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Mobile-Assisted Flipped Learning Integrated with Metacognitive Skills in the Teaching of Speaking and Listening Skills

Haerazi
Universitas Pendidikan Mandalika
haerazi@undikma.ac.id
Corresponding email: haerazi@undikma.ac.id

Abstract

The integration of mobile technology within the framework of flipped learning provides a viable and efficient means of fostering learners' speaking and listening skills. Through the flipped classroom, learners are better prepared for in-class interactions, as they have already acquired foundational knowledge and exposure to authentic language use. Therefore, this study aims to find out the efficacy of mobile-assisted flipped learning integrated with metacognitive skills in the teaching of speaking and listening skills in Mandalika University of Education. This study is designed in experimental design which is non-equivalent control group design. In this design, participants are not randomly assigned to the intervention or control group, resulting in inherent differences between the groups that may influence the outcomes. The instruments employed the speaking, listening, and metacognitive tests. The collected data are analyzed in descriptive and inferential statistical analysis. Based on the data analysis, the conclusion of this study showed that the integration of mobile-assisted flipped learning had a positive impact on learners' speaking and listening proficiency. Learners actively engaged in preparing their learning activities, both during out-of-class and in-class sessions. The incorporation of mobile technology and the flipped learning approach empowered learners to take ownership of their learning, enabling them to access instructional materials outside the traditional classroom setting and actively participate in in-class interactions. These findings highlight the potential of mobile-assisted flipped learning as an effective pedagogical approach in enhancing learners' speaking and listening skills, while also promoting learner autonomy and engagement in the learning process.

Keywords: Mobile learning; flipped learning; metacognitive skills; speaking and listening skills

Introduction

Teaching English as a foreign language requires the implementation of specific learning methods or approaches to effectively guide learners in acquiring language skills (Celce-Murcia, 2007; Richards & Rodgers, 2001; Sudarmaji et al., 2021), including speaking and listening skills. Among the various pedagogical approaches available, flipped learning stands out as a promising method for facilitating language skill development. Flipped learning is an instructional approach that reorganizes the traditional learning structure by shifting the delivery of instruction outside the classroom, while utilizing in-class time for interactive learning activities (Basal, 2015;

Gilboy et al., 2015). By adopting flipped learning, lecturers can optimize the use of valuable in-class time for engaging learners in meaningful language learning experiences (Adnan, 2017; Aqqal et al., 2017). The initial exposure to instructional content, such as grammar explanations or vocabulary and pronunciation presentations, is provided through pre-recorded videos (Burke & Fedorek, 2017), online materials (Le Roux & Nagel, 2018), or readings that students can access outside the classroom.

The flipped learning allows learners to acquire the necessary foundational knowledge independently (Fauzan & Ngabut, 2018; Gough et al., 2017), at their own pace and convenience. Subsequently, during in-class sessions, the focus shifts towards collaborative activities, discussions, and hands-on exercises that promote active participation and interaction among learners (Kim, 2018; Lee & Wallace, 2018). In this way, flipped learning fosters a learner-centered environment, enabling students to actively apply their knowledge, practice language skills (Hazaymeh & Altakhaineh, 2019), and receive immediate feedback and guidance from the instructor (Wu et al., 2020; Yoon & Kim, 2022). By capitalizing on in-class time for interactive learning, flipped learning enhances the efficiency and effectiveness of language skill acquisition. Moreover, flipped learning encourages learners to take responsibility for their own learning process, as they are expected to engage with the pre-class materials (O'Flaherty & Phillips, 2015) and come prepared to actively participate during in-class activities.

Yoon and Kim (2022) state that flipped learning can promote self-directed learning skills, autonomy, and critical thinking, which are essential for lifelong learning and language proficiency development. Employing flipped learning as a pedagogical approach in teaching language skills provides an innovative and effective method to enhance language skill acquisition (Jiang et al., 2021; Tadayonifar & Entezari, 2020). By utilizing out-of-class time for instructional content delivery and in-class time for interactive learning experiences, flipped learning maximizes the potential of in-person interactions, promotes learner engagement, and fosters learner autonomy (Alghasab, 2020; Bakla & Mehdiyev, 2022). The application of this approach can lead to more efficient and effective language learning outcomes for learners of English as a foreign language.

In the context of developing speaking and listening skills, lecturers employ a range of instructional flipped strategies to facilitate the language activities. One

such strategy involves the provision of online materials, specifically English YouTube videos (Arndt & Woore, 2018) and English website links (Son & Park, 2012), which align with the discussion topics at hand. By integrating these resources into the learning process, learners are afforded the opportunity to engage in purposeful listening activities that promote language comprehension and fluency (Cartner & Cameron, 2022; Terzioğlu & Kurt, 2022). The utilization of English YouTube videos serves as a valuable tool to expose learners to authentic spoken language in various contexts (Bajrami & Ismaili, 2016; C. W. Chen, 2018). These videos often feature native or proficient speakers engaging in conversations, presentations, or discussions on relevant topics. By incorporating such videos into the out-of-class and in-class activities, lecturers enable learners to develop their listening skills by actively processing spoken language, identifying vocabulary, understanding intonation, and recognizing various linguistic features that contribute to effective communication.

In order to optimize the development of learners' speaking and listening skills, the researcher adopts the use of mobile technology as a means of implementing flipped learning. Mobile devices, including mobile phones, smartphones, and Personal Digital Assistants (PDAs), are recognized for their portability, lightweight design, and handheld functionality (Çakmak & Erçetin, 2018; Chang et al., 2018). Within the framework of flipped learning, mobile devices are employed to facilitate out-of-class learning activities, whereby learners are expected to engage with instructional materials (Sudiatama et al., 2023; Yanto et al., 2020) such as videos or English podcasts created by lecturers in preparation for in-class sessions.

The integration of mobile technology within the context of flipped learning help learners to carry out learning activities easier. The portability and lightweight nature of mobile devices enable learners to access learning materials anytime and anywhere, thus fostering flexibility and convenience in their language learning journey (Gao & Shen, 2021; Lai & Zheng, 2018). Learners can conveniently watch instructional videos or listen to English podcasts on their mobile devices, allowing them to adapt their learning experiences to fit their individual schedules and preferences. Lin et al. (2022) argue the utilization of mobile devices in flipped learning facilitates the incorporation of multimedia resources, enhancing learners' engagement and comprehension of the instructional content. Videos and podcasts, often featuring native or proficient speakers, provide learners with authentic language input, exposing them to various accents, intonations, and communicative

contexts. This exposure contributes to the development of listening skills, as learners actively process spoken language and become familiar with the nuances of natural conversation (Burke & Fedorek, 2017; Terzioğlu & Kurt, 2022).

Additionally, mobile devices afford opportunities for learners to engage in self-paced learning, enabling them to revisit instructional materials as needed and tailor their learning process to their own pace and needs (Loewen et al., 2019; Puebla et al., 2022). Learners can pause, rewind, or repeat sections of videos or podcasts to ensure a comprehensive understanding of the content. This personalized learning experience allows learners to focus on areas that require further attention, promoting autonomy and metacognitive reflection (Rahimi & Katal, 2012b, 2012a). By utilizing mobile technology in flipped learning, learners are equipped with the tools necessary to enhance their speaking and listening skills. The accessibility, multimedia capabilities, and flexibility of mobile devices contribute to the effectiveness of out-of-class learning activities, enabling learners to engage with instructional materials at their convenience.

In this study, the effectiveness of flipped learning in speaking and listening classes is influenced by learners' metacognitive skills. Metacognitive skills refer to individuals' capacity to engage in self-questioning and self-regulation (Haerazi & Kazemian, 2021; Zhang & Zhang, 2019). Within the context of learning activities, learners are encouraged to think critically, and the outcome of such critical thinking is reflected in their ability to effectively regulate their own learning progress and achievement (Haerazi et al., 2020; Kazemian et al., 2021). Metacognitive skills play a crucial role in the learning process, as they enable learners to engage in reflective thinking, monitor their own comprehension, and make conscious decisions regarding their learning strategies and goals (Aziz et al., 2019; Cartner & Cameron, 2022). By fostering metacognitive skills, flipped learning provides learners with the cognitive tools necessary to actively engage in the learning activities and take ownership of their learning process.

Within the framework of mobile-assisted flipped learning, learners are prompted to think critically by engaging with pre-class instructional materials, such as videos, readings, or podcasts that present them with the necessary content and concepts. This exposure to the material encourages learners to analyze, evaluate, and synthesize information, thus cultivating their critical thinking skills (C. W. Chen, 2018; Par, 2018). By encouraging critical thinking through pre-class instructional

materials, flipped learning empowers learners to engage in reflective practices and develop a deeper understanding of the content. This, in turn, fosters metacognitive skills, ultimately enhancing learners' ability to self-regulate and achieve optimal learning outcomes in the context of speaking and listening skills.

Through the flipped classroom, learners are better prepared for in-class interactions, as they have already acquired foundational knowledge and exposure to authentic language use. The research questions formulated include whether the mobile-assisted flipped learning is effective or not to teach speaking and listening skills and to find out whether there is or not the interaction between mobile-assisted flipped learning and metacognitive skills in improving students' speaking and listening skills. Therefore, this study aims to find out the efficacy of mobile-assisted flipped learning integrated with metacognitive skills in the teaching of speaking and listening skills in Mandalika University of Education. The novelty of this study lied in the use of flipped learning which is assisted with mobile devices and integrated with metacognitive skills in enhancing pre-service teachers' speaking and listening skills.

Research Methodology

This study is designed in experimental design which is non-equivalent control group design. In this design, participants are not randomly assigned to the intervention or control group, resulting in inherent differences between the groups that may influence the outcomes (Miles et al., 2016). The use of non-equivalent control group design is based on situations where random assignment is not feasible or ethical in this study (Ghauri et al., 2020). This study aims to find out the efficacy of mobile-assisted flipped learning integrated with metacognitive skills in the teaching of speaking and listening skills in Mandalika University of Education. To see the efficacy of the mobile-assisted flipped learning, the research samples are divided into two groups, control and experimental groups. Learners who are subjected to mobile-assisted flipped learning are categorized as the experimental group meanwhile project-based learning is applied in the control group. The learners, who are involved in the experimental group consist of 27 participants, while in control group allot 29 learners.

Data Collection Technique

The data collected for this study are quantitative in nature. Quantitative data refers to numerical information that can be measured and analyzed statistically (Miles et al., 2016). The present study encompasses the assessment of learners' performance in speaking skills, listening skills, and metacognitive skills. To collect the necessary data, speaking tests, listening tests, and metacognitive tests were employed as instruments of measurement. Both the experimental and control groups participated in the study and were administered the aforementioned tests during pre-test and post-test sessions. Additionally, the metacognitive test was conducted during the initial phase of the speaking and listening classes to evaluate learners' metacognitive abilities and their application to the learning process.

The speaking test was focused on vocabulary usage, grammatical competence, pronunciation, language accuracy, fluency, coherence of ideas. It is aimed to evaluate learners' ability to communicate effectively, express ideas clearly, demonstrate grammatical accuracy, and exhibit appropriate pronunciation and intonation after giving mobile-assisted flipped learning activities. In speaking test, the lecturer provides learners with various tasks, such as oral presentations, role-plays, discussions, or interviews, which required learners to engage in spontaneous and interactive speaking activities. This test provided quantitative data that were analyzed to assess learners' speaking skills and compare the performance of different groups within the study.

In listening test, the lecturer focuses on learners' listening comprehension skills and their ability to understand spoken language. These tests aimed to evaluate learners' proficiency in comprehending spoken information, identifying main ideas, understanding details, and extracting relevant information from aural input. The listening test consisted of multiple-choice questions, gap-filling exercises, or short answer questions, which required learners to actively listen to videos or spoken passages and demonstrate their understanding. The assessment criteria for the listening tests in this study included factors of accuracy of answers, comprehension of main ideas, recognition of supporting details, and ability to follow and understand spoken discourse. The results of the listening tests provided quantitative data that were analyzed to assess learners' listening skills and to compare the performance of different groups within the study.

Data Analysis

The data of this study were obtained through the administration of speaking tests, listening tests, and metacognitive tests, which generated numerical scores or ratings. The use of quantitative data allows for statistical analysis, enabling researchers to draw objective conclusions, identify patterns, and make inferences about the relationships between variables in the study. To see the effectiveness of mobile-assisted flipped learning, the quantitative data were analyzed in descriptive and inferential statistical analysis. The descriptive analysis is to show the learners' speaking and listening grades from the control and experimental groups. In this case, the descriptive analysis was focused on the mean, mode, median, and standar deviation. Meanwhile, the inferential analysis was conducted to achieve the effect of and the interaction between the mobile-assisted flipped learning classroom and metacognitive skills towards learners' English speaking and listening skills at Mandalika University of Education.

In this study, inferential analysis was conducted using parametric statistical analysis, specifically the multifactor analysis of variance (ANOVA) with two-way ANOVA. This statistical approach allows for the examination of significant differences between groups. The analysis was performed using the IBM SPSS 21.0 software, which provides the necessary tools and functionality to compute the statistical tests and assess the significance of the observed differences. By employing the multifactor ANOVA with two-way ANOVA, this study aims to determine if there are statistically significant variations between the groups in terms of the measured variables. The use of parametric statistical analysis and the IBM SPSS 21.0 software ensures a rigorous and systematic approach to analyzing the data and drawing valid conclusions. The conclusion was decided in the sig. level 0.05. The interpretation of the data findings was taken in line with the statistical hypothesis.

Findings and Discussion

Findings

Mobile-assisted flipped learning is designed to facilitate learners to improve speaking and listening skills integrated with their metacognitive skills. This is subjected to the experimental group. In control group, learners are treated by project-based learning, which is the existing learning approach used by the lecturer. This study was assisted by two speaking and listening lecturers from Mandalika University of Education. The two are also played a role as raters of learners' speaking and

listening performances. The complete speaking and listening achievement of learners' pre-test and post-test session can be presented in Figure 1 and Figure 2.

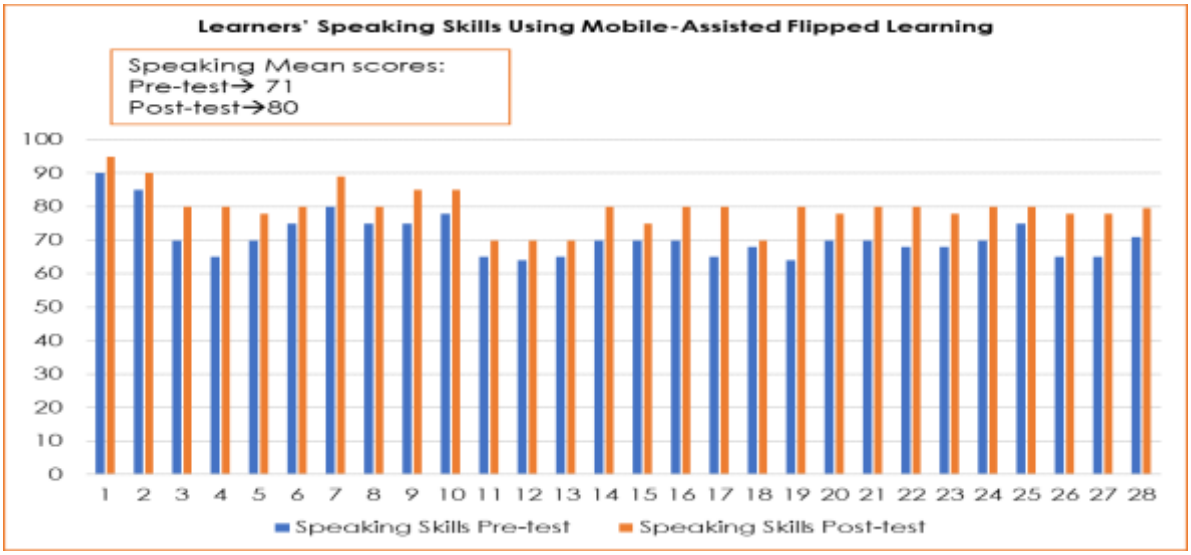

Figure 1. Learners' Speaking Skills in Experimental Group

The experimental group demonstrated a higher mean score in speaking achievement compared to the control group. In the post-test assessment, the experimental group achieved a mean score of 80, while the control group attained a mean score of 75. This difference suggests that the intervention implemented in the experimental group positively influenced learners' speaking performance, resulting in a statistically significant increase in their mean score. These findings provide empirical evidence of the effectiveness of the intervention in enhancing learners' speaking skills, as demonstrated by the higher mean score in the experimental group when compared to the control group. Dealing with the listening skills, learners' listening achievement can be showed in Figure 2.

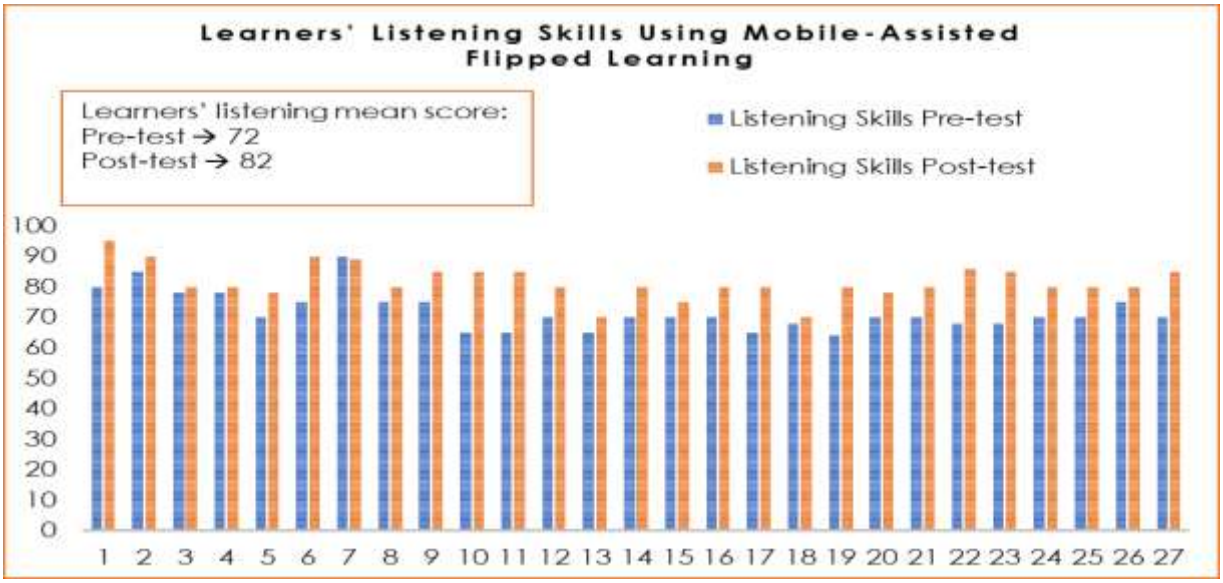

Figure 2. Learners' Listening Skills in Experimental Group

Figure 2 illustrates the effectiveness of employing mobile-assisted flipped learning in enhancing learners' listening skills and comprehension. The results clearly indicate that learners in the experimental group outperformed those in the control group in terms of their listening skills. Specifically, the mean score for listening in the experimental group was 82, whereas the control group achieved a mean score of 72. These findings provide empirical evidence of the positive impact of the mobile-assisted flipped learning approach on learners' listening abilities. The observed difference in mean scores between the experimental and control groups signifies the significant improvement in listening skills achieved through the implementation of the mobile-assisted flipped learning methodology.

In relation to students' metacognitive skills, both the control and experimental groups exhibited a comparable level of metacognitive abilities. The data analysis revealed no statistically significant difference between the two groups in terms of their metacognitive skill levels. This suggests that prior to the implementation of the intervention, the participants in both groups possessed a similar level of metacognitive awareness and self-regulatory capacities. The parallel levels of metacognitive skills between the control and experimental groups provide a robust foundation for comparing the effects of the intervention on other outcome variables, such as speaking and listening skills. The metacognitive skills of learners can be shown in Table 1.

Table 1. Learners' Metacognitive Skills

Descriptive Statistics				
Skills	Metacognitive	Mean	Std. Deviation	N
Speaking	High	82.21	6.67	14
	Medium	76.45	4.126	22
	Low	75	5.912	20
	Total	77.38	6.119	56
Listening	High	82.5	8.225	14
	Medium	77.23	5.282	22
	Low	77.35	6.467	20
	Total	78.59	6.803	56

Table 1 presented learners' metacognitive level both experimental and control groups. 56 learners are involved in this study. 14 learners have high metacognitive level, 22 learners have medium level, 20 learners have low level of metacognitive in speaking classes. Meanwhile, the same level of metacognitive was attained by learners in listening classes. To see the interaction between metacognitive skills and the mobile-assisted flipped learning, this study employed an inferential statistical analysis. Table 2 presented the summary of Manova test.

Table 2. Summary of Manova Test

Tests of Between-Subjects Effects						
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Speaking	459.313a	2	229.657	7.608	0.001
	Listening	285.640b	2	142.82	3.349	0.043
Intercept	Speaking	327181.824	1	327181.824	10839.2	0
	Listening	336796.402	1	336796.402	7898.63	0
Metacognitive	Speaking	459.313	2	229.657	7.608	0.001
	Listening	285.64	2	142.82	3.349	0.043
Error	Speaking	1599.812	53	30.185		
	Listening	2259.914	53	42.64		
Total	Speaking	337325	56			
	Listening	348417	56			
Corrected Total	Speaking	2059.125	55			
	Listening	2545.554	55			
a R Squared = .223 (Adjusted R Squared = .194)						
b R Squared = .112 (Adjusted R Squared = .079)						

Discussion

This study aims to find out the effectiveness of integrating mobile-assisted flipped learning with metacognitive skills in the instruction of speaking and listening skills at Mandalika University of Education. Through an investigation of the research findings, it was revealed that the integration of mobile-assisted flipped learning had a positive impact on learners' speaking and listening proficiency. Learners actively engaged in preparing their learning activities, both during out-of-class and in-class sessions. The incorporation of mobile technology and the flipped learning approach empowered learners to take ownership of their learning, enabling them to access instructional materials outside the traditional classroom setting and actively participate in in-class interactions (Walsh & Rísquez, 2020; Yilmaz, 2017; Zarrinfard et al., 2021). These findings highlight the potential of mobile-assisted flipped learning as an effective pedagogical approach in enhancing learners' speaking and listening skills, while also promoting learner autonomy and engagement in the learning process.

In the context of teaching practice, learners actively participate in a range of speaking activities aimed at enhancing their oral communication skills. These activities encompass reading activities focused on discussion topics, followed by interactive discussion sessions. During these sessions, learners are encouraged to engage in activities that enhance their pronunciation of English words, the expression of ideas, and the ability to provide counterarguments. Importantly, these speaking activities occur within the confines of the in-class learning environment. To further reinforce learners' speaking skills, additional resources in the form of English videos are made available through online learning platforms, accessible via mobile devices (Puebla et al., 2022; Terzioğlu & Kurt, 2022). These videos serve as supplementary materials to support learners' language development.

By utilizing mobile devices, learners are asked to engage with the videos at their own convenience and pace, providing them with opportunities to practice their speaking skills beyond the confines of the traditional classroom setting. It is in line with Bajrami and Ismaili (2016) who inform that by combining in-class speaking activities with online resources, such as English videos accessible through mobile devices, learners are provided with a comprehensive learning experience that fosters the development of their speaking skills. The integration of these activities

allows for a more dynamic and interactive learning environment, where learners are actively engaged in various speaking tasks and exposed to authentic language materials (Gao & Shen, 2021; Lin et al., 2022). These multifaceted activities to teaching speaking skills can enhance learners' proficiency and fluency in English communication.

During the intentional content phase of flipped learning, learners are asked to be engaged in a purposeful learning process that promotes the acquisition of natural English language skills. This is facilitated through the utilization of mobile devices, which allow learners to access and engage with English YouTube videos and relevant website links provided by their lecturers (Arndt & Woore, 2018; Bakla & Mehdiyev, 2022). By watching and listening to these materials, learners are exposed to authentic English language usage, enabling them to develop a more intuitive understanding of the language. Furthermore, the in-class time is strategically allocated for learners to actively participate in cooperative interactions with their peers under the guidance and supervision of their lecturers.

The use of mobile-assisted flipped learning is able to create collaborative learning both speaking and listening time. This collaborative setting fosters meaningful engagement, as learners engage in discussions, role-plays, and various interactive activities (Al-Rawahi & Al-Mekhlafi, 2015; C. W. Chen, 2018) that promote the application and practice of the language skills they have acquired through the intentional content phase. Through this interactive process, learners not only enhance their communicative abilities but also strengthen their interpersonal and cooperative skills (Jiang et al., 2021; Kim, 2018). The intentional content phase of flipped learning, with its emphasis on mobile-assisted learning and in-class collaboration, creates a comprehensive and dynamic learning environment that integrates both independent exploration and guided interaction. By combining self-paced learning through mobile devices with in-class cooperative activities, learners are provided with valuable opportunities to engage with authentic language materials and practice their English language skills in a supportive and interactive setting (Gilboy et al., 2015; Tadayonifar & Entezari, 2020). These learning activities can enhance learners' language proficiency, fluency, and sociolinguistic competence in a natural and learner-centered manner.

The learner-centered approach has emerged as a fundamental pillar within the framework of the flipped learning model (Hung, 2017; Yanto et al., 2020),

particularly in the context of teaching speaking and listening skills. In traditional instructional settings, learners often face limited exposure to the target language, and learning activities are characterized by their decontextualized nature, lacking real-life situational relevance. In contrast, the learner-centered learning in this study places learners at the forefront of the learning process, acknowledging their individual needs, interests, and preferences. Within the flipped learning model, learners are provided with ample opportunities to engage in authentic and meaningful language experiences.

Through the integration of multimedia resources, such as audio and video materials accessible through mobile devices, learners can access a wider range of authentic language input. According to Pradana and Tena (2021), this exposure to authentic language aids in bridging the gap between classroom learning and real-life language use. Furthermore, the learner-centered learning activities allow learners to actively participate in the selection and exploration of learning materials (Flowers et al., 2019; Liu et al., 2018), catering to their specific interests and learning styles. By engaging with contextually relevant and authentic language materials, learners can develop a deeper understanding of the language and its cultural nuances.

The authentic materials in the autonomy learning fosters a more holistic and comprehensive speaking and listening experiences, promoting not only linguistic competence but also sociocultural understanding and communicative proficiency (Afifah & Devana, 2020; Sudarmaji et al., 2021). By embracing a learner-centered approach within the flipped learning model, lecturers can provide learners with the necessary tools and resources to engage in meaningful speaking and listening learning experiences. This shift from decontextualized activities to authentic and learner-driven language encounters empowers learners to develop a deeper connection with the language and enhances their overall speaking and listening skills. The learner-centered approach within the flipped learning model thus offers a promising avenue for creating engaging and effective language learning environments.

In doing learners' out-of-class learning, learners can utilize their metacognitive skills. Learners are involved in reflecting their own thinking and learning process. For instance, learners are asked to regulate their understanding of a certain discussion topic before expressing it in front of speaking class. It is in line with Cartner and Cameron (2022) who argue metacognitive skills refer to learners' ability to monitor,

regulate, and reflect on their own thinking and learning processes. In the flipped learning model, learners are actively encouraged to employ metacognitive strategies to enhance their engagement and understanding of the subject matter (Rahimi & Katal, 2012a). They can effectively plan and manage their speaking and listening activities. They are encouraged to set goals, select appropriate learning resources, and strategize their approach to maximize their learning outcomes. In the context of flipped learning, learners are empowered to take ownership of their learning by engaging in self-directed learning activities outside the classroom (Tadayonifar & Entezari, 2020).

Additionally, in in-class learning the lecturer leads learners to train their metacognitive competences and skills. Learners are trained to monitor their understanding and comprehension of the speaking and listening materials through mobile devices. At the same time, they can assess their own progress, identify areas of strengths and weaknesses, and make adjustments to their learning strategies accordingly. This self-assessment process helps them to actively monitor their own learning, fostering a sense of self-awareness and self-regulation (Butler, 2023; Zhang & Zhang, 2019). Moreover, this can help them in reflecting on their learning experiences. They are encouraged to think critically about their learning process, evaluate their strategies, and make connections between new knowledge and prior learning (Haerazi & Kazemian, 2021; Kazemian et al., 2021). This reflective practice promotes deeper learning and facilitates the transfer of knowledge and skills to real-life contexts.

This study demonstrated that the implementation of mobile-assisted flipped learning effectively empowers learners to engage in meaningful language learning experiences within authentic real-life situations (C.-M. Chen et al., 2019; Loewen et al., 2019). In the context of in-class activities, learners are provided with various opportunities to practice and apply their language skills. These activities encompass dialogue exercises, where learners engage in interactive conversations, role-playing exercises that simulate real-life scenarios, and the completion of short dialogues presented in videos shared by lecturers. By engaging in dialogue exercises, learners are encouraged to actively participate in conversational interactions (Bjuland & Helgevold, 2018), thereby enhancing their oral communication skills and promoting fluency.

Role-playing exercises using flipped learning model facilitate learners to immerse themselves in simulated real-life situations, enabling them to practice language functions and cultural nuances in a contextually relevant manner. Furthermore, the completion of short dialogues in videos shared by lecturers provides learners with authentic language input and reinforces their comprehension and production skills (Bajrami & Ismaili, 2016; Xu & Zhou, 2020). The integration of these in-class activities within the mobile-assisted flipped learning model serves as a catalyst for learners to apply their language skills in practical and meaningful ways. By engaging in these hands-on activities, learners are able to bridge the gap between classroom instruction and real-life language use, thereby fostering a deeper understanding and appreciation of the target language. This approach not only enhances learners' language proficiency but also cultivates their confidence and motivation to communicate effectively in real-life situations.

Conclusion and Suggestion

This study investigated the efficacy of mobile-assisted flipped learning integrated with metacognitive skills in the teaching of speaking and listening skills. The findings demonstrated that the implementation of mobile-assisted flipped learning had a positive effect on learners' speaking and listening skills. Learners actively participated in a range of speaking activities within the in-class learning environment, such as reading activities of discussion topics followed by interactive discussion sessions. During the intentional content phase of flipped learning, learners engaged in purposeful learning processes that involved listening to and watching English YouTube videos and relevant website links provided by lecturers. These activities exposed learners to authentic English language usage, contributing to the development of their listening skills and comprehension. In-class time was allocated for learners to engage in cooperative interactions, allowing them to practice and apply the language skills acquired during the intentional content phase.

The use of mobile-assisted flipped learning created a collaborative learning environment for both speaking and listening activities. This collaborative setting fostered meaningful engagement, as learners participated in discussions, role-plays, and other interactive activities that promoted the application and practice of their language skills. By combining self-paced learning through mobile devices with in-class cooperative activities, learners had valuable opportunities to engage with

authentic language materials and practice their English skills in a supportive and interactive setting. Furthermore, the learner-centered approach was a fundamental pillar of the flipped learning model in the teaching of speaking and listening skills. It addressed the limitations of traditional instructional settings by providing learners with more exposure to the target language and offering contextually relevant learning activities. Learners had greater autonomy in selecting and exploring learning materials, catering to their individual needs, interests, and learning styles. This learner-centered approach, combined with the integration of multimedia resources and authentic language materials, fostered a holistic and comprehensive speaking and listening learning experience, promoting linguistic competence, sociocultural understanding, and communicative proficiency.

The suggestion for further studies in the implementation of mobile-assisted flipped learning is that the next studies should focus much more on learning activities in-class time. Before the in-class session, lecturers should involve learners to watch or listen to specific videos or podcasts related to the upcoming topic. This may allow them to familiarize themselves with the content and engage in critical thinking about the subject matter. In the classroom, learners can then actively participate in discussions, role-plays, or other interactive activities related to the pre-assigned materials.

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