speaking classes successfully. Then, another set of questionnaires was also delivered to 13 teacher participants. After that, the survey was recorded in an SPSS version 18 datasheet. The collected survey data were analyzed using SPSS to calculate the means and standard deviation, the total number of participant responses, frequency, and percentage marking on each response for each statement. These quantitative data were organized into themes in order to be combined with qualitative data.

Semi-structured interviews, on the other hand, were the second study approach used to gather the data. The interview started in the late of the academic year's second semester, two weeks after the end-of-session questionnaires. Due to the Covid 19 epidemic, the participants were instructed to answer the questions through the Google Meet. At first, the researcher described the goal of the interviews, so the teachers knew what they were doing. The interviews were taped with the participants' permission and transcribed, and the transcriptions were used in the qualitative analysis of the study. The qualitative data acquired during the interview is analyzed using three techniques. First, the researcher listened to the interview via online recording and noted down ideas for each question; second, the researcher read all statements and categorized each interviewee's responses in terms of thematic factors; third, the researcher checked over all of the responses for each topic.

3.4 Findings

Cronbach's alpha was run to measure the reliability of the results in all themes of the questionnaire. Technology is one of the factors that is investigated in the whole dissertation. The range of alpha scale for all question items in all three sections was 0.65 above the required value, that is, 0.60 (Cronbach, 1951). Thus, the results show that the research instrument has a high level of consistency, which helps to improve the study's quality.

Teachers' attitudes towards technological factors on speaking fluency

Table 1. Technological factors from teachers' perceptions

Theme Technology (Appendix 1)	1 Scales	Teacher's response - Frequency	Percentage (%)
	Strongly disagree	1	1.53%
	Disagree	10	15.38%
	Neutral	17	26.15%
	Agree	33	50.76%
	Strong agree	4	6.15%
Total		65	

Table 1 represents the findings of the teachers' viewpoints on technological factors that affect speaking fluency. Teachers in this survey were asked if technologies can support oral fluency. 26.15 percent said that they strongly agreed, 50.76 percent said that they agreed, 26.15 percent said that they had no view, 15.38 percent disagreed, and 1.53 percent strongly disagreed.

Students' attitudes towards technological factors on speaking fluency

Table 2. Technological factors from students' perceptions

Theme 1 Technological (Appendix 2)	Scales	Student's response - Frequency	Percentage (%)
	Strongly disagree	6	4 %
	Disagree	9	6%
	Neutral	30	20 %
	Agree	66	44%
	Strongly agree	39	26%
Total		150	

Table 2 represents the findings of the students' viewpoints on technological factors that affect speaking fluency. Students in this survey were asked if technologies can support oral fluency. 26 percent said that they strongly agreed, 44 percent said that they agreed, 20 percent said that they had no view, 6 percent disagreed, and 4 percent strongly disagreed.

Teachers' perceptions on technological factors influencing speaking fluency**Table3.** Technology factor influencing speaking fluency

Questionnaire Theme 1: Technology factor influencing speaking fluency	Mean	Standard deviation
Theme 1: Technology factor influencing speaking fluency		
Technologies are helpful for improving the language learners' ability specifically in the oral fluency.	3.70	0.752
Technologies are helpful for keeping track of the language learning progress.	3.77	0.927
The language learners can learn best without the help of technologies.	2.62	0.961
Technologies motivate the language learners to get more involved in speaking activities.	3.54	0.660
Technologies are helpful for the language learners improving the speaking skill.	3.62	0.650

Table 3 shows that the mean value for the first item ($M = 3.77$, $SD < 1.0$) suggests that the teachers believe that technologies help keep track of the language learning progress. The teachers also think that technologies are helpful for language learners to improve their speaking skills ($M = 3.62$, $SD = 0.650$) when they employ technology in their teaching and introducing classroom tasks. That is why the teachers feel that technologies help improve the language learners' ability, specifically oral fluency ($M = 3.70$, $SD = 0.752$). In addition, the participants' responses ($M = 3.54$, $SD = 0.660$) indicate that technologies motivate language learners to get more involved in speaking activities. That is why the teachers think that learners cannot learn best ($M = 2.62$, $SD = 0.961$) without the help of technology.

Students' perceptions on technological factors influencing speaking fluency

Table 4. Technological factors influencing speaking fluency

Questionnaire Theme1: Technological factors influencing speaking fluency	Mean	Standard deviation
Theme 1: Technological factor influencing speaking fluency		
Technologies are helpful for improving the language learners' ability specifically in the oral fluency.	3.91	0.910
Technologies are helpful for keeping track of the language learning progress.	4.17	0.648
The language learners can learn best without the help of technologies.	2.73	1.172
Technologies motivate the language learners to get more involved in speaking activities.	3.93	0.868
Technologies are helpful for the language learners improving the speaking skill.	4.13	0.730

As can be seen from Table 4, the results show that students have pointed to technological factors that they believe in having an effect. The most critical factor ($M = 4.17$, $SD = 0.648$) is that the students agree that technologies help keep track of the language learning progress. This is followed closely by another significant factor ($M = 4.13$, $SD = 0.730$), in which the learners agree that technologies are helpful for language learners improving their speaking skills. A third factor ($M = 3.93$, $SD = 0.868$) is that technology motivates language learners to participate in speaking activities. In fact, technology can be used to boost the students' motivation. A fourth salient factor ($M = 3.91$, $SD = 0.910$) is that the students believe technologies help improve the language learners' ability, specifically in oral fluency. The Internet is becoming ever more critical in allowing everybody to acquire new skills or connect with distant and near friends and family. Compared to other developed countries, Vietnamese students have more opportunities to access digital devices despite fewer than half of all students accessing the Internet (OECD, 2017). The students in Vietnam are aware of trends in the access and use of new technologies in helping them learning, as indicated by their reports that they know that technology helps improve their second language ability, specifically in oral fluency. That is why the learners think they cannot learn ($M = 2.73$, $SD = 1.172$) best without the help of technology. In such circumstances, the students are visual learners; this modern approach by using technology has a significant impact.

Teachers' interview on technology influencing speaking fluency

In support of the questionnaire survey, the teachers' viewpoints (which were in English, not their mother tongue) toward technological factors having the significant influence on students' speaking fluency in a second language are more like to be the same view as the questionnaire responses. For example, one of the teachers stated:

[..] I think technologies in teaching are also one of the most important factors increasing the oral fluency and accuracy as well as deducing the anxiety. However, teachers and learners know how to make use of it for integrating technology in the teaching and of learning the language.

Another teacher shared the same view on these most important factors influencing the speaking fluency, saying:

We're talking about doing things with language these days, rather than just learning about it. So, trying to find ways for students to do meaningful spoken language practice in a class can be very difficult. Using tools such as technological gadgets, can give a reason for a second language learner to promote to speak. So, we can see how technology can be effectively used to support speaking fluency.

All of the participants advocated the importance of technology and the use of technology as materials, tools, and equipment in the classroom to improve their teaching instructions and students' speaking performance in general and oral fluency in particular.

4. Discussions

This section presents a discussion based on the findings of this research. The results provided the answer to two research questions related to the impact of technology on speaking fluency from the teacher's and students' perceptions and the teacher's and students' evaluation of technological factors associated with the development of oral fluency for L2 speakers.

The first research question sought to examine the impact of technology on developing speaking fluency for L2 speakers from the perceptions of the teachers and students. According to the quantitative analysis, the teachers, and students, believe that technology significantly impacts Vietnamese students' speaking skills, mainly speaking fluency. The current study matches Dang's (2011) findings that technology, namely CALL, can be used to teach speaking skills, which "helps learners become good communicators" (p.90). The findings of this study revealed that the students made progress in developing their oral fluency in English with the assistance of technology.

The participants also stated that technology is an innovative tool to encourage students to speak up and get more involved in speaking activities. When it comes to increasing speaking

skills, particularly oral fluency, the support of technologies is crucial. There is a compatibility between these findings and those reported by Nguyen, Warren, and Fehring (2014), indicating that technology is at play which negatively affects the speaking performance of EFL learners. For example, their findings revealed limited use of teaching aids and technology in some parts of Vietnam. The data also show that technologies are helpful for language learners in improving their speaking skills as well as oral fluency. This also agrees with the theory of the input hypothesis. From Krashen's (1970) view, learners are exposed to comprehensible input, and linguistic competence is acquired by understanding written and spoken language input. This means that learners use technology to improve their oral fluency, for example, by using technological devices such as mobiles and software applications. It may be concluded that a student aspires to speak English fluently because they take advantage of modern technology to learn a second language.

Also, integrating technology into teaching the second language in general and speaking skills, in particular, can benefit both the students and teachers and pave the way to oral fluency.

The second research question was to explore how students and teachers evaluated the technology factor influencing oral fluency. The results from the student questionnaire were quite similar to those of the teachers in terms of technological factors. One of the most influencing factors, technology, is shown as one of the most significant impacts on oral fluency by the current research participants.

Furthermore, the results from the questionnaire data show that the students improved their speaking skills and speaking fluency by using the internet. The results also indicate that the students are motivated to communicate and develop their speaking fluency in English due to getting more involved in using technologies. Son (2013) confirmed this claim through his study, which indicated that "the use of technology might help speak fluency" (p.3). This is also consistent with the findings of many researchers in English teaching and learning (Peraer & Petegem, 2010; Lillian & Doan, 2009; Nguyen, 2012), which revealed that the potential of the internet and technologies in promoting teaching and learning process. In addition, in recent years, the Vietnamese government has called for teaching innovation through the integration of technology in the classroom to improve the quality of education in general and EFL education in particular.

This century has experienced a significant increase in using technological accomplishment, which is one of the essential tools for language learning. The finding from the current research is associated with the informal language learning idea, which states that language learners can increase their speaking fluency by being exposed to mass media outside of the classroom. As also pointed out by (Bahrani, 2011), "greater exposure to audio/visual mass media as a source of

authentic language input improves speaking fluency in EFL context more than the social interaction in ESL context" (p.145). In other words, technology can be used to foster learners' social and social problem-solving skills and enhance their speaking fluency in language learning to a significant extent.

5. Conclusions

Based on the quantitative findings and illustrated qualitative comments, it is suggested that the teachers and students indicate that second language learners would achieve speaking fluency with the assistance of technology. In other words, this study is based on the hypothesis that technology positively influences English oral fluency and that learners improve their oral fluency through modern technology. This hypothesis has been supported by the findings. The teachers and students both believe that technology can help EFL learners improve their communication skills and speaking fluency. Language practitioners could also consider using modern technology as an essential tool to better their speaking fluency.

More importantly, the study provides an insight into the teachers' and students' perceptions of the influence of technology on the oral fluency of Vietnamese students. The application of technology in teaching and learning is necessary and compulsory to promote the students' engagement and motivation to learn English as a second language despite the limitation of using technology in higher education in some parts of Vietnam. This is because technology plays a vital role in developing learners' speaking fluency.

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Appendix

Table 1. Questionnaire - Technologies factors from teachers’ perceptions

Technologies are helpful for improving the language learners’ ability specifically in the oral fluency.
Technologies are helpful for keeping track of the language learning progress.
The language learners can learn best without the help of technologies.
Technologies motivate the language learners to get more involved in speaking activities.
Technologies are helpful for the language learners improving the speaking skill.

Table 2. Questionnaire -Technologies factors from students' perceptions

Technologies are helpful for improving the language learners' ability specifically in the oral fluency.
Technologies are helpful for keeping track of the language learning progress.
The language learners can learn best without the help of technologies.
Technologies motivate the language learners to get more involved in speaking activities.
Technologies are helpful for the language learners improving the speaking skill.