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Perceptions of the technology acceptance model and the impact of mobile technology on learning in english as a foreign language classrooms: insights from students and teachers

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ABSTRACT
This study utilises a mixed-method approach to analyse the impact and usage of mobile technology among Indonesian English as a Foreign Language (EFL) teachers and students. The study examines gender factors to understand their interrelation with mobile technology usage. Using online survey questionnaires and semi-structured interviews, this research explores the viewpoints of 150 English educators and 215 secondary students in Indonesia, concentrating on the Technology Acceptance Model (TAM) and Mobile Technology Impact (MTI). The findings demonstrate a clear link between TAM and MTI for both teacher and student cohorts. Male and female students typically hold similar perceptions of TAM and MTI, with the exception of the aspect of promoting collaborative learning. Female students demonstrate a more favourable outlook in this regard. In contrast, teachers uniformly perceive TAM and MTI regardless of their gender. Additionally, the promotion of collaborative learning appears as the least important factor in both Structural Equation Models (SEMs). These discoveries have implications for mobile device incorporation in English classrooms, highlighting the necessity for custom approaches to satisfy diverse perceptions and demographics.

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INTRODUCTION

Technological advances have transformed education over the past 20 years. Mobile technology has revolutionized language education, leading to a shift away from traditional teaching methods to mobile-assisted language learning (MALL) and mobile learning (M-Learning), which have facilitated new educational frontiers. The widespread use of mobile devices, including smartphones, tablets, and personal computers, has extended the learning process beyond traditional classrooms (Domingo & Garganté, 2016).

As mobile technology continues to evolve, educators are challenged to harness its potential to optimize language learning. Previous studies have consistently shown that mobile learning simplifies access to information, enhances participation, promotes self-

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learning, and fosters collaboration (Domingo & Garganté, 2016). Furthermore, mobile technology empowers students to take control of their learning by providing immediate access to online resources and promoting peer-to-peer cooperation, thereby revolutionizing the learning process (Demir & Akpınar, 2018). These technological advances are significant for language education, presenting both opportunities and challenges.

In recent years, M-Learning has gained considerable attention in the realm of English as a foreign language (EFL) education. Mobile technology provides numerous educational advantages, such as unrestricted learning opportunities, heightened student involvement, motivation, cooperation, and individualized, autonomous learning (Chu et al., 2010; Franklin, 2011; Looi et al., 2011).However, integrating mobile technology into instruction and learning is still an actively researched topic. In the digital era, teachers are transitioning from primary conveyors of knowledge to facilitators who use mobile technology to improve student outcomes (Brown & Mbati, 2015). Furthermore, the use of feedback mechanisms and online assessment tools connected to mobile technology has the potential to revolutionize formative assessment practices (Kalogiannakis et al., 2021).

Constructivist theories, particularly Vygotsky's Sociocultural Theory, provide a strong theoretical foundation for understanding the integration of mobile technology with modern pedagogical paradigms. Constructivist methodologies prioritize active student participation, collaborative learning, and the influence of culturally shaped objects on learning. These methodologies align with the capabilities of mobile technology. Integrating mobile technology, such as smartphones and tablets, is consistent with Vygotsky's idea of culturally produced artifacts. This integration enhances student access to information, engagement, and communication, promoting significant learning experiences (Lamb et al., 2017).

Mobile-Assisted Language Learning (MALL) has gained attention due to the widespread use of smartphones and language-learning apps. MALL allows learners to take control of their learning journey beyond traditional classrooms (Kukulska-Hulme, 2013). The use of mobile devices and language-learning apps allows students to conveniently engage in English learning, enhancing their motivation and self-reliance (Lindaman & Nolan, 2015).

The integration of mobile technology in educational settings is influenced by the attitudes of both teachers and students. While some educators exhibit enthusiasm towards technology integration, others express reluctance (Semerci & Aydın, 2018). Similarly, the use of mobile technology by students varies depending on factors such as gender and age (Şad et al., 2022). It is essential to comprehend these perceptions and influential factors to successfully integrate technology into education.

This study aims to comprehensively examine the dynamics of integrating mobile technology in EFL classrooms, focusing on the perspectives of teachers and students. Through a thorough analysis of previous research and exploration of the theoretical framework, relationships, gaps, and discrepancies between various groups, this study aims to provide an objective understanding of the impact of mobile technology on language

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education in contemporary society. Furthermore, this study aims to identify the factors that affect teachers' and students' views and attitudes toward the adoption of mobile technology. It also sheds light on the challenges and opportunities associated with this revolutionary education tool.

In conclusion, this research explores the evolving nature of language education in the digital age and the impact of mobile technology on teaching and learning. This study aims to provide valuable insights into incorporating mobile technology in EFL classrooms, bridging the gap between theory and practice. The research has the potential to inform pedagogical practices, improve technology adoption, and enhance the language learning experience for educators and students.

The researcher considered it necessary to conduct an empirical investigation and analyse Indonesian EFL teachers' and students' perceptions of the Technology Acceptance Model (TAM) and Mobile Technology Impact (MTI) in emergency remote learning in virtual and limited face-to-face classrooms. These research questions are being investigated:

1. What are the differences in perceptions of TAM and MTI between male and female students and teachers?
2. What is the relationship between TAM and mobile technology's impact on learning in an EFL classroom context?.

METHODS

The research design employed in this study, as outlined by Creswell & Creswell (2018), combines both qualitative and quantitative research methodologies to comprehensively investigate teachers' and students' perceptions of the impact of mobile technology on learning. The goal is to provide a holistic understanding of this subject matter. The research focuses on 150 English teachers from various Indonesian programs and 215 students, selected through convenience sampling as per Creswell and Creswell & Creswell (2018) guidelines. The data collection process utilises two main instruments: a structured questionnaire consisting of 47 questions adapted from Domingo & Garganté (2016) and (Hoi & Mu, 2021) and semi-structured interviews that allow for in-depth exploration of the participants' experiences, guided by Aldrich's (2017) framework. The questionnaire gathers quantitative data and then analyses using independent sample T-tests and the Structural Equation Model (SEM) to examine differences and relationships between various variables. Qualitative data collected through interviews is analysed using NVIVO, following Creswell & Creswell (2018) five-step procedure that involves data preparation, exploration, coding, theme development, and findings validation. This thorough mixed-method approach allows for a comprehensive understanding of the research topic, bridging the quantitative and qualitative aspects of the study as suggested by Creswell & Plano Clark (2018).

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RESULTS AND DISCUSSION

Perceived Differences in TAM and MTI Among Male and Female Students (n=215)

Table 1 Independent sample T- test based on students' gender

Independent sample t test (student gender)						
		F	Sig	t	df	2-tailed
TAM_PEU	assumed	.497	.482	.608	213	.544
	not assumed			.597	156.043	.552
TAM_PU	assumed	.363	.548	-.118	213	.906
	not assumed			-.120	174.004	.904
TAM_BI	assumed	.002	.968	1.627	213	.105
	not assumed			1.601	157.808	.111
MTI_PNW	assumed	1.030	.311	1.494	213	.137
	not assumed			1.530	178.134	.128
MTI_ENG	assumed	5.694	.018	1.286	213	.200
	not assumed			1.344	188.734	.181
MTI_AUT	assumed	1.115	.292	.364	213	.716
	not assumed			.371	176.030	.711
MTI_ACC	assumed	.047	.828	.792	213	.429
	not assumed			.788	163.349	.432
MTI_COLL	assumed	.112	.738	2.988	213	.003
	not assumed			2.909	152.391	.004

Source: (Kartika, 2022)

The table shows that the sig value for equality of variances (MTI_COLL) is 0.738, which is greater than 0.05, indicating that identical variances are assumed. There is a significant difference between male and female students regarding the impact of mobile technology in promoting collaborative learning (MTI_COLL) (t(213) = 2.988, p = .003). The t value of 2.988 indicates that female students in the first group had more favorable opinions than male students. There was no significant difference between male and female students of MTI and TAM in terms of other factors, as all the p values (2-tailed) were greater than 0.05. This suggests that male and female students share the same perception of TAM and MTI, except for promoting collaborative learning.

Gender-Based Differences in Teacher TAM and MTI Perception (n=150)

Table 2 Independent sample T- test based on teacher gender

Independent sample t test (teacher gender)						
		F	Sig	t	df	2-tailed
TAM_PEU	assumed	.060	.807	-.952	148	.343
	not assumed			-1.005	77.111	.318
TAM_ PU	assumed	.324	.570	-1.276	148	.204
	not assumed			-1.262	67.805	.211
TAM_ BI	assumed	1.302	.256	-1.264	148	.208
	not assumed			-1.243	67.110	.218
MTI_PNW	assumed	.026	.871	-.163	148	.871

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	not assumed			-.163	69.596	.871
MTI_ENG	assumed	4.602	.034	-.119	148	.905
	not assumed			-.109	59.435	.914
MTI_AUT	assumed	.404	.526	-.042	148	.967
	not assumed			-.040	65.266	.968
MTI_ACC	assumed	.431	.513	-.463	148	.644
	not assumed			-.465	69.722	.643
MTI_	assumed	1.320	.252	-.163	148	.871
COLL	not assumed			-.177	82.549	.860

Source: (Kartika, 2022)

An independent sample t-test was conducted to determine if there were any differences in perceptions between female and male teachers regarding TAM and MTI. The table shows that there were no significant differences in perceptions between female and male teachers, as all the p-values (2-tailed) were greater than 0.05. This suggests that both female and male teachers held the same opinion regarding TAM and MTI.

Structural Equation Modelling: Final Model (student)

The study's structural equation model findings are analyzed by examining the influence of latent variables and observable factors such as students' gender, age, total number of gadgets, internet connectivity, the Technology Acceptance Model (TAM), and Mobile Technology Impact (MTI). Several direct and indirect models were eliminated due to insignificant estimations of certain variables. The final structural equation model is illustrated in Figure 1. Table 3 provides all variable coefficients. The analysis aimed to determine causal relationships between variables in the structural equation model.

Table 3 Standardised regression weights of SEM analysis (student)

Variable		Standardized	Unstandardized	S. E	C.R	*P*label
Independent	Dependent					
Technology Acceptance Model	Perceived ease of use (PEU)	.879	1.000			
	Perceived of usefulness (PU)	.985	1.130	.141	8.032	***
	Behavioural Intention (BI)	.886	1.132	.143	7.922	***
Mobile Technology Impact	Providing New Ways to Learn (PNW)	.885	1.000			
	Increasing Engagement to Learning (ENG)	.834	1.391	.159	8.733	***
	Fostering autonomous learning (AUT)	.944	1.249	.157	7.934	***
	Access to Information (ACC)	.809	0.993	.126	7.880	***
	Promoting Collaborative Learning (COLL)	.721	1.216	.162	7.508	***
Technology Acceptance Model	Mobile Technology Impact	.851	.834	.112	7.445	***

Source: (Kartika, 2022)

*fixed values For any fixed values, standard error cannot be computed

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Table 3 displays the standardized regression weights based on factor loading and the corresponding p-values of the variables. As the p-value is less than 0.05, all related variables are considered significant (***). Additionally, the estimated standardized regression weight values indicate that all variables have a positive impact. The path coefficient value demonstrates that if the independent variable increases by one standard deviation, the dependent variable will increase by the same amount. The TAM construct has a direct influence on MTI with a coefficient value of y=0.851. This implies that as the TAM variable approaches one standard deviation, the MTI will similarly approach 0.851.

The first floor of TAM variables includes three measured items: Perceived ease of use (PEU), Perceived usefulness (PU), and Behavioral Intention (BI). The variables in the Technology Acceptance Model (TAM) have the strongest effect on the items measuring Perceived Usefulness (PU), with coefficient values of y=0.985. On the other hand, the item measuring Perceived Ease of Use (PEU) is the least significant, with a coefficient value of y=0.879. However, the TAM variable has a positive effect on all three measured items, indicating that when PEU, PU, and Behavioral Intention (BI) increase by 1, it will affect TAM with coefficient values of (0.879), (0.985), and (0.886), respectively.

Additionally, the MTI variables consist of five measured items: Providing New Ways to Learn (PNW), Increasing Engagement in Learning (ENG), Fostering Autonomous Learning (AUT), Access to Information (ACC), and Promoting Collaborative Learning (COLL). The MTI variable has the strongest effect on Fostering Autonomous Learning (AUT) with coefficient values of y=0.944. Meanwhile, the least significant construct is Promoting Collaborative Learning (COLL), with coefficient values of y=0.721. However, the MTI variable has a positive effect on all five measured items. This indicates that when Providing New Ways to Learn (PNW), Increasing Engagement to Learning (ENG), Fostering Autonomous Learning (AUT), Access to Information (ACC), and Promoting Collaborative Learning (COLL) increase by 1, MTI increases by 0.885, 0.834, 0.944, 0.809, and 0.721, respectively.

Additionally, the estimated standard error indicates the acceptability of certain measured items. An S.E. value below 0.1 is considered acceptable, with lower values indicating greater significance. Conversely, all items are deemed unacceptable if their S.E. value exceeds the limit of 0.1. However, based on the p-values of the measured items, it is evident that all of the items met the significant cut-off values. This indicates that the SEM model used in this study is reliable with a significance level of 5% ($p < 0.05$). Therefore, the SEM model can be considered valid and trustworthy in building a meaningful model as a whole.

Table 4 Table of goodness-fit-indices of SEM (student)

Model	CMIN	Df	CMIN/df	TLI	CFI	RMSEA
SEM	815.653	455	1.793	0.879	0.889	0.061

Source: (Kartika, 2022)

The table shows that the SEM model used in this investigation has a strong structural model, with most of the goodness-fit-indices reaching the acceptable cut-off value. The TLI (0.879) and CFI (0.889) are within the acceptable range limit of 0.8 to 0.9 for

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comparative fit index. Additionally, the RMSEA indicates a good fit model at 0.061, which is below the cut-off value of 0.1.

Structural Equation Modelling: Final Model (teacher)

The study's structural equation model results are interpreted based on the impact of the relationship between the latent and other observable factors such as teachers' gender, age, education level, certification, total gadget, Internet connection, Technology Acceptance Model (TAM), and Mobile Technology Impact (MTI). Several direct and indirect models were discarded due to the negligible estimations of the variables. Figure 2 illustrates the final model of the SEM study. Additionally, Table 5 provides the statistical values for all variable coefficients. It is important to note that the test focused solely on determining the causal relationship between the variables in the structural equation model.

Table 5 Standardised regression weights of SEM analysis (teacher)

Variable Independent	Dependent	Standardized	Unstandardized	S. E	C.R	P label
Technology Acceptance Model (TAM)	Perceived ease of use (PEU)	.928	1.000			
	Perceived of usefulness (PU)	.924	.989	.134	7.402	***
	Behavioural Intention (BI)	.883	.977	.136	7.172	***
Mobile Technology Impact (MTI)	Providing New Ways to Learn (PNW)	.916	1.000			
	Increasing Engagement to Learning (ENG)	.776	1.137	.156	7.282	***
	Fostering autonomous learning (AUT)	.733	.732	.125	5.840	***
	Access to Information (ACC)	.682	.854	.136	6.301	***
	Promoting Collaborative Learning (COLL)	.651	.883	.148	5.988	***
Technology Acceptance Model	Mobile Technology Impact	.944	.881	.132	6.657	***

Source: (Kartika, 2022)

*fixed values For any fixed values, standard error cannot be computed

Table 5 displays the standardized regression weights based on factor loading and the corresponding p-values of the variables. All related variables are statistically significant with a p-value less than 0.05 (***). Additionally, the estimated standardized regression weight values indicate that all variables have a positive impact. The path coefficient value

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demonstrates that if the independent variable increases by one standard deviation, the dependent variable will increase by the same amount. The TAM construct has a direct influence on MTI, with coefficient values of y=0.944. This value implies that as the TAM variable approaches one standard deviation, the MTI will similarly approach 0.944.

The table shows three measured items on the first floor of TAM variables: Perceived ease of use (PEU), Perceived usefulness (PU), and Behavioral Intention (BI). The variables in the Technology Acceptance Model (TAM) have the strongest effect on the perceived ease of use (PEU) items, with coefficient values of y=0.928. Conversely, the least significant measured item is the Behavioral Intention (BI), with coefficient values of y=0.883. However, the TAM variable has a positive effect on all three measured items, indicating that when the perceived ease of use (PEU), perceived usefulness (PU), and behavioral intention (BI) increase by 1, it will affect TAM with coefficients of 0.928, 0.924, and 0.883, respectively.

The MTI variables comprise five measured components: Providing New Ways to Learn (PNW), Increasing Engagement to Learning (ENG), Fostering Autonomous Learning (AUT), Access to Information (ACC), and Promoting Collaborative Learning (COLL). Of these, Providing New Ways to Learn (PNW) has the strongest impact with a coefficient value of y=0.916, while Promoting Collaborative Learning (COLL) has the least significant impact, with a coefficient value of y=0.651. However, all five measured components exhibit a positive correlation with the MTI variable. This indicates that a one-unit increase in Providing New Ways to Learn (PNW), Increasing Engagement in Learning (ENG), Fostering Autonomous Learning (AUT), Access to Information (ACC), and Promoting Collaborative Learning (COLL) will respectively impact the MTI by 0.916, 0.776, 0.733, 0.682, and 0.651.

Additionally, the estimated standard error (S.E) indicates the acceptability of each measured component. An S.E value below 0.1 is considered acceptable, and the lower the S.E value, the more significant the measured component. However, if the S.E value exceeds 0.1, it suggests poor acceptability. However, the p-values of all measured components meet the significant cut-off value of 5% in the Structural Equation Modeling (SEM) used in this study, indicating the reliability of the model at a 5% significance level ($p < 0.05$). This validates the SEM model and its ability to construct a meaningful overall model..

Table 6 Table of goodness-fit-indices of SEM (teacher)

Model	CMIN	Df	CMIN/df	TLI	CFI	RMSEA
SEM	1105.96	455	2.431	0.801	0.808	0.098

Source: (Kartika, 2022)

The table shows that the SEM model used in this study has a strong structural model, as most of the goodness-of-fit indices meet the acceptable cutoff values. The TLI (0.801) and CFI (0.808) are within the permitted range of 0.8 to 0.9, indicating a comparative fit index. Additionally, the RMSEA indicates a close fit model at 0.098, suggesting a good fit index since the cutoff value should not exceed 0.1.

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Students' and Teachers' Perception of Mobile Technology Impact Thematic Analysis

Access to Information

Student participants view mobile technology as a convenient tool that provides them with access to learning materials regardless of their location or time. They often use smartphones to search for specific information, as demonstrated by Participant 2A's statement: 'I frequently use smartphones to utilize Google Translate for word meanings and pronunciation.' Participant 1A uses online books and references to aid in their studies, while Participant 3A prefers smartphones to access content on YouTube, as well as to find English-language movies and songs. Teacher participants acknowledge the usefulness of mobile technology in delivering lesson content and exposing students to diverse information sources. They often use devices to distribute lesson materials, enabling students to access them at their convenience asynchronously.

Autonomous Learning

The use of mobile technology in English learning is appreciated by student participants due to its autonomy, allowing them to learn outside the classroom context. Participant 2A shared their experience with an application called Rosetta Stone, which enabled independent English learning. Participant 1A mentioned the availability of English learning applications on Android or iOS. Participant 3A reported that she can learn anytime and anywhere with the help of websites and applications, such as Duolingo. Teachers encourage autonomous learning and use interactive tools to support students' independent study.

Collaborative Learning

During the pandemic, collaborative learning has not been favored by students and teachers. Only two student participants reported on the impact of collaborative learning on the teaching and learning process. Student Participant 3A explained that they used Google Docs for group projects, while Participant 1A highlighted the use of Canva and Miro Board for efficient teamwork.Teacher participant 2B found it challenging to encourage group work during the pandemic, resulting in most assignments being completed individually. Other participants did not explicitly mention collaborative learning.

Increasing Engagement

Student participants perceive mobile technology as motivating due to its provision of visually appealing and interactive content. Participant 1A expressed a preference for English classes that integrate mobile technology over traditional classes that rely on textbooks and worksheets, stating, "I favor English classes with mobile technology integration over traditional classes with textbooks and worksheets." Teachers have reported increased student engagement when using mobile technology, particularly with interactive learning tools.

Providing New Ways

Mobile technology is providing alternative ways for students to learn English. Participant 2A noted that mobile technology and the internet offer global connections that allow for encountering and learning new things outside of school textbooks. Participant 1A

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shared that she learns English through various apps and websites, which provide different perspectives. From the perspective of educators, mobile technology provides alternative sources and tools, reducing paper usage and offering a variety of learning methods that enhance the learning process. Participants 1B and 2B emphasized the use of Quizziz and other tools to provide alternative ways to review material and engage students. Both teachers and students agree that mobile technology benefits learning by offering alternative approaches to studying English.

Perceptions of Technology Acceptance Model (TAM) and Multimodal Translation Instruction (MTI) Among Male and Female Students and Teachers

This study conducted independent sample T-tests to analyze the gaps in TAM and MTI perceptions between male and female students and teachers. The results showed no significant difference between male and female students in terms of TAM and mobile technology's impact, except for promoting collaborative learning (MTI_COLL) t (213) = 2.988 and p= .003. The positive. The value of 2.988 indicates that the first group, consisting of female students, scored higher. This assertion was supported by qualitative analysis, in which two female student participants emphasized the influence of collaborative learning on the teaching and learning process. In contrast, male students did not offer detailed opinions on this topic.

Similarly, a study by De Prada et al. (2022) reported a significant gender difference, where female students outperformed male students in most collaboration work. Regarding using smartphones to learn English, gender is one element that influences users' smartphone usage habits when learning a language (Şad et al., 2022). Female students were shown to utilise their cellphones much more than their male colleagues to undertake general language learning activities such as using English learning apps, doing learning activities on websites, watching English videos, and doing vocabulary and pronunciation tasks (Şad et al., 2022).

From teacher participants, the independent sample T-test result showed no significant differences in perceptions between female and male teachers where all the p values (2-tailed) are more significant than 0.05. It indicated that female and male teachers shared the same perception of TAM and MTI. Based on thematic analysis, female and male teacher participants shared similar experiences related to several advantages of mobile technology use in teaching English. Participants 1B (female) and 2B (male) highlighted the convenience of scoring or collecting students' homework/assignments/tests using mobile technology help such as Google Forms and Google Classroom. These findings agreed with some studies that reported no significant difference between female and male teachers' perceptions of the technology acceptance (David & Aruta, 2022; Teo et al., 2019; Teo et al., 2014; Teo et al., 2016). Consequently, female and male teachers need to be on the same page when they perceive technology use in the classroom, especially during the COVID-19 pandemic when teachers must quickly adapt and implement online teaching (David & Aruta, 2022).

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The relationship between Technology Acceptance Model (TAM) and the Impact of Mobile Technology on Learning in the English as a Foreign Language (EFL) Classroom Context

The statistical analysis showed that the Technology Acceptance Model (TAM) had a direct effect on the Mobile Technology Impact (MTI) for both groups of participants, teachers and students. In the Structural Equation Modeling (SEM) model for students, the TAM construct had a direct influence on MTI with coefficient values of y=0.851. Similarly, in the SEM model for teachers, the TAM construct had a direct influence on MTI with coefficient values of y=0.944. The results indicate that TAM has a significant influence on MTI in both groups of participants. Furthermore, students' and teachers' perceptions of the impact of mobile technology in the classroom are also influenced by perceived ease of use, perceived usefulness, and behavioral intention. (Chong et al., 2011; Robinson et al., 2017; Xu & Zhu, 2020; Zainal & Fan, 2022).

The student's model shows that TAM variables have the most significant impact on the Perceived Usefulness (PU) aspect, with coefficient values of y=0.985. Conversely, the Perceived Ease of Use (PEU) item is identified as the least significant, with coefficient values of y=0.879. Additionally, within the same model, the MTI variable has the strongest influence on Fostering Autonomous Learning (AUT), with coefficient values of y=0.944. In contrast, the least significant construct is identified as Promoting Collaborative Learning (COLL), with a coefficient value of y=0.721. It is important to note that Perceived Usefulness holds significant importance within the TAM framework. (Abdullah et al., 2016; Chen et al., 2013). Perceived of usefulness is one of the two conceptions have the most effect on people's adoption or rejection of technology (Davis, 1989).

Participants 2A and 3A reported that mobile technology increased their motivation to learn English and improve their academic performance, particularly when they were unable to attend school in person and meet with their teachers. They were able to access course materials through the Learning Management System (LMS). Additionally, participant 1A noted that using mobile technology improved the convenience of submitting assignments through Padlet. Participants explained several benefits of using mobile technology, including increased motivation in learning, easy access to information, suitability, and an improved English learning experience during the COVID-19 pandemic (perceived usefulness). These findings were similar to a study by DeWitt et al. (2015) stated that the activity involving Padlet had the greatest impact on promoting students' engagement and knowledge exchange virtually.

The use of mobile technology provides convenience and quick access, facilitating the study of English (Perceived Ease of Use). According to student participants, accessing information or learning materials through smartphones and tablets is helpful and easy. However, regarding the practicality of mobile technology to aid in learning the four English language skills (listening, reading, speaking, and writing), student participants only reported finding grammar and vocabulary easy to learn through the use of mobile technology. In a similar vein, a research from Indonesia conducted by Rahayu and Purnawarman (2019) revealed that the majority of pupils significantly improved their

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grammatical comprehension aided by the help of mobile technology in this case Quizziz. Moreover, learning English vocabulary using smartphones was one of the popular activities done by students (Şad et al., 2022).

Participants also mentioned how convenient and flexible language learning tools such as Ruangguru and Duolingo, available on Android and iOS platforms, make it possible to learn independently outside class. These tools provide access to a library of instructional videos and exercises with feedback anytime and from anywhere (Loewen et al., 2019; Rahmawati et al., 2021). Mobile learning is a service that provides students with learning content in general, which aids in knowledge acquisition regardless of place or time (Kukulska-Hulme, 2013).

All participants express positive intentions to integrate mobile devices in the future (Behavioral Intention). However, some concerns arise among teacher participants regarding the challenges of integrating technology into the English classroom, such as teachers' lack of technological knowledge and infrastructure limitations (e.g., blackout). This finding aligns with Hsu and Kuan's (2013) research on barriers to incorporating ICT into classroom teaching, where one factor is the duration of teacher training. It suggests that teachers can enhance their competency and intention to use mobile technology in the classroom by improving their technological literacy through practice-oriented training (Ertmer et al., 2012; Yildiz Durak, 2021). Limited infrastructure, such as technical electricity problems, is also noted in other research (Abdelrahman et al., 2019; Laabidi & Laabidi, 2016). Therefore, school support plays a crucial role in addressing these technical issues to help teachers fully utilize mobile technology in the classroom (Karaca et al., 2013; Xu & Zhu, 2020).

From teacher participant perspectives, compelling ideas about mobile technology facilitating less paper in teaching have emerged (Providing New Ways to Learn). Participants mention that teaching listening to students has become more accessible due to online sources such as VOA and cloze test generators (paperless). Moreover, the learning impact of mobile technology has been demonstrated in providing new methods of learning, allowing students to explore their subjects from various angles, fostering meaningful learning experiences in the classroom (Boticki et al., 2015; Domingo & Garganté, 2016; Furió et al., 2015).

In both SEM models (teacher and student), promoting collaborative learning is the least significant measured item. Only two female student participants highlighted the impact of collaborative learning on the teaching and learning process by utilizing online tools like Google Docs and Miro board; there were no detailed opinions from male students on this theme. Google Docs as an online collaborative tool has been reported by Fallon (2015) to simplify technological collaboration and likely encourage more participation in student activities (Fen Yeh, 2021; Zainal & Fan, 2022). From teacher perspectives, it is challenging to encourage group work during a pandemic, so most assignments are individual, and learning processes are conducted online to save time. Similarly, Robinson et al. (2017) report that collaborative learning poses challenges for teachers, such as managing time and schedules. Due to heavy workloads and a lack of teachers' knowledge, teachers often lack time to address practice (Garbin et al., 2015). Tutors must be familiar with collaborative learning procedures in a virtual

setting. Therefore, the collaborative context must be acknowledged and taken into account during instructional activities (de Jong et al., 2019; Garbin et al., 2015).

CONCLUSION

This study investigates Indonesian secondary English teachers' and students' perceptions of technology acceptance and its impact on English as a Foreign Language (EFL) classrooms. Using a mixed-method approach, including quantitative analysis (t-tests and SEM) and thematic analysis, the research offers a comprehensive understanding of the topic. It acknowledges the increasing importance of integrating mobile technology into English classrooms, particularly amidst the global shift towards online learning during the COVID-19 pandemic. The study reveals persistent differences in technology perceptions between teachers and students, stressing the need to understand the factors influencing these perceptions. Validating the Technology Acceptance Model (TAM) in an educational context, the study shows that perceived ease of use and usefulness significantly influence teachers' and students' intentions to use technology, affecting their perceptions of mobile technology's impact on the classroom, especially in promoting collaborative learning. The study highlights the theoretical significance of perceived ease of use and usefulness within the TAM framework, aligning with existing research. It also emphasizes the strong connection between the TAM construct and the Mobile Technology Impact (MTI) construct, directly linking technology acceptance to perceptions of mobile technology's impact. Methodologically, the study underscores the value of mixed-method research for addressing complex research questions, employing various data collection and analysis techniques. It acknowledges limitations, such as gender imbalances among participants and differences in respondent numbers, and suggests improvements to the SEM model by considering additional demographic variables. Future research suggestions include exploring collaborative learning using mobile technology in Indonesian EFL classrooms, particularly through experimental or classroom action research focusing on students' collaborative work across different age groups and genders. Teachers are encouraged to leverage mobile devices to support collaborative learning while considering students' unique characteristics.

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