STUDENTS' MOBILE TECHNOLOGY USAGE AND THEIR TOEFL LISTENING PROFICIENCY: A CORRELATIONAL STUDY

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Abstract

This research aimed to find out the correlation between students' mobile technology usage and TOEFL listening proficiency in the sixth semester of the English Study Program of FKIP Universitas Riau. The sample of this study was 36 students in the sixth semester of the English Study Program of FKIP Universitas Riau. The Cluster Random sampling technique was utilized to choose the sample for this research. This study used two data instruments, a mobile technology usage questionnaire and TOEFL listening proficiency gained by collecting students' TOEFL listening scores. The instruments were distributed to the respondents online through Google Forms. The mobile technology usage questionnaire was an adaptation of a questionnaire by Grenier. The respondents submitted the TOEFL listening score after finishing the questionnaire. The students' mobile technology usage was analyzed using a Likert scale in the form of positive questions. The students' proficiency levels were categorized using ETS Performance Descriptors for TOEFL. The researcher used the Pearson Product Moment formula to determine the correlation coefficient value. The result of this study shows that most respondents' listening proficiency is categorized at the elementary level with a range score of the listening section 31-46. Moreover, this study revealed a moderate correlation between students' mobile technology usage and their TOEFL listening proficiency, with a 36% determinant score. In other words, mobile technology usage is not the main factor in determining students' TOEFL listening proficiency.

INTRODUCTION

With the advent of the modern era, the widespread utilization of the internet has become a familiar sight. The internet now plays a prominent role in various aspects of life, including healthcare, business, education, and politics. Furthermore, there has been significant progress in the advancement of mobile technologies, including devices like iPads, tablet PCs, laptops, game consoles, smartphones, digital cameras, and personal digital assistants. Mobile technologies have become more user-friendly and functionally increased. According to Ally et al. (2009), as access to information and knowledge anywhere and anytime has increased in popularity, it challenged the role of education and the relationship between education, technology, and society has become more dynamic than before. Modern technology usage, such as wireless and mobile devices, is progressively increasing from a small scale to a bigger scale and is diverse across every education section (Ally et al., 2009). In the learning process, the learners and educators have complete control of what, when, and from which location the knowledge they access. Nowadays, knowledge and information can be accessed by surfing a blog, joining a discussion forum, following online courses, and even scrolling through social network platforms. According to Bachore (2015), utilizing different mobile applications facilitates the creation of an interactive educational setting with a variety of contextual dimension. The use of mobile technology in learning has a lot of potential to be used as a tool to encourage collaborative learning, engage students with content as an alternative to attending campus lectures and for an up-to-date information distribution (Taleb and Sohrabi, 2012).

English, a global communication language used worldwide has been spoken in several dialects and cultures. The United States and the United Kingdom are the most prominent English-speaking countries. Since English is regarded as the universal language, many people are now learning English to communicate with other people from various countries. The listening skill, one of the four Basic English abilities, occupies almost 50% of daily conversation (Bozorgian, 2012). According to Tyagi (2013), listening involves both hearing what the other person is saying and developing a psychological connection with them. To effectively teach and learn English, listening skills are crucial. Teachers and students must both have intense listening skills to comprehend one another. Listening combines hearing what someone else is saying while also developing a psychological understanding of the speaker. Since listening requires much concentration on the part of the learner, many of them find it challenging to explore this skill. They must constantly practice to broaden their vocabulary and become accustomed to hearing the pronunciation of each word. Students sometimes have difficulties in listening courses because they are not familiar with the sound of a word resulting in them not understanding what the speaker

is talking about. In most cases, the written words have a significant difference in how the words are pronounced (Bloomfield et al., 2010).

Since English is widely used worldwide, the English Language Proficiency (ELP) exam is a tool to assess English Proficiency. Many universities and institutions today require their students to take the ELP test, especially for English for Foreign Language (EFL) learners. Furthermore, it is crucial for students since, in some circumstances, such as studying abroad, applying for a scholarship, or even graduating from the institution, the ELP test may be required. According to Cho and Bridgeman (2013), the Test of English as a Foreign Language (TOEFL) is one of the English proficiency tests that non-native speakers may take to measure their English proficiency. TOEFL has undergone several changes to reflect a more accurate assessment of the test takers' academic English competence. It is available in three primary formats: paper-based (PBT), computer-based (CBT), and internet-based (iBT) (Cho & Bridgeman, 2013). Additionally, the Institutional Testing Program (ITP) allows qualified universities and other institutions to provide their students the earlier paper-based TOEFL test versions while utilizing their testing resources, hiring their administrators, and setting their test schedules (Abboud & Husein, 2011). In Indonesia, the TOEFL test is used for several purposes, from determining a person's level of competence in English to achieving essential objectives, including applying for employment and attending educational programs (Utomo & Damayanti, 2019). The TOEFL listening section, according to Phillips (2001) consists of fifty questions of recorded materials and the test takers are required to respond to multiple-choice questions about the material. There are three types of materials and each of them has a different number of questions; short dialogue, long conversations, and talks.

A study about mobile applications usage in language learning conducted by Kacetl & Klímová (2019), which results suggested that one of the benefits of using a mobile device is that students can store their materials and access them easily without having to search through books manually, which can be time-consuming. Moreover, language learners can easily access various target language materials online, including text, audio, and video formats. Klimova (2019) conducted a research analyzing the influence of mobile learning on students' academic achievement. The researcher used a personalized mobile app designed for the Android operating system. The study's findings suggested that using smartphones to learn foreign languages, especially for studying and reviewing English vocabulary, has the potential to enhance the academic achievement of university students. The statistical analysis showed that students who utilized mobile apps for their studies achieved significantly better learning outcomes than those who did not.

Another study by Angelia & Simanjuntak (2023) investigated the use of digital audio in enhancing EFL learners' listening proficiency, with two groups as the sample where one group was exposed to digital audio and one other group was not exposed to digital audio. This research used audio podcasting on Spotify as the media. The study showed that the group exposed to digital audio improved their listening proficiency. In contrast, the group that was not exposed to the digital audio only showed a slight improvement. The research's conclusion then indicated that the online podcast service has much potential to assist students in improving their listening proficiency. Utilizing digital audio can be a practical approach as it has been observed that although there was no noteworthy difference from the method used before, there was an increase in range. The digital audio usage improved the students' listening proficiency and was a helpful reference for further study in the same field.

Grenier (2018) examined the correlation between mobile learning and the academic achievement of college students in an online environment measured by GPA (course grade point of average). The researcher used The Learning Management System (LMS) as students' access to course resource, syllabus information, and course materials. The findings of the study suggested that there is no significant correlation, either positive or negative, between mobile technology usage and students' achievement measured by GPA. The result of this study could serve as a foundation for further research on the impact of mobile technology usage, although there was no significant correlation between the two variables.

There are several parallels and variations between the earlier studies. The previous studies examined mobile technology usage for various language-learning purposes. It is also revealed a somewhat different conclusion, where different mobile technologies applied in students' language learning resulting in different outcomes of students' academic results. Grenier (2018) did not specify the mobile device that was used in the research. The researcher took into account any mobile devices such as laptops, PDAs, or smartphones and assigned the participants to LMS (Learning Management System). In Angela and Simanjuntak (2023) utilised Spotify mobile apps to access digital audio in order to support the experimental group's listening learning which suggests that the use of online podcast service has a lot of potential in assisting students to improve their listening proficiency. The different methods and results from previous studies then sparked the researcher's interest in investigating the correlation between students' mobile technology usage and their TOEFL listening proficiency. This study focused on investigating the mobile apps and online services used to support students' listening learning and measuring their listening proficiency by using the listening TOEFL score.

METHODOLOGY

Research Design

To examine the possibility of a relationship between the two variables, students' mobile technology usage and their TOEFL listening proficiency, the researcher used correlational research in this study. In a correlational study, the researcher compares two or more scores for each participant using the correlation statistic rather than trying to control or manipulate the variable as in an experiment (Creswell, 2015).

Setting and Participants

This research took place at the English Study Program of FKIP Universitas Riau. The research data collection took place in April 2023 through the online platform Google Forms. The population of this research was the six-semester students of the English Study Program of FKIP Universitas Riau. A class of 36 students was chosen as the sample for this study using the Cluster Random Sampling technique. The researchers used an online random picker service to draw a random group as a sample. According to Gay (2010), in cluster random sampling, the whole groups are chosen randomly as the research sample. A cluster is any site where a population of individuals has comparable traits. Random sampling is not applied to the individual but to the class or group as a cluster.

Data Collection Method(s) and Analysis

The researchers used two methods in collecting the research data; a mobile technology usage questionnaire and a self-reported TOEFL listening section score. The first instrument was the mobile technology usage questionnaire which was adapted from Grenier (2018) to evaluate students' behaviour as a degree of mobile technology usage on a scale from never (1) to always (5), not attitude or perception. The second instrument in this study is students' TOEFL scores focusing on the listening section. The TOEFL listening score was used to determine students' listening proficiency. The TOEFL scores can be acquired through a TOEFL test which, for the students enrolled in the English Study Program of Universitas Riau, the passing score is 500 points. The respondents reported their TOEFL scores along with the questionnaire. The instruments were

distributed online via Google Forms to the respondents. Respondents' data are not disclosed and are used only for academic research.

The questionnaire was analyzed by using Likert-Scale in the form of positive questions. The participants responded to the prepared instrument that comprises a series of statements selecting one of the following responses: (5) Always, (4) Often, (3) Sometimes, (2) Seldom, (1) Never. The researcher utilized Yang & Miller's (2008) interpretation, shown in Table 1, to determine the frequency of mobile technology used in supporting language learning practice.

Table 1. Interpretation of Frequency Score

No.	Range Score	Frequency
1	80-100%	Always
2	60-79.99%	Often
3	40-59.99%	Sometimes
4	20-29.99%	Seldom
5	0-19.99%	Never

The students' TOEFL listening scores were then categorized into four categories based on ETS Performance Descriptors for TOEFL (2011) as presented in Table 2.

Table SEQ Table * ARABIC 2. Classification of TOEFL Listening Score

No.	Category	Score
1	Advanced	64-68
2	Upper Intermediate	54-63
3	Intermediate	47-53
4	Elementary	31-46

The researcher used the Pearson Product Moment formula was to calculate the correlation coefficient that exists between students' mobile technology usage and their TOEFL listening score. The Product Moment formula is used to quantify how strongly the two variables are correlated. The formula is presented as follows:

$$r_{xy} = \frac{\square\square.\Sigma\square\square\square - (\Sigma\square\square)(\Sigma\square\square)}{\sqrt{\square\square\square.\Sigma\square\square^2 - (\Sigma\square\square)^2\square\square\square.\Sigma\square\square^2 - (\Sigma\square\square)^2\square}}$$

The calculation result then indicates whether or not there is a significant correlation between the two variables. The interpretation value presented in Table 3 by Schober & Schwarte (2018) was used to calculate the correlation range. The correlation coefficient value ranges between -1.00 to +1.00.

Table 3. Range of Correlation Coefficient Interpretation

R Value	Interpretation
0.90-1.00	Very strong correlation
0.70-0.89	Strong correlation
0.40-0.69	Moderate correlation
0.10-0.39	Weak correlation
0.00-0.10	Negligible correlation

FINDINGS AND DISCUSSION

The data gathered during the research, along with the researcher's conclusions, are presented in this part. Self-reported TOEFL scores and questionnaires were used to collect the data.

Students' TOEFL Listening Proficiency Levels

The classification of students' listening TOEFL score based on ETS Performance Descriptors for the TOEFL (2011) test are shown in Table 4 below.

Table 4. Classification of Students' TOEFL Listening Scores

No.	Category	Score	No. of Respondents	Percentage
1	Advanced	64-68	2	5.56%
2	Upper Intermediate	54-63	7	19.44%
3	Intermediate	47-53	4	11.11%
4	Elementary	31-46	23	63.89%

Two students (5.56%) acquired 64-68 scores in the listening section and are classified in the Advanced level. Seven students (19.44%) acquired scores 54-63 are classified in the Upper Intermediate level. Four students (11.11%) who acquired scores 47-53 are classified in the Intermediate level. There are twenty-three students (63.89%) who acquired scores 31-46 and are classified in the Elementary level.

Students' Mobile Technology Usage

The students' mobile technology usage questionnaire consists of three indicators. The first indicator is the purpose of using mobile technology. The second indicator is the contents accessed from mobile technology. The last indicator is the applications used to support listening learning practice. Each indicator has five sub-indictors which fall into five statements regarding students' behavior in using mobile technology in listening learning.

1. The Purpose of Mobile Technology Usage

Classifying the purpose of the use of mobile technology is the first indicator of the questionnaire. The sub-indicators include using mobile technology for entertainment purposes, mobile technology for listening purposes, mobile technology for gaining new information or news purposes, mobile technology for online course purposes, and mobile technology for social networking purpose. Table 5 below presents of indicator's frequency

Table 5. Students' Purpose of Using Mobile Technology

Statement	Percentage	Category
I use mobile technology for entertainment purpose (watch movies, shows, gaming, etc.)	86.67%	Always
I use mobile technology for listening learning purpose	77.78%	Often
I use mobile technology for gaining new information/news through online TV/news channel	79.44%	Always
I use mobile technology for online courses learning focusing on listening	71.67%	Often
I use mobile technology for social networking video features (e.g. Facebook live, YouTube live)	81.67%	Always

From the data above, the highest average score of the purpose of using mobile technology is for entertainment purposes, with 86.67%. The lowest average score is online courses learning focusing on listening, with 71.67%.

2. The Content Accessed from Mobile Technology

The second mobile technology usage questionnaire indicator is the content accessed from mobile technology. The sub-indicators are accessing academic listening learning material, accessing online lecture recordings, online listening quizzes, daily conversation or Vlogs, and listening to English songs. Table 6 below displays each indicator's percentage.

Table 6. Contents Accessed from Mobile Technology

Statement	Percentage	Category
I use mobile technology to access academic listening learning material in the form of audio/video (with and/or without subtitle)	75.56%	Often
I use mobile technology to access online lecture recordings in the form of audio/video	74.44%	Often
I take online listening quizzes/test to test my listening ability	73.33%	Often
I watch/listen to a daily conversation or Vlogs of English native speaker	76.11%	Often
I listen to English songs to support my listening learning	85.56%	Always

The result shows that the highest average percentage of content accessed from mobile technology is English songs, with 85.56% meanwhile, the lowest average percentage is online listening quizzes/tests, with 73.33%.

3. Applications Used in Supporting Listening Learning Practice

The third indicator of the mobile technology usage questionnaire is the application used in supporting the listening learning process. The sub-indicators are radio and podcast, audio recorder apps, video streaming apps, audiobooks, and educational apps. The percentage of each indicator is displayed in Table 7 below.

Table 7. Mobile Applications Used in Supporting Listening Learning Practice

Statement	Percentage	Category
I use English-based radio and/or podcast to support my listening learning	70%	Often
I use tape recorder/audio recorder apps to support my listening learning	65%	Often
I use video streaming apps to support my listening learning (e.g., YouTube)	77.22%	Often
I use the audiobook to support my listening learning	67.78%	Often
I use educational apps to support my listening learning	68.33%	Often

The table above demonstrates that video streaming apps (e.g. YouTube) are utilized to help learning processes the most frequently with 77.22%, while tape recorder/audio recorder apps are used the least, accounting for 65% of all applications.

The Correlation Calculation

The data were then calculated with manual statistical calculation using the Product Moment formula to determine the coefficient correlation that exists between the two variables. According to the calculation, the correlation coefficient index "r" between variables X and Y is 0.600. According to the interpretation of the Product Moment score by Schober & Schwarte (2018), a moderate correlation exists between students' mobile technology usage and TOEFL listening proficiency. The determinant coefficient calculation showed that the determinant score of this research was 36%, which means students' mobile technology usage gave 36% influence to students' TOEFL listening score; meanwhile, 64% contributed by the other aspects.

Discussion

This study was carried out to determine the correlation between students' mobile technology usage and their TOEFL listening proficiency. The researcher used the Cluster Random Sampling technique in determining the sample, and one class of 36 students was chosen. The data was gathered by utilizing a questionnaire which was distributed online through Google Forms to measure students' frequency of mobile technology usage. Along with the questionnaire, the respondents were required to submit their TOEFL

scores, which then only the listening section score was used as this research was intended to determine their listening proficiency.

The findings of this research showed that there is a moderate correlation between students' mobile technology usage and their TOEFL listening proficiency. It indicates that students' mobile technology usage sometimes could predict students' TOEFL listening proficiency. The data showed that 64% of the total respondents in this research are categorized in the "Elementary" level with score ranges of 31-46 for the TOEFL listening section. Through the mobile technology usage questionnaire, it is revealed that the respondents "Often" use mobile technology for various purposes, accessing various academic and non-academic listening material and various mobile applications to support their listening learning practice. The findings of this study also indicate the coefficient of determination of the two variables is 36% which means students' mobile technology usage gave a 36% contribution to students' TOEFL listening score which in this study is used to measure students' listening proficiency.

In contrast to the previous study by Grenier (2018), which was conducted to examine the correlation between mobile learning and academic achievement measured by GPA, which result showed there are no significant correlations between the two variables, this study's findings indicated a moderate correlation between students' mobile technology usage and their TOEFL listening proficiency. The findings from a previous study by Angelia & Simanjuntak (2023) suggested that using digital audio files considerably affects students' listening skills, but not significantly. Podcasts are an engaging tool for students to accomplish their learning goals and may help the teacher to introduce listening techniques in class. The substance of the podcasts is one of the main elements that may influence how well students' listening skills improve. The study conducted by Klimova (2019) also revealed that using smartphones for vocabulary review and study might help to improve university students' performance. Through the posted alerts, the teacher repeatedly encouraged students in the experimental group to utilize mobile applications to learn and use the new English language outside the class. In line with the result of this study, the use of mobile applications should also consider the needs of the students in order to assist students in learning and accomplishing the learning objective. Students also need to understand that to achieve their learning objective, they must actively participate in their learning.

There might be several factors that differentiate the result of the study, namely the size of the sample, the behaviour of the respondents in using mobile technology in learning, the mobile devices used by the students, the variable factor used in the study, and other factors that might need further investigation. Assessing the purpose and the quality of mobile

applications and online services prior to evaluating the extent of mobility and academic achievement might enable a more accurate analysis of the correlation between mobile technology usage and listening comprehension.

This study's limitation is how mobile technology was used to support students' listening learning in general rather than the TOEFL preparation test. Moreover, the participants did not use specific applications developed by language experts. The researcher also did not specify the use of the mobile device used by students' which might have different usage purposes.

The findings of this research suggested that, although it might not be the main factor, using mobile technology might serve as a practical approach to improving students' listening proficiency levels. Consistent use of mobile devices and mobile services or applications and focusing on the TOEFL preparation strategy might improve students' listening proficiency.

CONCLUSIONS

The result of this research showed a moderate correlation between students' mobile technology usage and their TOEFL listening proficiency. It suggests that the extent of students' mobile technology usage could be considered a predictor of their TOEFL listening proficiency. Further investigation into other factors in helping the improvement of students' listening achievement might be needed. Moreover, the language experts did not develop specific educational applications, which might also contribute to why mobile technology moderately correlates with students' TOEFL listening proficiency. As TOEFL needs different strategies, it might affect students' accomplishment if they utilize mobile technology for TOEFL preparation test purposes.

Further studies with a larger sample, advanced variable factors, and different instruments could refer to and be comparable to this research. As the limitation of this study was that the factors of applications and content used by the students were not specifically for the TOEFL test preparation, the researcher suggests specifying the use of mobile technology in the TOEFL test preparation area. Furthermore, this research investigated students' mobile technology to support their listening learning practice in general, not focusing on the TOEFL preparation tests. Using different mobile devices might also contribute to this study's result. As this research was not focusing on only one mobile device, the students might use one of the mobile devices they own, namely a smartphone, not focusing on TOEFL preparation tests only.

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