STRENGTHENING STUDENTS' ENGLISH READING SKILLS AND MOTIVATION THROUGH FLIPPED CLASSROOM STRATEGY USING WHATSAPP (WA) AS A LEARNING MEDIA

Sensianus Sungkur[1]
Universitas Terbuka

Lidwina Sri Ardiasih[2]
Universitas Terbuka

Andang Saehu[3]
UIN Sunan Gunung Djati

sensianussungkur@gmail.com[1]

ABSTRACT

This study employs a quasi-experimental design to explore the effectiveness of the Flipped Classroom strategy in enhancing students' reading skills and motivation using the WhatsApp platform. The quasi-experimental technique measures the measurement results before and after treatment. In addition, this study also seeks a correlation between reading skills and reading motivation. The research participants were seventh graders of a Junior High School in Tana Tidung who were randomly selected into experimental and control classes. The instruments used in this study were a pre-post reading skills test and a pre-post reading motivation questionnaire on two dimensions, namely intrinsic and extrinsic. Both instruments have been tested for validity and reliability before being used in the study. The results showed that the significant value (2 tailed) or (P) of the post-class reading comprehension test obtained by the experimental and control classes was 0.001, which is smaller than 0.05. It is confirmed that there is a significant difference and the quality of the experimental class' results in reading comprehension, which is higher than the control class. Thus, the Flipped Classroom strategy has an impact on improving reading skills. All significant values (2 tailed) or (P) of the post-reading motivation questionnaire in both dimensions obtained by the experimental and control classes also showed significant difference as they reached 0.001, which is smaller than 0.05. In addition, the quality of the experimental class' reading motivation results were higher than the control class. Thus, the Flipped Classroom strategy has a good impact on increasing reading motivation. Meanwhile, the significance values of the Pearson correlation of the post-reading skill test and the post-reading motivation questionnaire in both dimensions obtained by the experimental class are 0.882, 0.629, and 0.522. The control class obtained 0.286, 0.151, and 0.069. These values are more than 0.05. Thus, this shows that students' reading skills are not correlated with reading motivation in the control class. So, it can be concluded that the Flipped Classroom strategy is very appropriate for improving reading skills and reading

motivation using WhatsApp platform, but there is no relationship between reading skills and reading motivation.
Keywords: Flipped Classroom Strategy, Reading Motivation, Reading Skill, WhatsApp.

INTRODUCTION

English serves as the predominant international language, widely utilized for communication across various countries. In the realm of technology and science, English plays a crucial role as a medium of instruction and information dissemination. In Indonesia, English is categorized as a foreign language and is taught at all educational levels, from elementary school to university. English as a Foreign Language (EFL) instruction frequently integrates Indonesian to facilitate comprehension. Among the essential skills in EFL learning, reading is paramount as it forms the foundation for acquiring knowledge and fostering intellectual growth. Effective reading skills are instrumental in understanding written texts, interpreting information, and enhancing communication abilities.

Reading is a fundamental cognitive process that significantly contributes to an individual's educational development. (Surkamp, 2018) describes reading as a dynamic process involving the simultaneous reception and interpretation of information from texts. (Lestari, 2024) further emphasizes that various reading sources, such as books, newspapers, and digital media, can enhance reading comprehension. The availability of diverse reading materials fosters reading habits, while advancements in digital technology have expanded access to reading through electronic devices such as smartphones. With the increasing use of digital platforms, students now have the flexibility to engage in reading activities via Android smartphones, which offer efficiency and convenience.

Despite the significance of reading, challenges remain in cultivating students' reading habits, particularly in the digital era. Traditional print materials are often less accessible, and students face distractions from digital entertainment. However, the integration of technology in education presents new opportunities for enhancing reading engagement. (Baytiyeh, 2017) highlights the potential of technology in improving students' literacy and communication skills. Android smartphones, as open-source devices, provide a platform for interactive and digital learning. (Ahmed, 2019) categorizes learning outcomes into cognitive, affective, and psychomotor aspects, all of which can be enhanced through technology-assisted education. As educators adapt to technological advancements, the use of WhatsApp as a digital learning tool has emerged as a viable solution to address reading engagement challenges.

Existing literature underscores the role of technology in learning, but research gaps persist concerning its specific impact on students reading motivation

and learning outcomes. While prior studies have explored digital learning tools, limited research examines the effectiveness of WhatsApp in fostering reading habits among junior high school students. Additionally, there is a need to investigate the extent to which smartphone usage influences students' reading motivation and learning achievements. This study aims to bridge this gap by analysing the role of smartphones, particularly WhatsApp, in supporting students' reading engagement within the context of procedural text comprehension.

The objectives are to explain the effectiveness the Flipped Classroom Learning to enhance the seventh-grade students' English reading skills, report the result quality of reading motivation by the seventh graders who are taught through Flipped strategy and those who are taught using conventional and to describe the correlation between students' reading skill and reading motivation. Specifically, the research seeks to determine how digital reading resources, accessible via Android smartphones, contribute to students' reading engagement. Additionally, the study explores the implementation of the flipped classroom learning model, which integrates digital learning tools to enhance student-cantered education. By utilizing smartphones for independent learning at home, followed by classroom discussions, this study investigates how flipped learning strategies can optimize reading motivation and comprehension. Ultimately, this research aims to provide insights into the effective integration of technology in EFL instruction, contributing to the broader discourse on digital learning methodologies.

This research aims to investigate the effectiveness of the Flipped Classroom Learning strategy using WhatsApp in enhancing seventh-grade students' reading skills and motivation. The study is guided by the following research questions, 1) Is there any different result of applying the Flipped Classroom Learning to enhance the seventh-grade students' English reading skills through the use of WhatsApp in the experiment class compared to the conventional in the control class? 2) Is there any different result of applying the Flipped Classroom Learning to enhance the seventh-grade students' English reading motivation through the use of WhatsApp in the experiment class compared to the conventional in the control class? 3) Is there any correlation between students' reading skill and reading motivation of applying the Flipped Classroom Learning through the use of WhatsApp?

These questions focus on comparing the effectiveness of the flipped classroom approach with traditional teaching methods and exploring the relationship between reading skills and motivation in this learning model.

The urgency of research on strengthening reading skills and reading motivation through the flipped classroom strategy using WhatsApp media can improve the quality of education and student literacy in this digital era. Although flipped classroom and WhatsApp have been widely used in education, research that specifically investigates the effectiveness of the combination of the two in

improving reading skills and motivation is still limited. Valid and reliable research is needed to understand how the implementation of flipped classrooms through WhatsApp can effectively address challenges in students' reading skills and motivation. The results of this study can provide valuable insights for educators in designing and implementing more innovative and effective learning strategies to improve students' literacy skills. This study can provide guidance on how best to utilize technology that is familiar to students (WhatsApp) to support broader learning goals, such as improving reading skills.

LITERATURE REVIEW
Understanding Reading Skills in Educational Contexts
Reading is a process that is carried out and published by the reader to obtain the message to be conveyed by the author through words/written material or picking and understanding the meaning contained in the written material. Based on the above description it can be interpreted that reading is a thought process which includes understanding, telling the meaning of written symbols by involving sight, eye movement, speech, and memory. Perdana (2021). The development of reading skills is crucial in educational settings, particularly in language learning environments. Researchers have identified several key components that contribute to effective reading abilities.

Motivation as a Critical Driver of Reading Performance
Reading motivation emerges as a pivotal factor in determining reading proficiency and engagement. (Ives, 2023) highlights two primary motivation dimensions: intrinsic factors, where individuals are driven by personal interest and enjoyment, and extrinsic factors, which involve external encouragement or incentives. In educational contexts, understanding and nurturing these motivational aspects can significantly impact students' reading performance and overall learning outcomes. The contemporary educational landscape has witnessed a transformative approach to motivation through technological integration. Smartphones and mobile applications have emerged as powerful tools for enhancing learning motivation, providing accessible and interactive platforms for educational engagement.

Flipped Classroom: A Pedagogical Innovation
Flipped class learning is effective learning because it teaches students to become independent learners when they study learning materials before class. When students become independent learners because of this learning model, class time can be used to study what they have learned before class and reinforce the material Hakim et al. (2020). The active involvement of students in learning and the use of flipped learning strategies supported by technology can stimulate and develop students' creative thinking skills (Mengesha et al., 2024)

Key advantages of the flipped classroom include enhanced student interactivity, increased student involvement in learning materials, improved teacher-student interaction, and flexibility in learning processes.

WhatsApp as a Learning Media

Mobile technology, particularly smartphone applications like WhatsApp, has revolutionized educational communication and learning strategies. (Mutunga et al., 2022) emphasizes that technology in learning can help students improve skills, enhance communication, and make subject matter more accessible.

The integration of WhatsApp in educational settings offers several benefits, such as immediate communication, multimedia content sharing, collaborative learning opportunities, and flexible learning environments.

METHODS

The reading skills of students at SMPN 3 Tana Tidung are still relatively low, primarily due to a lack of motivation and interest in reading, as well as the continued use of conventional teaching methods. Flipped class learning is effective learning because it teaches students to become independent learners when they study learning materials before class. When students become independent learners because of this learning model, class time can be used to study what they have learned before class and reinforce the material Hakim et al. (2020)

One key innovation influencing reading skills is the use of learning media, specifically Android smartphones. By integrating smartphones as learning tools, students can engage with reading materials more flexibly and efficiently. The role of teachers is crucial in selecting appropriate digital learning media, ensuring that students stay motivated and actively participate in reading activities.

Furthermore, the study incorporates WhatsApp groups and Google Forms as online learning platforms to facilitate reading tasks. This approach provides flexibility, allowing students to manage their study time effectively (Suciati, 2024). As a result, the combination of Flipped Classroom Learning and digital tools is expected to enhance students' reading motivation and skills, leading to improved learning outcomes.

This study employs a quasi-experimental method and pre-test and post-test control to examine the effectiveness of the flipped classroom strategy using Android smartphones in enhancing students' reading skills and motivation. The research involves two groups: an experimental group that receives the flipped classroom treatment and a control group that follows conventional teaching methods. After a designated learning period, the reading skills and motivation of both groups are assessed and compared.

The research consists of three main phases:

1. Pre-Treatment Phase: Two classes undergo a pre-test to assess their initial reading comprehension levels.
2. Treatment Phase: The control class receives instruction using a conventional strategy, while the experimental class is taught using the Flipped Classroom strategy. An English teacher, in collaboration with the researcher, facilitates the teaching process.
3. Post-Treatment Phase: Both groups take a post-test, and their results are compared to evaluate the effectiveness of the Flipped Classroom strategy.

Figure 1 Steps of the study
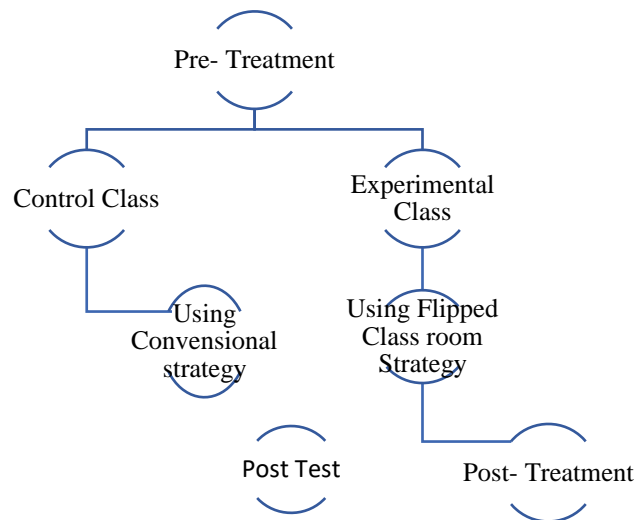
To measure students' reading skill, the study employs a reading skill test in both the pre-test and post-test, designed according to the *Merdeka Curriculum* (Kemendiknas). The test assesses finding the topic, main idea, detailed information, preference, and inference in reading texts. The scores are analyzed to determine differences in reading skills between students taught using the Flipped Classroom strategy and those taught using conventional methods. To assess students' reading motivation, the study utilizes a motivation level questionnaire based on (Eidswick, 2009), which evaluates situational interest, individual motivation, and topic interest. The findings will compare the motivation levels of students in both instructional settings and analyse the correlation between reading skills and reading motivation.

Moreover, the study's target population comprised seventh-grade students at SMPN 3 Tana Tidung, located in North Kalimantan Province, Indonesia. The total student population consisted of 62 students distributed across three classes: VII-A (22 students), VII-B (21 students), and VII-C (19 students).

A random sampling technique was employed to select the research participants. The sampling process involved:

- Preparing small papers with class names (VII-A, VII-B, VII-C)

- Having a teacher randomly select two classes under the supervision of other teachers
- Establishing the selected classes as research samples

The final sample included 42 students: VII-A (22 students) as the experimental class and VII-B (20 students) as the control class. The sample composition was carefully balanced, with VII-A comprising 9 males and 13 females, and VII-B consisting of 10 males and 10 females.

Furthermore, data collection includes pre-test and post-test reading skill assessments, as well as pre-test and post-test reading motivation questionnaires. The numerical data obtained from these assessments are analyzed using SPSS 25. Inferential statistics, specifically the t-test, is applied to determine the differences between the experimental and control groups regarding reading skills and motivation.

Additionally, Pearson's product-moment correlation analysis is conducted to examine the relationship between the flipped classroom strategy and the dependent variables—reading skills and motivation. The correlation is evaluated by comparing the obtained coefficient score (r-score) with the critical values in the r-score table at a 5% significance level. If the r-score exceeds the critical value, the null hypothesis is rejected, indicating a significant correlation. Otherwise, the null hypothesis is accepted, implying no significant correlation.

FINDING

This chapter presents the results of the study on strengthening students' English reading skills and motivation through the flipped classroom strategy, using WhatsApp (WA) as a learning media. The analysis focuses on the improvements in students' reading abilities, the impact of the flipped classroom model, and the role of WhatsApp as a tool for enhancing motivation. The chapter also delves into the effects of these interventions on students' overall learning experiences, supported by various data collected during the study.

The study's results were divided into two sections:

1. Pre-administration phase – This section analyzed the pre-test results of reading skills and motivation in both the experimental and control classes.
2. Post-administration phase –This section examined the post-test results for reading skills and motivation in both classes.

To evaluate the effectiveness of Flipped Classroom Learning via WhatsApp in enhancing seventh-grade students' English reading skills, a normality test was conducted. The normality test was essential to ensure the data met the statistical assumptions for applying a t-test (Nurgiyantoro, 2015).

Normality Test Results

- Since the sample size was fewer than 200, the Liliefors test was used along with Kolmogorov-Smirnov and Shapiro-Wilk tests to assess normality.

Pre-Reading Skill Test Results

1. Experimental Class (VIIA)
   o Data analysis using SPSS 25 showed a Kolmogorov-Smirnov significance score of 0.96 and a Shapiro-Wilk score of 0.77.

Table 2. The Tests of Normality Result of Pre-Reading Skill Test of Experimental class (VIIA)

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre Test Reading Skill of Experiment Class	.170	22	.096	.920	22	.077

a. Lilliefors Significance Correction

   o Since both scores were higher than 0.05 ($\alpha = 5\%$), the data was normally distributed.
   o The Q-Q plot confirmed normality, with no outliers, allowing for the application of a t-test.

2. Control Class
   o Analysis using SPSS showed a Kolmogorov-Smirnov score of 0.23 and a Shapiro-Wilk score of 0.89.

Table 3. The Tests of Normality Result of Pre-Reading skill Test of Control Class (VIIB)

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre Test Reading Skill of Control Class	.208	20	.023	.917	20	.089

a. Lilliefors Significance Correction

   o Since the Shapiro-Wilk score was higher than 0.05, the data was also normally distributed.
   o The Q-Q plot confirmed normality, allowing the data to be used in a t-test.

Overall, the normality test results indicated that both the experimental and control class data were suitable for further statistical analysis.

Post-Reading Skill Test Data and Reading Motivation Questionnaire Data

1. Post-Reading Skill Test Data
   - Experimental Class (VIIA)
     o Kolmogorov-Smirnov score: 0.30, Shapiro-Wilk score: 0.93

Table 4. The Test of Normality Result of Post-Reading skill Test of Experimental Class (VIIA)

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post Test Reading Skill of Experiment Class	.195	22	.030	.924	22	.093

a. Lilliefors Significance Correction

- o The data was normally distributed ($p > 0.05$), as confirmed by the Q-Q plot.
- Control Class (VIIB)
  - o Kolmogorov-Smirnov score: 0.89, Shapiro-Wilk score: 0.91

Table 5. *The Tests of Normality Result of Post-Reading skill Test of Control Class (VII B)*

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post Test Reading Skill of Control Class	.180	20	.089	.918	20	.091

a. Lilliefors Significance Correction

The data was normally distributed, making it suitable for t-test analysis.

2. Pre-Reading Motivation Questionnaire Data
- Consisted of 20 items, divided into intrinsic and extrinsic motivation dimensions.
- Experimental Class (VIIA)
  - o Intrinsic Motivation: Kolmogorov-Smirnov: 0.62, Shapiro-Wilk: 0.65
  - o Extrinsic Motivation: Kolmogorov-Smirnov: 0.085, Shapiro-Wilk: 0.134

Table 6. The Tests of Normality Result

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre Intrinsic of Reading Motivation Questionnaire	.180	22	.062	.917	22	.065
Pre Extrinsic of Reading Motivation Questionnaire	.173	22	.085	.932	22	.134

a. Lilliefors Significance Correction

       o   Extrinsic Motivation: Kolmogorov-Smirnov: 0.054, Shapiro-Wilk: 0.104

Table 7.The Tests of Normality Result of Pre-Reading skill Questionnaire of Control Class (VII B)

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
The Tests of Normality Result of Pre-Reading Motivation Questionnaire of Control Class	.179	20	.093	.931	20	.161
a. Lilliefors Significance Correction						

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
The Tests of Normality Extrinsic Result of Pre-Reading Motivation Questionnaire of Control Class (VII B).	.191	20	.054	.921	20	.104
a. Lilliefors Significance Correction						

       o   The data was also normally distributed, enabling statistical testing.

3. Post-Reading Motivation Questionnaire Data
- Consisted of intrinsic, extrinsic motivation, and topic interest dimensions.
- Experimental Class (VIIA)
  - Intrinsic Motivation: Kolmogorov-Smirnov: 0.076, Shapiro-Wilk: 0.066
  - Extrinsic Motivation: Kolmogorov-Smirnov: 0.089, Shapiro-Wilk: 0.086

Table 8. The Tests of Normality Result of Post-Reading Motivation Questionnaire of Experimental Class (VII A)

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post intrinsic of Reading Motivation questionnaire	.176	22	.076	.917	22	.066
Post Extrinsic of Reading Motivation questionnaire	.172	22	.089	.922	22	.086

a. Lilliefors Significance Correction

       o   The data was normally distributed and valid for statistical testing.
- Control Class (VIIB)
  - Intrinsic Motivation: Kolmogorov-Smirnov: 0.059, Shapiro-Wilk: 0.078

o Extrinsic Motivation: Kolmogorov-Smirnov: 0.022, Shapiro-Wilk: 0.053

Table 9. The Tests of Normality Result of Post-Reading skill Questionnaire of Control Class (VII B).

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post Intrinsic of Reading Motivation Questionnaire in the Control Class	.189	20	.058	.915	20	.078
Post Extrinsic of Reading Motivation Questionnaire in the Control Class	.209	20	.022	.906	20	.053

a. Lilliefors Significance Correction

o The data was normally distributed, as shown in the Q-Q plot.

The Pre-Administration phase aimed to ensure that the experimental and control classes had comparable levels of reading skills, motivation, and interest before implementing the teaching strategy.

1. Pre-Reading Skill Test:
    o The mean score of the experimental class was 69.54, while the control class had 68.00.

Table 10. The t-test Pre test of Reading Skill in the Experiment Class (VIIA) and Control Class (VIIB)

Descriptives

Score

			Statistic	Bias	Std. Error	95% Confidence Interval Lower	Upper
Pre-test Reading Skill of Experiment Class	N		22	0	3	15	28
	Mean		69.5455	.0859	1.1354	67.2932	71.8000
	Std. Deviation		5.32494	-.14187	.68387	3.84843	6.51920
	Std. Error		1.13528				
	95% Confidence Interval for Mean	Lower Bound	67.1845				
		Upper Bound	71.9064				
	Minimum		60.00				
	Maximum		80.00				
Pre-test Reading Skill of Control Class	N		20	0	3	14	27
	Mean		68.0000	-.0360	1.1977	65.6250	70.4994
	Std. Deviation		5.47723	-.23798	.77516	3.69293	6.70807
	Std. Error		1.22474				
	95% Confidence Interval for Mean	Lower Bound	65.4366				
		Upper Bound	70.5634				
	Minimum		60.00				
	Maximum		80.00				
Total	N		42	0	0	42	42
	Mean		68.8095	.0301	.8208	67.1429	70.3571
	Std. Deviation		5.38851	-.07515	.47406	4.41068	6.22833
	Std. Error		.83146				
	95% Confidence Interval for Mean	Lower Bound	67.1303				
		Upper Bound	70.4887				
	Minimum		60.00				
	Maximum		80.00				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

ANOVA

Score

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	25.022	1	25.022	.859	.360
Within Groups	1165.455	40	29.136		
Total	1190.476	41			

- o Levene's Test for Equality of Variances showed a significance value (P) of 0.360, indicating that both classes were homogeneous.
2. Pre-Reading Motivation Questionnaire:
    - o It assessed intrinsic motivation (experimental class: 28.45, control class: 21.15) and extrinsic motivation (experimental class: 15.27, control class: 15.50).

Table 11. Pre Reading-Questionnaire of Experiment Class and Control Class on Intrinsic (VIIA)

Descriptives

Score

			Statistic	Bootstrap[a] Bias	Std. Error	95% Confidence Interval Lower	Upper
Pre Questionnaire Reading Motivation of Experiment Class on Intrinsic	N		22	0	3	16	29
	Mean		28.45	-.01	.42	27.64	29.33
	Std. Deviation		2.017	-.060	.212	1.527	2.363
	Std. Error		.430				
	95% Confidence Interval for Mean	Lower Bound	27.56				
		Upper Bound	29.35				
	Minimum		25				
	Maximum		32				
Pre Questionnaire Reading Motivation of Control Class on Intrinsic	N		20	0	3	13	26
	Mean		21.15	.00	.47	20.26	22.12
	Std. Deviation		2.207	-.069	.277	1.529	2.604
	Std. Error		.494				
	95% Confidence Interval for Mean	Lower Bound	20.12				
		Upper Bound	22.18				
	Minimum		18				
	Maximum		25				
Total	N		42	0	0	42	42
	Mean		24.98	.02	.63	23.71	26.26
	Std. Deviation		4.240	-.068	.282	3.592	4.722
	Std. Error		.654				
	95% Confidence Interval for Mean	Lower Bound	23.66				
		Upper Bound	26.30				
	Minimum		18				
	Maximum		32				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Score	Based on Mean	.031	1	40	.860
	Based on Median	.086	1	40	.771
	Based on Median and with adjusted df	.086	1	39.854	.771
	Based on trimmed mean	.024	1	40	.877

Table 12. The t-test Result Pre Reading-Questionnaire of Experiment Class and Control Class on Extrinsic

Descriptives

Score

			Statistic	Bootstrap[a]			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
Pre Questionnaire Reading Motivation of Experiment Class on Extrinsic	N		22	0	3	15	28
	Mean		15.27	-.01	.29	14.68	15.86
	Std. Deviation		1.453	-.047	.173	1.057	1.739
	Std. Error		.310				
	95% Confidence Interval for Mean	Lower Bound	14.63				
		Upper Bound	15.92				
	Minimum		13				
	Maximum		18				
Pre Questionnaire Reading Motivation of Control Class on Extrinsic	N		20	0	3	14	27
	Mean		15.50	.00	.23	15.05	16.00
	Std. Deviation		1.051	-.050	.212	.588	1.418
	Std. Error		.235				
	95% Confidence Interval for Mean	Lower Bound	15.01				
		Upper Bound	15.99				
	Minimum		13				
	Maximum		18				
Total	N		42	0	0	42	42
	Mean		15.38	-.01	.18	15.02	15.76
	Std. Deviation		1.268	-.025	.126	.994	1.485
	Std. Error		.196				
	95% Confidence Interval for Mean	Lower Bound	14.99				
		Upper Bound	15.78				
	Minimum		13				
	Maximum		18				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Score	Based on Mean	3.374	1	40	.074
	Based on Median	2.603	1	40	.115
	Based on Median and with adjusted df	2.603	1	37.618	.115
	Based on trimmed mean	3.314	1	40	.076

ANOVA

Score

			Sum of Squares	df	Mean Square	F	Sig.
Between Groups	(Combined)		.541	1	.541	.331	.568
	Linear Term	Unweighted	.541	1	.541	.331	.568
		Weighted	.541	1	.541	.331	.568
Within Groups			65.364	40	1.634		
Total			65.905	41			

- o Levene's Test confirmed homogeneity (P-values > 0.05)

Table 13. Pre test of Reading Skill in the Experiment Class and Control Class

Group Statistics

	Class		Statistic	Bias	Std. Error	Lower	Upper
						Bootstrap[a] 95% Confidence Interval	
Score	Pre-Test Of Experiment Class	N	22				
		Mean	69.55	.01	1.11	67.22	71.67
		Std. Deviation	5.325	-.158	.658	3.932	6.467
		Std. Error Mean	1.135				
	Pre-Test of Control Class	N	20				
		Mean	68.00	.02	1.18	65.68	70.50
		Std. Deviation	5.477	-.192	.752	3.780	6.724
		Std. Error Mean	1.225				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	.092	.763	.927	40	.180	.360	1.545	1.668	-1.825	4.916
	Equal variances not assumed			.925	39.376	.180	.360	1.545	1.670	-1.831	4.922

- o T-tests showed no significant differences, establishing equivalence between the classes.

3. Pre-Reading Interest Questionnaire:
    - o Similar to the motivation test, it measured situational and individual motivation.

Table 14. Pre-Questionnaire Reading Motivation of Experiment Class and Control Class on intrinsic

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Score	Pre Questioonnaire Reading Motivation of Experiment Class on Intrinsic	22	28.45	2.017	.430
	Pre Questioonnaire Reading Motivation of Control Class on Intrinsic	20	21.15	2.207	.494

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	.031	.860	11.208	40	<.001	7.305	.652	5.987	8.622
	Equal variances not assumed			11.159	38.649	<.001	7.305	.655	5.980	8.629

Table 15 Pre-Questionnaire Reading Motivation of Experiment Class and Control Class on Extrinsic

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Score	Pre Questioonnaire Reading Motivation of Experiment on Extrinsic	22	15.27	1.453	.310
	Pre Questioonnaire Reading Motivation of Control Class on Extrinsic	20	15.50	1.051	.235

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	3.374	.074	-.575	40	.568	-.227	.395	-1.025	.571
	Equal variances not assumed			-.584	38.158	.562	-.227	.389	-1.015	.560

- o Results were consistent, showing no significant difference between the two groups. Based on analysis of mean, Levene's Test for Equality Variance score, t- value, and its significance scores of pre-reading motivation on all dimensions above, both experimental and control class were established homogeneous and equivalent

Overall, statistical analyses confirmed that both experimental and control classes were homogeneous and equivalent in reading skills, motivation, and interest, ensuring a fair comparison for evaluating the Flipped Classroom Learning method using WhatsApp.

The post-administration phase of the study assessed the effectiveness of the Flipped Classroom strategy in improving reading skills and motivation by

comparing an experimental class using the strategy with a control class using a conventional approach.

1. Post-Reading Skill Test
   - o The experimental class had a higher mean score (78.55) than the control class (75.25).

Table 16. The t-test Result of Post Reading Skill Test of Experimental (VII A) and Control Class (VII B)

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Score	Post-Test of Experiment Class	22	79.55	5.544	1.182
	Post-Test of Control Class	20	75.25	4.993	1.117

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
Score	Equal variances assumed	.146	.704	2.628	40	.006	.012	4.295	1.634	.992	7.598
	Equal variances not assumed			2.642	39.998	.006	.012	4.295	1.626	1.009	7.582

2.628, p-value: 0.012 < 0.05), confirming the Flipped Classroom strategy's positive impact on reading comprehension.

2. Post-Reading Motivation Questionnaire
   - o Motivation was measured on intrinsic and extrinsic dimensions.
   - o The experimental class showed higher mean scores in intrinsic motivation (21.15 vs. 24.40) and extrinsic motivation (15.50 vs. 16.90) compared to the control class.

Tabel 17. Pre dan Post Questionnaire Motivation of Control Class (Intrinsic)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
							Mean Difference	Std. Error Difference	Difference	
		F	Sig.	t	df	Sig. (2-tailed)			Lower	Upper
Score	Equal variances assumed	4.651	.037	-5.659	38	<,001	-3.250	.574	-4.413	-2.087
	Equal variances not assumed			-5.659	30.965	<,001	-3.250	.574	-4.421	-2.079

Group Statistics

Class	N	Mean	Std. Deviation	Std. Error Mean
S Pre Questioonnaire- c Motivation of o Control Class on r Intrinsic	20	21.15	2.207	.494
e Post Questioonnaire Motivation of Control Class on Intrinsic	20	24.40	1.314	.294

o Significant differences were found in both dimensions, reinforcing the effectiveness of the Flipped Classroom strategy in increasing reading motivation.

3. Comparison of Pre- and Post-Test Scores
   o The experimental class showed significant improvement in reading skills (pre-test: -14.77, post-test: 14.77) and intrinsic motivation (pre: 28.45, post: 44.50) as well as extrinsic motivation (pre: 15.27, post: 29.22).

Tabel 18. *Pre dan Post Questionnaire Motivation of Control Class (Extrinsic)*

Group Statistics

	Class	N	Mean	Std. Deviation	Std. Error Mean
Score	Pre Questioonnaire Motivation of Control Class on Extrinsic	20	15.50	1.051	.235
	Post Questioonnaire Motivation of Control Class on Extrinsic	20	16.90	.912	.204

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	.178	.675	-4.499	38	<,001	-1.400	.311	-2.030	-.770
	Equal variances not assumed			-4.499	37.256	<,001	-1.400	.311	-2.030	-.770

Table 19 The Analysis Result Pre and Post Test of Reading Skill in the
Experimental Class.

Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	Pre-test Reading Skill In the Experiment & Post-test Reading Skill In the Experiment	22	.612	.001	.002
Pair 2	Post-test Reading Skill In the Experiment & Pre-test Reading Skill In the Experiment	22	.612	.001	.002

Paired Samples Test

		Paired Differences Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper	t	df	Significance One-Sided p	Significance Two-Sided p
Pair 1	Pre-test Reading Skill In the Experiment - Post-test Reading Skill In the Experiment	-14.773	4.750	1.013	-16.879	-12.667	-14.587	21	<,001	<,001
Pair 2	Post-test Reading Skill In the Experiment - Pre-test Reading Skill In the Experiment	14.773	4.750	1.013	12.667	16.879	14.587	21	<,001	<,001

Table 20. *The Analysis Result Pre- and Pos-test of Reading Motivation of experiment on intrinsic.*

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post Reading Motivation Questionnaire of Experimen Class on Intrinsic	44.5000	22	1.50396	.32065
	Pre Reading Motivation Questionnaire of Experimen Class on Intrinsic	28.4545	22	2.01724	.43008

Paired Samples Test

		Paired Differences Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	95% Confidence Interval of the Difference Upper	t	df	Sig. (2-tailed)
Pair 1	Post Reading Motivation Questionnaire of Experimen Class on Intrinsic - Pre Reading Motivation Questionnaire of Experimen Class on Intrinsic	16.04545	2.39995	.51167	14.98138	17.10953	31.359	21	<,001

pre reading motivation questionnaire especially on extrinsic dimension.

Table 21. The Analysis Result Pre- and Post-reading motivation of Experimental Class on Extrinsic

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Post Reading Motivation Questionnaire of Experiment Class on Extrinsic	29.2273	22	1.10978	.23660
	Pre Reading Motivation Questionnaire of Experiment Class on Extrinsic	15.2727	22	1.45346	.30988

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Post Reading Motivation Questionnaire of Experiment Class on Extrinsic - Pre Reading Motivation Questionnaire of Experiment Class on Extrinsic	13.95455	1.55769	.33210	13.26390	14.64519	42.019	21	<,001

4. Correlation Analysis between Reading Skill and Motivation
    o In the experimental class, a strong positive correlation was found between reading skills and both intrinsic (0.882, $p < 0.05$) and extrinsic motivation (0.629, $p < 0.05$).

Table 22. The Correlation Analysis between the Post-Reading Skill Test and Post Questionnaire Reading Motivation of Experimental Class

Correlations

		Post Intrinsic of Reading Motivation Questionnaire in the Experiment Class	Post Extrinsic of Reading Motivation Questionnaire in the Experiment Class	Post-Test of Reading Skill in the Experiment Class
Post Intrinsic of Reading Motivation Questionnaire in the Experiment Class	Pearson Correlation	1	.882**	.522*
	Sig. (2-tailed)		<,001	.013
	N	22	22	22
Post Extrinsic of Reading Motivation Questionnaire in the Experiment Class	Pearson Correlation	.882**	1	.629**
	Sig. (2-tailed)	<,001		.002
	N	22	22	22
Post-Test of Reading Skill in the Experiment Class	Pearson Correlation	.522*	.629**	1
	Sig. (2-tailed)	.013	.002	
	N	22	22	22

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Based on that analysis, there was significant correlation between score of post-reading skill test and score of post-reading motivation questionnaire obtained by experimental class on two dimensions; intrinsic dimension and extrinsic dimension.

Table 23. *The Correlation Analysis between the Post-Reading Skill Test and Post Questionnaire of Reading motivation in the Control Class*

Correlations

		Post Intrinsic Questionnaire of Reading Motivation in the Control Class	Post Extrinsic Questionnaire of Reading Motivation in the Control Class	Post test of Reading Skill in the Control Class
Post Intrinsic Questionnaire of Reading Motivation in the Control Class	Pearson Correlation	1	.286	-.069
	Sig. (2-tailed)		.221	.773
	N	20	20	20
Post Extrinsic Questionnaire of Reading Motivation in the Control Class	Pearson Correlation	.286	1	.151
	Sig. (2-tailed)	.221		.524
	N	20	20	20
Post test of Reading Skill in the Control Class	Pearson Correlation	-.069	.151	1
	Sig. (2-tailed)	.773	.524	
	N	20	20	20

In contrast, the control class showed no significant correlation between reading skills and motivation in either dimension.

Overall, the study confirmed that the Flipped Classroom strategy significantly improves students' reading skills and motivation compared to traditional methods.

DISCUSSION

This study is very useful in the process of discussing this research, in addition to showing that the topic under study has never been studied by other researchers in the same context. There are several relevant studies as a reference for researchers in conducting this research, including the research entitled. "The Effect of Using Mobile Communication Devices (HP) on Student Learning Activities at SMP Negeri 66 South Jakarta" Mutunga (2022). The difference between this research and the research that the researchers conducted lies in the variables studied have differences in the independent variable, namely the use of smartphones and using Flipped Classroom strategy.

This study examines the impact of a WhatsApp-mediated Flipped Classroom strategy on the English reading skills and motivation of seventh-grade students. It evaluates three research questions:

1. **Effect on Reading Skills**
   o The study compares the effectiveness of the Flipped Classroom strategy against conventional methods in improving reading skills.
   o Post-test results show the experimental group (Flipped Classroom) had a higher mean score (79.55) than the control group (75.25).
   o Statistical analysis (t-value = 2.628, sig = 0.012) confirms a significant improvement, leading to the rejection of the null hypothesis (H0.1) and acceptance of the alternative hypothesis (H1.1).

2. **Effect on Reading Motivation**
   o The study examines how the Flipped Classroom model affects reading motivation, compared to conventional methods.
   o Post-test results reveal that the experimental group had significantly higher intrinsic (44.50 vs. 24.40) and extrinsic (29.22 vs. 16.90) motivation scores than the control group.
   o Statistical tests confirm a significant difference (sig < 0.05), leading to the rejection of the null hypothesis (H0.2) and acceptance of the alternative hypothesis (H1.2).

3. **Correlation Between Reading Skills and Motivation**
   o The study investigates whether reading skills and motivation are correlated.
   o The experimental group shows significant correlations (Pearson correlation: intrinsic = 0.882, extrinsic = 0.629, sig < 0.05), while the control group does not (sig > 0.05).
   o These results support the alternative hypothesis (H1.3) for the experimental group but confirm the null hypothesis (H0.3) for the control group.

CONCLUSIONS

This study concluded that the Flipped Classroom strategy, supported by smartphone-based learning through WhatsApp, was effective in improving both reading skills and reading motivation among students. The results showed that the experimental class had significantly better reading skill scores compared to the control class. Additionally, the Flipped Classroom strategy was found to enhance reading motivation across intrinsic and extrinsic dimensions.

The study further confirmed a correlation between reading skills and reading motivation, reinforcing the effectiveness of the approach. Summary of Suggestions (1) Educational Implementation: Teachers should consider using the Flipped Classroom strategy with WhatsApp, Zoom, or other Mobile-Assisted Language Learning (MALL) tools to enhance reading skills. (2) Institutional Support: Schools and policymakers should provide essential support, including free internet access and mobile devices, especially for students in remote areas. (3) Pedagogical Focus: More emphasis should be placed on teaching reading comprehension skills using the Flipped Classroom approach and (4) Further qualitative research is needed to explore reading skills and motivation in-depth, strengthening and expanding the findings of this study.

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