**Jurnal Teknologi Pendidikan, April 2023, 25 (1), 140-153**
DOI: http://dx.doi.org/10.21009/JTP2001.6
p-ISSN: 1411-2744 e-ISSN: 2620-3081
Accredited by Directorate General of Strengthening for Research and Development
Available online at http://journal.unj.ac.id/unj/index.php/jtp

# The Effectiveness of the Flipped Classroom Method on Students' Speaking Ability: A Meta-Analysis Study

**Elisabet Ani Ayu Senjaya[1(*)], Ali Muhtadi[2]**
[1,2]Universitas Negeri Yogyakarta, Yogyakarta, Indonesia

Received : May 5, 2023
Revised : April 2, 2023
Accepted : April 27, 2023

**Abstract**

Many studies have investigated the effectiveness of the flipped classroom method on students' speaking ability when compared to traditional learning methods. However, previous research has provided ambiguous results. This study aims to test the effectiveness of the flipped classroom method on students' speaking abilities compared to traditional methods, as well as investigate what factors can influence the effectiveness of using the flipped classroom method on students' speaking abilities. The design used in this study was group contrast meta-analysis by analyzing 15 primary studies that met the inclusion criteria. The results of the analysis using the random-effects approach obtained a combined effect size of ($g = 1.25$; $p < 0.01$). The effect size is in the "Large Effect" category. It can be concluded that the use of the flipped classroom method on students' speaking ability has a significant and more effective effect compared to traditional learning methods. Heterogeneity analysis found that the moderator variable educational level influenced the effectiveness of implementing the flipped classroom method on students' speaking abilities, but not the moderator variables educational level, experimental class capacity, and region. The findings of this meta-analysis provide more accurate results regarding inconsistent effect size variations and can enrich insight into knowledge about the effectiveness of using the flipped classroom method in improving students' speaking skills. These findings can be a basis for decision making in designing more effective learning programs, as well as encourage further research to dig deeper into the mechanisms and context behind the results found.

**Keywords:** speaking skills, flipped classroom, meta-analysis

(*) Corresponding Author: elisabetani.2020@student.uny.ac.id

**How to Cite:** Senjaya, E. A. A., & Ali Muhtadi. (2023). The Effectiveness of the Flipped Classroom Method on Students' Speaking Ability: A Meta-Analysis Study. *JTP - Jurnal Teknologi Pendidikan, 25(1)*, 140-153. https://doi.org/10.21009/jtp.v25i1.38632

## INTRODUCTION

Speaking is one of the skills related to English that must be owned by everyone, including students. Speaking skills have become a very significant aspect in the language context. As highlighted by Erdem (2016), in language learning, speaking is considered as one of the key skills. As this key skill, speaking has a very fundamental role in conveying information, expressing feelings and emotions, expressing ideas, and conveying beliefs (Muklas, 2017; Namaziandost et al., 2019). In addition, speaking is considered a very effective means of communicating in various languages (Boonkit, 2010). Humans need the ability to speak to be able to verbally communicate their thoughts in various daily activities, which is important because they have to interact and socialize with other individuals. Moreover, considering the status of English as a lingua franca,

speaking skills are also considered as the most vital tool to gain access to information and knowledge (Hasan, 2014).

When learning English, students often face difficulties and make mistakes, especially in speaking the language. Students face a large number of challenges. According to Al Nakhalah (2016), most of the problems students face stem from an unreasonable fear of sounding stupid when speaking English. When speaking English, students are afraid of making mistakes because they know that their peers might laugh at them or give negative feedback. The second cause is shyness, which occurs because some students feel less confident because their friends feel intimidated by everyone in the class, which makes them shy to speak English in class. This is due to the fact that their friends may think that they are being bullied by everyone in class. Anxiety is in third place. Almost all students reported feeling anxious when trying to learn English. The fourth emotion is trepidation. This often happens for various reasons, such as a student's lack of aptitude or an evaluation that makes the student afraid to try again. Lack of self-confidence is the last problem and is practically synonymous with the fear of making a mistake. Not only children who experience difficulties in learning English, but teachers also face several obstacles in the process of teaching English to students. One of the problems is students who are not active in learning.

Based on several problems described above, instructors must take certain steps to facilitate students' English learning. Integrating education with various modern technologies is one step that instructors can take. Technology is a solution that can help overcome this problem. With the rapid development of technology today, teachers can use it to overcome the challenges faced by students. According to Ponmozhi and Thenmozhi (2017), because technology has penetrated various aspects of daily life, technology can act as a useful tool for students in the learning process. Technology allows students to understand broader topics, without being limited by location or time, because technology has become an important part of education (Setiawan et al., 2022). One method that fits this need is the flipped classroom.

The Flipped Classroom Method is a learning approach that has received increasing attention in recent years. In this method, students are given previous learning material to study at home via videos or online learning materials, while time in class is used for discussions, exercises, and direct interaction between students and teachers (Bishop & Verleger, 2013; Bergmann & Sams, 2012) . The Flipped Classroom method offers the potential to improve students' speaking skills by providing more opportunities to practice and interact in the language being studied (Abdullah et al., 2019; Li & Suwanthep, 2017; Turan & Akdag-Cimen, 2020). The flipped classroom method can also reduce student anxiety (Chen et al., 2020). By understanding the material first and having the opportunity to respond to questions or topics in a more structured classroom setting, they may feel more confident and less afraid of making mistakes. The learning environment produced by the flipped classroom method creates a sense of comfort for students, which helps them feel more confident and overcome their fear of sounding stupid when speaking English. In other words, the Flipped Classroom method creates an atmosphere that supports the development of students' confidence in speaking English

Regarding students' English speaking skills, the flipped classroom method was identified as being able to improve students' speaking skills (Abdullah & Ismail, 2019; AlKhoudary & AlKhoudary, 2019; Ginaya et al. 2018; Kantisa & Sitthitikul, 2020; Isda et al. 2021; Pramila & Thomas, 2019; Hariyanto & Lolita, 2023; Phoeun & Sengri, 2021; Rahman & Hajar, 2021; Sudarmaji et al. 202; Sohaya et al. 2021). However, different results were found by Marliana (2022) who found that the flipped classroom method did not have a significant effect on students' speaking abilities. Davies (2000) stated that the weakness of a single experiment is that it has certain situational limitations such as time, sample and context, which may be the reason for this contradiction. Ambiguous results on the same topic can result in conclusions drawn on research questions that can be subjective. Therefore, meta-analysis studies can be used to unite the findings of different research results on the same topic in a coherent and consistent manner to expand the sample and obtain reliable results (Borenstei et al., 2009; Hunter & Schmit, 2004; Retnawati et al., 2009; Hunter & Schmit, 2004; Retnawati et al. al., 2018).

So far, a meta-analysis study examining the effectiveness of using the flipped classroom method has been carried out by Güler et al. (2023); Låg and Sæle (2019); Purnomo et al. (2022); Shi et al. (2020); and Yakar (2021). However, these studies did not focus on examining the effect of using the flipped classroom method on students' English speaking skills. Therefore this study aims to determine the effectiveness of the flipped classroom method on students' mathematical abilities compared to traditional learning methods using a meta-analytic study approach. In addition, this study will also test whether moderator variables such as educational level, experimental class capacity, year of study, and region can affect the effectiveness of the flipped classroom method in improving students' English speaking skills. This research question is as follows.

RQ1 : Are the flipped classroom method more effective for students' speaking ability than the traditional learning method?

RQ2 : Do the moderator variables of educational level, experimental class capacity, year of research, and region influence the effectiveness of the flipped classroom method on students' speaking abilities?

## METHODS

### Research Design

In this study, the meta-analysis method was used to review the results of research that examined the effect of the flipped classroom model on students' speaking abilities. In general, the stages of this meta-analysis include; determining inclusion criteria, data collection and coding of variables, and data analysis (Borenstein et al., 2009; retnawati et al., 2018; Juandi & Tamur., 2020).

### Inclusion Criteria

In meta-analytic research, the determination of inclusion criteria aims to facilitate the search for studies at a later stage. All studies collected in the initial

search were then examined and assessed using established inclusion criteria for inclusion in the meta-analysis and further evaluated. The inclusion criteria established in this meta-analysis included:

1. Year of publication ranges from 2014 to 2023;
2. Studies published in national or international journals;
3. There is at least 1 experimental group with the flipped classroom model and a comparison group as a control group with the traditional model;
4. Studies are required to report the mean, standard deviation and sample size for each experimental and control group; or sample size and t-value; or sample size and p-value; or sample size with F-value

**Data Collection and Coding**

The relevant study collection phase is carried out using online databases such as Google Scholar (https://scholar.google.com/), Garuda Portal (http://garuda.ristekbrin.go.id/), and Since and Technology Index (http://sinta.ristekbrin.go.id/journals). The keywords used in the literature search were "Flipped Classroom" AND "Speaking skills" in both Indonesian and English. From the results of the study search based on the specified criteria, 15 primary studies were found that met the requirements.

After obtaining eligible articles, literature characteristics were identified by coding. Coding content includes educational level, experimental class capacity, research year, and region. A summary of the coding results is presented in table 1.

**Tabel 1**. Coding of Studies included in the Meta-analysis

| **Educational Level** | **Frequency** | **Percentage** |
|---|---|---|
| College | 8 | 53.33% |
| Senior High School | 6 | 40.00% |
| Junior High School | 1 | 6.67% |
| **Experiment Class Capacity** | **Frequency** | **Percentage** |
| ≤ 30 | 8 | 53.33% |
| > 30 | 7 | 46.67% |
| **Research Year** | **Frequency** | **Percentage** |
| 2018-2020 | 7 | 46.67% |
| 2021-2023 | 8 | 53.33% |
| **Region** | **Frequency** | **Percentage** |
| International | 5 | 66.67% |
| National | 10 | 33.33% |

**Data Analysis**

Data analysis was carried out using Comprehensive Meta-Analysis (CMA) Version 3 software. The meta-analysis scheme used in this article consists of several steps, namely: (1) calculating the effect size of each study; (2) tests of heterogeneity and pooled effect sizes; (3) moderator variable analysis; and (4) evaluation of publication bias. The interpretation of effect sizes in this study uses the classification proposed by Cohen et al. (2018). The effect size classification is presented in table 2 as follows.

**Tabel 2.** Effect Size Classification (g)

| Classification | Interval |
|---|---|
| Ignored | $0.00 < g \leq 0.19$ |
| Small Effect | $0.19 < g \leq 0.49$ |
| Medium effect | $0.49 < g \leq 0.79$ |
| Large Effect | $0.79 < g \leq 1.29$ |
| Very Large Effect | $g > 1.29$ |

The heterogeneity test in this study was carried out using the Q parameter approach. If the heterogeneity assumption is met, then the appropriate estimation model for calculating the summary effect is random-effect, while if the heterogeneity assumption is not met, then a fixed-effect estimation model is used (Borenstein et al., 2009; Retnawati et al., 2018). To measure the extent to which the available literature covers the entire spectrum of research results, a publication bias test was carried out (Borenstein et al., 2009; Badawi et al., 2023; Kamsurya et al., 2022; Martaputri et al., 2021; Muhtadi et al., 2022; Retnawati et al. , 2018). In this meta-analysis study, a publication bias test was performed using the File-Safe N (FSN) approach.

## RESULTS & DISCUSSION

### Primary Analysis

Based on the results of calculations using CMA software, data is obtained as shown in table 3 below.

**Table 3**. Effect Size of Each Study

| No | Author | g | SE | Variance | Category |
|---|---|---|---|---|---|
| 1 | Rahman & Hajar (2021) | 2.38 | 0.29 | 0.08 | Very Large effect |
| 2 | Sudarmaji et al., (2021) | 0.99 | 0.25 | 0.06 | Large Effect |
| 3 | AlKhoudary & AlKhoudary (2019) | 1.88 | 0.37 | 0.14 | Very Large effect |
| 4 | Marliana (2022) | -0.47 | 0.31 | 0.09 | Ignored |
| 5 | Hariyanto & Lolita (2023) | 3.12 | 0.48 | 0.23 | Very Large effect |
| 6 | Phoeun & Sengri (2021) | 0.86 | 0.32 | 0.10 | Large Effect |
| 7 | Rachmawati (2022) | 0.42 | 0.25 | 0.06 | Small Effect |
| 8 | Abdullah & Ismail (2019) | 1.19 | 0.29 | 0.09 | Large Effect |
| 9 | Ginaya et al., (2018) | 3.59 | 0.45 | 0.20 | Very Large effect |
| 10 | Kantisa & Sitthitikul (2020) | 1.05 | 0.21 | 0.04 | Large Effect |
| 11 | Isda et al., (2021) | 1.62 | 0.32 | 0.10 | Very Large effect |
| 12 | Pramila & Thomas (2019) | 1.14 | 0.15 | 0.02 | Large Effect |
| 13 | Sohaya et al., (2021) | 0.86 | 0.29 | 0.09 | Large Effect |
| 14 | Zulkarnain & Lubis (2023) | 0.49 | 0.24 | 0.06 | Medium effect |
| 15 | Nurfhadila (2019) | 0.40 | 0.25 | 0.06 | Small Effect |

Note: g = Effect Size; SE = Standard Error

Based on Table 3, the effect size range obtained from 15 primary studies is (-0.47) to 3.59. From these data, there is one study (n = 1) categorized as negligible effect, two studies (n = 2) categorized as small effect, one study (n = 1) categorized as medium effect, six studies (n = 6) categorized as large effect, and five studies (n = 5) categorized the effect as very large. This data shows that the application of the flipped classroom on speaking ability has varying effects. Therefore, it is necessary to calculate the combined effect size. In general, the comparison of meta-analysis results according to the effect model is presented in table 4 below.

**Table 4.** Analysis Results Based on the Effect Model

| Model | k | g | SE | Test of Null (2-Tail) | | Heterogeneity | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Z | P-value | Q-value | df (Q) | P-value | $I^2$ |
| Fixed | 15 | 1.06 | 0.07 | 15.54 | 0.00 | | | | |
| Random | 15 | 1.25 | 0.21 | 5.92 | 0.00 | 124.74 | 14 | 0.00 | 88.78 |

Note: g = Effect Size; SE = Standard Error

From Table 4 above, the P value < 0.05 means there is a significant difference between the studies studied, so Random-Effect is used. Based on the Random-Effect model, the magnitude of the influence of the flipped classroom method on students' speaking abilities shows a combined effect size value of 1.25 with the "large effect" criterion. This means that the application of the flipped classroom method to students' speaking abilities has a big influence and is more effective than traditional learning methods.

Furthermore, to identify and correct potential biases that may arise due to the selection of publications that tend to accept or publish only significant or positive research results, a publication bias evaluation is carried out. A summary of the bias evaluation can be seen in table 5 below.

**Table 5**. Fail-Safe N Analysis

| | |
|---|---|
| z-value | 16.21 |
| p-value | 0.00 |
| Alpha | 0.05 |
| Z for Alpha | 1.96 |
| N | 15 |
| P > number of missing studies | 1001 |

Based on the analysis carried out in Table 5, the p value obtained is smaller than the alpha that has been determined. This shows that this research can be considered reliable and valid (Borenstein et al., 2009). Additionally, through fail-safe N analysis, it was estimated that approximately 1001 uncovered studies were needed to change the p value to greater than alpha = 0.05. This shows that the results of this study are quite robust and are not easily influenced by publication bias or other factors that could influence the results of the analysis.

**Moderator Variable Analysis**

Further analysis was conducted to answer the second research question. Of the 15 studies observed by researchers, they were grouped according to educational level, experimental class capacity, research year, and region. A

summary of the results of the moderator variable analysis is presented in table 6 below.

**Table 6.** Analysis Results Based on Study Characteristics

| Moderator Variable | k | g | SE | Test of Null (2-Taill) | | Heterogeneity | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Z | P | Q | df (Q) | P |
| **Educational level** | | | | | | | | |
| College | 8 | 1.10 | 0.09 | 12.57 | 0.00 | 84.59 | 7.00 | 0.00 |
| JHS | 1 | 0.86 | 0.29 | 2.93 | 0.00 | 0.00 | 0.00 | 1.00 |
| SHS | 6 | 1.03 | 0.12 | 8.70 | 0.00 | 39.46 | 5.00 | 0.00 |
| Qb | | | | | | 0.69 | 2.00 | 0.71 |
| **Experiment Class Capacity** | | | | | | | | |
| < 30 | 8 | 1.26 | 0.12 | 10.51 | 0.00 | 81.14 | 7.00 | 0.00 |
| > 30 | 7 | 0.97 | 0.08 | 11.62 | 0.00 | 39.69 | 6.00 | 0.00 |
| Qb | | | | | | 3.90 | 1.00 | 0.05 |
| **Research Year** | | | | | | | | |
| 2018-2020 | 7 | 1.21 | 0.09 | 13.05 | 0.00 | 44.32 | 6.00 | 0.00 |
| 2021-2023 | 8 | 0.89 | 0.10 | 8.76 | 0.00 | 74.76 | 7.00 | 0.00 |
| Qb | | | | | | 5.66 | 1.00 | 0.02 |
| **Region** | | | | | | | | |
| International | 5 | 1.15 | 0.10 | 11.21 | 0.00 | 4.95 | 4.00 | 0.29 |
| National | 10 | 0.99 | 0.09 | 10.83 | 0.00 | 118.45 | 9.00 | 0.00 |
| Qb | | | | | | 1.34 | 1.00 | 0.25 |

The moderator variable educational level consists of three groups, namely junior high school (JHS), senior high school (SHS), and College. The results of the null test analysis (2-tail) in the three groups showed a p value < 0.05. This value shows that the flipped classroom method is effective on students' speaking abilities whether applied to JHS, SHS and College groups. Furthermore, the results of the heterogeneity test between educational level groups obtained a value of Qb = (0.69; p > 0.05). This value shows that the moderator variable level of education does not influence the impact of using the flipped classroom method on students' speaking abilities. This means that the use of the flipped classroom method on students' speaking abilities has a level of effectiveness that is not significantly different from studies conducted at JHS, SHS and College levels.

The moderator variable of experimental class capacity consists of two groups, namely studies with class capacity ≤ 30 and > 30. The results of the null test analysis (2-tail) in these two groups show a p value < 0.05. This value shows that the flipped classroom method is effective on students' speaking abilities when applied to class capacities ≤ 30 and > 30. Furthermore, the results of the heterogeneity test between experimental class capacity groups obtained a value of Qb = (3.90; p > 0.05). This value shows that the moderator variable experimental class capacity does not influence the impact of using the flipped classroom method on students' speaking abilities. This means that the use of the flipped classroom method on students' speaking abilities has a level of effectiveness that

is not significantly different in studies conducted at class capacities of ≤ 30 and > 30.

The research year moderator variable consists of two groups, namely 2018-2020 and 2021-2023. The results of the null test analysis (2-tail) in the two groups showed a p value <0.05. This value shows that the flipped classroom method is effective on students' speaking abilities in both studies conducted in 2018-2020 and 2021-2023. Furthermore, the results of the heterogeneity test between study year groups obtained a value of Qb = (5.66; $p < 0.05$). This value shows that the moderator variable research year influences the impact of using the flipped classroom method on students' speaking abilities. This means that the use of the flipped classroom method on students' speaking abilities has a significantly different level of effectiveness between studies conducted in 20121-2023 and studies conducted in 2018-2020.

The regional moderator variable consists of two groups, namely studies in national and international regions. The results of the null test analysis (2-tail) in the two groups showed a p value < 0.05. This value shows that the flipped classroom method is effective for students' speaking abilities, both applied in national and international areas. Furthermore, the results of the heterogeneity test between regional groups obtained a value of Qb = (1.36; $p > 0.05$). This value shows that the regional moderator variable does not influence the impact of using the flipped classroom method on students' speaking abilities. This means that the use of the flipped classroom method on students' speaking abilities has a level of effectiveness that is not significantly different between national and international regions.

## Discussion

The results of the overall meta-analysis of 15 primary studies using a random-effect approach, the large influence of the flipped classroom method on students' speaking abilities shows a combined effect size value of 1.25 with the "large effect" criterion. This means that the application of the flipped classroom method to students' speaking abilities has a big influence and is more effective than traditional learning methods. The results of this study are in line with previous meta-analyses conducted by Güler et al. (2023); Purnomo et al. (2022); Shi et al. (2020); and Yakar (2021). They also revealed that the application of the flipped classroom method had a significant influence on learning achievement. These consistent findings strengthen recommendations for its use in education. The more interactive, participatory, and independent learning experience provided by this method plays an important role in building stronger conceptual understanding in students. Students' ability to access material before class and then discuss, collaborate, and practice under teacher guidance can significantly improve learning outcomes. However, it is important to note that the success of these methods depends not only on the model itself, but also on how the method is implemented in the appropriate context. Factors such as a well-designed curriculum, an effective teacher's role as facilitator, and adequate technological support are important components in the success of the flipped classroom approach.

Based on the findings from the moderator variable analysis, we found that the flipped classroom method was effective in improving students' speaking abilities in all educational level groups studied (JHS, SHS, and College). Furthermore, the results of the heterogeneity test between educational level groups show that there is no significant difference in the effectiveness of using the flipped classroom method between the three educational level variable groups. The educational level variable does not influence the impact of using the flipped classroom method on students' speaking abilities. This means that this method is equally effective at all levels of education studied, from JHS to College. This finding is in line with the meta-analysis study conducted by Cheng et al. (2018); Låg and Sæle (2019); Guler et al. (2023); and Yakar et al. (2021). They also concluded that the use of the flipped classroom method did not have significantly different effectiveness between levels of education. This finding is very important because it shows that the flipped classroom method can be used effectively to improve students' speaking abilities, regardless of their educational level. This offers the potential for wide use of the fliiped classroom method in a variety of educational settings, from junior high schools to tertiary institutions to help students develop better speaking skills.

Based on the findings from the moderator's analysis regarding the experimental class capacity variable, we found that the flipped classroom method was effective in improving students' speaking skills both in class capacity with ≤ 30 and > 30 students. Furthermore, the heterogeneity test results between groups of experimental class capacity found that there was no difference significant in the effectiveness of using the flipped classroom method between these two groups. The experimental class capacity variable does not affect the impact of using the flipped classroom method on students' speaking abilities. This means that this method is equally effective in classes with different capacities, both those with a capacity of ≤ 30 or > 30. This finding is also in line with the meta-analysis conducted by Purnomo et al. (2022); Samritin et al. (2023); Sulistyowati et al. (2023), and Yakar et al. (2021), who found that the sample size variable did not affect the effect size. This finding is very important because it shows that the flipped classroom method can be used effectively to improve students' speaking skills, regardless of the size of their experimental class. This indicates flexibility in applying this method in various contexts of classes with various capacities.

Based on the findings from the moderator analysis regarding the research year variable, we found that the flipped classroom method was effective in improving students' speaking abilities in both research year groups (2018-2020 and 2021-2023). Furthermore, the results of the heterogeneity test between research year groups found that there was a significant difference in the effectiveness of using the flipped classroom method between these two groups. The research year variable influences the impact of the flipped classroom method on students' speaking abilities. This means that the flipped classroom method provides significantly different effects between studies conducted in 2021-2023 and studies conducted in 2018-2020. This finding is in line with the meta-analysis conducted by Purnomo et al. (2022) who found that the research year variable influenced the impact of implementing the flipped classroom method on students' mathematical abilities. This finding could have several implications. Changes in

the effectiveness of the flipped classroom method over time can be influenced by various factors, including technological developments, curriculum changes, or increasing teacher experience in implementing this method. Therefore, it is important to continue monitoring and evaluating the impact of these methods in different contexts to further understand the factors that influence their effectiveness. It is also important to note that, although there were significant differences between the two research year groups, both groups still indicated that the flipped classroom method was effective in improving students' speaking abilities. This indicates that this method still has potential in improving students' speaking abilities, although with variations in the level of effectiveness.

Based on the findings from the moderator analysis regarding regional variables, we found that the flipped classroom method was effective in improving students' speaking skills in both national and international areas. Furthermore, the results of the heterogeneity test between the two regional groups show that there is no significant difference in the effectiveness of using the flipped classroom method between these two groups. The region variable does not affect the impact of the flipped classroom method on students' speaking abilities. This means that the use of the flipped classroom method provides a similar level of effectiveness between studies conducted at the national and international levels. These findings are in line with the meta-analysis study conducted by Guler et al. (2023) and Purnomo et al. (2022). These findings can provide confidence that the flipped classroom method can be used effectively in various regional contexts, both at national and international levels. This also indicates that this method has wide applicability in improving students' speaking abilities in various educational settings, without being overly influenced by regional factors. However, it is important to consider other factors that may influence results, such as student characteristics, teacher competency, and school curriculum.

## CONCLUSION

Based on the meta-analysis of 15 primary studies conducted, it can be concluded that the flipped classroom method has a greater influence on students' speaking ability and is more effective than traditional learning methods. The heterogeneity analysis carried out also revealed that moderator variables such as educational level, experimental class capacity, and region did not affect the impact of using the flipped classroom method on students' speaking abilities. Meanwhile, the moderator variable in the year of the study affected the impact of using the flipped classroom method on students' speaking abilities. This provides a deeper understanding of the variations in effect sizes that occur in the use of the fipped classroom method, as well as recognizing that the effect can be influenced by certain factors.

Based on these findings, there are several recommendations that can be taken. First, educators at various levels of education can consider using the flipped classroom method as an effective tool to improve students' speaking skills. Second, learning planning using the flipped classroom method must consider various factors, such as student characteristics, to maximize its effectiveness.

Third, it is important to continuously monitor the development of these methods and evaluate their impact in a changing context, especially given the significant changes in education over the past few years.

This research has several limitations that need to be considered. First, although the meta-analysis has been carried out carefully, there may still be factors not identified in this study that may affect the effectiveness of the flipped classroom method. Second, this research only considers the effect of the flipped classroom method on students' speaking ability, without considering its impact on other aspects of learning such as understanding concepts or critical thinking skills. Third, most of the primary studies analyzed in this study may have come from a different context, which could influence the generalizability of these results to the environment

## REFERENCES


Abdullah, M. Y., Hussin, S., & Ismail, K. (2019). Implementation of flipped classroom model and its effectiveness on English speaking performance. *International Journal of Emerging Technologies in Learning (Online)*, 14(9), 130. https://doi.org/10.3991/ijet.v14i09.10348

Abdullah, M. Y., Hussin, S., & Ismail, K. (2019). Implementation of flipped classroom model and its effectiveness on English speaking performance. *International Journal of Emerging Technologies in Learning (Online)*, *14*(9), 130. https://doi.org/10.3991/ijet.v14i09.10348

Al Nakhalah, A. M. M. (2016). Problems and difficulties of speaking that encounter English language students at Al Quds Open University. *International Journal of Humanities and Social Science Invention*, 5(12), 96-101.

AlKhoudary, Y. A., & AlKhoudary, J. A. (2019). The effectiveness of flipping classroom model on EFL secondary school speaking skills. *Indonesian EFL Journal*, 5(2), 1-10. https://doi.org/10.25134/ieflj.v5i2.1811

Badawi., Sumarno., Hukom, J., Prihatmojo, A., Manaf, A., Suciati, I., & Ratau, A. (2023). Integration of Blended Learning and Project-Based Learning (BPjBL) on Achievement of Students' learning goals: A Meta-analysis study. *Pegem Journal of Education and Instruction, 13*(4), 274–281. https://doi.org/10.47750/pegegog.13.04.32

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International society for technology in education.

Bishop, J., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. In 2013 ASEE Annual Conference & Exposition (pp. 23-1200).

Boonkit, K. (2010). Enhancing the development of speaking skills for non-native speakers of English. *Procedia - Social and Behavioral Sciences*, 2(2), 1305–1309. https://doi.org/10.1016/j.sbspro.2010.03.191

Borenstein, M., Hedges, L. V, & Rothstein, H. R. (2009). *Introductionto Meta-Analysis* (Issue January). John Wiley & Sons.Hunter, J. E., & Schmidt, F. L. (2004). Methods of meta-analysis: Correcting error and bias in research findings. Sage

Chen Hsieh, J. S., Wu, W. C. V., & Marek, M. W. (2017). Using the flipped classroom to enhance EFL learning. *Computer Assisted Language Learning*, 30(1-2), 1-21. https://doi.org/10.1080/09588221.2015.1111910

Cheng, L., Ritzhaupt, A.D. & Antonenko, P. Effects of the flipped classroom instructional strategy on students' learning outcomes: a meta-

analysis. *Education Tech Research Dev, 67*, 793–824 (2019). https://doi.org/10.1007/s11423-018-9633-7

Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (8th ed.). Routledge Taylor & Francis Group.

Davies, P. (2000). The relevance of systematic reviews to educational policy and practice. *Oxford review of education*, *26*(3-4), 365-378. https://doi.org/10.1080/713688543

Erdem, M. D. (2016). Instructors' opinions about the education on Turkish speaking abilities of Syrian students. *Anthropologist*, 24(2), 541–550. https://doi.org/10.1080/09720073.2016.11892048

Ginaya, G., Rejeki, I. N. M., & Astuti, N. N. S. (2018). The effects of blended learning to students' speaking ability: A study of utilizing technology to strengthen the conventional instruction. *International journal of linguistics, literature and culture*, *4*(3), 1-14. http://dx.doi.org/10.21744/ijllc.v0i0.000

Güler, M., Kokoç, M., & Önder Bütüner, S. (2023). Does a flipped classroom model work in mathematics education? A meta-analysis. *Education and Information Technologies, 28*(1), 57-79. https://doi.org/10.1007/s10639-022-11143-z

Hariyanto, V. A. I., & Lolita, Y. (2023). The Effect Of Using Flipped Learning Strategy In Improving Students'speaking Skill In Hybrid Learning. *Globish: An English-Indonesian Journal for English, Education, and Culture*, 12(1), 1-18. http://dx.doi.org/10.31000/globish.v7i2

Hasan, A. A. A. (2014). The Effect of Using Task-Based Learning in Teaching English on the Oral Performance of the Secondary School Students. *International Interdisciplinary Journal of Education*, 3(2), 250–264.

Isda, I. D. & Imran. (2021). The Effect of Using Blended Learning Model on Enhancing Students' Speaking Skill in Senior High Schools. *JOLLT Journal of Languages and Language Teaching*, 9(1), 92-98. https://doi.org/10.33394/jollt.v%vi%i.2921

Juandi, D., & Tamur, M. (2020). Pengantar Analisis Meta (1st ed.). UPI PRESS.

Kamsurya, M. A., Wijaya, A., Ramadhani, R., & Hukom, J. (2022). The Effect of Self-Efficacy on Students' Mathematical Abilities: A Meta-Analysis Study. *Jurnal Pendidikan Progresif, 12*(2), 451-463. http://dx.doi.org/10.23960/jpp.v12.i2.202205

Kantisa, P., & Sitthitikul, P. (2020). The effects of blended learning on Thai university students' speaking ability, learning motivation and perceptions. *Journal of Asia TEFL*, *17*(4), 1377-1391. http://dx.doi.org/10.18823/asiatefl.2020.17.4.14.1377

Låg, T., & Sæle, R. G. (2019). Does the flipped classroom improve student learning and satisfaction? A systematic review and meta-analysis. *AERA open, 5*(3), 2332858419870489. http://doi.org/10.1177/2332858419870489

Li, S., & Suwanthep, J. (2017). Integration of flipped classroom model for EFL speaking. *International Journal of Learning and Teaching, 3*(2), 118-123. https://doi.org/10.18178/ijlt.3.2.118-123

Marliana, R. (2022). Effectiveness of Flipped Learning Method in Improving Students' Speaking Skill. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 10(1), 114-119. http://dx.doi.org/10.24256/ideas.v10i1.2486

Martaputri, N., A., Muhtadi, A., Hukom, J., & Samal, D. (2021). Meta-Analysis : The Corellation Between Emotional Intelligence and Acedemic Achievement. *Jurnal Pendidikan Progresif, 11*(3), 511-523. doi: 10.23960/jpp.v11.i3.202102.

Muhtadi, A., Assagaf, G & Hukom, J. (2022). Self-efficacy and students' mathematics learning ability in Indonesia: A meta analysis study.

*International Journal of Instruction, 15*(3), 1131-1146. https://doi.org/10.29333/iji.2022.15360a

Muhtadi, A., Pujiriyanto., Syafruddin, K., Hukom, J., & Samal, D. (2022). A meta-analysis: Emotional intelligence and its effect on mathematics achievement. *International Journal of Instruction, 15*(4), 745-762. https://doi.org/10.29333/iji.2022.15440a

Muklas, M. (2017). Talking Chips Technique To Teach Speaking. *Journal of English Language Education and Literature*, II(1), 58–64.

Mullen, B., Muellerleile, P., & Bryant, B. (2001). Cumulative metaanalysis: A consideration of indicators of sufficiency and stability. *Personality and Social Psychology Bulletin*, 27(11), 1450– 1462. https://doi.org/10.1177/014616720 12711006

Namaziandost, E., Hashemifardnia, A., & Shafiee, S. (2019). The impact of opiniongap, reasoning-gap, and information-gap tasks on EFL learners' speaking fluency. *Cogent Social Sciences*, 5(1), 1–16. https://doi.org/10.1080/23311886.2019.1630150

Nurfadhila, U. (2019). Penggunaan Model Flipped Classroom dalam Meningkatkan Keterampilan Berbicara Bahasa Arab Siswa. *Maharaat: Jurnal Pendidikan Bahasa Arab*, *2*(1), 19-28.

Phoeun, M., & Sengsri, S. (2021). The Effect of a Flipped Classroom with Communicative Language Teaching Approach on Undergraduate Students' English Speaking Ability. *International Journal of Instruction*, 14(3), 1025-1042. https://doi.org/10.29333/iji.2021.14360a

Ponmozhi, D. D., & Thenmozhi, A. (2017). Difficulties faced by the rural students in learning English at high school level. *IOSR Journal of Humanities and Social Science*, 22(06), 31–34. https://doi.org/10.9790/0837- 2206133134

Pramila, K., & Thomas, J. (2019). Impact of blended learning on the speaking skills of English as a foreign language (EFL) learners at Sohar University. *Anthropologist*, *35*(1-3), 47-56. https://doi.org/10.31901/24566802.2019/35.1-3.2039

Purnomo, B., Muhtadi, A., Ramadhani, R., Manaf, A., & Hukom, J. (2022). The effect of flipped classroom model on mathematical ability: A meta analysis study. *Jurnal Pendidikan Progresif, 12(*3), 1201-1217. http://dx.doi.org/10.23960/jpp.v12.i3.202216

Rachmawati, R. (2022). The Implementation of Flipped Classroom Model to Improve the EFL Undergraduate Students' Speaking Skills. *Alsuna: Journal of Arabic and English Language*, *5*(2), 114-128. https://doi.org/10.31538/alsuna.v5i2.2735

Rahman, A & Hajar, I. (2021). The Use of Flipped Classroom Method in Fostering Students' Speaking Ability at the University of Iqra Buru. *ELT Worldwide: Journal of English Language Teaching*, 8(2), 176-194. https://doi.org/10.26858/eltww.v8i2.21177

Retnawati, H., Apino, E., Djidu, H., & Kartianom. (2018). *Pengantar Analisis Meta*. Yogyakarta: Paroma Publishing

Samritin, S., Susanto, A., Manaf, A., & Hukom, J. (2023). A meta-analysis study of the effect of the blended learning model on students' mathematics learning achievement. *Jurnal Elemen, 9*(1), 15-30. https://doi.org/10.29408/jel.v9i1.6141

Setiawan, A. A., Muhtadi, A., & Hukom, J. (2022). Blended learning and student mathematics ability in Indonesia: A meta-analysis study. *International Journal of Instruction, 15*(2), 905-916. https://doi.org/10.29333/iji.2022.15249a

Shi, Y., Ma, Y., MacLeod, J. et al. College students' cognitive learning outcomes in flipped classroom instruction: a meta-analysis of the empirical literature.

*J. Comput. Educ. 7*, 79–103 (2020). https://doi.org/10.1007/s40692-019-00142-8

Sohaya, E. M., Situmorang, J., & Tambunan, H. (2021). The Flipped Classroom: Learning Revolution to Improve Students' English Speaking Skills. *In 6th Annual International Seminar on Transformative Education and Educational Leadership* (AISTEEL 2021) (pp. 91-96). Atlantis Press.

Sudarmaji, I., Anwar, A. A. A., & Mulyana, A. (2021). Developing students' speaking skills through Flipped Classroom Model. *Journal of English Education and Teaching, 5*(2), 188-200. http://orcid.org/0000-0003-1123-1683

Sulistyowati, E., Hukom, J., & Muhtadi, A. (2023). Meta-Analysis of Flipped Classroom on Students' Mathematics Abilities: Effectiveness and Heterogeneity Analysis. *JTP-Jurnal Teknologi Pendidikan, 25*(2), 140-159. https://doi.org/10.21009/jtp.v25i2.27433

Turan, Z., & Akdag-Cimen, B. (2020). Flipped classroom in English language teaching: a systematic review. *Computer Assisted Language Learning*, 33(5-6), 590-606. https://doi.org/10.1080/09588221.2019.1584117

Yakar, Z. Y. (2021). The Effect of Flipped Learning Model on Primary and Secondary School Students' Mathematics Achievement: A Meta-Analysis Study. *Çukurova Üniversitesi Eğitim Fakültesi Dergisi, 50*(2), 1329-1366. https://doi.org/10.14812/cuefd.865337

Zulkarnain, I., & Lubis, S. I. (2023). Pengaruh Model Pembelajaran Flipped Classroom Dalam Meningkatkan Kemampuan Berbicara Siswa Mas Al Washliyah 12 Perbaungan. *Jurnal Education And Development*, *11*(1), 317-322. https://doi.org/10.37081/ed.v11i1.4361