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The Effect of Flipped Classroom on EFL Learners' Competence with Different Learning Styles: A Meta-Analysis

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Abstract

This meta-analysis examines the effectiveness of the Flipped Classroom (FC) model in enhancing EFL learners' competence, focusing on the impact of different learning styles. This study synthesizes data from 14 quasi-experimental studies published between 2015 and 2024, following PRISMA guidelines. The study evaluates the overall effect size (ES) and applies moderator analysis to assess variations across student majors, language learning targets, education levels, and geographic regions. Findings: Results indicate a moderate positive impact of the FC model on EFL learners' competence (ES = 1.99, 95% CI: 0.38 – 3.59). Notably, English-major students and those focusing on reading comprehension showed the most significant improvement. Additionally, learners at the college level benefited more than high school students. Implications: These findings suggest that the FC model can be effectively tailored to different learning styles, supporting a more personalized and interactive EFL learning experience. The study underscores the need for further research to optimize FC implementation across diverse educational and cultural contexts.

Keywords: *Flipped Classroom, EFL Learners' Competence, Learning Styles, Meta-Analysis*

1. Introduction

Improving students' abilities in EFL comes with difficulties; one of the primary challenges is the qualification of teachers and students' competency levels (Mohammed, 2018; Susidamaiyanti et al, 2023). Moreover, differences in students' learning styles further complicate EFL instruction, as each student processes information differently, which can influence their learning outcomes (Peranginangin et al., 2020). According to Fleming 2001 in Subagja & Rubini (2023), the four types of learning styles are kinaesthetic, visual, auditory, and reading/writing. Understanding and accommodating different learning

styles is crucial in improving the effectiveness of EFL learners (Pourhosein Gilakjani, 2011). For instance, visual, auditory, and kinesthetic learning modalities can influence EFL learners in understanding and applying the material taught to them. Each student has a unique way of receiving and responding to learning and information, so different learning styles are essential in EFL learning. In this case, teachers can design teaching strategies that recognize and adapt teaching according to diverse learning styles to suit the needs of EFL learners. When instruction is tailored to each student's unique learning preferences, students will typically be more motivated and comfortable in their learning process, as understanding these learning style differences not only improves student engagement but also helps achieve better learning outcomes (Peranginangin et al., 2020; Putra & Pratiwi, 2020).

Speaking, reading academic texts, and writing essays in English, EFL students often have difficulties; this is because EFL students lack the motivation to learn English, so it becomes a challenge to learn the language (Asnas, 2022; Mudra, 2024). Various learning styles affect the understanding and application of content by EFL learners; for example, students with kinesthetic learning styles need much hands-on practice to understand the topic (Hernandez et al., 2020; Tranquillo, 2008). Meanwhile, students with visual learning styles need information through pictures, visuals, and diagrams so that it can help their understanding (Pashler et al., 2008; Qasserras, 2024). Cultural and educational differences can significantly affect how learners interact/understand the learning material, creating additional challenges, especially in their language mastery (Derakhshan et al., 2016).

In considering this, the flipped classroom (FC) model is an innovative strategy in the world of education. FC is a changing approach to teaching, where students read books and watch videos to learn new material at home so that time in class is used for discussions, teamwork, and hands-on application of the material (Basal, 2015; Chen Hsieh et al., 2017; Ozdamli & Asiksoy, 2016; Samavi et al., 2020). Thus, the results obtained in this approach aim to increase student involvement and provide more opportunities for discussion with teachers. FC can also provide a significant improvement in the academic performance of EFL students, especially in language skills, such as speaking, listening, writing, and read. A study by Li & Li (2022) found that FC can encourage student engagement and can improve competence, especially the two factors that are important for EFL students. In addition, other studies show that FC can increase students' autonomy and motivation so that students do not feel anxious, especially when learning the language (Siahpoosh & Bagherin, 2024). The FC model also supports diverse learning styles by utilizing pre-class materials, such as watching videos for visual learners and practical activities for kinesthetic learners, so that an inclusive learning environment can be ensured (Tadayonifar & Entezari, 2020).

FC can improve learning outcomes and motivation in acquiring English idioms and can improve oral communication skills (Chen Hsieh et al., 2017). Significantly, allowing students to learn at their own pace and allocating class time for in-depth interaction can also increase student engagement in learning (DeLozier & Rhodes, 2017). In addition, FC can encourage the growth of critical reading, teamwork, and critical thinking, which is very important, especially in language acquisition (Khonamri et al., 2020; Pang, 2022). FC can also improve the learning outcomes of EFL learners, especially in speaking, pronunciation, and listening (Khoiriyah, 2021; Quyen, 2018; Zhang et al., 2016). O'Flaherty & Phillips (2015) also highlight how FC improves overall learning outcomes, but they also need to highlight the need for a more flexible and individualized approach to accommodate the different needs of students. The FC can also provide a more significant improvement in the skills of students with visual learning styles compared to traditional learning methods (Tadayonifar & Entezari, 2020). Indeed, it has been proven that FC can improve students' ability to think initially and solve problems. A study by Sutiani & Yuliardi (2023) found that FC can foster critical thinking and problem-solving, thus providing students with a comprehensive set of skills that support long-term academic success. This suggests that while FC can improve some cognitive

abilities, not all learning styles can benefit equally from it. In conclusion, given the variety of learning styles found in each Classroom, the FC model offers a promising strategy for improving EFL learners' competence. In this case, it addresses the demands of EFL learners and prepares them for more successful language acquisition by encouraging engagement, considering various learning styles, and improving academic performance.

Although the FC model has been widely adopted in EFL instruction, there remains a lack of systematic meta-analytical research that quantifies its effectiveness across diverse learning styles. Most existing studies focus on small-scale experimental designs without synthesizing broader patterns in EFL learning outcomes. Additionally, prior research has overlooked how different contextual factors—such as students' majors, target language skills, and geographic backgrounds—moderate the FC's effectiveness.

To address this gap, this study aims to (1) assess the overall impact of the FC model on EFL learners' competence through meta-analysis and (2) explore how learning styles and contextual factors influence learning outcomes. By identifying key moderator variables, this research provides a more comprehensive understanding of how FC can be optimized for diverse EFL learners. Despite its potential, there is limited evidence-based research that systematically analyzes the impact of the FC model on EFL learners across different learning styles. Therefore, this study aims to address this gap by conducting a meta-analysis of aggregated data to evaluate the effects of FC on EFL learners' competence and by adding moderator variables. The researchers provided a systematic review and synthesis of the study findings. Thus, this meta-analysis attempted to answer the following questions:

1. Is the FC model able to affect EFL students' competence?
2. How do different learning styles affect the effectiveness of FC in EFL learning?

This researcher hypothesized that (1) there is an effect of the FC model on EFL students' competence, (2) several different learning styles affect the effectiveness of the FC model on EFL learning, and that it shows better results than others.

2. Literature Review

2.1 The Pedagogical Theory Underlying Flipped Classroom

Active Learning Theory

According to active learning theory, students learn best while actively participating in the educational process. Dewey (1986) emphasizes that hands-on experience and interaction with real-world contexts are paramount. The FC learners have greater responsibility for their learning by involving instructional content at home so that time in class can be used for interactive activities, thus encouraging students to think critically and have problem-solving skills (Ettien & Touré, 2023). In a study by Zhao & Li (2021), students who engage with pre-class materials can use in-class discussions to deepen their understanding of EFL content, increase student engagement, and improve academic performance. This approach provides an active learning approach so that students can be placed at the center of their education experience by encouraging a deeper understanding of knowledge.

Pedagogical Differentiation Theory

The pedagogical differentiation theory states that students have diverse skills, interests, and learning styles. So, in this theory, it is suggested that adaptation methods be used in teaching so that it can meet the needs of individual students (Ettien & Touré, 2023). This aligns with the findings by Smale-Jacobse et al. (2019), who emphasized that differentiated learning can significantly improve learning outcomes in heterogeneous classrooms but depends on the context and implementation. The FC model aligns with this theory so that educators can tailor classroom activities based on students' preparation before

admission to their different competencies. According to this theory, students have a variety of abilities, passions, and learning preferences, which supports the use of flexible teaching strategies to accommodate each student's demands (Butler, 2024). This method can be helpful in the EFL learning environment, where students have different levels of language competence because, in addition to encouraging great student engagement, it also accommodates a variety of learning preferences (Hashim et al., 2023; Jeong et al., 2018; Persky & McLaughlin, 2017).

Intrinsic Motivation Theory

Developing students' natural drive to learn is the goal of the industrial motivation theory. Fate theory, a framework that stands out in this field, identifies autonomy, engagement, and competence as essential components of motivation (Mortega, 2022; Ryan & Deci, 2000). FC fosters independence by allowing students to learn outside the Classroom at their pace.

The self-assessment option increases students' high sense of competence, but activities in the Classroom foster togetherness through group projects and cooperative learning. A study by Hao & Lan (2023) found that the FC context showed a higher level of intrinsic motivation, especially in forming a balance between independence and collaboration between peers. Furthermore, the FC also can increase student motivation and engagement by meeting these basic demands (Hao & Lan, 2023; Khalil & Sabir, 2019).

3. Research Method

3.1 Research Design

Following PRISMA's statement, this study conducted a systematic review using a meta-analysis approach (Liberati et al., 2009). The purpose of this study is to analyze numerical and statistical data from various related fields. A study by Harrison (2011) states that meta-analysis is the combination and synthesis of findings with statistical models from several findings. In this study, the researchers used meta-analysis to ascertain the impact of FC on the proficiency of EFL students with different learning styles. In this case, the researcher included standard procedures such as following the PRISMA guidelines, ensuring the reliability and replication of the meta-analysis.

The results of the experimental study from 2015 to 2024 were used to assess the impact of FC. Each characteristic belongs to one of the four variables discussed in this field, such as student major, target of language learning, education level, and geographic region. The meta-analysis technique quantitatively synthesizes influence studies to show the relationship between variables clearly. Thus, in this case, the meta-analysis determined the size effect of 14 studies with various criteria the researchers had selected.

3.2 Study the Eligibility Criteria

This meta-analysis examined studies involving EFL learners across different age groups. Data were evaluated for studies published in peer-reviewed publications that assess the impact of FC on EFL learners' competence with varying learning styles. The inclusion criteria ensured that only robust, peer-reviewed studies were considered, enhancing the validity of the findings.

3.3 Data Source

The following electronic databases were used to do literature searches, which served as the sources: Google Scholar, ERIC, Scopus, Taylor & Francis, as well as general searches used for the search ('flipped classroom or 'flipped classroom on EFL learners') and ('flipped classroom with different learning styles') and ('learning styles') to locate other studies, consult the review papers' reference lists. These search criteria were designed to ensure a thorough retrieval of both general and specialized research in the field

3.4 Heterogeneity and Small Study Effect

Cochran's Q test was used to quantify heterogeneity, while inconsistency used the I2 statistic (Borenstein et al., 2009, 2017). Values in the order of 25% range are regarded as low, 50% are considered medium, and 75% are considered high or represent a large amount of inconsistency developed, suggesting the use of the funnel plot and Egger's regression test (Sedgwick & Marston, 2015). The overall conclusions are strengthened by this thorough examination of heterogeneity, which guarantees that potential biases and variability are taken into consideration.

3.5 Study Selection

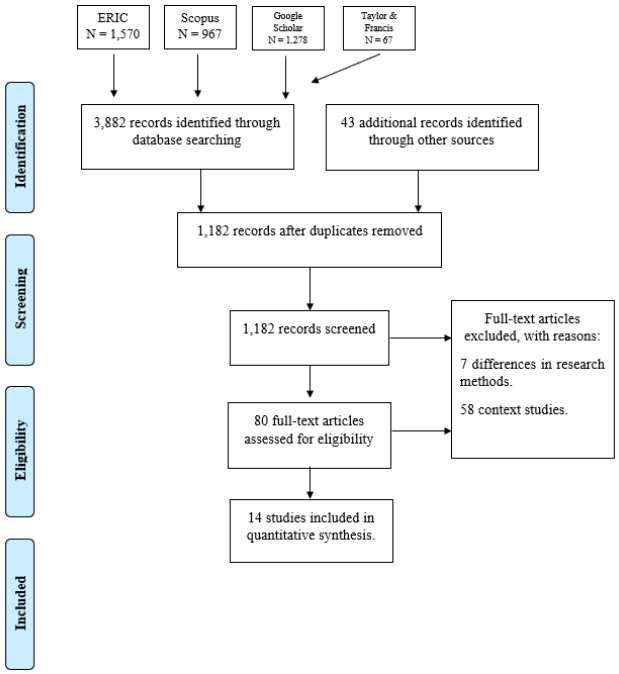

Figure:1: Flowchart for Selecting Studies

Study Selection and Quality Criteria:

This study adhered to PRISMA guidelines for systematic reviews. The inclusion criteria were: (1) peer-reviewed studies published between 2015–2024, (2) studies utilizing a quasi-experimental or experimental design, (3) studies that assessed FC impact on EFL learners' competence, and (4) studies that reported quantitative effect sizes. Excluded were non-peer-reviewed articles, qualitative studies, and studies lacking sufficient statistical data.

Statistical Approach:

A random-effects model was employed to account for heterogeneity among studies (Borenstein et al, 2009). Effect sizes were computed using standardized mean differences (SMD), and Cochran's Q-test assessed statistical heterogeneity. Additionally, Egger's regression test was conducted to detect publication bias. The researchers obtained 1,570 ERIC articles, 967 SCOPUS articles, 1,278 Google Scholar articles, and 67 Taylor & Francis. Furthermore, the researchers identified 43 articles from other sources, as illustrated in Figure 1. The results were published only in 2014 and 2024. This thorough selection procedure guarantees the inclusion of excellent research related to the study's goals.

3.6 Inclusion and Exclusion Rules

Table:1: List of Selected Studies with Moderator Factors

No.	Authors	N	ES	SE	Students Major	Target of Language Learning	Education Level	Geographic Regions
1.	Abaeian, H. & Samadi, L (2016)	100	13.355	0.9652628	English	Reading	Collage	Western Asia
2.	Abedi, P. et al. (2019)	32	1.392	0.3940681	English	Writing	Collage	Western Asia
3.	Afrilyasanti, R. et al. (2016)	62	2.735	0.3533934	English	Writing	Senior High School	Southeast Asia
4.	Alsowat, H. (2016)	67	2.882	0.3488794	English	General English	Collage	Western Asia
5.	Cabi, Emine. (2018)	59	-0.086	0.2608362	English	General English	Collage	Western Asia
6.	Etemadfar, P. et al. (2020)	40	0.788	0.3282769	English	Listening	Collage	Western Asia
7.	Hosseini, S.A. et al. (2021)	68	-0.050	0.2425742	Non-English	Listening	Collage	Western Asia
8.	Jdaitawi, M. (2019)	160	0.375	0.159501	Non-English	General English	Collage	Western Asia
9.	Kirmizi, O. & Komec, F. (2019)	58	0.309	0.2641707	Non-English	General English	Senior High School	Western Asia
10.	Namaziandost, E et al. (2020)	60	4.422	0.4791613	English	Listening	Collage	Western Asia
11.	Ozturk, M. & Cakiroglu, U. (2021)	49	1.005	0.3032774	Non-English	General English	Collage	Western Asia
12.	Putri, E.D. et al (2024)	58	0.784	0.2738914	English	Writing	Collage	Southeast Asia
13.	Qader, R. O. & Arslan, F.Y. (2019)	66	0.483	0.2498567	English	Writing	Collage	Western Asia
14.	Yulian, R. (2021)	74	1.617	0.2678052	Non-English	Reading	Collage	Southeast Asia

In order to guarantee the quality and applicability of the chosen research, a systematic set of inclusion and exclusion criteria was used. For instance, research has to be published in peer-reviewed publications and concentrate on FC treatments in EFL environments. Excluded were studies with insufficient methodological information.

3.7 Moderator Variables

Table. 1 listed four factors that could function as moderators' variables: likely students' major, target of language learning, education level, and geographic regions. Researchers also stated that the concentration of their majors, such as English or non-English. English in general, writing, listening, and writing are the focus areas for the target of language learning. Two categories are used in education: (1) college and (2)

senior high school. These moderator variables offer a framework for examining how various contextual elements affect FC's impact.

3.8 Effect Size Calculation

The effect size (ES) of the standardized mean difference, which was calculated using the mean and standard deviation, is the main result of this investigation (Borenstein et al., 2009). The researchers investigated the overall ES individually, with a high ES indicating the influence of FC on learners' competence, while a negative ES indicated a decrease in these factors. To accommodate variation across the studies found and ensure predictable results, a randomized effects model was used (Borenstein et al., 200).

3.9 Data Analysis

Meta-Analysis Utilizes

In this study, to test the heterogeneity of effect measures and publication bias, the researcher used confidence interval (CI) and funnel plot (Peters et al., 2010). Researchers used software such as Excel and JASP to examine potential moderator variables and researchers used this software with the aim of calculating Q statistics including QW (Q value is used to maintain variability in groups) as well as QB (Q value is used to assess differences between groups).

Publication Bias

Suppose a value of more than 50% indicates a significant component at risk of bias. In that case, this is usually a publication bias, i.e., one that exaggerates the effect or may not show an effect at all (Van Aert et al., 2019). When publication bias evaluations are included, the outcomes of the meta-analysis are clearer and more reliable.

Moderator Variables

The student's primary target of language learning, education level, and geographic regions are considered moderators of the effect measure. These factors are collected using categorical variables and included in data collection, analysis, and conclusion.

4. Results

Analysis of Publication Bias

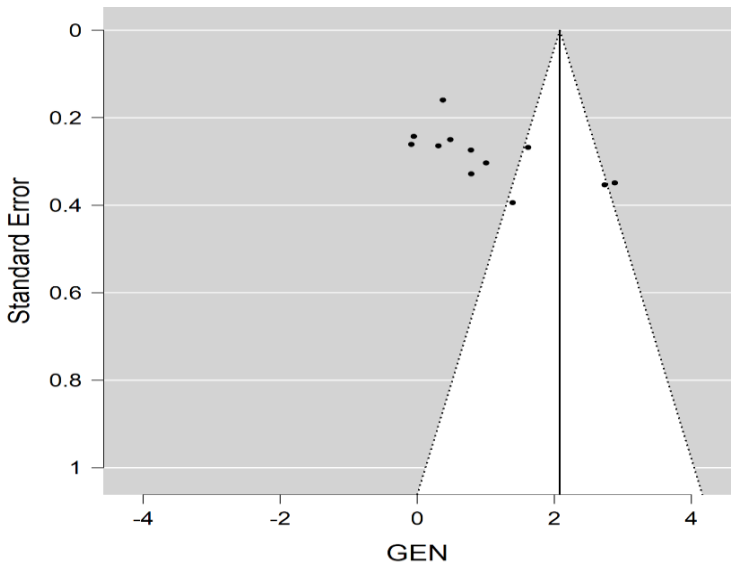

Figure:2: Funnel Plot of Publication Bias

The funnel plot in Figure 2 illustrates the link between the effect size and standard error of the effect size to evaluate the potential of publication bias . Since the funnel plot suggests the possibility of publication bias, the study's findings are statistically significant (demonstrating the beneficial use of FC) .

Overall Effect Size

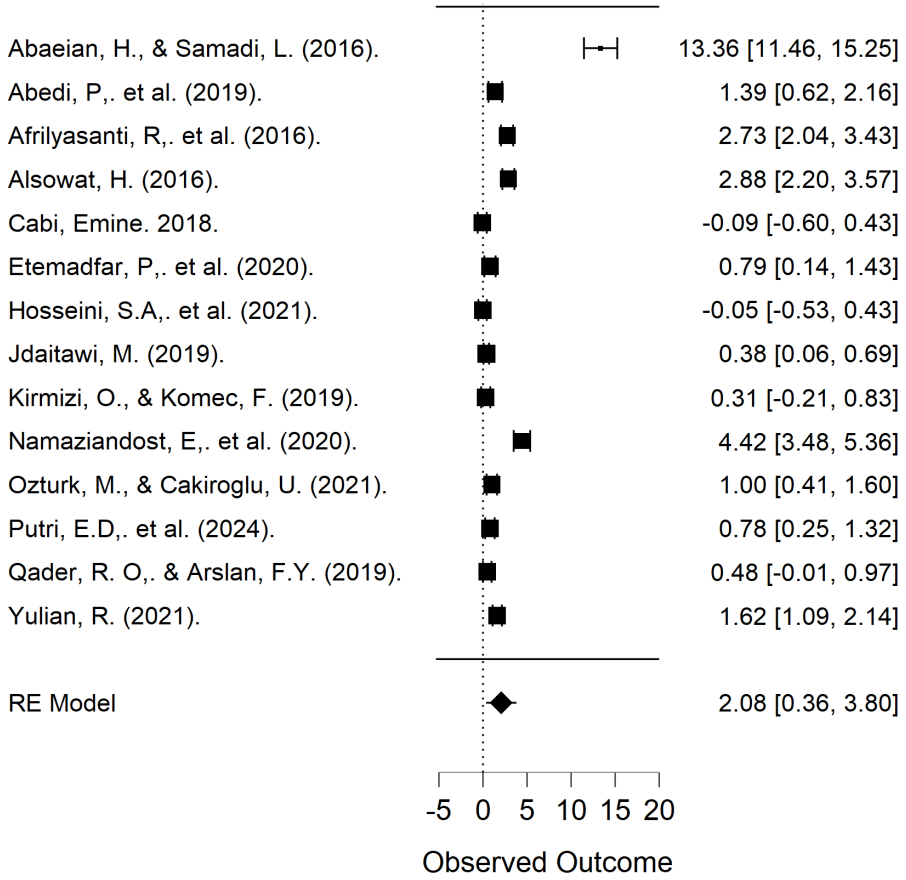

Figure:3: Forest Plot

In the forest plot above, the horizontal lines on each square show each study's ES, while the black boxes 95 per cent represent confidence intervals . The vertical line in the middle shows there is no effe . Furthermore, the forest plot in Figure 3 has an overall impact of 1,99 (95% CI: 0,38, 3,59) . This suggests that there is a moderate positive effect on FC .

Table:2: Effect Size for Flipped Classroom on EFL Learners' Competence

		Effect Size		95% CI		Test of null	Test of heterogeneity	
	k	d	SE	LL	UL	z	QB	df
All Studies								
Students Major	2	2,081	0,879	0,359	3,803		30,823	1
English		2,913	1,337	0,292	5,534	2,178		
Non-English		0,637	0,292	0,065	1,210	2,182		
Target of Language Learning	4	2,081	0,879	0,359	3,803		46,280	3

General English		0,850	0,419	0,028	1,672	2,028		
Listening		1,695	1,362	-0,975	4,366	1,244		
Reading		7,449	5,869	-4,053	18,952	1,269		
Writing		1,327	0.499	0,349	2,306	2,659		
Education Level	2	2,081	0,879	0,359	3,803		1,604	1
Collage		2,068	0,947	0,213	3,924	2,185		
Senior High School		1,511	1,213	-0,867	3,888	1,245		
Geographic Regions	3	2,081	0,879	0,359	3,803		17,372	2
Western Asia		2,201	1,136	-0,027	4,428	1,937		
Southeast Asia		1,694	0,558	0,600	2,788	3,035		

Moderator Variable Analysis

(a) Examining of Modifying Variables

Researchers examined the four modifiers of variables that potentially affect the magnitude of our impacts The results of the moderator analyses using QB and QW are shown in Table 3 .

Table:3: The Findings of Moderator Analyses with QB and QW

		Effect Size		95% CI		Test of null	Test of Heterogeneity
	k	d	SE	LL	UL	QB	QW
All Studies							
Students Major	2	2,081	0,879	0,359	3,803	30,823	306,188
English		2,913	1,337	0,292	5,534	279,914	
Non-English		0,637	0,292	0,065	1,210	26,274	
Target of Language Learning	4	2,081	0,879	0,359	3,803	46,280	290,731
General English		0,850	0,419	0,028	1,672	54,687	
Listening		1,695	1,362	-0,975	4,366	69,371	
Reading		7,449	5,869	-4,053	18,952	137,307	
Writing		1,327	0.499	0,349	2,306	29,366	
Education Level	2	2,081	0,879	0,359	3,803	1,604	335,407
Collage		2,068	0,947	0,213	3,924	305,174	
Senior High School		1,511	1,213	-0,867	3,888	30,233	
Geographic Regions	3	2,081	0,879	0,359	3,803	17,372	319,639
Western Asia		2,201	1,136	-0,027	4,428	300,512	
Southeast Asia		1,694	0,558	0,600	2,788	19,127	

Effectiveness of the Flipped Classroom Model on EFL Learners' Competence

From the meta-analysis, it is shown that the effectiveness of the Flipped Classroom model was moderate-positive regarding EFL Learners' competence, with an overall effect size (ES) of 1.99 (95% CI: 0.38-3.59). This suggests that the FC significantly improves learning outcomes compared to more traditional methods. Findings indicate that the strength of these impacts for FC is not the same for every learner group since they differ based on how learning styles, levels, and geographical contexts were applied.

Impact of Learning Styles on FC Effectiveness

The results reveal that students with a reading-focused learning style showed a considerable improvement with a large effect size in comparison to other learning styles. This finding implies that FC, which promotes pre-class reading and visual learning, works well with learners who favor written or structured input. On the contrary, students with an auditory learning style showed a lesser gain, which means that FC promotes understanding of the language; however, to optimize this effect, other methods, such as interactive listening tasks, will have to be solicited.

Differences in FC Effectiveness Based on Education Level

The effectiveness of FC differed for college students versus high school students. College students (ES = 2.068) scored higher than senior high school students (ES = 1.511). This implies that college students, who are generally more self-regulated and independent learners, benefit more from FC than their younger counterparts, who would probably need more guidance and structures to support their learning.

Geographic Variations in FC Effectiveness

The results indicate that there are geographical differences in the impact of FC. Research conducted in the Southeast Asian region has yielded higher effect sizes than those from the Western Asian region. The differences between countries could naturally be due to differences in educational policies, the preparedness of faculties and students to employ digital learning tools and institutional support for technology-based pedagogies. This finding implies that contextual issues, such as the student's past exposure to self-directed learning and digital platforms, must be considered for the successful implementation of FC.

4. Discussion

To examine the effect of the Flipped Classroom (FC) model on EFL learners' competence, a moderator analysis was conducted based on four key variables: student major, target of language learning, education level, and geographic regions. The findings indicate that these moderators significantly influence the effectiveness of FC, aligning with previous research on differentiated learning and pedagogical adaptability.

Regarding student majors, the results reveal a significant difference in the impact of FC between English and non-English majors. Students majoring in English tend to benefit more, as FC fosters collaborative learning, interactive engagement, and critical thinking (Etemadfar et al., 2020; Putri et al., 2024). This finding aligns with previous studies highlighting that FC promotes higher participation and deeper comprehension in language learning settings (Tadayonifar & Entezari, 2020). However, the effectiveness of FC for non-English majors is lower. This may be due to differences in instructional focus, as non-English majors may not receive as much exposure to active language use in classroom discussio. Research suggests that students outside language-focused programs may require additional scaffolding to maximize the benefits of FC (Namaziandost et al., 2020). Therefore, future research should explore adaptive FC strategies tailored to different academic disciplines to ensure equitable benefits across student majors.

The findings also demonstrate substantial variations in FC effectiveness across different language learning targets, including reading, writing, listening, and general English proficiency. The application of FC significantly enhances students' reading comprehension and critical thinking for critical reading, particularly among EFL students (Fathi & Barkhoda, 2021; Karimi & Hamzavi, 2017; Yulian, 2021). This result supports previous research indicating that pre-class reading materials allow for deeper in-class engagement. Additionally, FC improves listening comprehension by enabling students to engage with

audio-visual materials before class and develop critical listening skills (Ahmad, 2016; Etemadfar et al., 2020). However, while video-based pre-class activities contribute to listening development, they may not fully replicate the benefits of real-time conversational practice. Studies suggest that structured listening exercises and interactive speaking tasks are necessary to optimize auditory learners' outcomes.

Furthermore, FC enhances writing ability by providing more opportunities for active and collaborative learning through discussions (Mubarok et al., 2019; Susidamaiyanti et al., 2023). Previous studies also indicate that FC can support EFL students in understanding and applying grammatical structures effectively (Nagao, 2020). These findings highlight that while FC is highly effective for reading and writing, its implementation for listening and speaking skills may require additional instructional modifications.

The study also highlights significant differences in FC effectiveness between college and high school students. At both educational levels, FC improves learning outcomes, critical thinking skills, writing competence, and feedback opportunities during the learning process (Jdaitawi, 2019; Rajabi et al., 2021). However, college students tend to benefit more from FC, as they typically possess stronger self-regulation skills, which allow them to engage more effectively with pre-class materials and in-class discussions. These findings align with research emphasizing the role of learner autonomy in blended learning environments (O'Flaherty & Phillips, 2015). In contrast, high school students may struggle with self-directed learning due to their developing metacognitive skills, necessitating additional instructional support. Previous research suggests that incorporating motivational strategies and structured FC lesson plans can enhance engagement and learning outcomes for younger students (ÖzkanKırmızı & FundaKömeç, 2019). This highlights the importance of age-appropriate instructional design in FC implementation, where younger learners may benefit from a more guided approach before transitioning to full autonomy.

Geographical variations in FC effectiveness further underscore the role of cultural and institutional factors in shaping learning outcomes. The findings indicate that FC is more effective in Southeast Asia than in Western Asia. In Southeast Asia, FC aligns well with existing pedagogical structures, mainly due to the increasing integration of technology-enhanced learning in the region (Putri et al., 2024). Conversely, in some Western Asian contexts, where traditional teacher-centred instruction remains dominant, FC appears to be less effective (Alsowat, 2016; Cabı, 2018). Research suggests that cultural attitudes toward student autonomy and teacher authority may influence how learners engage with FC-based methodologies. This aligns with studies highlighting that students from educational backgrounds with strong teacher-centred traditions may require more structured guidance in FC settings to optimize learning outcomes. These findings emphasize the need for adaptable FC strategies that consider regional differences in educational policies, instructor preparedness, and student learning preferences.

Overall, the results suggest that FC is most beneficial for English majors, reading- and writing-focused learners, and college students. At the same time, additional modifications may be necessary for non-English majors, auditory learners, and younger students. Furthermore, cultural and institutional factors play a crucial role in determining the success of FC, highlighting the importance of localized instructional approaches. These insights contribute to the broader discourse on blended learning and emphasize the necessity of tailoring FC implementation to suit diverse learner needs and educational settings.

5. Conclusion

The results of this study show that the FC model significantly influences the competence of EFL students. This analysis shows that the FC model successfully adapts to various models of learning demands and preferences, mainly when influenced by other variables, including students' majors, language learning targets, geographical regions, and education levels. The FC model enhances EFL

learner competencies by promoting teamwork, critical thinking, and active engagement. This is very helpful in English skills such as writing, reading, and listening; besides that, the use of this concept shows flexibility at several levels of education, so it offers excellent benefits for high school students and college students.

In addition, the FC model has an effect on geographical regions with variations that reflect educational and cultural dynamics. The FC model is also a flexible and successful approach to EFL teaching because it can improve interaction, engagement, and collaborative learning across geographic areas. Apart from the benefits of FC, this study also highlights the need for more insightful and contextual research to optimize the efficacy of the FC model in various learnings. Future research should examine the long-term of the FC model as well as its application at different levels of proficiency and educational contexts. In addition, the interaction of factors also needs to be further researched with the aim of providing more helpful information for educators in decision-making.

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