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Teachers' perception of the impact of the flipped learning model on learning and students in Indonesia

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ABSTRACT

This study aims to investigate teachers' perceptions of the impact of flipped learning on student learning and motivation in a high school in West Java. The study involved 103 teachers who have implemented flipped learning in their teaching practice. Data were collected using a questionnaire consisting of 17 statements related to teachers' perceptions of flipped learning, which were then analyzed using descriptive statistics with validity and reliability tests to examine the relationship between teachers' perceptions with gender and teaching experience. The results showed that the majority of teachers responded positively to the implementation of flipped learning, indicating a positive impact on students' motivation and readiness to be actively involved in class. However, no significant differences were found between teachers' perceptions based on gender or length of teaching experience. These findings provide important insights into the potential of flipped learning to be implemented more widely in Indonesia. The limitation of this study lies in the limited scope of the sample, so further research is needed to explore other contexts and more diverse factors. The findings can be used by teachers and policy makers to design more effective training and support programs to improve the implementation of flipped learning in Indonesia.

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Introduction

Flipped learning, as an innovative teaching model, has garnered increasing attention in recent years due to its potential to address critical challenges in modern education (Santos & Serpa, 2020). This model reimagines the traditional teaching paradigm by shifting passive learning, such as lectures, to individual student preparation outside the classroom, thereby dedicating classroom time to active learning, in-depth discussions, and collaborative problem-solving (Matiso, 2024). Given the persistent struggle of educators to foster student engagement, critical thinking, and effective learning outcomes, flipped learning emerges as a promising solution (Pang, 2022). In the context of Indonesian education, several persistent challenges impede effective teaching and learning. These include disparities in technological infrastructure across regions, varying levels of teacher competence in utilizing digital tools, and the need to enhance student involvement in classroom activities (Azzahra, 2020). The Covid-19 pandemic amplified these challenges, forcing a sudden transition to remote learning and revealing both the weaknesses and opportunities within the educational system (Ssenyonga, 2021).

While the pandemic accelerated the adoption of technology in education, it also raised questions about the sustainability of these methods in a post-pandemic era. Will educators revert to traditional approaches, or will technology-driven innovations, such as flipped learning, become an integral part of instructional strategies to improve learning outcomes.

Flipped learning offers a student-centered approach that has the potential to address these challenges. By engaging with instructional content—such as videos, readings, or interactive modules—outside the classroom, students come prepared to apply their knowledge through active participation during class sessions. (Burce, 2024), said that the flipped classroom model, highlight its ability to foster deeper understanding and critical thinking by prioritizing application and interaction during face-to-face learning. The Flipped Learning Network further identifies four pillars essential to this approach: a flexible environment, a learning culture focused on students, intentionally structured content, and professional educators who provide guidance and feedback (Kim et al., 2021). (Rustam & Hanife, 2021) in his article has made a comparison between the flipped and traditional learning models (Table 2.2).

Table 1 <Comparison of Flipped Learning Models & Traditional>

	Flipped Learning	**Traditional**
Learning center.	Student	Teacher
Learning environment	Active	Passive
Learning stages I	At home	In the classroom
Learning stage II	In the classroom	At home

Research underscores the effectiveness of flipped learning in various educational contexts. Studies have shown that it can enhance student motivation, self-regulation, and academic performance (A. Abuhmaid & Abood, 2020; Andujar et al., 2020; Hossein-Mohand et al., 2021; Ishartono et al., 2022). Furthermore, students have reported improved engagement and satisfaction due to the interactive and collaborative nature of the model (Agustini et al., 2022; Kim et al., 2021). The integration of learning management systems, such as Google Classroom and Moodle, facilitates seamless access to instructional materials, ensuring alignment with learning objectives and providing opportunities for differentiated instruction (Knezovic, 2024).

However, the implementation of flipped learning in Indonesia has its own challenges. Limited access to technology, gaps in digital literacy, and lack of teacher professional development hinder the widespread adoption of flipped learning (Fitrianto, 2024). These barriers highlight the importance of understanding teachers' perspectives, as their readiness and attitudes towards flipped learning are critical to its success (Kazu & Yalçin, 2022). Exploring teachers' insights on the benefits, barriers and feasibility of this approach can inform the development of customized training programs and resource allocation strategies to address these challenges.

This study aims to examine the perceptions of Indonesian teachers regarding flipped learning and its influence on student engagement and motivation. By investigating teacher age and experiences, the research seeks to provide practical insights for the broader application of flipped learning in Indonesia. The findings are expected to offer valuable contributions to the literature on flipped learning, addressing the unique context of Indonesian education while identifying strategies to optimize its implementation in a rapidly evolving educational landscape.

Method

This research uses a descriptive approach that aims to describe certain phenomena systematically, factually, and accurately. The steps of this research include problem identification, preparation of research instruments, data collection, data analysis, and reporting research results. The population in this study were teachers at the senior high school level in public schools in West Java, Indonesia. The selection of this population was based on the reason that public schools in the area had implemented distance learning technology during the pandemic. The research sample was taken using a purposive sampling technique, with the following inclusion criteria: (1) teachers who were actively teaching in online classes during the pandemic, (2) had experience using flipped learning, and (3) were willing to be research respondents. The total number of samples taken was 50 teachers, which was considered sufficient to represent the population. Table 2 shows the characteristics of the participants.

The research instrument was a questionnaire consisting of 17 statement items, designed to measure teachers' perceptions of flipped learning. Topics in the questionnaire included teachers' understanding of flipped learning, ease of implementation, and its impact on student motivation. This questionnaire was adapted from (A. M. Abuhmaid, 2020) research and has been adjusted to the research context. The validity of the instrument content was tested by three experts in the field of education.

Table 2 <Participant Characteristics>

Variable		%	Sum
Gender	Male	32	33
	Female	68	70
	Total	100	103
Teaching Experience	<5 years	29.1	30
	5-10 years	24.3	25
	10-15 years	22.3	23
	>15 years	24.3	25
	Total	100	103

The validity of the instrument was tested using construct validity, with the calculation of the correlation between each item and the total score. From table 1, it was obtained that the calculated value was greater than the table value (0.1937), so that 17 questionnaire statement items were declared valid. Reliability testing was carried out using the Cronbach's Alpha value, which produced a value of 0.766. This value indicates that each statement item in the questionnaire can be declared reliable or consistent. The results of the questionnaire validity test are shown in table 3 below.

Table 3 <Validity Test Results>

Statement No.	rCalculate	rTable	Information
1	0.739	0.1937	Valid
2	0.697	0.1937	Valid
3	0.766	0.1937	Valid
4	0.711	0.1937	Valid
5	0.841	0.1937	Valid
6	0.762	0.1927	Valid
7	0.711	0.1937	Valid
8	0.733	0.1937	Valid
9	0.854	0.1937	Valid
10	0.810	0.1937	Valid
11	0.815	0.1937	Valid
12	0.737	0.1937	Valid
13	0.735	0.1937	Valid
14	0.821	0.1937	Valid
15	0.760	0.1937	Valid
16	0.598	0.1937	Valid
17	0.677	0.1937	Valid

The operational definition of variables in this study includes: Teacher perception, namely the teacher's view or assessment of flipped learning as measured through questionnaire items related to understanding, ease of implementation, and its impact on students; Student motivation, namely the level of student motivation to actively participate in learning as assessed based on teacher perception; and Impact of flipped learning, namely the effectiveness of the flipped learning method in supporting student learning as reported by teachers through questionnaires. This research method has several limitations, namely the sample taken is limited to teachers in one area, so the results of the study may be less generalizable to a wider population. In addition, the measurement of teacher perceptions is carried out through self-reports, which are potentially influenced by subjectivity bias.

Results and Discussions

This study aims to test teachers' perception of flipped learning. The findings are presented as Table 4. Table 4 shows that overall, the participating teachers gave a positive response and agreed with the 17 questionnaire statements regarding the impact of flipped learning on students. Overall, of all statements has a mean of >3.01. The first rank with the highest average (3.53) was obtained from the statement Flipped learning improves student's self-confidence coming to class with basic understanding. This increase in confidence is likely related to prior preparation through the materials provided, which allows students to come to class with a basic understanding. This confidence can increase students' motivation to be more involved in discussions or active activities in class. Research conducted by (Chowdhury, 2020) on Flip Learning also shows that students can gain a deeper understanding of the learning material when they first study the material at home through videos

or materials prepared by the teacher, and then use class time for discussion, problem solving, and practical application of concepts.

Table 4 <Teachers' Perception of Flipped Learning>

Statement Items	Rank	Mean	SD	Level
Flipped learning improves student's self-confidence coming to class with basic understanding	1	3.53	0.56	Tall
Flipped learning prepares students' mentally for the class	2	3.49	0.62	Tall
Students benefit from active learning in the classroom	3	3.47	0.59	Tall
Flipped learning can improve students' interaction in classes	4	3.46	0.57	Tall
Flipped learning makes learning more flexible	5	3.44	0.57	Tall
Students benefit from their time outside classes	6	3.40	0.55	Tall
Flipped learning improves students' creativity	7	3.39	0.58	Tall
Flipped learning makes learning more students-centric	8	3.37	0.63	Tall
Flipped learning improves students' higher order thinking skil	9	3.37	0.54	Tall
Flipped learning improves student's attention during class	10	3.36	0.59	Tall
Flipped learning can improve students' achievement	11	3.35	0.61	Tall
Flipped learning enables students' various aspects of development	12	3.36	0.55	Tall
Flipped learning makes learning more enjoyable	13	3.32	0.64	Tall
Flipped learning encourages cooperative learning among students	14	3.29	0.55	Tall
Flipped learning improves students' motivation to learn	15	3.29	0.55	Tall
Flipped learning can help overcome students' shyness	16	3.26	0.63	Tall
I think flipped learning is better than traditional teaching for students	17	3.24	0.69	Tall

The second and third rankings with an average of 3.49 and 3.47 were obtained from the statements Flipped learning prepares students' mentally for the class and Students benefit from active learning in the classroom. This shows that this method positively influences students' mental readiness and active engagement, both of which are important factors in building learning motivation. The statements from the three highest rankings show that the implementation of flipped learning has increased students' learning readiness in the form of confidence, mental readiness and ultimately can be more actively involved in the classroom.

From table 4, the bottom two ranking information was also obtained from the statement are Flipped learning can help overcome students' shyness and I think flipped learning is better than traditional teaching for students with an average of 3.26 and 3.24. These results show that the application of flipped learning will not automatically help shy students to be more active in the classroom and there is no full confidence from teachers that flipped learning is better than traditional learning. This could be because shy students may need additional interventions, such as individualized tutoring or other pedagogical strategies, to feel comfortable participating. In addition, although flipped learning has its advantages, some teachers are still not fully convinced that this method is better than traditional teaching. This hesitation can also be caused by a lack of training in implementing flipped learning effectively or technical challenges faced during implementation.

From this study, information was also obtained about teachers' perceptions of flipped learning based on gender as below.

Table 5 <Data on Teachers' Perception of Flipped Learning by Gender>

Gender	Perception		Total
	Low (≤3.0)	Height (>3.0)	
Male	13	20	33
Female	17	53	70
Total	30	73	103

Table 5 shows data on teachers' perception of flipped learning by gender. To determine whether there was a significant relationship between the two categorical variables, the researchers conducted a statistical test of Chi Square ($\chi 2$). With a significance level of 0.05 and df=1, the critical value of the table $\chi 2$ is 3.841, obtained a smaller calculated $\chi 2$ value (2.48). Based on the results of the $\chi 2$ test, there is not enough evidence to state that there is a significant relationship between gender and teachers' perception of flipped learning. In other words,

teachers' perception of Flipped Learning is not significantly different between male and female teachers. This shows that gender is not a factor affecting teachers' perception of Flipped Learning in this sample. The findings from (Mulyono et al., 2021) also show that both groups of teachers, regardless of gender, have similar views towards the flipped learning approach, indicating that gender is neither a barrier nor an advantage when it comes to the adoption of this method. Next is the researcher wants to get information about teachers' perceptions of flipped learning based on teaching years as below.

Table 6 <Teachers' Perception of *Flipped Learning* Based on Teaching Years>

Years of Teaching	Perception		Total
	Low (≤3.0)	Height (>3.0)	
<5 years	13	17	30
5-10 years	8	17	25
10-15 years	5	18	23
>15 years	13	12	25
Total	39	64	103

With a significance level of 0.05 and df=2, the critical value of the table $\chi 2$ is 5.560, a calculated $\chi 2$ value is obtained which is smaller (5.41). Based on the results of the $\chi 2$ test, there is not enough evidence to state that there is a significant relationship between teaching years and teachers' perception of flipped learning. In other words, teachers' perception of Flipped Learning is not significantly different between teachers with different years of service. This shows that teaching experience is not the main determinant in accepting or rejecting this method. This fact is interesting because flipped learning offers a new approach that often challenges the habits of experienced teachers, but these results show that both novice and experienced teachers can evaluate it positively. Research by (A. M. Abuhmaid, 2020) supports these findings, suggesting that the success of Flip Learning depends not only on teaching experience, but more on teachers' ability to utilize technology and design learning activities that actively engage students.

Practically, the results of this study show that flipped learning can improve students' learning readiness, such as self-confidence, mental readiness, and active engagement in class. Therefore, teachers and education managers are advised to consider implementing flipped learning, especially by providing training related to its implementation strategies. However, additional approaches need to be designed to help shy students to be more active in class, as well as to convince teachers of the advantages of flipped learning over traditional methods. Theoretically, this study contributes to the literature on teachers' perceptions of flipped learning by showing that gender and work experience do not significantly influence teachers' views. This finding opens up opportunities for further research to explore other factors, such as work culture, professional training and access to technology, which may be more relevant in influencing teachers' perceptions of flipped learning. The limitations of this study include the limited scope of the sample, which only includes teachers in one area, so the results of the study cannot be generalized to a broader context. In addition, the measurement of teachers' perceptions was done through self-report, which risks being influenced by subjectivity bias. Further research can explore these factors in depth to design a more effective flipped learning implementation strategy.

Conclusions

This study found that teachers responded positively to the impact of Flip Learning, especially in increasing student engagement and facilitating independent learning. However, no significant evidence was found showing a relationship between teachers' perceptions of Flip Learning and gender or years of work experience. This suggests that factors such as technology training and student readiness influence teachers' perceptions more than their demographics. In addition, challenges such as limited time to prepare materials and students' motivation to learn independently outside the classroom are also obstacles in the implementation of Flip Learning. This research provides new insights that can serve as a basis for educational policy development, taking into account factors such as technology support and professional training in the implementation of Flip Learning.

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