

## Research Article

# The Implementation of Edpuzzle as a Learning Media in Supporting Student Independence in Economics

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**Abstract:** In the digital era, innovation in educational media is crucial to accommodate various student learning styles. This study evaluates the use of the Edpuzzle application to enhance self-directed learning among students in class X.F at SMAN 1 Sambungmacan, Sragen, specifically in the subject of economics. The method used is Classroom Action Research (CAR) with two cycles. Data were collected through observations, tests, surveys, interviews, and documentation. The results show that Edpuzzle effectively improves students' self-directed learning, with enhancements in time management, initiative, and task completion. In Cycle I, students made progress in interaction and understanding of the material, despite some initial challenges. Cycle II showed higher levels of engagement and enthusiasm. Evaluations through surveys and interviews revealed positive feedback from both students and teachers regarding Edpuzzle. The conclusion is that Edpuzzle is effective in enhancing students' self-directed learning and engagement in economics education. It is recommended to continue using Edpuzzle, provide teacher training, and improve technological infrastructure in schools.

**Keywords:** digital era, educational media innovation, edpuzzle, self-directed learning, classroom action research

## INTRODUCTION

Learning in the digital era requires innovation in instructional media to accommodate the diverse learning styles of students. Teachers often face challenges in creating learning conditions that support students in thoroughly understanding the subject matter. Instructional media must be responsive to the changing times (Firmadani, 2020) and consider key factors within the context of economics education, focusing on hands-on experience and conceptual understanding (Dewi, 2015).

One important aspect that needs to be considered is student learning independence. Independent students tend to have strong intrinsic motivation, critical thinking abilities, and problem-solving skills. Learning independence is also considered a crucial indicator of academic success (Suhendri, 2015). Someone with good learning independence can manage their motivation and complete all tasks without external assistance and on time (Nasution, 2017). Characteristics of learning independence, such as responsibility, creativity, decision-making ability, and initiative, support an effective learning process.

Economics material for Grade X, particularly on the topics of markets and money, often presents difficulties for some students in understanding the concepts. Initial observations indicate that instructional media that do not align with diverse and modern

student learning styles, along with low levels of student learning independence, are the main factors contributing to these difficulties.

To address these issues, educators must use instructional media that can cater to all student learning styles. The recommended instructional medium is Edpuzzle, which is effective in bridging the gap. Edpuzzle was founded in 2013 by Quim Sabrià, Santi Herrero, and Xavier Louis, graduates of the University of Barcelona, who aimed to enhance the effectiveness of learning through video.

The recommended instructional medium is Edpuzzle, which is effective in bridging the gap. According to (Sundi et al., 2020), Edpuzzle allows teachers to turn educational videos into interactive tools by inserting questions, notes, and discussions into the video, making learning more engaging, in agreement with researchers (Hidayat et al., 2021). This not only makes learning more interesting but also helps students become independent and focused in their studies, especially in economics subjects (Qadriani et al., 2021). Students will feel more engaged and motivated in learning economics through Edpuzzle (Sirri & Lestari, 2020).

Interactive learning videos can explain economic concepts in a way that is easier for students to understand, while the questions and discussions embedded in the videos help test students' understanding directly. Additionally, the ability to monitor students' learning progress individually allows educators to provide more targeted interventions. This research will identify the benefits and contributions of implementing Edpuzzle in the educational context, with a focus on the use of Edpuzzle as a learning tool that supports student learning independence in economics.

Although Edpuzzle has been recognized as an interactive and effective learning medium for increasing student interest (Achmad, Ganiati, & Kur'aeni, 2021) and building a strong foundational knowledge (Lean, 2018), there remains a gap in understanding how its use can specifically enhance students' learning independence in the high school environment, particularly at SMAN 1 Sambungmacan Sragen. There has not been much research that thoroughly examines the effectiveness of Edpuzzle in the context of self-directed learning curricula, especially in Indonesia, focusing on developing students' learning independence in Economics subjects.

This research contributes to filling that gap by empirically investigating how the application of Edpuzzle can enhance students' learning independence at SMAN 1 Sambungmacan Sragen. The study also supports a constructivist approach that emphasizes active student participation and is student-centered, aligning with the integration of Edpuzzle into the self-directed curriculum. Additionally, this research provides practical solutions for teachers to leverage technology to improve the quality of learning and student learning independence at the secondary school level.

## LITERATURE REVIEW

### **Innovation in Learning Media in the Digital Era**

Innovation in learning media must continue to evolve in line with technological advancements and diverse student learning styles. Firmadani (2020) emphasizes that educational media need to adapt to the learning needs of the digital era. In the context of economic education, Dewi (2015) highlights the importance of using media that can present material with both practical and conceptual approaches to ensure comprehensive understanding. This innovation not only makes learning more accessible but also meets the varied cognitive demands of modern learners.

### **Learning Independence**

Learning independence, often referred to as self-directed learning, plays a crucial role in achieving academic success. According to Suhendri (2015), independent students demonstrate stronger internal motivation and better critical thinking skills, which are essential for facing complex academic challenges. Nasution (2017) adds that learning independence includes the ability to manage motivation and complete tasks independently. These characteristics are vital in educational environments that encourage independent learning at a pace determined by the students themselves.

### **Interactive Learning Media: Edpuzzle**

Edpuzzle is a digital tool that enhances the interactivity of learning videos by adding questions, discussions, and feedback mechanisms. Research conducted by Sundi et al. (2020); Hidayat et al. (2021) shows that Edpuzzle significantly increases student engagement and encourages greater learning independence. Additionally, Qadriani et al. (2021) found that Edpuzzle not only enhances student motivation but also strengthens their understanding of economic material, making it an effective tool for economic education. These studies highlight Edpuzzle's potential as a learning medium that combines interactive content with principles of active learning.

### **Effectiveness of Learning**

Video-based learning, particularly through interactive platforms like Edpuzzle, has been shown to enhance understanding of economic concepts. Achmad, Ganiati, and Kur'aeni (2021); Mischel (2018) found that video learning significantly increases student interest and engagement, making complex material more accessible and enjoyable. Furthermore, Edpuzzle allows teachers to monitor individual student progress, providing personalized feedback and support, which further contributes to its effectiveness (Achmad et al., 2021). This feature of individual monitoring makes video learning not only interactive but also tailored to the specific needs of each student.

### **Constructivist Paradigm**

Constructivist learning theory emphasizes the active involvement of students in the learning process, encouraging them to build their own understanding through interaction with the material. Edpuzzle aligns with this paradigm by promoting active learning through direct engagement with video content. Istiqomah (2019) explains that Edpuzzle not only facilitates active participation but also deeper conceptual understanding, as students are required to critically engage with the material presented in the videos. By supporting this form of learning, Edpuzzle serves as a tool that helps students build meaningful connections between new information and their existing knowledge.

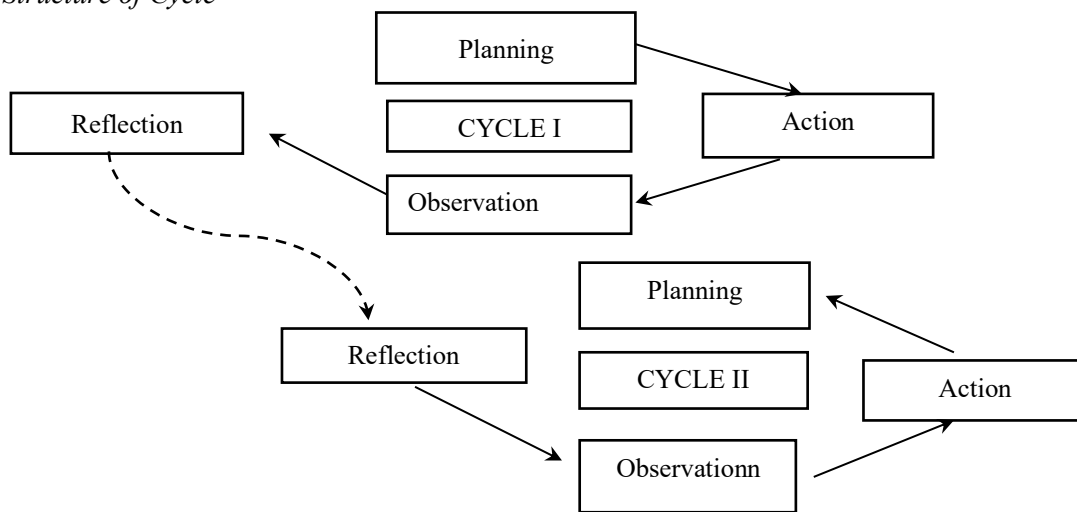
### **Supporting and Hindering Factors**

Despite its many benefits, the effectiveness of Edpuzzle heavily relies on several external factors. One of the main challenges in using Edpuzzle is the availability of a stable internet connection. Sugestiana and Joko (2022) state that the lack of reliable internet access can hinder the use of Edpuzzle and other digital learning tools, especially in areas with poor technological infrastructure. Warini, Hidayat, and Ilmi (2023) also emphasize the importance of institutional support, noting that schools need to invest in adequate infrastructure to maximize the benefits of educational technology.

## METHOD

The research method to be used is Classroom Action Research (CAR), which involves several stages: planning, implementation of actions, observation, and reflection. This research will be conducted in two cycles, where each cycle consists of two meetings. Data will be collected through observation, written tests, teacher interviews, questionnaires, and documentation. Thus, it is expected that this research will provide a deeper understanding of the potential of Edpuzzle in enhancing students' learning independence, as well as contribute to the development of innovative teaching methods.

**Figure 1**  
*Structure of Cycle*



1. **Planning:** Planning the use of Edpuzzle by selecting materials that align with the curriculum and student needs to enhance engagement and understanding.
2. **Action:** Implementing learning using Edpuzzle, where students watch educational videos and answer interactive questions to deepen their understanding.
3. **Observation:** Observing changes in students' learning independence, such as their engagement and ability to learn independently during the use of Edpuzzle.
4. **Reflection:** Assessing the results of the actions taken, conducting evaluations, and planning improvements for the next learning cycle.

This study involves Class X.F at SMAN 1 Sambungmacan, Sragen, with 33 students, conducted in March 2024. Data Collection Methods: (1) Observation: Direct observation of student interactions, (2) Written Tests: Measuring student understanding, (3) Questionnaires: Evaluating student responses to Edpuzzle, (4) Documentation: Collecting documents related to the learning process, and (5) Interviews: Gaining teacher perspectives on the use of Edpuzzle.

This research provides insights into how technology can enhance student learning independence and their engagement in the learning process. The study was conducted through systematic steps: planning, action, observation, and reflection.

Example Questionnaire: Student Engagement: "How often do you use Edpuzzle?", Material Understanding: "Does Edpuzzle help you understand the material?", Learning Independence: "Do you feel more independent after using Edpuzzle?"

## RESULT AND DISCUSSION

### The Level of Student Learning Independence Before Implementing the Edpuzzle Application

Before using the Edpuzzle application, students exhibited a lack of motivation and a tendency to be passive in learning. Several factors, such as teaching methods that were not suitable for students' learning styles, family background (the majority coming from lower-middle economic backgrounds), and other factors, influenced students' responses to learning. With the implementation of Edpuzzle, it is expected that students' learning independence will increase as they have more flexible access to learning materials.

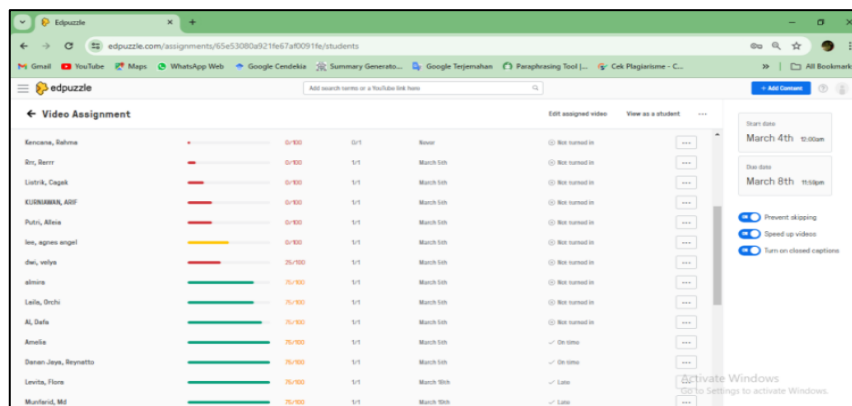
### Student Learning Outcomes After Implementing the Edpuzzle Application *Cycle I Learning*

In the second meeting of Cycle I, there was a significant increase in students' learning independence through positive interaction with the Edpuzzle application. The action plan developed by educators and researchers aimed to enhance students' understanding of Market and Money Systems. Edpuzzle was used as an alternative learning medium. Observations during the second meeting showed that most students successfully followed the instructional videos through Edpuzzle and completed the assigned tasks. In the initial meeting, students had not yet used Edpuzzle.

In the second meeting, students used Edpuzzle to continue learning. They faced challenges when logging in, but once they successfully accessed the platform, they were able to follow the videos and answer the questions well. Out of 33 students, 26 managed to complete the tasks using the application. Subsequently, the educator provided a more detailed explanation of the market to the students and assigned a group task for 15 minutes. The class was divided into five groups, of which three groups successfully completed the task on time and presented the results of their discussions (see Figure 2).

**Figure 2**

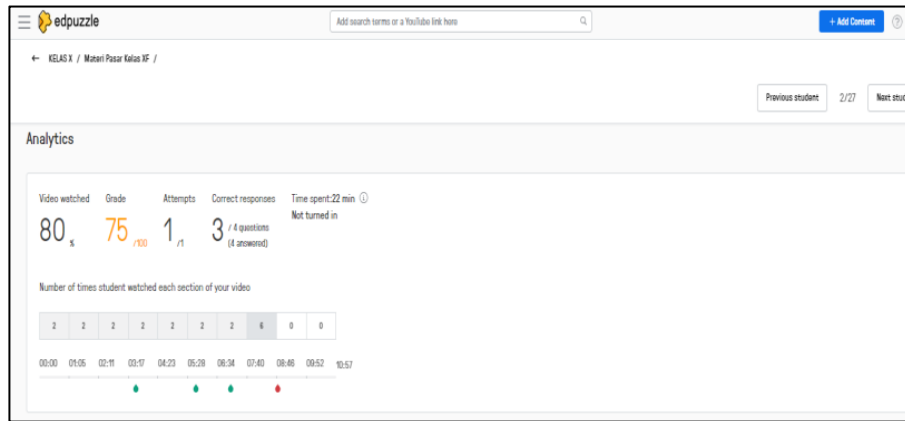
*Display of Student Activity Accessing Edpuzzle in Cycle I*



The display of student activity in accessing Edpuzzle during the second meeting of Cycle I shows that the majority of students effectively used their time to watch the videos and answer the questions. Although some students received low scores on the questions, they demonstrated an understanding of the material presented in the videos, indicating that the use of Edpuzzle can enhance students' learning independence by helping them manage their study time and better comprehend the material. This aligns

with Malcolm Knowles' view on the importance of independence in the learning process (Knowles et al., 2014).

**Figure 3**  
*Display of Individual Activity in Accessing Edpuzzle*



The Figure 3 of individual activity in accessing Edpuzzle shows the duration of time spent watching videos, the scores obtained, and whether any students completed the questions without watching the videos or vice versa. From this image, Edpuzzle provides students with the opportunity to manage their own learning time and methods, which can enhance their learning independence.

**Figure 3**  
*Example of Questions Completed by Students*

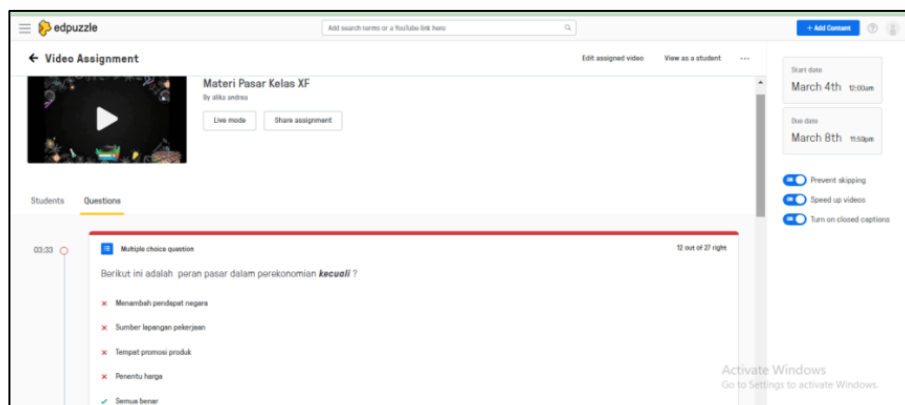
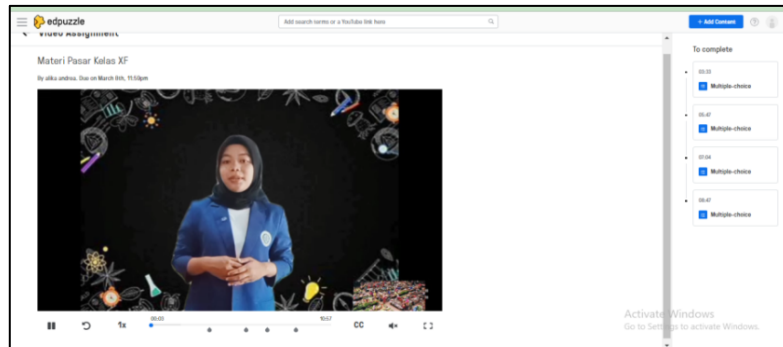


Figure 4 is a summary of the questions completed by students. From this image, educators can identify which questions may be difficult for students to understand, allowing them to adjust the evaluation accordingly. Observations so far indicate that interactive video-based learning makes students more enthusiastic about learning and facilitates their understanding of the material.

Previous research also emphasizes that teachers need to be selective in choosing instructional media (Dewi & Mubarak, 2021). In Class X.F, students tend to prefer learning through interactive videos. Previous studies also confirm that using interactive video-based learning media significantly enhances students' interest and motivation

(Sunami & Aslam, 2021). Students also feel satisfied, happy, and benefit from participating in learning through Edpuzzle, as noted by Sundi (2020).

**Figure 5**  
*Display of Learning Videos in Cycle I*



The display of learning videos in Cycle I (see Figure 5) shows that the videos were well-organized, and the material from PowerPoint and teaching modules was presented clearly. The addition of four questions in the video aimed to enhance students' understanding of the material. Thus, the use of Edpuzzle in learning can be considered an innovative step that effectively improves students' learning independence in Economics. In this Cycle I, it was shown that Edpuzzle can enhance students' learning independence and provide a more engaging and effective learning experience.

*Cycle II Learning*

In Cycle II, there was a significant improvement in students' learning independence through the use of the Edpuzzle application. The learning was conducted in two meetings with material on the money system. Observations showed that nearly all students were actively engaged in watching the learning videos and completing the questions effectively (Figure 6).

**Figure 6**  
*Summary of Student Access to Edpuzzle in Cycle II*

Student Name	Progress	Score	Time	Status
Lestrik, Capela	0/100	0/100	0:00	Not turned in
Zordan, Deyzco	80/100	80/100	1:15	On time
Firmanayah, Lani	100/100	100/100	1:15	On time
Al, Dafa	80/100	80/100	1:15	Not turned in
Bidawo, Rendino	80/100	80/100	1:15	On time
Bisa, Oktavia	80/100	80/100	1:15	On time
Admira	100/100	100/100	1:15	Not turned in
Nur, Iyza	100/100	100/100	1:15	Not turned in
Rizka, Tanjung	100/100	100/100	1:15	Not turned in
Anella	100/100	100/100	1:15	Not turned in
Anastasia, Fany	100/100	100/100	1:15	Not turned in
Aprilia, Yasinta	100/100	100/100	1:15	On time
Darlan, Javan, Bayuatho	100/100	100/100	1:15	On time
Laila, Orchi	100/100	100/100	1:15	On time

The summary of Cycle II results shows an improvement in the use of Edpuzzle by students compared to Cycle I, where only a few students were active. Nearly all students were actively engaged in watching the videos and completing the questions. The educator provided more specific explanations about the monetary system and payment tools using

a PowerPoint presentation. The positive student response to this explanation can be understood as most students had prepared themselves by watching the previous learning videos through Edpuzzle.

In the middle of the session, the teacher played a video on the history of money, which turned out to be less engaging for some students. A few students lost focus, preferring to use their phones or chat with their classmates. This highlighted the need for using Edpuzzle, which is more recommended to address such gaps.

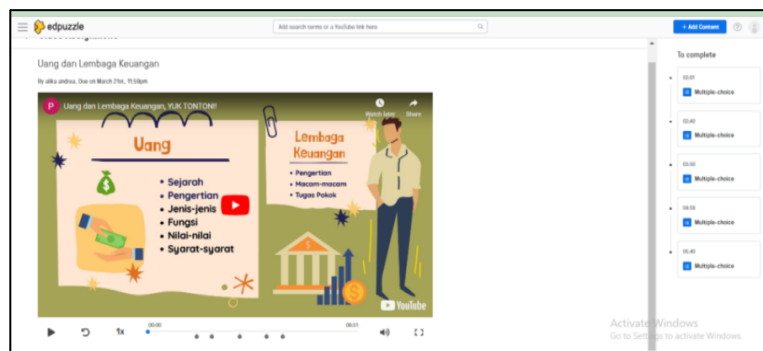
Subsequently, the teacher explained the role of Bank Indonesia as the central bank in more detail and simplified the information to facilitate understanding. Students showed increased activity and enthusiasm for learning. Afterwards, the teacher provided LKPD (*Lembar Kerja Peserta Didik*) questions on the monetary system, which yielded satisfactory results (Table 1)

**Table 1**  
*LKPD Results in Cycle II*

Student Success Score	Description
Highest Score	95
Lowest Score	20
Average Score	79.34
Students Passed	23
Students Not Passed	10

The distribution of written test scores among students shows variation in evaluation results, reflecting students' understanding of the material tested. Some students still face difficulties in grasping the material, requiring special attention and intervention to improve their understanding. Although the improvement in student independence after using the Edpuzzle application was not significant, the application still provides additional support in understanding the material.

**Figure 7**  
*Display of Learning Videos in Cycle II*



The display of learning videos in Cycle II (Figure 7) shows that the videos were well-organized, using material from YouTube, PowerPoint, and teaching modules that were presented clearly. The addition of four questions in the videos aimed to enhance students' understanding of the material. Therefore, the use of Edpuzzle in teaching is considered an innovative step that effectively improves students' learning independence in Economics.

After the learning session, students were asked to complete a questionnaire evaluating their responses to the use of the Edpuzzle application in Economics class. The results of the questionnaire indicated that the majority of students provided positive feedback about the implementation of Edpuzzle, which was seen as beneficial in enhancing their learning independence.

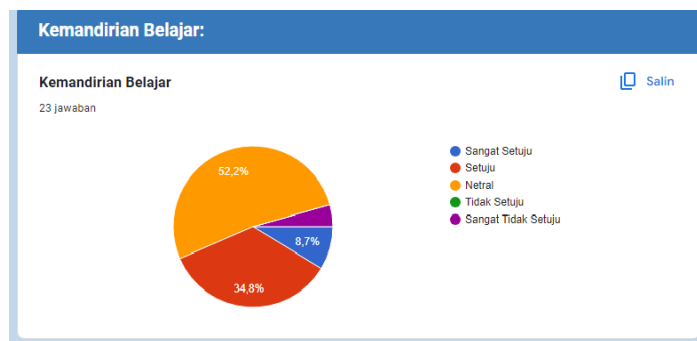
Learning independence is a process influenced by individuals' thoughts, feelings, and behaviors in achieving specific goals. This process involves three stages: planning and observing learning activities, and assessing and reflecting on learning outcomes. The following are the results from some of the questions answered by students:

*Results of the Questionnaire on the Use of Edpuzzle*

Observations from Cycle I and II (Figure 8) show a significant increase in student enthusiasm and more active engagement in the classroom learning process. The questionnaire results indicate that the majority of students responded positively to the use of Edpuzzle, which is considered to enhance their learning independence. According to the questionnaire, 52.2% of students were neutral, and 34.8% agreed that Edpuzzle can improve their learning independence.

**Figure 8**

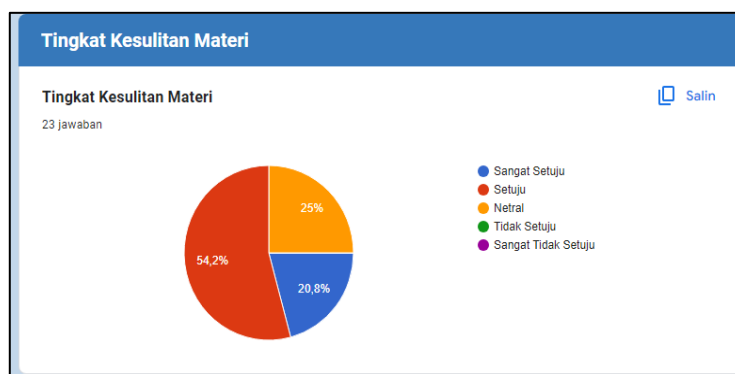
*Results of the Student Interest Questionnaire on Edpuzzle*



*Results of the Questionnaire on the Use of Edpuzzle*

**Figure 9**

*Results of the Questionnaire on Material Difficulty*



Observations from Cycle I and II show a significant increase in student enthusiasm and more active engagement in the classroom learning process. The questionnaire results indicate that the majority of students responded positively to the use

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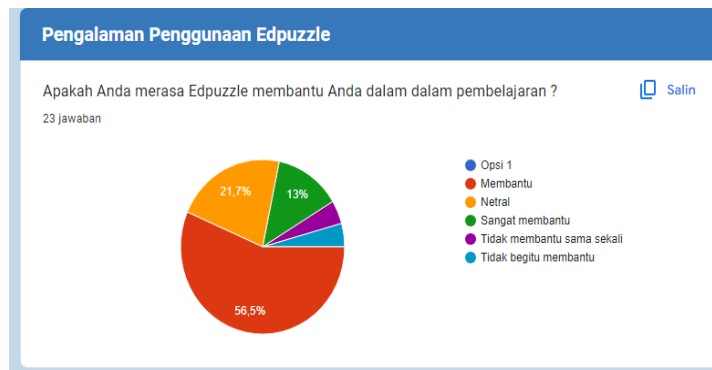
The questionnaire results on material difficulty indicate that the material provided through Edpuzzle was considered easy to understand. Specifically, 54.2% of students agreed, 20.8% strongly agreed, and 25% remained neutral. This ease of understanding enhances students' confidence in their learning abilities and allows them to study the material anytime and anywhere.

### *Results of the Questionnaire on the Effectiveness of Edpuzzle*

The use of Edpuzzle at SMA Negeri 1 Sambungmacan, Sragen, showed positive results in improving students' learning independence, particularly in Economics. The questionnaire results indicate that 56.5% of students agreed, 13% strongly agreed, and 21.7% were neutral about the effectiveness of Edpuzzle.

**Figure 10**

*Results of the Questionnaire on Student Responses to Using Edpuzzle*



It can be concluded that Edpuzzle is an innovative approach that can enhance students' learning abilities. However, challenges such as internet connectivity remain a significant factor affecting the effectiveness of using Edpuzzle. A study by Sugestiana and Joko (2022) indicates that internet availability is a factor hindering the effectiveness of learning.

### **Teacher's Statement**

Statements from the subject teacher indicate that the use of Edpuzzle has a positive impact on student independence and engagement. The main advantage of Edpuzzle is its ability to monitor student engagement directly, which is effective in enhancing learning independence. The teacher observed a significant increase in student engagement, both in class discussions and task completion, as well as improvements in the accuracy and timeliness of task submissions, indicating higher student motivation and independence.

Students have become more motivated and independent in seeking additional material and preparing for class. Student responses to Edpuzzle are very positive, with increased enthusiasm and participation in every learning activity. The teacher recommends thoroughly studying the application before implementing it, preparing materials carefully, ensuring stable internet connectivity, and tailoring the use of the application to the characteristics and learning styles of students.

The use of learning videos in Edpuzzle allows students to view good models and observe various processes and concepts visually. An engaging approach that meets students' needs is key to creating an effective and enjoyable learning environment. Social learning theory states that individuals learn through observation, imitation, and social interaction with their surroundings. This strategy helps teachers improve teaching effectiveness, expand students' understanding, and develop their social and cognitive skills (Warini, Hidayat, & Ilmi, 2023).

## CONCLUSION

Based on the research conducted at SMA Negeri 1 Sambungmacan, Sragen, specifically in class X.F, the following conclusions can be drawn: (1) Improvement in Learning Independence: The use of the Edpuzzle application has proven effective in enhancing students' learning independence. Students have shown improvement in managing their study time independently, taking initiative to understand the material, and completing assignments more effectively. This is evident from the increased ability of students to manage their study time and complete tasks better. (2) Engagement and Enthusiasm: The Edpuzzle application has increased student engagement and enthusiasm in Economics learning. Interactive features in Edpuzzle, such as pauseable instructional videos, embedded questions, and online discussions, have created a more engaging and interactive learning experience for students. (3) Effectiveness of Learning: The use of Edpuzzle has provided a more effective learning experience, contributing to improved student outcomes in the topics of Market and Money. Students demonstrated a better understanding of the material taught and an overall increase in learning independence. (4) Improvements from Cycle I to Cycle II: In Cycle II, there were significant improvements compared to Cycle I in terms of coordination between researchers and teachers, skills in explaining material, and understanding students' potential and needs. Students became more independent in their learning and more active in participating in lessons. (5) Positive Responses from Students and Teachers: Questionnaire and interview results indicate that students responded positively to the use of Edpuzzle. They felt more motivated and independent in their learning. Teachers also observed increased student engagement and independence in learning.

### Implication

It is recommended that the Edpuzzle application be continuously used in Economics and other subjects to enhance students' learning independence and the effectiveness of teaching. In addition, teachers should receive training and support in using Edpuzzle to ensure they can fully utilize the application's features and meet students' needs effectively. The school should improve technological infrastructure, including stable internet access, to support the use of Edpuzzle and other technologies in learning.

### Limitation and Future Direction

In addition to using Edpuzzle, it is recommended to combine various other learning media to further enhance student engagement and learning independence. Additional research is needed to explore the use of the Edpuzzle application in different subjects and educational levels to assess its effectiveness more broadly.

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