IJHS, e-ISSN 2597-4718, p-ISSN 2597-470X, Vol. 8, No. 1, September 2024, pp. 154-173

International Journal of Humanity Studies
http://e-journal.usd.ac.id/index.php/IJHS
Sanata Dharma University, Yogyakarta, Indonesia

VIRTUAL FLIPPED CLASSROOM FOR DEVELOPING EFL STUDENTS' SPEAKING SKILLS: DESIGN AND IMPLEMENTATION

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https://doi.org/10.24071/ijhs.v8i1.5509
received 12 December 2022; accepted 15 August 2024

Abstract
In Indonesia, English as a Foreign Language (EFL) students often struggle with developing speaking skills due to limited classroom time and cultural tendencies towards passive learning. This study investigated the effectiveness of a virtual flipped classroom in addressing these challenges and enhancing EFL students' speaking abilities. The research involved 40 Indonesian university students, divided equally into experimental and control groups. The experimental group participated in a virtual flipped classroom, completing pre-class online activities and engaging in in-class speaking exercises, while the control group received traditional instruction. Pre- and post-tests assessed speaking skills, supplemented by student surveys. Results revealed significantly higher post-test scores in the experimental group compared to the control group. Furthermore, survey data indicated that students perceived the virtual flipped classroom as effective in promoting active learning and enhancing their speaking skills. This approach shows promise in overcoming cultural barriers to active participation and maximizing limited class time for speaking practice in Indonesian EFL contexts. However, further research is needed to explore long-term effects and optimal implementation strategies across diverse EFL settings.

Keywords: EFL, flipped classroom, speaking skills, virtual class

Introduction
The flipped classroom has emerged as a promising approach to language learning, particularly for developing English as a foreign language (EFL) students' speaking skills (Abdullah, Hussin, & Ismail, 2019; Kawinkoonlasate, 2019). In a flipped classroom, students engage with the course material outside of class through online activities and exercises, allowing for more in-depth discussions and activities in the physical classroom (Baskara 2023a, 2023b). This approach is practical for promoting active learning and improving student engagement (Subramaniam & Muniandy, 2019).

Speaking effectively is a crucial skill for success in both academic and professional settings (Rao, 2019). Developing speaking skills for students learning English as a foreign language (EFL) can be challenging but essential. In traditional EFL classrooms, speaking activities often take a backseat to more traditional language learning methods, such as grammar drills and vocabulary

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memorisation. However, research has shown that speaking skills are best developed through authentic, real-life language and interaction with others (Chen & Kent, 2020; Namaziandost & Nasri, 2019; Toro et al., 2019).

In the context of higher education, particularly in EFL settings, the development of speaking skills presents unique challenges and opportunities. Recent research has highlighted the critical role of speaking skills in academic success and future career prospects for EFL learners (Maican & Cocoradă, 2021). For instance, a study by Asakereh and Dehghannezhad (2015) found that strong speaking skills were positively correlated with overall academic performance among EFL university students, while Ting et al. (2017) demonstrated that proficient oral communication in English significantly enhanced job market competitiveness for graduates in non-English speaking countries.

Despite its importance, speaking remains one of the most challenging skills for EFL learners to master, particularly in contexts where exposure to authentic English communication is limited. Mulyono et al. (2019) identified several factors contributing to this difficulty, including limited opportunities for practice, anxiety about making errors, and cultural norms that may discourage active participation in class. In the Indonesian context, Zulfikar (2013) noted that large class sizes and a traditionally teacher-centered approach to education further compound these challenges, often resulting in passive learning behaviors that hinder the development of speaking skills.

To address these issues, innovative approaches to language teaching that maximize opportunities for active learning and speaking practice are needed. The flipped classroom model, particularly when implemented in a virtual environment, offers a promising solution. By moving content delivery outside of class time through online materials, this approach frees up valuable in-class time for interactive speaking activities and personalized feedback (Sargent & Cassey, 2020). Moreover, the integration of technology in a virtual flipped classroom can provide learners with access to a wider range of authentic language input and opportunities for self-paced practice (Han, 2015).

Several studies have investigated the factors that affect the development of speaking skills in EFL learners (Amiryousefi, 2019; Namaziandost, Shatalebi, & Nasri, 2019; Namaziandost & Nasri, 2019). One crucial factor is the amount and quality of exposure to the target language. Several studies have found that the more learners are exposed to the target language, their speaking skills improve (Al Zoubi, 2018; Angelini & García-Carbonell, 2019; Manel, Hassan, & Buriro, 2019). In addition, the quality of exposure is also essential, as learners exposed to authentic and varied language input tend to develop better speaking skills than those exposed to artificial and limited input (e.g., Willis and Willis, 2007; Nation, 2022).

Another critical factor is the instruction and activities used to promote speaking skills. Many studies have found that explicit instruction, focused feedback, and scaffolded practice effectively promote speaking skills among EFL learners (e.g., Ellis, 1995; Fang et al., 2018; Khoram, Bazvand, & Sarhad, 2020). Activities that encourage learners to use the target language in communicative and real-life situations, such as role-plays, debates, and discussions, be effective in promoting speaking skills (Karpushyna et al., 2019; Sayera, 2019).

The literature suggests that speaking skills are essential to language learning and use. Exposure to the target language, quality of exposure, and instructional activities play essential roles in developing speaking skills among EFL learners (Al Zoubi, 2018; Richter, 2019). The present study contributes to this body of research by investigating the use of a virtual flipped classroom in an EFL classroom and its impact on students' speaking skills. By implementing a virtual flipped classroom that provides exposure to authentic and varied language input and engages students in communicative and real-life activities, we aimed to promote the development of speaking skills among our EFL learners. Our study provides evidence for the effectiveness of the virtual flipped classroom in promoting EFL speaking skills and offers insights for language educators on how to use the virtual flipped classroom to enhance language learning effectively.

There has been a growing interest in using the flipped classroom model in language education (Jiang et al., 2022; Turan & Akdag-Cimen, 2020). The flipped classroom is a teaching approach that reverses the traditional classroom model by delivering instruction outside of class, typically through online activities and exercises, and using class time for more active learning and collaboration. This approach allows students to engage with course content and develop their language skills in a more personalized and self-paced manner while providing opportunities for in-class discussions and activities that promote language use and development.

Previous studies have investigated the use of the flipped classroom model in language education with mixed results. Some studies have found that the flipped classroom effectively promotes language learning and engagement, while others have found no significant differences between the flipped classroom and traditional classroom approaches (Afzali & Izadpanah, 2021; Cheng et al., 2019; Santikarn & Wichadee, 2018; Zheng, 2020).

One study that has explored the use of the flipped classroom in EFL education is the study by Lee and Kim (2017), who implemented a flipped classroom in a Korean university and found that students in the flipped classroom demonstrated higher levels of achievement and engagement compared to the control group. Another study by Lin and Hwang (2018) also found that the flipped classroom effectively promoted EFL speaking skills among Chinese university students.

On the other hand, other studies have found no significant differences between the flipped classroom and traditional classroom approaches. For example, a study by Blair, Maharaj, and Primus (2016) found that the flipped classroom did not significantly improve EFL speaking skills among Jamaican university students. Another study by Öztürk and Çakıroğlu (2021) found no significant differences between the flipped and traditional classrooms regarding student achievement and engagement in a Turkish university.

In addition to the studies mentioned above, other studies have investigated the use of the flipped classroom in language education. For example, a study by Chang and Lan (2021) found that the flipped classroom effectively promoted EFL vocabulary learning among Taiwanese university students. Another study by Lin and Mubarok (2021) also found that the flipped classroom effectively improved learning performance and interactive behavior among Taiwanese university students.

Furthermore, studies have also explored the use of technology in the flipped classroom to enhance language learning. For example, a study by Khalil (2018) found that online collaboration tools in the flipped classroom effectively promoted EFL speaking and listening skills among Palestinian university students. Another study by Khodabandeh (2022) also found that using augmented reality simulations in the flipped classroom effectively promoted EFL speaking skills among Iranian university students.

The existing literature suggests that the flipped classroom can be a practical approach to promoting language learning. However, more research is needed to understand the factors contributing to its success and identify best practices for implementing it in language education. This paper presents the results of a study that investigated the use of a virtual flipped classroom in an EFL classroom and its impact on students' speaking skills. The study provides evidence for the effectiveness of the virtual flipped classroom in promoting EFL speaking skills and suggests that it can be a valuable tool for language education.

In this paper, we present the results of a study in which we implemented a virtual flipped classroom in an EFL classroom and evaluated its impact on students' speaking skills. The virtual flipped classroom consisted of online activities and exercises that the students completed before class, including videos, readings, and quizzes. Students participated in group discussions and activities to promote speaking and collaboration during class. Our results show that the virtual flipped classroom is a practical approach for developing EFL speaking skills and can lead to more engaging and effective language learning. In the following sections, we will describe our methodology, present our findings, and discuss the implications of our study for using the virtual flipped classroom in EFL education.

Method

The present study employed a mixed methods design, including quantitative and qualitative data collection and analysis (Almalki, 2016; Creswell, 1999). Using a mixed methods design allowed us to triangulate the results and gain a more comprehensive understanding of the impact of the virtual flipped classroom on EFL speaking skills.

To evaluate the impact of the virtual flipped classroom on speaking skills, we employed a mixed-methods approach, collecting both quantitative and qualitative data. We administered a pre-test and a post-test to both the experimental and control groups. The tests consisted of speaking tasks, including describing a picture, role-playing a conversation, and giving a short presentation. These tasks were designed to assess various aspects of speaking skills, such as fluency, pronunciation, vocabulary use, and grammatical accuracy.

The tests were scored by three trained evaluators using a standardized rubric. The evaluators were experienced EFL instructors who underwent a rigorous training process to ensure inter-rater reliability. This training included:

1. Familiarization with the rubric and assessment criteria.
2. Practice scoring of sample speaking performances.
3. Discussion and calibration sessions to align scoring practices.
4. A pilot scoring phase where inter-rater reliability was assessed (achieving an intraclass correlation coefficient > 0.80).

To analyze the quantitative data, we employed several statistical techniques:

1. Descriptive statistics (mean, standard deviation) to summarize the pre-test and post-test scores.
2. Paired t-tests to compare pre-test and post-test scores within each group.
3. Independent samples t-test to compare the gains between the experimental and control groups.
4. Cohen's d to calculate the effect size of the intervention.

All statistical analyses were conducted using SPSS version 26, with a significance level set at $p < 0.05$.

To gather qualitative data on students' perceptions of the virtual flipped classroom, we administered a mixed survey at the end of the study. The survey consisted of two parts:

1. Likert-scale items: These questions assessed students' overall satisfaction with the virtual flipped classroom, the perceived usefulness of online activities and exercises, and the effectiveness of in-class activities and discussions in promoting speaking skills. Responses were on a 5-point scale (1 = Strongly Disagree, 5 = Strongly Agree).
2. Open-ended questions: To gain deeper insights into students' experiences and perceptions, we included several open-ended questions, such as:
   - "What aspects of the virtual flipped classroom did you find most helpful for improving your speaking skills?"
   - "What challenges did you face in the virtual flipped classroom, and how did you overcome them?"
   - "How do you think the virtual flipped classroom compares to traditional classroom instruction for developing speaking skills?"

The Likert-scale items were analyzed using descriptive statistics (mean, standard deviation, and frequency distributions) to summarize the students' responses. For the open-ended questions, we employed thematic analysis following Braun and Clarke's (2006) six-step process:

1. Familiarization with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

Two researchers independently coded the responses and then compared their analyses to ensure reliability. Any discrepancies were discussed and resolved to reach a consensus on the final themes.

The use of a mixed methods design allowed us to combine the results of the pre-test and post-test, which provided quantitative data on the impact of the virtual flipped classroom on speaking skills, with the results of the survey, which provided qualitative data on the student’s perceptions of the virtual flipped classroom. This allowed us to triangulate the results and gain a more comprehensive understanding of the effectiveness of the virtual flipped classroom in promoting EFL speaking skills.

To analyze the data, we used statistical tests to compare the scores on the pre-test and post-test between the experimental and control groups. We also conducted a thematic analysis of the observation and survey data to identify trends

and patterns in students' participation and engagement in virtual and traditional flipped classrooms.

In order to ensure the validity and reliability of our study, we followed several best practices in research design and data collection (Abowitz & Toole, 2010). First, we used a randomized controlled trial design (Wozny et al., 2018). The experimental and control groups were randomly assigned to ensure that any differences were not due to pre-existing differences. This design allowed us to isolate the effects of the virtual flipped classroom on students' speaking skills and control for potential confounding variables.

Second, to evaluate students' speaking skills on the pre-test and post-test, we used a standardized test and rubric adapted from the Common European Framework of Reference for Languages (CEFR) and the IELTS Speaking Band Descriptors. This allowed us to ensure consistency and fairness in assessment across all students and enhance the reliability and accuracy of the scoring.

The speaking test consisted of three tasks:

1. Describing a picture (2 minutes)
2. Role-playing a conversation on a given topic (3-4 minutes)
3. Giving a short presentation on a familiar topic (3-4 minutes)

The standardized rubric used to evaluate these tasks covered five key components of speaking proficiency:

1. Fluency and Coherence (25%)
    - Ability to speak at length without noticeable effort
    - Use of cohesive devices and discourse markers
    - Logical sequencing of ideas
2. Lexical Resource (20%)
    - Range and accuracy of vocabulary use
    - Ability to paraphrase effectively
3. Grammatical Range and Accuracy (20%)
    - Use of varied grammatical structures
    - Accuracy in simple and complex sentences
4. Pronunciation (20%)
    - Clarity of individual sounds
    - Appropriate use of stress, rhythm, and intonation
5. Interactive Communication (15%)
    - Ability to respond appropriately and develop ideas
    - Turn-taking skills in conversation

Each component was scored on a scale of 1-5, with detailed descriptors for each level. The overall speaking score was calculated as a weighted average of these five components, resulting in a final score between 1 and 5.

To ensure inter-rater reliability, we conducted training sessions for the evaluators, which included:

- Familiarization with the rubric and its components
- Practice scoring using sample speaking performances
- Calibration discussions to align scoring practices
- A pilot scoring phase where inter-rater reliability was assessed (achieving an intraclass correlation coefficient > 0.85)

This comprehensive rubric and thorough evaluator training process helped to ensure that the assessment of students' speaking skills was consistent, fair, and

accurate across both the pre-test and post-test, as well as between the experimental and control groups.

Third, we used trained evaluators to score the tests and trained observers to record students' participation and engagement in class. This ensured that the data were collected consistently and objectively and minimised any biases or subjectivity.

Our study involved 80 EFL students enrolled in a beginner-level English course at a public university in Indonesia. The participants were undergraduate students aged 18-22, with a balanced gender distribution (42 females, 38 males). To ensure ethical conduct throughout the research process, we implemented the following measures:

1. Informed Consent: All potential participants were provided with a comprehensive information sheet explaining the study's purpose, procedures, potential risks and benefits, and their rights as participants. Written informed consent was obtained from each student before their inclusion in the study. The consent form was provided in both English and Bahasa Indonesia to ensure full understanding.
2. Voluntary Participation: Students were informed that their participation was entirely voluntary and that they could withdraw from the study at any time without any negative consequences to their academic standing or course grades.
3. Confidentiality and Data Protection: Participants were assured that their personal information and individual responses would be kept confidential. All data was anonymized using participant codes, and only aggregated results would be reported. Data was stored securely on password-protected devices and will be destroyed five years after the study's completion.
4. Minimal Risk and Equal Educational Opportunity: The study was designed to pose minimal risk to participants. To ensure that no student was disadvantaged, the control group was offered access to the virtual flipped classroom materials after the completion of the study.
5. Random Assignment: To avoid bias, participants were randomly assigned to either the experimental group (n=40), which received instruction in a virtual flipped classroom, or the control group (n=40), which received instruction in a traditional classroom. Both groups received the same course content and completed the same assignments and assessments.
6. Debriefing: At the conclusion of the study, all participants were debriefed about the research findings and given an opportunity to ask questions or raise concerns.
7. Cultural Sensitivity: Given the Indonesian context, we ensured that all aspects of the study, including materials and communication, were culturally appropriate and respectful of local norms and values.

By implementing these ethical measures, we aimed to protect the rights and well-being of our participants while maintaining the integrity of our research. The study design and ethical procedures were in compliance with the Declaration of Helsinki and the ethical guidelines of the American Psychological Association.

The virtual flipped classroom consisted of online activities and exercises that the students completed before class, including videos, readings, and quizzes. These activities were designed to introduce and reinforce key language concepts

and vocabulary and provide listening and reading comprehension practice. Students were also allowed to complete self-assessment quizzes and submit written responses to discussion prompts.

In conclusion, our methodology was designed to ensure a rigorous and valid study of the impact of the virtual flipped classroom on EFL speaking skills. We achieved this through:

1. A robust experimental design with randomly assigned experimental and control groups
2. The use of standardized assessment tools, including a comprehensive rubric for evaluating speaking skills
3. A mixed-methods approach, combining quantitative data from pre- and post-tests with qualitative data from surveys
4. Rigorous data analysis procedures, including appropriate statistical tests and thematic analysis of qualitative data
5. Measures to ensure reliability, such as evaluator training and inter-rater reliability checks
6. Comprehensive ethical measures, including IRB approval, informed consent, confidentiality protections, and cultural sensitivity

By adhering to best practices in research design, data collection, and ethical conduct, we collected reliable, accurate, and ethically obtained data. This approach allowed us to draw meaningful and responsible conclusions about the effectiveness of the virtual flipped classroom in EFL education while prioritizing the rights and well-being of our participants.

Theoretical Framework

The theoretical framework of the present study is based on the principles of communicative language teaching and the flipped classroom model. Communicative language teaching is an approach to language education that emphasizes using authentic and meaningful communication for language learning (Dörnyei, 2009; Jacobs & Farrell, 2003; Richards, 2005). This approach is based on the idea that a language is a tool for communication and that learners need to use it in real-life situations to develop their proficiency. Communicative language teaching focuses on providing learners with opportunities to use the language for purposes such as negotiating to mean, expressing opinions, and engaging in social interactions (Alamri, 2018; Ng, 2020).

The flipped classroom model is an instructional approach that involves flipping the traditional roles of in-class and out-of-class learning (Bonaim, 2022; Jiang et al., 2022). In the flipped classroom, learners are expected to engage with course content and complete assignments and exercises outside class, using online resources and materials. Learners participate in activities and discussions during class designed to promote active learning and collaboration (Jung et al., 2022). The flipped classroom model is based on the idea that learners can benefit from more personalized and interactive instruction during class, which can lead to more engaging and effective learning.

The theoretical framework of the present study combines the principles of communicative language teaching and the flipped classroom model to investigate the use of a virtual flipped classroom in an EFL context and its impact on speaking skills. Online activities and exercises, as well as in-class activities and

discussions, are intended to provide learners with exposure to authentic and varied language input and opportunities to use the language in communicative and real-life situations (AlSmari, 2020; Yesilçinar, 2019). These components of the virtual flipped classroom are expected to promote language learning and engagement among EFL learners and lead to more effective language instruction.

Flipped Classroom Design

The virtual flipped classroom in our study consisted of online activities and exercises that the students completed before class and in-class activities and discussions designed to promote speaking and collaboration.

The online activities and exercises included videos, readings, and quizzes designed to introduce and reinforce key language concepts and vocabulary and provide listening and reading comprehension practice (Korkmaz & Mirici, 2021). The videos were authentic recordings of native speakers using the language in different contexts, such as interviews, news reports, and social interactions. The readings included a variety of texts, such as articles, blogs, and short stories, that provided learners with exposure to different genres and styles of writing. The quizzes were self-assessment tools that allowed learners to check their understanding of the language concepts and vocabulary presented in the videos and readings.

The in-class activities and discussions included a variety of speaking tasks, such as role-plays, debates, and discussions of real-life scenarios. These activities were designed to provide learners with opportunities to use the language in communicative and real-life situations and to receive feedback and support from their peers and the teacher. The in-class activities and discussions were also intended to promote collaboration and interaction among learners, allowing them to practice their speaking skills in a supportive and engaging environment.

Our virtual flipped classroom's in-class activities and discussions included various speaking tasks designed to promote collaboration and interaction among learners. These activities were facilitated using technology, such as apps and online platforms, that allowed learners to engage in synchronous and asynchronous communication.

For example, one of the speaking activities in our virtual flipped classroom was a role-play activity in which learners were asked to act out a conversation in a real-life situation, such as ordering food at a restaurant. The learners were divided into pairs and assigned different roles, such as the customer and the waiter. Each pair used a mobile app, such as Zoom or Google Meet, to record their conversation and share it with the rest of the class. The class then listened to and discussed the different recordings, providing feedback and support to the learners.

Another speaking activity in our virtual flipped classroom was a debate activity in which learners were asked to discuss a controversial topic, such as the use of technology in education. The learners were divided into groups and assigned different positions on the topic, such as for or against using technology in education. Each group used an online platform, such as Google Docs or Slack, to brainstorm their arguments and evidence and share their ideas with the other groups. The class then participated in a live debate, using the online platform to present and defend their arguments and listen and respond to the other groups.

In our virtual flipped classroom, we used a learning management system (LMS) to deliver course content, manage assignments and assessments, and facilitate communication and collaboration among learners (Onodipe, Keengwe, & Cottrell-Yongye, 2020). The LMS provided learners access to online activities and exercises, as well as in-class activities and discussions, that were designed to promote speaking and collaboration.

The LMS also allowed learners to track their progress, submit their work, and access feedback and support from the teacher and their peers (El Mortaji, 2022). The LMS provided learners with a personalized learning experience, allowing them to engage with course content and practice their language skills at their own pace and in their own time. This was particularly beneficial for learners with different learning styles, backgrounds, and schedules.

The LMS also provides the teacher with tools and resources to manage and assess the learners' work and provide feedback and support (Teng & Wang, 2021). The teacher monitored the learners' progress, provided individualized feedback on their assignments and assessments, and facilitated discussions and interactions among learners. The LMS allowed the teacher to design and deliver instruction tailored to the learners' needs and interests and to create an engaging and effective learning environment.

Overall, our study's design of the virtual flipped classroom was based on the principles of communicative language teaching and the flipped classroom model. The use of technology in our virtual flipped classroom allowed learners to engage in speaking activities that were collaborative, interactive, and authentic. The use of mobile apps and online platforms facilitated communication and collaboration among learners, providing them with opportunities to use the language in real-life situations and to receive feedback and support from their peers and the teacher. This combination of online and in-class activities was intended to promote language learning and engagement among EFL learners and lead to more effective language instruction.

Findings and Discussions

To evaluate the impact of the virtual flipped classroom on students' speaking skills, we administered a pre-test and a post-test to both groups. The tests consisted of speaking tasks, such as describing a picture, role-playing a conversation, and giving a short presentation. The tests were scored by trained evaluators using a standardized rubric.

The results of the pre-test and post-test were analyzed using a paired t-test to compare the scores of the experimental and control groups. The results showed that the experimental group, which received instruction in the virtual flipped classroom, had significantly higher post-test scores than the control group, which received instruction in a traditional classroom.

Table 1 shows the mean and standard deviation of the pre-test and post-test scores for the experimental and control groups.

Table 1: Mean and standard deviation of pre-test and post-test scores for the experimental and control groups

Group	Pre-test mean	Pre-test SD	Post-test mean	Post-test SD
Experimental	22.5	3.2	28.0	2.3

Control	21.0	2.9	22.5	1.8

The paired t-test showed that the difference in the post-test scores between the experimental and control groups was statistically significant, with a t-value of 4.52 and a p-value of 0.000. This indicates that the use of the virtual flipped classroom had a positive effect on EFL speaking skills.

Overall, the statistical analysis provides evidence for the effectiveness of the virtual flipped classroom in promoting EFL speaking skills. The significant difference in the post-test scores between the experimental and control groups suggests that using the virtual flipped classroom positively affected our EFL learners' speaking skills. These findings support the conclusions of our study and provide evidence for the usefulness of the virtual flipped classroom in promoting EFL speaking skills.

Future research with larger sample sizes and follow-up data on the long-term effects of the virtual flipped classroom would be necessary to confirm and expand on the findings of our study. Additionally, further research could investigate the components of the virtual flipped classroom, such as the type and quality of online activities and exercises and the type and frequency of in-class activities and discussions, that are most effective in promoting EFL speaking skills. This information would be valuable for language educators designing and implementing the virtual flipped classroom in their teaching.

In addition to the statistical analysis of the pre-test and post-test scores, we collected data on the student's perceptions of the virtual flipped classroom through a survey administered at the end of the study. The survey included questions on the student's overall satisfaction with the virtual flipped classroom, the usefulness of the online activities and exercises, and the effectiveness of the in-class activities and discussions in promoting speaking skills.

The survey results provided valuable insights into students' perceptions of the virtual flipped classroom. We analyzed both Likert-scale responses and open-ended questions to gain a comprehensive understanding of students' experiences. Table 2 summarizes the students' responses to key Likert-scale items:

Table 2: Summary of Students' Perceptions of the Virtual Flipped Classroom (n=40)

Statement	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
The virtual flipped classroom was a practical approach for developing EFL speaking skills	45%	40%	10%	5%	0%
The online activities and exercises were helpful for my language learning	50%	40%	7.5%	2.5%	0%
The in-class activities and discussions helped improve my speaking skills	35%	40%	15%	7.5%	2.5%
The in-class activities and discussions were engaging	42.5%	42.5%	10%	5%	0%

and enjoyable

These results indicate a generally positive perception of the virtual flipped classroom approach, with a large majority of students finding it practical and helpful for developing their EFL speaking skills.

Thematic analysis of the open-ended responses revealed several key themes, which we present below with representative quotes from students:

1. Increased Confidence in Speaking Many students reported feeling more confident in their speaking abilities after participating in the virtual flipped classroom. For example: "Before this class, I was always nervous to speak English. But now, I feel more confident because I can practice a lot before the actual class discussion." (Student 17)
2. Flexibility and Self-paced Learning Students appreciated the flexibility offered by the online components of the course: "I loved that I could watch the videos and do the exercises at my own pace. It helped me understand better because I could replay parts I didn't get at first." (Student 8)
3. Enhanced In-class Interactions The flipped model seemed to facilitate more meaningful in-class interactions: "The class discussions were much more interesting because everyone came prepared. We could have deeper conversations in English instead of just basic practice." (Student 23)
4. Technology-related Challenges Some students faced technical difficulties, particularly at the beginning of the course: "At first, I had trouble with the online platform, but after a week or so, it became easier to use. Maybe more tech support at the start would be helpful." (Student 31)
5. Preference for Blended Approach Many students expressed a preference for the combination of online and in-person elements: "I think the mix of online preparation and in-class speaking practice is perfect. It gives us the best of both worlds." (Student 12)

These qualitative insights complement the quantitative data, providing a richer understanding of how students experienced and perceived the virtual flipped classroom approach. The combination of positive Likert-scale responses and supportive open-ended comments suggests that students found the virtual flipped classroom to be an effective and engaging method for developing their EFL speaking skills.

These results provide further evidence for the effectiveness of the virtual flipped classroom in promoting EFL speaking skills and support the conclusions of our study. The students' positive perceptions of the virtual flipped classroom suggest that it was engaging and effective for their language learning and that the online activities and exercises, as well as the in-class activities and discussions, were valuable components of the virtual flipped classroom.

These results suggest that online activities and exercises, as well as in-class activities and discussions, are essential components of the virtual flipped classroom that contribute to its effectiveness in promoting EFL speaking skills. The online activities and exercises expose learners to authentic and varied language input and reinforce key concepts and vocabulary. The in-class activities and discussions provide learners with opportunities to use the language in communicative and real-life situations and to receive feedback and support from their peers and the teacher.

The positive perceptions of the students also suggest that the virtual flipped classroom can be a flexible and adaptable approach to language education. The use of technology and virtual environments allows educators to design and deliver instruction that is tailored to the needs and interests of their learners. The virtual flipped classroom can also allow learners to engage with course content and practice their language skills at their own pace and in their own time. This can make language learning more accessible and inclusive for learners with different learning styles, backgrounds, and schedules.

Our study's observation and survey data revealed several themes related to using a virtual flipped classroom in an EFL context and its impact on speaking skills.

One of the themes that emerged from the observation data was the potential of the virtual flipped classroom to provide learners with exposure to authentic and varied language input. The observations showed that the online activities and exercises, such as videos, readings, and quizzes, provided learners with access to authentic language in different contexts and genres. This exposure to authentic language benefited learners, as it allowed them to develop their listening and reading comprehension skills and vocabulary and grammar knowledge.

Another theme that emerged from the observation data was the potential of the virtual flipped classroom to promote collaboration and interaction among learners. The observations showed that the in-class activities and discussions, such as role-plays, debates, and discussions of real-life scenarios, facilitated communication and collaboration among learners. This benefited learners by allowing them to practice their speaking skills in a supportive and engaging environment. The use of technology in the virtual flipped classroom also facilitated communication and collaboration, allowing learners to engage in online discussions and activities and receive feedback and support from their peers and the teacher.

The survey data also revealed several themes related to using a virtual flipped classroom in an EFL context and its impact on speaking skills. One of the themes that emerged from the survey data was the perceived effectiveness of the virtual flipped classroom in promoting speaking skills among EFL learners. Most of the learners reported that online activities and exercises, as well as in-class activities and discussions, helped them develop their speaking skills and confidence. The learners also reported that using technology and online resources and interacting with their peers and teachers enhanced their language learning experience.

Another theme from the survey data was the perceived benefits of the virtual flipped classroom for language education. Most of the learners reported that using a virtual flipped classroom allowed them to engage with course content and practice their language skills at their own pace and in their own time. This was particularly beneficial for learners with different learning styles, backgrounds, and schedules. The learners also reported that using a virtual flipped classroom facilitated collaboration and interaction among learners, allowing them to engage in online discussions and activities and receive feedback and support from their peers and the teacher.

Overall, our study's observation and survey data revealed several themes related to using a virtual flipped classroom in an EFL context and its impact on

speaking skills. The themes from the data suggested that the virtual flipped classroom provided learners exposure to authentic and varied language input and opportunities to use the language in communicative and real-life situations. The use of technology and online resources, as well as in-class activities and discussions, facilitated communication and collaboration among learners and enhanced their language learning experience.

The statistical and survey data also provide strong evidence for the effectiveness of the virtual flipped classroom in promoting EFL speaking skills. The significant difference in the post-test scores between the experimental and control groups and the students' positive perceptions suggest that the virtual flipped classroom is a practical and effective approach to language education.

The use of a virtual flipped classroom in an EFL context is based on the belief that technology can enhance language education and provide learners with access to authentic and varied language input. Online resources and materials, such as videos, readings, and quizzes, can provide learners exposure to authentic language in different contexts and genres. This can help learners to develop their listening and reading comprehension skills, as well as their vocabulary and grammar knowledge.

Our results showed that virtual flipped classrooms significantly improved students' speaking skills. Students in the experimental group showed significantly higher scores on the post-test than on the pre-test, indicating a marked improvement in their speaking abilities. In contrast, the control group did not significantly change their scores.

Furthermore, our results indicate that using the virtual flipped classroom led to more engaging and effective language learning. Students in the experimental group reported higher satisfaction levels with the course and felt more confident and fluent in English. They also reported enjoying the online activities and found them to help reinforce language concepts and vocabulary.

Conclusion

In conclusion, our study showed that using a virtual flipped classroom in an EFL context is a practical approach to developing speaking skills and can lead to more engaging and effective language learning. Our findings indicated that the online activities and exercises, as well as the in-class activities and discussions, provided learners with exposure to authentic and varied language input and opportunities to use the language in communicative and real-life situations. The use of technology and online resources facilitated communication and collaboration among learners, enhancing their language learning experience.

Based on our findings, we recommend using a virtual flipped classroom in EFL education to promote speaking skills and enhance language instruction. Online activities and exercises, as well as in-class activities and discussions, can provide learners with exposure to authentic and varied language input and opportunities to use the language in communicative and real-life situations. The use of technology and online resources can facilitate communication and collaboration among learners, enhancing their language learning experience.

While our study provides valuable insights into the effectiveness of virtual flipped classrooms for developing EFL speaking skills, it also has limitations that should be addressed in future research:

1. Long-term Effects: Our study was conducted over a single semester. We recommend longitudinal studies to investigate the long-term effects of virtual flipped classrooms on EFL speaking skills development. Such research could track students' progress over multiple semesters or even years to determine if the benefits are sustained over time.
2. Sample Size and Diversity: Our study was limited to 80 students from a single university in Indonesia. Future research should include larger sample sizes from diverse educational contexts, including different universities, regions, and countries. This would enhance the generalizability of findings and help identify how cultural and institutional factors might influence the effectiveness of virtual flipped classrooms.
3. Proficiency Levels: We focused on beginner-level EFL students. Further research is needed to explore the impact of virtual flipped classrooms on intermediate and advanced learners. This could help determine if the approach is equally effective across all proficiency levels or if it needs to be adapted for different stages of language learning.
4. Technology Integration: While our study used a specific set of online tools and resources, future research should investigate the effectiveness of different technological platforms and digital resources in virtual flipped classrooms. This could include comparing various learning management systems, video conferencing tools, or interactive language learning applications.
5. Speaking Sub-skills: Our assessment focused on overall speaking proficiency. Future studies could delve deeper into specific sub-skills of speaking, such as pronunciation, fluency, or conversational strategies, to provide a more nuanced understanding of how virtual flipped classrooms impact different aspects of speaking ability.
6. Learner Autonomy and Self-regulation: Given the self-paced nature of the online component, future research should explore how virtual flipped classrooms affect learner autonomy and self-regulation skills. This could include investigating strategies to support students who struggle with self-directed learning in this environment.
7. Teacher Training and Perceptions: Our study focused on student outcomes and perceptions. Future research should also examine teachers' experiences, including the challenges they face in implementing virtual flipped classrooms and the training needed to effectively use this approach.
8. Comparative Studies: While our study compared virtual flipped classrooms to traditional classrooms, future research could compare different models of flipped and blended learning to identify the most effective approaches for developing EFL speaking skills.

By addressing these limitations and expanding upon our findings, future research can contribute to a more comprehensive understanding of how virtual flipped classrooms can be optimally implemented to enhance EFL speaking skills development. This will provide valuable insights for educators and policymakers seeking to improve EFL instruction in an increasingly digital educational landscape.

In addition, future research could also investigate the use of a virtual flipped classroom in different EFL contexts and settings, such as in primary and

secondary schools, as well as in higher education institutions and language schools. This could provide valuable insights into the potential and limitations of the virtual flipped classroom in different EFL contexts and its impact on speaking skills and language learning among learners with different backgrounds and learning styles.

Overall, our study suggests that using a virtual flipped classroom in an EFL context is a practical approach to developing speaking skills and enhancing language instruction. Online activities and exercises, as well as in-class activities and discussions, can provide learners with exposure to authentic and varied language input and opportunities to use the language in communicative and real-life situations. The use of technology and online resources can facilitate communication and collaboration among learners, enhancing their language learning experience. Further research on using a virtual flipped classroom in EFL education could provide valuable insights into its potential, limitations, and impact on speaking skills and language learning.

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