Flipped learning implementation to improve student learning outcomes in office management fundamentals

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Abstrak

Penelitian ini bertujuan untuk mengetahui implementasi model pembelajaran flipped learning dalam meningkatkan hasil belajar siswa pada mata pelajaran Dasar-Dasar Manajemen Perkantoran dan Layanan Bisnis. Penelitian menggunakan pendekatan Penelitian Tindakan Kelas (PTK) sebanyak dua siklus. Sumber data berasal dari hasil belajar siswa, guru mata pelajaran, siswa kelas 10 MPLB 1, dan dokumen pendukung. Teknik pengumpulan data dilakukan melalui tes, observasi, dan wawancara. Data dianalisis dengan teknik reduksi data, penyajian data, dan penarikan kesimpulan. Hasil penelitian menunjukkan bahwa penerapan flipped learning berjalan efektif melalui penyampaian materi berupa video pembelajaran yang diakses siswa sebelum pembelajaran tatap muka. Rata-rata nilai siswa meningkat dari 61% pada pra tindakan, menjadi 72% pada siklus I, dan 85% pada siklus II. Model ini juga meningkatkan keaktifan dan keterlibatan siswa selama proses pembelajaran.

Kata kunci: Inovasi Model Pembelajaran; Penelitian Tindakan Kelas; Video Pembelajaran

Abstract

This study aimed to investigate the implementation of the flipped learning model in improving student learning outcomes in the subject of Office Management and Business Services Fundamentals. The research employed Classroom Action Research (CAR) conducted over two cycles. Data sources included student learning outcomes, subject teachers, Grade 10 MPLB 1 students, and supporting documents. Data were collected through tests, observations, and interviews, then analyzed using data reduction, data display, and conclusion drawing techniques. The findings demonstrate that flipped learning was effectively implemented through instructional videos accessed by students prior to face-to-face sessions. Student average scores increased from 61% in the pre-action phase to 72% in Cycle I and 85% in Cycle II. This model also enhanced student engagement and active participation throughout the learning process.

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Introduction

The rapid development of information and communication technology has driven transformative changes in education, including the pedagogical models implemented by teachers in schools. However, most learning processes in vocational high schools remain dominated by conventional teacher-centered methods that minimally engage students as active participants. This condition adversely affects student learning outcomes, particularly in Office Management and Business Services Fundamentals. A preliminary survey conducted at SMK Negeri 1 Sukoharjo revealed that the average daily test scores of Grade 10 MPLB 1 students reached only 62, falling below the Minimum Completeness Criteria (KKM) of 70.

The flipped learning model represents an innovative pedagogical approach that inverts traditional learning sequences. Students study material at home through media such as videos, while classroom time is allocated for discussions and problem-solving activities with teachers. According to Tresnawati et al. (2022), flipped learning is particularly relevant for 21st-century education as it develops students' independent learning activities and enhances classroom engagement. This model transforms learning tasks typically assigned in class into home-based activities, while school time is devoted to completing assignments or confirming knowledge acquired at home through peer and teacher collaboration (Maolidah et al., 2017). Consequently, classroom interactions proceed more effectively because both teachers and students have prior familiarity with the topics under discussion (Hasjim & Siem, 2021). Additionally, Subagia (2017) stated that flipped learning can improve learning outcomes and make instruction less monotonous through the utilization of engaging digital media.

However, these findings indicate that flipped learning implementation still encounters challenges, particularly in learning environments not fully adaptive to technology use or among students with low learning autonomy. Therefore, further research is necessary that considers the characteristics of vocational high school students and the active role of teachers in facilitating the adaptation process to flipped learning. Herein lies the novelty of this study: the implementation of video-based flipped learning specifically designed according to vocational high school student characteristics, combined with intensive teacher guidance throughout the learning process.

Based on this background, the research problem is formulated as follows: How is the flipped learning model implemented to improve student learning outcomes in Office Management and Business Services Fundamentals at SMK Negeri 1 Sukoharjo? This study aimed to examine both the process and results of implementing the flipped learning model in enhancing student learning outcomes. The research is expected to serve as an innovative solution for vocational high school instruction and contribute to improving the quality of technology-based education in Indonesia.

Theoretically, flipped learning is a pedagogical model that inverts conventional learning sequences: students study theory at home and engage in practice or clarification in class (Putra et al., 2020). Flipped learning encourages greater student activity, enhances engagement, and develops critical thinking skills (Nurpianti et al., 2018). Meanwhile, Somayana (2020) defined learning outcomes as academic achievements attained through examinations and assignment completion, supported by active participation in questioning and answering that contributes to these achievements. Learning outcomes result from the interaction between stimulus and response demonstrated through mastery of specific competencies across cognitive, affective, and psychomotor domains (Mboa et al., 2024). Learning outcomes are influenced by internal factors such as learning interest and motivation, teacher competence, teacher communication, student

learning discipline, classroom management, and self-management, while external factors include the implemented learning model, school environment, and school culture (Yandi et al., 2023).

Reasearch Methods

This study employed a Classroom Action Research (CAR) approach. This research design was selected to describe teacher and student activities during the learning implementation process. Classroom Action Research represents an effort by teachers to improve the quality of and responsibility for classroom learning management. CAR is research that describes cause-and-effect relationships from treatments while documenting all occurrences during treatment implementation and describing the entire process from initial treatment to its outcomes. Thus, CAR describes both processes and results as conducted by teachers in their classrooms to improve learning quality.

The research subjects were 34 Grade 10 MPLB 1 students at SMK Negeri 1 Sukoharjo for the 2024/2025 academic year, comprising 2 male and 32 female students. The researcher selected Grade 10 MPLB 1 because this class demonstrated low learning outcomes in Office Management and Business Services Fundamentals, with a classical absorption rate of only 62% on the second daily test for business services material in the first semester.

Qualitative data were used to describe the success of implementing the flipped learning model designed by the researcher, obtained through observations and interviews during teaching-learning activities between teachers and students. Quantitative data were obtained from test results administered to the 34 Grade 10 MPLB 1 students at SMK Negeri 1 Sukoharjo.

Data collection techniques included observation, interviews, document analysis, and tests. The data validity technique in this classroom action research employed triangulation, one approach used to enhance data validity and credibility obtained during the research process. The test instruments used in this study underwent validity testing to ensure that the measurement tools accurately measured the investigated aspects. The instruments comprised pre-action, Cycle I, and Cycle II questions validated through expert judgment. This expert validation involved specialists with expertise in the field, specifically Office Management and Business Services Fundamentals teachers. Reliability testing of observation instruments was not conducted through inter-rater reliability because only one observer, the researcher, was involved. To ensure instrument consistency, the researcher verified internal consistency reliability by examining coherence among indicators in the observation sheets and ensuring uniform assessment criteria for each observed aspect. Additionally, expert judgment was incorporated in the content validation process to ensure each observation indicator accurately represented the measured aspects.

Data analysis in this study utilized interactive qualitative data analysis techniques consisting of data reduction, data display, and conclusion drawing. Data reduction involves selecting appropriate and useful data while identifying data that can be disregarded, ensuring that collected data provide meaningful information. Data display presents information in narrative, graphic, table, and matrix formats to illustrate relationships between variables. The conclusion drawing stage involved drawing conclusions regarding possibilities and evaluations. Action success indicators were established as follows: (a) at least 75% of students achieve scores $\geq$70, and (b) student engagement during learning reaches at least 75% based on observation sheets. Research ethics were fulfilled through informed consent from students and parents, along with guarantees of personal data confidentiality.

Result and Discussion

Research Result

Pre-Action Data

During this phase, the researcher conducted direct observation of problems related to Office Management and Business Services Fundamentals instruction in Grade 10 MPLB. This classroom action research was conducted collaboratively between the researcher as the process observer and the teacher as the instructor of Office Management and Business Services Fundamentals. Generally,

the teacher still employed conventional models that rendered students passive and bored during learning activities. During observation, the researcher referred to prepared observation sheets, yielding percentages of 37% for teacher activity and 42% for student activity. The pre-action posttest results before implementing the flipped learning model are presented in Table 1:

Table 1
Pre-Action Student Learning Outcomes

Description	Initial Results	Percentage (%)
Number of Students	34	–
Met KKM	15	44%
Did Not Meet KKM	19	56%
Average Score	61%	–
Classical Absorption	44%	–

Table 1 indicates that the pre-action phase before implementing the flipped learning model yielded a classical absorption rate of 44%, calculated from the percentage of students achieving mastery. Of the 34 students, 15 (44%) achieved mastery, while 19 (56%) did not meet the minimum criteria.

Cycle I Results

Cycle I action research was conducted over two meetings, encompassing planning, implementation, reflection, and observation stages. First, action planning included: (a) designing the flipped learning model; (b) preparing lesson plans for Office Management and Business Services Fundamentals on office communication material, along with materials for pre-class delivery such as videos, PowerPoint presentations, and other teaching materials; and (c) preparing research assessment instruments for data collection, including teacher teaching activity observation sheets and student activity observation sheets. Second, action implementation consisted of: (a) opening activities, (b) core activities, and (c) closing activities. Third, a posttest was administered at the end of the cycle to determine the success level of the intervention following flipped learning model implementation. Fourth, the researcher observed student and teacher activities to assess classroom learning implementation.
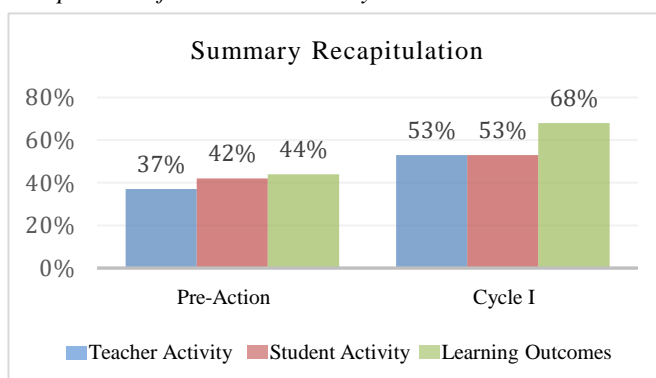
Table 2
Cycle I Student Learning Outcomes

Description	Results	Percentage (%)
Number of Students	34	–
Met KKM	23	68%
Did Not Meet KKM	11	32%
Average Score	72%	–
Classical Absorption	68%	–

Table 2 demonstrates that Cycle I achieved an average score of 72%, with 23 students scoring above the KKM ($\geq$70) and 11 students scoring below the KKM (<70). The classical absorption rate reached 68%, calculated based on the percentage of students achieving learning mastery.

Figure 1 Teacher activities
Comparison of Pre-Action and Cycle I Observation Results

Based on Figure 1, observation of teacher and student activities in Cycle I revealed improvements compared to the pre-action phase. Teacher activity increased from 37% in the pre-action phase to 53% in Cycle I, while student activity rose from 42% to 53%. Furthermore, student learning outcomes showed significant improvement from 44% in the pre-action phase to 68% in Cycle I. These improvements indicate that implementing the flipped learning model positively impacts teacher and student engagement in the learning process. Nevertheless, several aspects required improvement, including teacher readiness in managing group discussions and student readiness for active, independent learning.

Cycle II Results

Cycle I results were obtained from posttests administered at the end of each cycle and subsequently analyzed. The strengths and weaknesses identified in Cycle I served as references for Cycle II. Cycle II learning occurred over five meetings, with the first meeting consisting of question-and-answer sessions or quizzes to assess students' initial abilities, followed by material delivery. A posttest was administered at the end of the cycle to determine intervention success following flipped learning model implementation. Cycle II stages included planning, action implementation, observation, and reflection. First, action planning comprised: (a) designing the flipped learning model; (b) preparing lesson plans for Office Management and Business Services Fundamentals on office communication material, along with materials for pre-class delivery such as videos, PowerPoint presentations, and other teaching materials; and (c) preparing research assessment instruments for data collection. Second, action implementation consisted of: (a) opening activities, (b) core activities, and (c) closing activities. Third, reflection was conducted by administering posttest questions to individual students as a measure of flipped learning model implementation success. Fourth, observation was conducted to monitor teacher and student activities in implementing flipped learning model procedures from beginning to end.
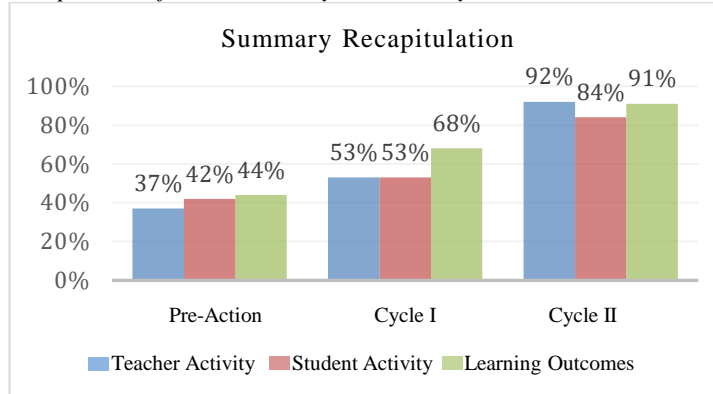
Reflection from Cycle I improvements, based on posttest results and teacher and student activity observations, indicated enhancement. Student outcomes achieved the success indicator initially established by the researcher at 75%. This improvement demonstrates that implementing the flipped learning model can enhance student learning outcomes, thus eliminating the need for further corrective actions in Cycle III.

The researcher analyzed the Cycle II observations and found that student learning outcomes improved, with learning indicator achievement reaching scores in the very good category. The Cycle II student learning outcomes for Office Management and Business Services Fundamentals are presented in the following table:

Table 3
Cycle II Student Learning Outcomes

Description	Results	Percentage (%)
Number of Students	34	–
Met KKM	31	91%
Did Not Meet KKM	3	9%
Average Score	85%	–
Classical Absorption	91%	–

Table 3 indicates that of 34 students, 31 achieved scores above the established KKM of 70. This number demonstrates significant improvement in student learning mastery compared to both initial conditions and Cycle I results. The classical absorption rate in Cycle II reached 91%, indicating that most Grade 10 MPLB 1 students successfully achieved learning mastery according to criteria. However, the three students who did not meet the KKM were individuals with specific characteristics and constraints, such as difficulty comprehending material despite receiving additional guidance. These constraints were individual in nature and could not be fully addressed through classical intervention.

Figure 2
Comparison of Pre-Action, Cycle I, and Cycle II Observation Results

As shown in Figure 2, teacher and student activities in Cycle II demonstrated significant improvement compared to both the pre-action phase and Cycle I. Teacher activity increased from 37% in the pre-action phase to 53% in Cycle I, reaching 92% in Cycle II. In Cycle II, teachers showed improvement in learning management with excellent percentages, demonstrating greater confidence in material delivery, maximum utilization of learning media, and effective implementation of the flipped learning model while explaining difficult concepts using simple language and everyday examples that enhanced student comprehension.

Student activity also increased from 42% in the pre-action phase to 53% in Cycle I, then dramatically to 94% in Cycle II. Cycle II student activity observations from initial to final meetings showed significant improvement with a percentage of 84%, falling within the good criteria. Compared to student activity during pre-action and Cycle I, which still indicated that students were unable to follow flipped learning model instruction, this improvement demonstrates that students were prepared to participate in school learning activities, capable of following flipped learning model instruction both in group discussions and expressing opinions, and able to complete teacher-assigned tasks properly. Students demonstrated greater readiness because they had previously studied materials at home through provided instructional videos. To monitor student engagement in accessing video-based learning materials, the researcher utilized analytics features available on YouTube. Displayed data, such as view counts, were used to assess the extent to which Grade 10 MPLB 1 students accessed the provided instructional videos. Based on this data, the office communication material video was accessed 141 times, while the written and verbal communication material received 133 views.

The improvements were not only evident from observation results but were also corroborated by teacher and student statements in interviews and questionnaires administered by the researcher. Mrs. Nur, the Office Management and Business Services Fundamentals teacher, stated that learning using the flipped learning model brought significant impact on student enthusiasm:

"As a teacher, I found the flipped learning model very helpful. Students appeared more prepared when entering class. They no longer waited for explanations from the beginning but already had a basic understanding. Discussions became more interactive, and I could immediately emphasize important points. Compared to before, the classroom atmosphere felt more lively and students were more confident in expressing their opinions."

The teacher also added that although there were some challenges when first implementing the flipped learning model, such as the teacher's initial inability to create instructional videos and students' unfamiliarity with accessing materials independently, by the second cycle students began showing good adaptation:

"Honestly, I initially struggled with instructional videos because I usually just searched for teaching videos on YouTube that sometimes didn't match what I wanted to convey to students. However, with the researcher's assistance, I found it helpful and learned how to

create instructional videos. Regarding student response to the flipped learning model, initially I only used PowerPoint or whiteboard media, but with instructional videos, students became more enthusiastic even though some students hadn't watched the videos before class during initial implementation. After reminders and support, they began adapting. Some previously passive students even started actively asking questions and participating in discussions." (Interview with Teacher, May 6, 2025)

Interviews conducted with several students after Cycle II implementation indicated that they experienced changes in their learning approach and attitudes toward subject material. One student stated:

"Learning with videos before class made me more prepared and understand what we would study in class. When entering class, I wasn't confused, and I became confident enough to ask questions because I already had an idea of the material." (Interview with Student, May 6, 2025)

"The flipped learning model is more interesting because before we only used books and PowerPoint that were too monotonous, so as students listening to teacher explanations, we quickly became drowsy." (Interview with Student, May 6, 2025)

"The difference with the learning model before using flipped learning is that I quickly became drowsy because we only listened to teacher explanations I felt like I was being told a bedtime story. However, when using the flipped learning model, I felt happy because there were videos that didn't just rely on monotonous books or PowerPoint." (Interview with Student, May 6, 2025).

Discussion

This classroom action research was conducted over two cycles encompassing planning, implementation, reflection, and observation stages. The intervention was motivated by low pretest scores among students who had not yet achieved the KKM and minimal student engagement in learning. The findings demonstrate significant improvement from the pre-action phase to Cycle I and Cycle II across teacher teaching activities, student learning activities, and student learning outcomes. During the pre-action phase, the learning process remained predominantly passive, with teacher activity at 37%, characterized by unidirectional material delivery and suboptimal utilization of learning media. This condition affected both student activity and learning outcomes.

In Cycle I, teacher learning activity reached 67% and student activity 53%. Students began adapting to the flipped learning model. Although learning outcomes improved compared to pretest conditions, research success indicators were not fully achieved. This was attributable to insufficient active student participation, time constraints and unconducive classroom conditions, and suboptimal implementation of group presentation activities. Based on Cycle I reflection, the researcher decided to make improvements and continue to Cycle II.

The flipped learning model can significantly improve student learning outcomes. According to Putri and Hanesman (2020), flipped learning positively influences student learning outcomes. This success was demonstrated through improved classical absorption rates reaching the learning mastery indicator of 91% in Cycle II, meeting the established target. The logical process underlying these findings indicates that students who have previously studied material can follow learning more effectively, while classroom time can be utilized to strengthen understanding through discussions and interactive activities between teachers and students or among students. This model provides greater opportunities for students to actively construct knowledge.

The research findings demonstrate improved student learning outcomes from 44% in the pre-action phase to 68% in Cycle I and 91% in Cycle II. This finding aligns with research by Zainuddin and Halili (2016), which stated that flipped learning enhances learning motivation and outcomes due to its student-centered nature. With appropriate technology support and teacher guidance, flipped learning becomes an effective approach for improving learning quality in vocational high schools. Flipped learning provides opportunities for interaction and direct feedback typically unavailable in traditional learning (Lundin et al., 2018). This also relates to research by Sari et al. (2021), which

stated that students tend to prefer the flipped learning model due to its flexibility and enhancement of learning readiness.

Interpretation of these research results indicates that flipped learning can create more meaningful learning atmospheres, increase student participation, and provide more effective learning experiences. According to Rohiman et al. (2024), consistent application of flipped learning can improve student learning outcomes. The study findings also reinforce prior constructivist theory developed by Saputra and Mujib (2018), who stated that flipped learning model instruction is superior to lecture-based methods. Flipped learning positively influences student learning outcomes (van Alten et al., 2019). Additionally, Hafizuddin and Akhmad (2024) stated that flipped learning has proven effective in improving student learning outcomes through statistical testing, where the calculated value of 32.621 exceeded the critical value, which is highly relevant to Office Management and Business Services Fundamentals.

Based on the explanation above, it can be concluded that implementing the flipped learning model is effective in improving learning activities, student engagement, and learning outcomes in Office Management and Business Services Fundamentals. This model can serve as an alternative learning strategy applicable in vocational high school instruction to promote more optimal learning achievement.

Conclusion

Based on the research findings, implementing the flipped learning model proves effective in improving learning outcomes among Grade 10 MPLB 1 students in Office Management and Business Services Fundamentals at SMK Negeri 1 Sukoharjo. The initial problem identified through the preliminary survey indicated that student learning mastery remained low at only 62%, representing 21 students. This condition underscored the need for innovative implementation of learning models capable of promoting active student engagement and improving learning outcomes. The implementation results demonstrate significant improvement in both learning activities and student learning outcomes. Teacher and student activities during the learning process showed quality enhancement, evidenced by active student participation in discussions, better material comprehension, and enthusiasm in video-based learning. Regarding learning mastery, the number of students meeting the KKM increased from 15 students in the pre-action phase to 23 students in Cycle I and 31 students in Cycle II. Classically, student absorption reached 91%, surpassing the established minimum success indicator of 75%. This research also reinforces prior constructivist theory developed by Saputra and Mujib (2018), who stated that flipped learning model instruction is superior to lecture-based methods. Flipped learning positively influences student learning outcomes (van Alten et al., 2019). Additionally, Hafizuddin and Akhmad (2024) stated that flipped learning has proven effective in improving student learning outcomes through statistical testing, where the calculated value of 32.621 exceeded the critical value, demonstrating high relevance to Office Management and Business Services Fundamentals.

The practical implications of this research suggest that teachers can utilize various media, such as instructional videos, to deliver material before face-to-face classroom sessions. This activity can make classroom learning more effective for discussions, question-and-answer sessions, and practice exercises. This approach is particularly beneficial for students who need or prefer independent learning styles, as they tend to require more time to comprehend material. Based on these research findings, teachers are recommended to implement the flipped learning model consistently while adjusting to student characteristics. Teachers should also monitor student readiness in accessing materials before classroom learning activities to ensure effective flipped learning implementation. Additionally, students are expected to optimally utilize instructional video materials provided before face-to-face sessions to be better prepared for classroom learning processes. Student discipline and learning autonomy become crucial aspects requiring development in implementing this learning model. Furthermore, recommendations for future researchers include investigating flipped learning model implementation across different subjects to expand the research scope and provide a more comprehensive picture of this learning model's effectiveness across various fields of study. The limitations of this research relate to the instructional video production

process, during which the researcher encountered technical difficulties including audio interference during recording or voiceover sessions. Heavy rainfall disrupted recording clarity, requiring the researcher to repeat the recording process several times. This condition extended media production time beyond the planned schedule.

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