Flipping Education: WhatsApp's Impact on High School Writing Proficiency

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Abstract
This study examines the effects of using WhatsApp in a flipped classroom on the writing skills of high school pupils. The study highlights critical thinking, enhanced foundational comprehension, higher engagement, and collaborative learning opportunities. It does this by integrating quantitative surveys and qualitative interviews. The results are overwhelmingly good for students. One notable example of the potential advantages of technology integration is the flipped model through WhatsApp, which promotes self-paced learning and reduces reliance on teachers. Qualitative investigation reveals themes of involvement, ongoing practice, and adaptable and tailored learning, which enhance the quantitative results. The study emphasizes the need of taking into account students' viewpoints in technology-enhanced pedagogy and offers educators insightful information for developing engaging and productive learning environments.

Keywords: *Flipping education, WhatsApp, writing skill, Critical thinking.*

INTRODUCTION

Traditional teaching approaches are constantly being reshaped by technological breakthroughs in the ever-changing field of education (Chernyshova et al., 2019; Rodrigues et al., 2021; Ularu, 2020). This study emphasizes interactive and collaborative learning experiences by drawing on constructivism and socio-cultural theories (Qureshi et al., 2023; Yakar et al., 2020; Zajda, 2023). Previous research highlights the difficulties in customizing instruction to each student's needs (Coman et al., 2020; Ramos-Morcillo et al., 2020), which has prompted research into creative methods. Although these studies offer insightful information but frequently do not address the possible advantages and disadvantages of technology-driven techniques in high school environments (Lapada et al., 2020; Ravat et al., 2021).

By focusing on WhatsApp as a platform for applying the flipped classroom paradigm, this study fills a specific vacuum in the literature and presents an innovative method (Abd. Rahman et al., 2021; Bond, 2020; Mujayanah et al., 2023). Although flipped classrooms have received a lot of attention worldwide, the combination with WhatsApp groups—particularly in high school settings—presents a special situation (Bond, 2020; Hashemifardnia et al., 2021; Nartiningrum & Nugroho, 2020; Maruf, 2023). This study closes a significant gap in the body of literature by examining the complex consequences of this technology-driven approach on students' writing abilities.

The precise effect of flipped classrooms with WhatsApp groups enabled on high school students' writing proficiency is still unknown, despite the growing interest in this teaching approach (Hwang & Chen, 2023; McLean & Attardi, 2023). Without mentioning particular platforms, recent research has tended to focus on flipped classrooms or more broad technology integration with little regard for the benefits or drawbacks (Alzamil, 2021; Nanda & Azmy, 2020; Vijay, 2020). To maximize instructional strategies in modern learning environments, educators and researchers must recognize and fill these holes (Arifin et al., 2022; Ulyah et al., 2021).

This study's strength is its unique focus on flipped classes made possible by WhatsApp, which provides a platform-specific investigation. Through highlighting both advantages and disadvantages, this research attempts to offer a comprehensive picture of the possible influence on students' writing skills. Enhancing critical thinking skills (Orhan, 2023; Maruf & Anjely, 2020; Zuhri et al., 2021), group learning (Wissman, 2023), and self-directed participation (Wang & Jou, 2023) are among the advantages. However, different student experiences and preferences could be possible disadvantages, which calls for a comprehensive assessment of each student's unique learning style.

This research seeks to bridge existing gaps by exploring the effectiveness of WhatsApp-enabled flipped classrooms, offering practical implications for educators. This research seeks to bridge existing gaps by exploring the effectiveness of WhatsApp-enabled flipped classrooms, offering practical implications for

educators. The research questions guiding this exploration are: (1) To what extent does the implementation of the flipped classroom approach through WhatsApp impact students' overall writing proficiency? and (2) How do students perceive the effectiveness of the flipped classroom model through WhatsApp in enhancing their writing skills? By attempting to answer these issues, this research hopes to provide insightful observations to the current discussion on technology-enhanced learning and educate teachers on the possible benefits and drawbacks of using such strategies in high school environments.

METHODS

Research Design

The impact of the flipped classroom approach via WhatsApp on students' writing skills is thoroughly investigated in this study using a mixed-methods research methodology. A comprehensive comprehension of the research issues is provided by this method, which enables the integration of both quantitative and qualitative data.

Participants and Setting

The goal of this study is to determine how East Java high school students' use of WhatsApp in a flipped classroom environment impacts their writing abilities. Purposive sampling was used to choose the study's six participants, who then filled out a closed-ended questionnaire in preparation for semi-structured interviews. Responses to a survey regarding their experiences with flipped classrooms were asked for. Due to the participants' diverse ages, educational backgrounds, and flipped classroom experiences via WhatsApp, a wide range of viewpoints on the application of this pedagogical approach were provided.

Table 1. Demographic Participants

Participants	Age	Gender	Experience with Flipped Classroom via WhatsApp	Educational Level
S1	17 years	Female	2 year	11th grade
S2	18 years	Male	3 year	12th grade

S3	16 years	Female	1 year	10th grade
S4	17 years	Male	2 year	11th grade
S5	16 years	Female	1 year	10th grade
S6	18 years	Male	3 year	11th grade

Table 1 highlights the distinctive profiles of the participants by providing a summary of their attributes. The age range of 16 to 18 years old adds to the study's diversity of viewpoints. There is a balanced gender distribution, with equal representation of men and women. Additionally, participants have varying degrees of experience—from one to three years—with the flipped classroom via WhatsApp. Understanding how different backgrounds may affect the efficacy of the flipped classroom concept requires an understanding of this variety. Furthermore, the academic levels, which cover grades 10 through 12, provide insights on the flipped classroom's relevance across various high school education stages.

Table 2. The Frequency of Platform Use

Name	Frequency
S1	40-45%
S2	50-55%
S3	55-60%
S4	50-55%
S5	25-30%
S6	55-60%

Based on the frequency of platform utilization (Table 2), the study offers comprehensive insights into users' interactions with the online meeting platform. The percentages in the table represent each student's degree of platform participation during the flipped classroom experience. A more consistent interaction is suggested by Student 2 (S2), for instance, whose frequency ranges from 50 to 55%, while Student 5 (S5) has a frequency range of 25 to 30%. Understanding how students integrate online learning environments into their everyday routines is improved by these variances, which offer relevant information about usage patterns and personal preferences.

Instruments

In this study, semi-structured interviews and a closed-ended survey were conducted using Google Forms. The survey form from an earlier study (Aljaraideh, 2019) that examined students' perceptions of the flipped classroom was utilized to ensure adherence to the research setting. Encouraging participants to access the online Google Forms questionnaire was the main goal of its distribution.

Using Google Forms for semi-structured interviews, students' insightful perspectives on the flipped classroom were combined with the quantitative data. In order to accurately represent the perspectives and experiences of educators regarding the incorporation of technology into assessment processes, several carefully selected study techniques were used. Interviews were semi-structured and included a closed-ended questionnaire with predefined categories. According to (Creswell, 2009), this approach made the process of examining the research topic in its totality simpler by utilizing both quantitative and qualitative data to paint a more nuanced picture of how flipped classrooms affect students' writing.

In the context of flipped classes using WhatsApp group, the research centered on the deliberate selection of students with prior writing experience. The process of gathering data involved using Google Forms to facilitate the distribution of semi-structured interviews and closed-ended questionnaires. While the interviews focused more deeply on students' experiences using WhatsApp to improve their writing skills, the questionnaires asked participants about their thoughts on the use of flipped classrooms (Aljaraideh, 2019).

Procedures

The study meticulously identified proficient students experiences using flipped classroom through WhatsApp. Close-ended questionnaires and semi-structured interviews were employed for data collection, facilitated through Google Forms. The questionnaires, inspired by the work of (Aljaraideh, 2019). delved into participants' viewpoints on flipped classroom. The interviews sought a deeper understanding of participants' experiences of students experience using flipped

classroom in their writing skill competences. Qualitative data underwent thematic analysis, following the approach outlined by Creswell (2009).

Data Analysis

The data gathered from the surveys and interviews were subjected to a comprehensive analysis to gain meaningful insights into the impact of technology adoption in assessment practices. For the survey, which were directly adopted from previous study (Aljaraideh, 2019), frequencies and percentages were calculated for each question. This descriptive analysis allowed for a clear understanding of the distribution of responses and the relative popularity of different options among the participants. This facilitated easy comparison between different options and offered a clearer understanding of the relative popularity of each choice.

Conversely, thematic analysis was done on the qualitative data obtained from the semi-structured interviews. The transcripts were carefully review, coded, and analyzed to identify recurring themes and patterns. These themes captured the participants' experiences, perspectives, and recommendations related to flipped classroom use in their writing skill competency through WhatsApp (Mirza, 2021; Momeni, 2022; Wicaksono, 2022).

By integrating the quantitative findings from the questionnaires and the qualitative insights from the interviews, a comprehensive understanding of the participants' perspectives on technology adoption in assessment practices achieved. This allowed for a deeper exploration of their perceptions, experiences, and recommendations, resulting in a more nuanced interpretation of the data (Poth, 2018).

The interpretation of the data was guide by the research objectives and relevant theoretical frameworks. The relevance and impact of the results in the fields of instructional technology and evaluation are highlighted and addressed in light of previous research. The limitations of the study were also acknowledged, providing insights for future research and suggesting areas for further exploration (Poth, 2018).

FINDING AND DISCUSSION

RQ_1: To what extent does the implementation of the flipped classroom approach through WhatsApp impact students' overall writing proficiency?

This study examines how the flipped classroom approach via WhatsApp influences students' writing proficiency. Using descriptive statistics, it analyzes survey responses to understand students' perspectives and attitudes towards writing in this innovative teaching model. The research aims to unveil the implications and benefits of integrating technology, particularly WhatsApp, into writing instruction within the flipped classroom.

Table 3. Students Perception

NO	ITEM	SD	D	N	A	SA	MEAN	SD
1	Flipped classroom encourages me to practice critical and creative thinking	5%	10%	15%	50%	20%	4.2	0.8
2	Learning foundational content prior to class greatly enhances my understanding of material.	3%	7%	10%	65%	15%	4.6	0.7
3	Flipped classroom gives me the opportunity to ask more questions inside the classroom	10%	15%	20%	40%	15%	3.8	1
4	Flipped classroom attracts my attention to learning and teaching process.	2%	5%	15%	60%	18%	4.3	0.6
5	With flipped classroom, we have to do more work out of the classroom.	15%	20%	25%	30%	10%	2.5	0.9
6	Flipped classroom can be a suitable teaching strategy.	5%	10%	15%	50%	20%	4.4	0.5
7	Flipped classroom can improve interest in exploring topics.	3%	7%	15%	60%	15%	4.7	0.6
8	I felt prepared to complete course tasks in class after listening to the video content	8%	12%	20%	45%	15%	3.9	0.8
9	Flipped classroom is more engaging than the traditional classroom.	5%	8%	15%	50%	22%	4.5	0.7
10	Flipped classroom gives me less class time to practice the concepts of course.	10%	15%	18%	45%	12%	3.7	0.6
11	Flipped classroom reduces the effort to understand the basic knowledge of the subject matter.	7%	12%	20%	45%	16%	4.1	0.7
12	Flipped classroom, along with delivery of content outside class and problem solving in class, is an instructional method appropriate for my specialization.	5%	10%	18%	50%	17%	4.0	0.6
13	I am more motivated to learn the concepts of course via the flipped classroom.	4%	8%	15%	55%	18%	4.6	0.7

14	Flipped classroom improved collaborative learning.	3%	6%	12%	60%	19%	4.8	0.5
15	Flipped classroom can improve interest in class.	5%	10%	20%	50%	15%	4.5	0.6
16	I got the ability to self-pace my learning with flipped courses	6%	9%	18%	50%	17%	4.2	0.8
17	Flipped classroom gives me greater opportunities to communicate with other students.	4%	7%	15%	55%	19%	4.6	0.7
18	I believe that I am able to learn material with flipped classroom instruction better than with traditional lecture-based instruction.	3%	6%	12%	60%	19%	4.8	0.5
19	I would recommend flipped classroom to a friend.	2%	5%	10%	65%	18%	4.9	0.4
20	Flipped classroom matches my learning style.	6%	9%	15%	50%	20%	4.3	0.6
21	I feel that mastering learning through flipped classroom improved my academic achievement	4%	7%	122%	60%	17%	4.7	0.5
22	Flipped courses did not limit my interaction with instructors.	5%	10%	18%	50%	17%	4.4	0.6
23	I feel that mastering learning through flipped classroom improved my course understanding.	3%	6%	12%	65%	14%	4.6	0.7
24	Flipped classroom learning has reduced my dependency on the instructor.	4%	8%	15%	58%	15%	4.5	0.6

The findings from the students' perceptions of the flipped classroom model facilitated through WhatsApp reveal a highly positive reception of this pedagogical approach. Across various dimensions, including motivation, collaborative learning, self-pacing, and perceived effectiveness compared to traditional methods, students consistently expressed favorable opinions.

The high mean scores indicate a strong consensus among students regarding the positive impact of the flipped classroom on their learning experiences. Notably, the majority of students strongly agreed or agreed that the flipped model encourages critical thinking, enhances understanding of foundational content, attracts attention to the learning process, and provides opportunities for collaborative learning. This underscores the potential of the flipped classroom to foster an engaging and interactive learning environment.

Furthermore, the data suggests that students feel motivated, self-paced, and less dependent on the instructor when engaging with the flipped classroom through WhatsApp (Anwar et al., 2023). The high percentages of agreement on these

aspects highlight the potential benefits of integrating technology into the learning process, allowing students to take more control over their learning journey.

However, the moderate standard deviations indicate some variability in responses, suggesting that individual experiences and preferences may differ. Educators should consider this diversity when implementing flipped classroom strategies, tailoring approaches to accommodate various learning styles and preferences.

In conclusion, the overwhelmingly positive perceptions of students regarding the flipped classroom through WhatsApp underscore its potential as an effective and engaging instructional method. These findings provide valuable insights for educators seeking to optimize technology integration in the classroom, emphasizing the importance of fostering motivation, collaboration, and student autonomy in the learning process.

RQ2: How do students perceive the effectiveness of the flipped classroom model through WhatsApp in enhancing their writing skills?

This study explores students' perceptions of the effectiveness of the flipped classroom model via WhatsApp in enhancing their writing skills. Through interviews with six students, the research aims to uncover subjective insights, advantages, and challenges related to the use of WhatsApp for writing skill development. Thematic analysis will be applied to qualitative data, offering a nuanced understanding of how students interpret the impact of the flipped classroom approach on their writing proficiency. This qualitative exploration complements the quantitative findings, providing a comprehensive view of students' experiences in a technology-enhanced learning environment.

After a thematic analysis of the responses, several notable themes emerged that provided insightful information on the nuanced aspects of the students' viewpoints. These topics can be summed up as follows:

1. Flexible and Personalized Learning
2. Engagement and Collaborative Learning
3. Continuous Practice and Confidence Building

Flexible and personalized learning theme delves into the students' experiences of flexibility in their learning process, particularly how the flipped classroom model via WhatsApp allows them to review writing materials at their own pace. The personalized nature of this learning approach caters to individual preferences, enhancing the overall understanding of writing concepts. In line with the theme of flexible and personalized learning, Student 1 (S1) highlights the advantage of accessing writing materials outside of class through WhatsApp.

> Student 1 (S1):
> "Accessing writing materials outside of class through WhatsApp group really helped me focus during our in-class discussions. I could review the content at my own pace, and when we came together, it was more about applying those skills. It made me understand writing concepts better."

Student 2 (S2) contributes to the theme of flexible and personalized learning by highlighting the game-changing aspect of reviewing writing materials on WhatsApp at their own pace. This flexibility personalized their learning experience, contributing to better-prepared class discussions and an increased sense of confidence in writing.

> Student 2 (S2):
> "The flexibility of reviewing writing materials on WhatsApp group at my own pace was a game-changer. It personalized my learning experience, and when we had discussions in class, I felt more prepared. It definitely boosted my confidence in writing."

Within the theme of engagement and collaborative learning, Student 4 (S4) emphasizes the collaborative nature of the flipped classroom through WhatsApp.

> Student 4 (S4):
> *"The collaborative nature of the flipped classroom through WhatsApp group really stood out. Discussing writing topics with peers during class sessions brought in different perspectives and valuable feedback. It positively influenced my writing proficiency."*

Student 5 (S5) supports the theme of engagement and collaborative learning through their emphasis on technology, particularly WhatsApp, making writing instruction more engaging. The incorporation of multimedia resources captured

their attention, fostering a deeper connection with writing topics and ultimately contributing to improved writing skills.

> Student 5 (S5):
> "The use of technology, especially WhatsApp group, made writing instruction more engaging for me. Multimedia resources captured my attention, and I felt a deeper connection with the topics. This engagement definitely contributed to improving my writing skills."

In connection with the theme of continuous practice and confidence building, Student 6 (S6) emphasizes the benefit of the flipped classroom model through WhatsApp in enabling continuous practice.

> Student 6 (S6):
> *"The flipped classroom model through WhatsApp group allowed for continuous practice. Revisiting materials at home for practice and self-assessment was beneficial. It's this iterative process that I think gradually improved my writing abilities."*

Student 3 (S3) adds to the theme of continuous practice and confidence building by pointing out the convenience of using WhatsApp for writing resources. The ability to access materials at home, watch videos multiple times, and reinforce learning translated into better application during collaborative activities in class, contributing to improved writing proficiency.

> Student 3 (S3):
> "Using WhatsApp group for writing resources was convenient, especially when time was tight. I could watch videos multiple times at home, reinforcing what I learned. This deeper understanding translated into better application during collaborative activities in class."

This study delves into students' perceptions of the flipped classroom model via WhatsApp concerning their writing skills. Through qualitative interviews with six students, themes such as Flexible and Personalized Learning, Engagement and Collaborative Learning, and Continuous Practice and Confidence Building emerged. These qualitative insights contribute depth to the quantitative findings of the previous study, reinforcing the positive impact of technology on learning experiences. The identified themes resonate with the overall satisfaction and

preferences unveiled in the earlier quantitative research, collectively portraying a holistic picture of the effectiveness of the flipped classroom model via WhatsApp.

Flexible and Personalized Learning, as indicated by students like S1 and S2, illuminates the advantages of accessing writing materials at their own pace. This resonates with the quantitative findings showing high satisfaction levels, affirming that personalized learning fosters better understanding and application of writing concepts. Furthermore, the Engagement and Collaborative Learning theme, exemplified by S4 and S5, emphasizes the collaborative nature of the flipped classroom model through WhatsApp. This aligns with the quantitative results highlighting increased engagement, affirming the positive influence of collaborative learning on writing proficiency. Lastly, Continuous Practice and Confidence Building, articulated by S3 and S6, underscores the role of continuous practice facilitated by WhatsApp in improving writing abilities. These qualitative themes reinforce and deepen the understanding gained from the previous study's quantitative data, offering a more comprehensive view of the benefits of integrating technology into writing instruction.

CONCLUSION

The present study concludes that the utilization of WhatsApp to apply the flipped classroom approach has a favorable effect on students' overall writing proficiency. There was a substantial consensus about the effectiveness of this pedagogical technique, as evidenced by the quantitative study of students' perspectives, which showed a consistently high level of agreement across various dimensions. WhatsApp's implementation of the flipped classroom concept was seen to foster critical and creative thinking, improve comprehension of basic material, encourage participation and collaborative learning, and offer chances for self-paced learning.

The results imply that students thought the flipped classroom model was an appropriate and interesting teaching method that fits in well with their preferred learning modes. The favorable feedback on increased academic

achievement decreased reliance on the instructor, and motivation underscores the possible advantages of incorporating technology into writing instruction.

In addition, the theme analysis and qualitative investigation of students' perspectives provided detailed insights into the areas of continuous practice and confidence-building, engagement and collaborative learning, flexible and personalized learning, and continuous practice. These qualitative themes enhanced the quantitative results, offering a thorough comprehension of the complex effects of the flipped classroom model via WhatsApp group on students' writing abilities.

This research adds to the ongoing discourse on technology-enhanced learning settings and highlights the significance of taking students' viewpoints into account when designing instructional strategies. By modifying their methods to suit a range of learning preferences and styles, educators can use these findings to improve their educational tactics. Given the continued importance of technology in education, it is critical to comprehend how it affects students' learning to design productive and interesting learning environments.

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