

Improving learning outcomes of SMK students through window shopping model with mind mapping media

Shintia Novianti*, Siva Indah Purnama, Wakhidatul Khurnia Dewi, Wisnu Wibisono, Hery Sawiji

Teacher Professional Education Program, Sebelas Maret University, Surakarta, Indonesia

Email: shintianovianti30@student.uns.ac.id

Abstrak

Penelitian ini bertujuan untuk meningkatkan hasil belajar siswa kelas X SMK Saraswati Sukoharjo pada mata pelajaran Dasar-Dasar Program Keahlian Manajemen Perkantoran melalui penerapan model pembelajaran window shopping yang dipadukan dengan media mind mapping. Latar belakang penelitian ini berangkat dari rendahnya motivasi dan capaian akademik siswa, yang sebagian besar belum memenuhi kriteria ketuntasan minimal. Penelitian dilakukan dalam dua siklus dengan pendekatan Penelitian Tindakan Kelas (PTK), yang mencakup tahap perencanaan, pelaksanaan tindakan, observasi, dan refleksi. Hasil penelitian menunjukkan adanya peningkatan signifikan dalam ketuntasan belajar, dari 70% pada siklus pertama menjadi 88,89% pada siklus kedua. Selain itu, terjadi peningkatan dalam pelaksanaan pembelajaran, baik dari segi interaksi siswa maupun peran aktif guru. Hal ini ditunjukkan oleh skor observasi yang meningkat dari kategori "cukup baik" menjadi "sangat baik" serta nilai rata-rata keaktifan siswa dimana kondisi awal dengan nilai rata-rata 46,3% mengalami peningkatan dengan kondisi akhir pada siklus II menjadi 85,2%. Temuan ini mengindikasikan bahwa strategi pembelajaran yang bersifat kolaboratif dan visual mampu menciptakan pengalaman belajar yang lebih menarik dan efektif, serta mendukung penguasaan materi secara lebih mendalam.

Kata kunci: ketuntasan belajar; motivasi belajar; pembelajaran kolaboratif

Abstract

This study aimed to improve learning outcomes of Grade X students at SMK Saraswati Sukoharjo in Basic Office Management Skills through implementation of the window shopping learning model combined with mind mapping media. The research background stemmed from low motivation and academic achievement among students, with the majority not meeting minimum competency criteria. We conducted the research in two cycles using Classroom Action Research (CAR) approach, including planning, action implementation, observation, and reflection stages. Results showed significant improvement in learning mastery, increasing from

* Corresponding author

Citation in APA style: Novianti, S., Purnama, S.I., Dewi, W.K., Wibisono, W., & Sawiji, H. (2025). Improving learning outcomes of SMK students through window shopping model with mind mapping media. *Jurnal Informasi dan Komunikasi Administrasi Perkantoran*, 9(5), 534-544. <https://dx.doi.org/10.20961/jikap.v9i5.103953>

70% in the first cycle to 88.89% in the second cycle. Additionally, notable improvement occurred in the learning process, both in student interaction and teacher's active role. This was indicated by observation scores increasing from "quite good" to "very good" category and average student activity scores improving from initial conditions of 46.3% to final conditions of 85.2% in Cycle II. These findings indicate that collaborative and visual learning strategies can create more engaging and effective learning experiences while supporting deeper subject matter understanding.

Keywords: collaborative learning; learning mastery; learning motivation

Received June 12, 2025; Revised June 30, 2025; Accepted August 25, 2025;
Published Online September 02, 2025

<https://dx.doi.org/10.20961/jikap.v9i5.103953>

Introduction

Education plays crucial roles in national development as it produces high-quality, creative, and competitive human resources. Through education, people acquire knowledge, skills, and values needed to contribute to various life sectors. With sound education systems, nations can reduce poverty, improve people's welfare, and create more sustainable futures. The objectives of Indonesian National Education, as outlined in Law Number 20 of 2003 concerning the National Education System, are to develop students' potential to become individuals who believe in and fear God Almighty, possess noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens (Law Number 20 of 2003, Article 3).

In education, teachers play crucial roles in advancing education. According to Law No. 14 of 2005 concerning Teachers and Lecturers, teachers serve as professional educators with primary responsibility for designing, implementing, evaluating, and guiding learning processes to improve education quality (Law No. 14 of 2005, Articles 1 and 20). Designing and implementing learning processes should emphasize not only cognitive aspects but also character development and 21st-century skills. Therefore, every learning activity in classrooms should be directed toward fostering students' holistic growth. Twenty-first-century skills such as critical thinking, collaboration, and communication can be optimally developed through active learning models that involve teamwork and real-life problem-solving in classrooms (Putri & Yuliana, 2021). Furthermore, teachers serve as facilitators, motivators, and role models in shaping students' character and overall competency. Teachers' roles are key in identifying learning problems, designing innovative solutions, and reflecting on action results for continuous improvement.

The learning process at Saraswati Vocational High School, Sukoharjo, specifically in the Office Management and Business Services expertise program for Class X MPLB, on office equipment and supplies subjects, shows tendencies toward one-way learning, lack of interaction, and insufficient space for students to develop creativity. This results in boring learning atmospheres and declining student interest in learning. Factors contributing to low learning motivation in vocational high school students can also be linked to monotonous teaching styles and lack of student involvement in learning processes (Wijaya & Pratiwi, 2019). In line with findings by Susanti et al. (2024), monotonous teaching methods can lead to boredom, fatigue, and decreased student learning motivation due to lack of variation in learning methods and minimal use of creative media. Additionally, research by Pulumoduyo et al. (2024) identified that learning boredom in vocational school students can be caused by teachers' less interesting teaching strategies, uninteresting learning materials, and lack of infrastructure, all of which contribute to decreased student learning interest.

Students in Class X of SMK Saraswati Sukoharjo in the Office Management and Business Services expertise program Class X MPLB consisted of 27 students, with 6 students showing active participation in learning processes, while the majority of others tended to be passive and less enthusiastic. This reflects lack of motivation or interest in learning for most students, which can impact learning effectiveness and overall learning outcome achievement. This lack of enthusiasm

has potential to hinder learning processes because minimal interaction makes classroom atmospheres passive without critical thinking processes or discussions. As a result, their ability to master expected competencies decreases, which is reflected in low academic grades or achievements. Learning outcomes of Class X MPLB students at SMK Saraswati Sukoharjo in office equipment and supplies materials are still below set standards. Based on conducted evaluations, most students have not been able to achieve expected minimum scores of 75. This achievement indicates that students' understanding of materials is still less than optimal. This could be an indicator that learning processes are not fully effective in helping students master important concepts taught. Therefore, more varied and interactive approaches are needed so students can more easily understand materials and improve their academic performance.

Using learning methods that encourage interaction between students is crucial for creating active and enjoyable learning environments, which will positively impact learning outcomes. One suitable method to support this is the window shopping type learning model. This method allows students to exchange information and discuss directly with their peers, creating collaborative learning processes. Application of this model is considered suitable for Fundamentals of Office Management Expertise Program, particularly for office equipment and supplies materials. With this method, students not only understand materials theoretically but also actively explore knowledge through meaningful interactions, which ultimately can improve their understanding and learning outcomes.

Use of the window shopping method in learning processes is designed to encourage students to actively exchange information, materials, concepts, and ideas interactively with other groups, thereby creating dynamic and collaborative learning atmospheres. This method not only enhances in-depth conceptual understanding but also plays important roles in honing students' social skills, such as abilities to communicate, collaborate, and respect others' opinions. Thus, window shopping method application is expected to enrich students' learning experiences while developing social skills that are essential for their success in both social and academic environments (Sari & Nur, 2022). Furthermore, the window shopping method has been shown to significantly enhance student learning activities through fun approaches that encourage active participation (Fauziah & Hidayati, 2020).

One media that can be used to support interactive student learning is mind mapping. Mind mapping is a visualization technique used to structure information by connecting main ideas to subtopics or supporting ideas through tree-like branches. This method helps brains process and remember information more effectively because it combines visual elements, colors, and keywords, making it easier to understand complex concepts. One of mind mapping's main benefits is that it improves students' memory, creativity, and critical thinking skills, as they can see interrelationships between concepts holistically. Mind mapping has been proven effective in improving students' conceptual understanding through systematic and engaging visualizations (Yusri & Fitriyani, 2023).

Use of flipbook-based interactive media in learning processes makes it easier for students to understand materials because it presents information visually, attractively, and accessibly. Flipbooks allow integration of text, images, animations, and other interactive elements that can increase appeal and strengthen understanding of presented concepts. With displays that resemble real books and intuitive navigation, students are more motivated to learn independently and collaboratively. Furthermore, flipbooks also support technology-based learning that aligns with today's digital generation needs (Wulandari & Zainuddin, 2021). This aligns with findings by Thahlia and Paseleng (2024), which showed that interactive media use can significantly increase student learning interest in vocational high schools. Interactive media has also been shown to improve student learning outcomes by making it easier for them to absorb materials in more engaging and efficient manners (Amalia & Wulandari, 2022). Other digital media support can also be implemented through development of web-based media containing problem-based learning content. This media has proven effective in increasing student learning interest, particularly in simulation-based and digital communication-based lessons, as students are directly involved in solving real-world problems through interactive content presented in engaging and contextual manners (Yunianto, 2021).

Several previous studies have used learning approaches such as Problem Based Learning, Discovery Learning, or Project Based Learning models in productive learning in vocational schools,

but these models tend to require more time in designing and managing projects. Unlike the window shopping approach, which is simple, flexible, and emphasizes active collaboration and rapid exchange of ideas between groups. Using mind mapping as supporting medium also strengthens students' visual understanding.

Based on the previous description, we felt compelled to conduct classroom action research to address low student learning outcomes. This research focused on application of the window shopping learning model combined with mind mapping media as an effort to improve students' understanding of materials. With the title "Improving Learning Outcomes of Class X SMK Students through Window Shopping Model with Mind Mapping Media," this research is expected to be an effective solution in creating more active, communicative, and enjoyable learning atmospheres. This approach was chosen because it is believed to be able to facilitate students in understanding concepts visually and interactively, thus having positive impacts on improving their academic achievements. Additionally, this research is expected to be able to provide real contributions in answering vocational education challenges, especially in increasing student engagement, competence, and readiness to face work world demands through adaptive, contextual learning approaches that align with 21st century needs.

Research Methods

The research method used in this study was the Classroom Action Research (CAR) approach, which is a form of reflective study by action actors (teachers) to improve learning quality in classrooms. With activities carried out as usual, researchers entered classrooms and conducted learning. It was hoped that obtained data would be as objective as possible because it was used to assess validity and validity of obtained data. According to Afandi (2016), CAR is a scientific activity carried out by teachers in their own classrooms with aims of improving and enhancing learning processes and outcomes. According to Awaliah et al. (2023), CAR is a real-life activity in routine situations carried out by teachers to improve learning quality through systematically designed actions. Results of this study have potential to be generalized to other vocational high school contexts with similar characteristics, particularly in productive subjects that require active collaboration and conceptual understanding. The window shopping method and mind mapping media are flexible and can be widely applied to subjects that emphasize critical thinking skills and collaborative communication.

This research was conducted at Saraswati Vocational High School, Sukoharjo, located at Jalan Ir. Soekarno, Grogol, Sukoharjo, in the 2024/2025 academic year. CAR implementation was carried out in two cycles. The first cycle was held on April 14, 2025, and the second cycle on April 21, 2025. Each cycle consisted of one meeting with duration of 90 minutes (2×45 minutes), in accordance with the school's regular learning schedule. This research obtained official permission from the school, namely Saraswati Vocational High School, as evidenced by a research permit letter. Additionally, before carrying out actions in classrooms, researchers explained objectives, benefits, and procedures of research to principals, supervising teachers, and students. Approval was obtained in writing through consent forms signed by schools and supervising teachers. This research also ensures confidentiality of all student data and is used only for academic purposes and learning development.

The learning model used was window shopping, because it can create collaborative, interactive, and enjoyable learning atmospheres. In Cycle I, this model was implemented with aims of encouraging students to actively exchange information between groups that had low participation due to dominance of one-way learning. Meanwhile, in Cycle II, strategies were enhanced by integrating mind mapping media as visual aids for discussion results. This strategy was chosen based on first cycle reflection results, which demonstrated needs for visual media support to deepen student understanding.

End of cycle test results were checked and scored with students who obtained scores equal to or greater than 75 declared to have completed learning because the KKM set by the school was 75. With provisions using the following classical formula:

$$\text{Completeness Classical} = \frac{\text{Number of students who passed}}{\text{Total number of students}} \times 100$$

According to Syaifudin (2020), classical learning completion is stated to have been achieved if at least 85% of students in concerned class groups have achieved or met criteria for student learning completion as a group if they achieve absorption rates of 75% or above. Observation assessment scores used scales of 0-4, as in the table below:

Table 1
Guidelines for Assessment of Learning Implementation

Category	Score Weight
Very accurate	4
Accurate	3
Fairly accurate	2
Less accurate	1
Inaccurate	0

Based on Table 1 in guidelines for assessing learning implementation, several categories are included: very accurate, accurate, fairly accurate, less accurate, and inaccurate. Scoring for learning implementation was adjusted to situations and available score weights. Once learning implementation assessment scores were obtained, they were calculated to determine learning implementation quality using the following formula:

$$\text{Percentage of Average Value (NR)} = \frac{\text{Total Score}}{\text{Total Maximum Score}} \times 100\%$$

Table 2
Assessment Score Criteria

Nilai (%)	Criteria
90-100	Very good
70-89	Good
50-69	Fairly good
29-49	Less good
10-29	Not good

In assessments that have been carried out, there are assessment score criteria as shown in Table 2, adjusted to percentages of total scores obtained. These criteria include very good, good, fairly good, less good, and bad, adjusted to percentages of values received. Observation data collection was carried out directly during learning processes by two observers (colleague teachers), using prepared observation sheets. Each observer monitored teacher and student activities based on learning implementation indicators. Assessment criteria for student activities included aspects such as active discussion, ability to express opinions, group collaboration, independence, and courage in presenting results.

Instruments, both tests and observations, were analyzed based on indicators' suitability to competency aspects being measured (knowledge, skills, and attitudes). This was done to assess whether test items correctly measured intended concepts and whether observation indicators reflected expected dimensions of active learning activities. Instruments were revised based on input from experts and practicing teachers. Revisions were made to correct ambiguous question wording, remove overlapping indicators, or add observation items deemed important but not yet included. The purpose of this step was to improve clarity, accuracy, and completeness of instruments.

Instrument validation was carried out through review processes by experts and practitioners to ensure that instruments could measure relevant aspects and align with achieved indicators.

Furthermore, data validity was strengthened through verification by Mr. Wisnu Wibisono, M.Pd., a mentor teacher and principal, who acted as an inter-rater. He helped check consistency of observation and assessment results between observers to ensure greater objectivity and reliability. With involvement of mentors as verifiers, obtained data were considered more valid and representative of learning activity implementation in classrooms. To minimize potential for subjectivity because researchers also acted as teachers, observations were conducted by two independent observers who were fellow teachers and were not directly involved in teaching. Assessments were conducted using validated and previously agreed-upon observation instruments. Observation results were compared and consolidated to ensure objectivity, and analyzed using triangulation to obtain comprehensive and fair pictures of ongoing learning processes.

Result and Discussion

Research Result

Before intervention, students were less enthusiastic about participating in learning processes. This was due to learning methods which were still one-way and dominated by teachers. Of the 27 students, only 6 students were seen actively interacting during learning processes. This condition had impacts on low student learning outcomes in Basic Office Management Expertise Program subjects on office equipment and supplies. This was reflected in student test scores, where average scores obtained were only 60, even though Minimum Completion Criteria (KKM) had been set at 75. After implementing cooperative learning models of window shopping type combined with mind mapping media on office equipment and supplies materials, there were increases in student learning completion.

Data on student learning completion after implementing this method can be seen in the following table:

Table 3
Student learning outcomes in cycle 1

Cycle 1			
Learning Completion		Mark	
Completed	Incomplete	Highest	Lowest
19	8	95	50

Based on teacher observation results and student assessments in Cycle I, as shown in Table 3, 8 students did not complete learning, with learning completion percentage of 70%. Although there were score increases after implementing window shopping learning models, overall learning outcomes still did not meet classical completion criteria.

Table 4
Student learning outcomes in cycle 2

Cycle 2			
Learning Completion		Mark	
Completed	Incomplete	Highest	Lowest
24	3	95	70

Based on results shown in Table 4, numbers of students who did not complete lessons in Cycle II decreased to 3, with learning completion percentage of 88.89%. This indicates that students achieved classical completion in Cycle II. Data from observations during learning processes, conducted by researchers as teachers and accompanied by two teachers as observers, can be seen in Table 5 below:

Table 5*Teacher observation data during learning cycle I*

No.	Activity	Score
1	The teacher conveys the learning objectives and motivates students	3
2	The teacher explains the Office Equipment and Supplies material clearly and systematically	3
3	The teacher guides students to understand the Window Shopping method that will be used	2
4	The teacher explains the group formation technique clearly and appropriately	2
5	The teacher guides students during the window shopping activity	2
6	The teacher provides feedback when students create mind maps based on their observations	3
Total		15
Learning Implementation Assessment Score		62%

Description: 1) Not Good 2) Quite Good 3) Good 4) Very Good

Based on Table 5, learning conducted in Class X MPLB using window shopping learning models showed improvement in learning implementation compared to previous meetings. Assessment of learning implementation in Cycle I obtained scores of 62%, which is included in "quite good" category according to score ranges of 50%-69%.

Table 6*Teacher observation data during cycle 2 learning*

No.	Activity	Score
1	The teacher conveys the learning objectives and motivates students	4
2	The teacher explains the Office Equipment and Supplies material clearly and systematically	4
3	The teacher guides students to understand the Window Shopping method that will be used	4
4	The teacher explains the group formation technique clearly and appropriately	3
5	The teacher guides students during the window shopping activity	4
6	The teacher provides feedback when students create mind maps based on their observations	4
Total		23
Learning Implementation Assessment Score		96%

Description: 1) Not Good 2) Quite Good 3) Good 4) Very Good

In Cycle II, teacher observation data presented in Table 6 indicate increases in learning implementation, from 62% in Cycle I to 96%. Input from colleagues acting as observers during learning processes was also used for improvement and evaluation. This input was used to assess and improve learning implementation. Student engagement showed positive development with increases. This is evident from observations of learning implementation, which followed planned stages and focused on developing student skills. Increases in student engagement are shown in the following table.

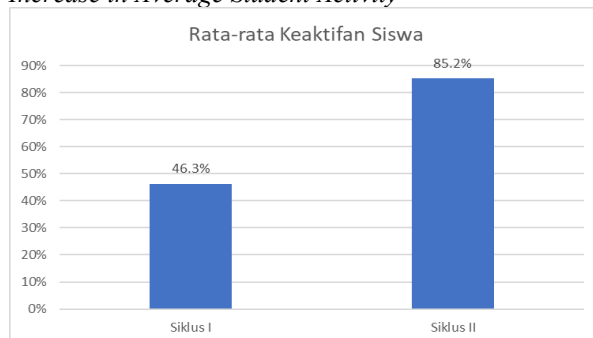
Table 7*Observation data on increasing student activity*

Criteria	Cycle I		Cycle II	
	Number of Students	%	Number of Students	%
High	2	7,4%	23	85,2%
Medium	4	14,8%	4	14,8%
Low	15	55,6%	0	0%
Very Low	6	22,2%	0	0%
Total	27	100%	27	100%

Table 8*Observation data on increasing student activity*

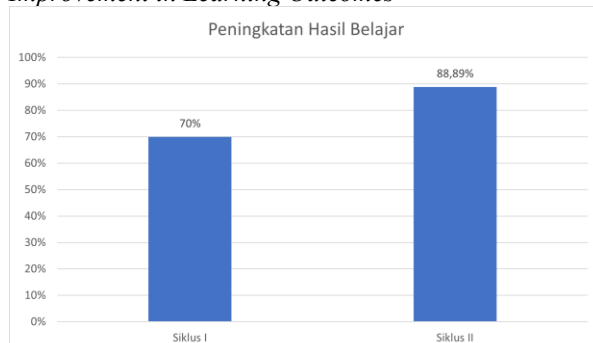
Criteria	Cycle I	Cycle II
Average	46,3%	85,2%

Tables 7 and 8 show that student activity increased. Based on data in tables, it can be seen that student activity in Cycle I of total numbers of 27 students, student activity in Cycle I was classified as low. This can be seen from tables which show that student activity was still low, namely 55.6% or 15 students. After implementing Cycle II by implementing window shopping type learning models and use of mind mapping media, there were increases in student activity with medium activity categories of 4 students (14.8%) and high activity categories of 23 students (85.2%), with averages of 85.2% (high). The 23 students were declared to have met criteria for activity indicators that had been determined in this study. With average student activity having reached expected performance indicator targets, this classroom action research (CAR) was stopped at that stage.

Figure 1*Increase in Average Student Activity*

Source: Documentation of observation results and data analysis (2025)

Based on the graph in Figure 1, it can be seen that through implementation of window shopping learning models and use of mind mapping media, activeness of students at Saraswati Sukoharjo Vocational School can be increased. The graph in Figure 1 shows surges in student activeness from average values of 46.3% to increases with final conditions in Cycle II to 85.2% after there were different interventions.

Figure 2*Improvement in Learning Outcomes*

Source: Documentation of observation results and data analysis (2025)

The graph in Figure 2 shows increases in student learning outcomes. In Cycle I, learning completion only reached 70%, while in Cycle II, it increased to 88.89%. These increases reflect that collaborative and visual learning approaches implemented significantly improved students'

understanding and mastery of materials. This is in line with increased active student participation, which also contributed to learning success.

Discussion

In classroom action research conducted by Class X MPLB at SMK Saraswati Sukoharjo on office equipment and supplies materials, it succeeded in improving learning outcomes and student activity through implementation of Window Shopping learning models combined with mind mapping media. This is in line with Novitami's research (2024) which shows that with Window Shopping learning approaches equipped with mind mapping, students showed increased conceptual understanding and higher enthusiasm for learning compared to conventional methods. Furthermore, this method strengthens student participation in learning because they actively exchange information and ask questions within groups, resulting in more lively and effective learning atmospheres. Research results by Silalahi et al. (2024) also showed that Window Shopping learning model application was able to significantly increase student engagement, from 46% to 85%, driven by intensive and collaborative intergroup interactions throughout learning processes. This method strengthens student participation in learning because they actively exchange information and ask questions within groups, resulting in more lively and effective learning environments.

In Cycle I, learning only focused on application of Window Shopping models to improve interaction between groups. However, observations showed that although learning objectives, material explanations, and appreciation were well implemented, there were still weaknesses in group formation, discussion guidance, and presentation of results. Student activity was still limited, and conceptual understanding was not yet in-depth due to lack of material visualization. Therefore, in Cycle II, corrective actions were taken by adding mind mapping media to visualize discussion results in structured manners. Improvements in action in Cycle II were proven to increase learning completion from 70% to 88.89%. Observation scores for learning implementation increased from "fairly good" to "very good," and student activity increased from 46.3% to 85.2%. Thus, application of Window Shopping learning models combined with mind mapping media proved to be able to improve learning outcomes and student activity through intergroup interactions that encourage conceptual understanding and active participation in learning processes.

To strengthen findings in each cycle, observations and reflections were conducted jointly by supervising teachers and observers. Input provided in each cycle served as important bases for designing improvements in subsequent cycles. This comprehensive evaluation encompassed not only aspects of learning implementation but also effectiveness of strategies used in improving student engagement and learning outcomes. Details of observations and input are presented in the following table.

Table 9
Suggestions from observers

Meeting to-	Suggestion
P-1	Learning implementation has been quite good, especially in conveying objectives, explaining material, and providing appreciation to students. However, improvements are needed in group formation, discussion guidance, and presentation of results. Teachers can provide written instructions and rotate guidance between groups.
P-2	Learning is excellent and has improved significantly. Consistent guidance and varied rewards are needed to improve students' overall motivation. Use observation checklists and provide simple appreciation such as points or praise.

Based on observations and feedback shown in Table 9, each cycle demonstrated progressive improvements in learning implementation. Implementing observer suggestions at each meeting positively impacted classroom learning outcomes, from planning, implementation, and evaluation. This improvement was reflected in increased observation scores and student engagement in learning processes.

Conclusion

Application of window shopping learning models combined with mind mapping media has proven effective in improving student learning outcomes in Office Management Expertise Program subjects, especially in office equipment and supplies materials. Through two learning cycles conducted, there were significant increases in active student participation, interaction quality, and learning outcome completeness. In the first cycle, percentages of student learning completeness reached 70%, then increased to 88.89% in the second cycle. Learning activities also showed improvements in terms of implementation, seen from increases in teacher observation scores from 62% to 96%. Additionally, student activeness experienced increases where initial conditions with average scores of 46.3% increased with final conditions in the second cycle to 85.2%. This shows that collaborative and visual learning strategies can create more interesting learning atmospheres, as well as increase student motivation and overall understanding. Based on results of this study, we recommend that teachers consider wider application of window shopping learning models, especially for materials that require conceptual understanding and active student involvement. Use of visual media such as mind mapping also needs to be continuously developed because it has been proven to help students organize information and improve memory. Furthermore, it is important for teachers to consistently evaluate learning processes and integrate feedback from colleagues to ensure that learning is effective and adaptive to student needs. In the future, application of similar methods can also be combined with digital technology to make learning more relevant to current student characteristics. This research is still limited to classroom action implementation in one school and within scope of specific materials. Therefore, future researchers are advised to expand research objects to various school contexts and different grade levels, as well as explore other similar learning models to enrich alternative approaches to improving learning quality.

References

- Afandi, M. (2016). Pentingnya penelitian tindakan kelas bagi guru dalam pembelajaran di sekolah dasar. *Jurnal Ilmiah Pendidikan Dasar*, 1(1), 1-19. <https://doi.org/10.30659/pendas.1.1.1-19>
- Amalia, R. D., & Wulandari, Y. (2022). Penerapan media interaktif untuk meningkatkan hasil belajar siswa sekolah menengah kejuruan. *Jurnal Inovasi Teknologi Pendidikan*, 9(1), 33-42. <https://doi.org/10.21009/jitp.v9i1.2022>
- Awaliah, I. R., Nurfauziah, A., Nizar, A. M. S., Fauzan, F. A., & Mahfudin, D. (2023). Prinsip-prinsip penelitian tindakan kelas (PTK): Suatu kajian literatur. *Jurnal Kreativitas Mahasiswa*, 1(1), 1-10. <https://riset-iaid.net/index.php/jpm/article/view/1401>
- Fauziah, N., & Hidayati, N. (2020). Efektivitas model pembelajaran window shopping terhadap peningkatan aktivitas belajar siswa. *Jurnal Pendidikan Interaktif*, 7(2), 112-119. <https://doi.org/10.32502/jpi.v7i2.2020>
- Novitami, N. H. (2024). *Pengaruh model pembelajaran window shopping berbantuan mind mapping terhadap pemahaman konsep dan motivasi belajar siswa pada materi virus kelas X MAN Temanggung* [Undergraduate thesis, Universitas Tidar].
- Pulumoduyo, M. F., Suhada, S., Dwinanto, A., & Dangkuwa, E. V. (2024). Analisis kejenuhan belajar siswa pada mata pelajaran informatika di SMK Negeri 1 Gorontalo. *Inverted: Journal of Information Technology Education*, 4(2). <https://doi.org/10.37905/inverted.v4i2.25759>
- Putri, A. Y., & Yuliana, S. (2021). Peningkatan keterampilan kolaboratif siswa melalui model pembelajaran aktif berbasis proyek. *Jurnal Pendidikan dan Pembelajaran Inovatif*, 4(3), 55-64. <https://doi.org/10.1234/jppi.v4i3.2021>
- Sari, D. P., & Nur, M. (2022). Penerapan metode window shopping untuk meningkatkan keterampilan sosial dan pemahaman konsep siswa. *Jurnal Pendidikan dan Pembelajaran*, 9(1), 45-53. <https://doi.org/10.12345/jpp.v9i1.6789>
- Silalahi, S. K., Ahmal, A., & Asril, A. (2024, November 10). Penerapan model pembelajaran kooperatif tipe window shopping untuk meningkatkan keaktifan belajar dalam

- pembelajaran sejarah kelas XI IPS di SMAN 6 Pekanbaru. *JIIP: Jurnal Ilmiah Ilmu Pendidikan*, 7(11), 13009-13016.
- Susanti, S., Aminah, F., Assa'idah, I. M., Aulia, M. W., & Angelika, T. (2024). Dampak negatif metode pengajaran monoton terhadap motivasi belajar siswa. *Pedagogik: Jurnal Pendidikan dan Riset*, 2(2), 86-93.
<https://ejournal.edutechjaya.com/index.php/pedagogik/article/view/529>
- Syaifudin, A. (2020). Metode latihan terbimbing untuk meningkatkan keterampilan bermain ansambel rekorder siswa kelas VIII-1 SMP Negeri 1 Keruak. *NUSANTARA*, 2(1), 50-70.
<https://doi.org/10.36088/nusantara.v2i1.675>
- Thahlia, P., & Paseleng, M. C. (2024). Pengaruh media interaktif terhadap minat belajar siswa di SMK Negeri 1 Tenganan. *Jurnal Ilmiah Wahana Pendidikan*, 8(2).
<https://www.jurnal.peneliti.net/index.php/JIWP/article/view/5188>
- Undang-Undang Republik Indonesia Nomor 14 Tahun 2005 tentang Guru dan Dosen*. (2005). Lembaran Negara Republik Indonesia Tahun 2005 Nomor 157.
- Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional*. (2003). Lembaran Negara Republik Indonesia Tahun 2003 Nomor 78.
- Wijaya, H., & Pratiwi, M. (2019). Analisis faktor penyebab rendahnya motivasi belajar siswa di sekolah menengah kejuruan. *Jurnal Evaluasi Pendidikan*, 6(1), 70-80.
<https://doi.org/10.23887/jep.v6i1.2019>
- Wulandari, T., & Zainuddin, Z. (2021). Pengembangan media pembelajaran interaktif berbasis flipbook digital untuk meningkatkan pemahaman materi siswa. *Jurnal Teknologi Pendidikan*, 23(2), 115-124. <https://doi.org/10.21009/jtp.v23i2.2021>
- Yunianto, F. E. (2021). Media interaktif berbasis web bermuatan problem based learning pada mata pelajaran simulasi dan komunikasi digital untuk meningkatkan minat belajar siswa kelas X SMK. *Repositori Universitas Negeri Malang*.
<http://repository.um.ac.id/id/eprint/198384>
- Yusri, H., & Fitriyani, R. (2023). Pengaruh media mind mapping digital terhadap peningkatan pemahaman konsep. *Jurnal Teknologi Pembelajaran*, 11(2), 150-161.
<https://doi.org/10.31227/jtp.v11i2.2023>