UNLOCKING ENGAGEMENT: THE ROLE OF EDPUZZLE IN AUGMENTING PARTICIPATION AND ENHANCING RESPONSES DURING CONTEMPORARY ISSUES DISCUSSIONS

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Abstract

The challenges seen in the pre-observations of online synchronous sessions, where students are struggling to participate actively in class discussions, were the motivation for this study. The main objective of this study is to determine whether Edpuzzle increased actual participation and improved the quality of the responses of the students during synchronous sessions. The study utilized an action research design, which resulted in various findings and insights. From the observations that were analyzed through researcher-made scoring guidelines and extensive thematic analysis of the FGD, results reveal that even though Edpuzzle can activate the prior knowledge of the students, it is not sufficient for them to be able to respond excellently during synchronous sessions since the questions that students were involved in Edpuzzle catered only to lower-order thinking skills. This study therefore concludes that Edpuzzle is instrumental in increasing students' participation during asynchronous sessions. However, it cannot necessarily improve the quality of their responses to the teacher's queries in synchronous sessions. With this, researchers recommend that teachers embed more higher-order thinking questions in Edpuzzle videos to gradually develop the students' critical thinking competencies and prepare them for synchronous discussions.

Keywords: *Edpuzzle, prior knowledge, quality of responses, online learning tool, class engagement*

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1.0 Introduction

Given the predicaments of remote or online learning, teachers are expected to deliver synchronous sessions following a prescribed and shortened number of minutes as compared to face-to-face learning. According to DepEd Order No. 12 Series of 2020, the suggested allotted time for synchronous classes is 30 minutes. This allows the teachers to virtually meet and check in with their students, discuss class guidelines, and make announcements. During the 30-minute synchronous class, teachers can also give feedback to their class regarding individual and group tasks, student outputs, and exam results.

Based on the pre-observations conducted by the researchers on a Grade 10 Araling Panlipunan (AP) or Social Studies in a Junior High School institution in Northern Mindanao, Philippines, the researchers observed that students encountered several difficulties during the synchronous class sessions. These challenges encountered included internet connectivity issues, procrastination, and lack of participation According to Azlan *et al.* (2020), the main disadvantage of the synchronous mode of learning is that the efficiency of education is strongly dependent on the quality of the internet connection. In the observations, out of 28 students, only 14 opened their cameras throughout the whole observation period. With this, the researcher's theory is that opening their cameras will affect the stability of the internet, causing it to consume more bandwidth. In addition, the researchers also observed that students' procrastination leads to the late or delayed submission of requirements and outputs. According to Melgaard *et al.* (2022), procrastinators have difficulty structuring their routines and spent less time on their studies as a result of changes in the study environment. Lastly, the problem of lack of participation in the actual class discussion was also observed. The researchers observed that only 13 out of 28 students participated in the class discussion. Aslan and Sahin (2020), in their study, mentioned that a lack of prior knowledge about the topic being discussed is also a factor in students' lack of class participation. On the other hand, only 8 out of 13 students who have participated in class show knowledge and understanding of the topic when answering the queries of their teachers. The students answered with their original thoughts and by sharing examples and experiences.

With this, the researchers address the issues observed by utilizing an online learning tool called *Edpuzzle*. It is a learning application designed to help K–12 teachers create interactive video lessons and track the students' progress at any time. With the use of *Edpuzzle*, students answer a series of multiple-choice, open-ended, or short-answer questions connected to the *Edpuzzle* activity, which is part of their preliminary activities. Using *Edpuzzle,* the instructor can monitor the answers of the students in real-time and easily identify anything that the student did not understand well in the video presentation (Amaliah, 2020; Ware, 2021). Apart from creating their video, they can also borrow from various sources, including YouTube, to use in their *Edpuzzle* activity. According to Ware (2021), the purpose of *Edpuzzle* is for the instructors who teach, especially in virtual learning, increase student engagement when using educational videos.

According to the study of Di Cesare *et al.* (2021), viewing a video could be a passive activity without a person or tool to facilitate active engagement. Their study describes the specific technology, which is the *Edpuzzle*, that can help facilitate video lessons that include explicit instruction elements such as eliciting frequent responses, offering supported practice, and providing immediate formative and corrective feedback to monitor the student's performance in the online setting. In pandemic days, when teaching and learning happen remotely, it is challenging for teachers to create engaging activities while using video content. They are unsure if students are watching the videos or grasping the content. However, through the *Edpuzzle*, the use of this application aids in asynchronously facilitating students' viewing and understanding of the content even without the presence of the teacher. While the majority of studies on gamification techniques and other applications are mostly teacher-led, this application is designed to make asynchronous tasks both engaging and facilitative for students to better understand the lesson content. *Edpuzzle* helps students plan and manage their time and monitor their progress through the reports from the technology-incorporated activities without the presence of the teacher (Silverajah & Govindaraj, 2018). This shows that *Edpuzzle* activities encouraged students to do their activities and practice time management, which could have a positive impact on their academic performance and procrastination habits. Based on the study of Gordon (2014), *Edpuzzle* helps students study at their own pace,

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place, and mode of learning. Hence, it promotes the development of the student's ability to manage their learning by allowing them to control the pace and manage their time for learning. *Edpuzzle* has also been used to address the class participation issue. As Giyanto e*t al.* (2020) emphasize, *Edpuzzle* can engage students' prior knowledge, in which, through watching videos related to the lesson, students obtain prior knowledge before class sessions in both traditional and online classes. Furthermore, *Edpuzzle* has been used by AP Grade 10 teachers at the Junior High School, where this study is conducted, as an asynchronous activity that allows students to view a discussion video related to the topics covered for a specific quarter and is based on the learning packet provided for them. While viewing the video, students answer a series of multiple-choice and constructed-response questions as part of their pre-work before synchronous sessions. Students are familiar with the intervention because the application has been used. The gap of knowledge that the study hopes to address is that the AP 10 teachers who utilized *Edpuzzle* do not have a research basis for the effectiveness of the tool in increasing participation and improving the quality of the student's responses in their classes. This research finds out whether *Edpuzzle* can be a useful tool to increase students' participation and improve the quality of their responses during synchronous discussions.

Thus, this research study focuses on the use of *Edpuzzle* to increase participation and improve the quality of the responses of the students during actual synchronous discussions. The direction of the study is to know the level of actual participation and quality of responses of the students during the synchronous sessions, as well as the experience of the students and teachers in using *Edpuzzle.* findings of this study could be utilized to discover another teaching tools for teachers to enhance students' learning experience in the classroom.

2.0 Research Methodology

Research Design

This study made use of a practical action research design. Practical action research is a form of investigation that teachers can use to solve problems and improve professional practices in their classrooms. It entails systematic observations and data collection that the practitioner-researcher can then use for reflection, decision-making, and the development of more effective classroom strategies (Parsons & Brown, 2002). Action research is the most appropriate design for this study because it aims to resolve the problem of lack of participation and enhance the quality of responses during synchronous sessions. Action research deals with implementing an intervention and determining if the implemented activity will improve the situation that the researchers would like to solve. Furthermore, this research design was utilized in this study to determine whether the intervention increased actual participation and improved the quality of the responses of the students during synchronous sessions. The *Edpuzzle* was the intervention that was utilized in this study. It is a tool where the students could watch interactive videos about their lessons, wherein the videos embedded nine multiple-choice items and one constructed response question. The tool was used as an asynchronous activity for the students, which they were required to complete before they began their actual discussions with the Araling Panlipunan (Social Studies) teacher.

Research Setting and Participants

This study was conducted in a flexible learning setup, specifically in an online learning mode, in one of the Junior High Schools in Northern Mindanao, Philippines. The flexible learning arrangement was composed of both home-based learning and a cautious return to on-campus learning. In the former, Microsoft Teams was the official learning management system of the school during the time of the study, while the latter was implemented on specific schedules per grade level for processing and deepening of the lesson.

The participants of the study were 10th-grade students from two identified sections. A total of 18 students participated in the execution of the intervention with 14 students in section A and 4 students in section B, and a total of 12 students from the same group of 18 participated in the focus group discussions. In addition, the two Araling Panlipunan (AP) or Social Studies teachers who implemented the intervention in their respective 10th-grade classes participated in the interview.

Research Instruments

The research instruments were a multiple-choice with constructed-response test, a tally sheet, an interview, and a focus group discussion. The multiple-choice with a constructed response test was already embedded in the *Edpuzzle* videos. AP teachers created videos and questions based on the learning competencies. Each test contained nine multiple-choice items and one open-ended question. The AP teachers then assessed the open-ended question using a 4-point rubric. Moreover, scores and completion time in watching and answering the embedded questions in the *Edpuzzle* video were taken into consideration since this was done asynchronously. This was also to determine the number of embedded questions responded to by the students [participants] and their speed in accomplishing the tasks. Hence, practicality was the primary reason for using these proxy variables to measure and quantify the construct. The experts checked the content, construct, and face validity of this instrument, while its reliability was computed after the pilot testing.

The tally sheet was used to report on the number of times the students (participants) recited orally during the actual processing of the lesson during live online classes. For every response of the participant, a 4-point scoring guide was utilized to assess the responses in terms of their depth of knowledge about the lesson, their ability to link the lesson into meaningful insights, and their use of relevant terminologies.

Lastly, after the 4-day implementation of the intervention, interview questions were asked to two AP teachers, and focus group discussion questions were asked to selected student participants to gather their experiences while using *Edpuzzle* in their classes. A specific protocol was adapted from Macagba *et al.* (2021).

Sampling Scheme

The study employed purposive sampling based on the specific criteria such as the nature of the study, the characteristics of participants, and the timeline of the research project.

Data Gathering Procedure

The actual implementation of the intervention was conducted for four consecutive days, from Monday to Thursday. The implementation of the *Edpuzzle* as an asynchronous activity for the students commenced from Monday to Wednesday, while the observations of the synchronous sessions of the students were conducted from Tuesday to Thursday. For instance, the class had an asynchronous activity through *Edpuzzle* a day before their scheduled live online class. In this activity, students watched a video

related to their lesson and answered the questions embedded in the video. On the following day, students attended their live online class with the AP teacher, in which the main goal was to deepen further their lesson. While the processing and deepening were happening, the researchers joined the live discussion of the class to accomplish the tally sheet and determined whether the student (participant) interacted with the teacher through oral recitation or not as well as assess the quality of his/her responses. After their live online class, the class was instructed by the teacher regarding their next lesson, which they needed to prepare by watching a new video through *Edpuzzle* again and answering the questions embedded in the video. The same process was observed by the class on the 3rd and 4th day of implementation. After the actual implementation of the intervention, interviews with the two AP teachers and focus group discussions with the student participants were conducted to collect about their experiences in using Edpuzzle in their teaching-learning experiences.

Data Analysis

The statistical tools that were utilized to analyze the data gathered were scoring range and thematic analysis. The scoring range with five levels analyzed the scores of the students from the multiple-choice with constructed response questions embedded in the *Edpuzzle* video and the quality of their responses to their teacher's queries during synchronous sessions. Meanwhile, a time range with four levels analyzed the completion time after watching and interacting with the video. Moreover, the thematic analysis examined the qualitative responses of the participants from interviews and focus group discussions.

Ethical Considerations

Permission was sent to the Director of School Partnerships at *Edpuzzle* to use the basic (free) version of the online application for this study. Research tools were validated by experts in the field of Araling Panlipunan and research. A pilot test was done on selected 10th-grade students to examine the reliability. Once the tools were revised and enhanced, an orientation was given to the Araling Panlipunan teachers, who expressed their willingness to implement the intervention in their classes. The orientation was organized and facilitated by the research group.

Before the actual implementation of the study, the distribution of Informed Consent Forms for parents or guardians as well as Informed Assent Forms for the students was done via Microsoft Teams. Both were required to attach their e-signatures on the forms once they allowed their sons or daughters [students themselves] to participate in the study. They were given five days to read, asked for clarifications, and return the forms with their signatures. Only those who were able to return both forms with signatures were considered official participants of the study. Otherwise, they were omitted. Before the end of the four-day implementation of the study, another set of these forms was released to the official participants of the study for the focus group discussions. The two Araling Panlipunan teachers also received Informed Consent Forms to join the interview.

The intervention in this study was provided to the two classes to ensure equality among all students. However, only the scores and interactions of the official participants were utilized in the study. When the researchers joined the Araling Panlipunan synchronous classes to observe, students were assured that the researchers observed the class only and refrained from performing some actions that might have caused the students to feel uncomfortable, such as opening their cameras and turning on their microphones. All members of the research team who were treated as guests or visitors during the synchronous sessions adhered to the school's policy.

The research team of the study had no direct relationship, supervision, or control over the two classes or the official participants. The scores of the participants from the *Edpuzzle* videos were turned over to the research team, and a unique set of codes replaced the names of the official participants. In addition, all data, including the qualitative data from the focus group discussions and the interviews, can only be accessed by the research team for the sole purpose of this study. Any personal identifiers directly linked to the participants were removed.

3.0 Results and Discussion

Level of Asynchronous and Synchronous Participation

The first research question, which is about the level of actual participation and the quality of the student's responses during synchronous sessions, considering their asynchronous and synchronous data, was addressed using two research instruments, such as the multiple-choice with constructed response test and rubric. The data from the *Edpuzzle* videos regarding the completion time of the students while watching the videos was also gathered. Results are presented in table 1.

Table 1. Participants' scores in multiple-choice with constructed response test in Edpuzzle videos

Indicators	Number of Participants		
	Lesson 1	Lesson 2	Lesson 3
Excellent	10	6	5
Very Good	6	9	10
Good	1	2	1
Fair	1	1	1
Poor	0	0	1
Total:		18	

Depcicted in the table above it shows that most students scored Excellent and Very Good in answering multiple-choice and constructed response questions embedded in *Edpuzzle* videos. Specifically, most of the students garnered excellent scores in Lesson 1, and very good scores in Lessons 2 and 3. This finding implies that students understand the lessons better while watching the *Edpuzzle* videos because they can correctly answer the questions that are embedded in the videos. This also implies that most students gain prior knowledge after watching the *Edpuzzle* videos and answering the embedded questions. With that, we, the researchers, infer that *Edpuzzle* is a tool that allows students to learn their lessons by watching videos and answering questions embedded in the videos, for which the correct answers are only found in the videos. According to Amaliah (2020), *Edpuzzle* videos are interactive and engaging for students. That is why they can engage more in the discussion in the videos and answer the embedded questions correctly.

Using the data from *Edpuzzle,* the researchers gathered the completion times of the students after watching the *Edpuzzle* videos and answering the embedded questions. Specifically, the researchers gathered the time turned in by each student for their *Edpuzzle* activities during asynchronous sessions from Lesson 1 to Lesson 3. Each lesson has two to three parts; specifically, Lesson 1 and 3 have three parts each, and Lesson 2 has two parts. In Tables 2 and 3, the researchers combined the parts of an lesson into one to

present the completion times of the students in each lesson.

Table 2. Participants' completion time of *Edpuzzle* activities (from Section A)

Indicators	Time Range	Lessons		
		1	2	3
Extremely on Time	1:00 PM - 5:00 PM	12	10	9
Moderately on Time	6:00 PM - 1:00 PM	2	4	5
Slightly on Time	12:00 AM - 5:00 AM	0	0	0
Poorly on Time	6:00 AM - 1:00 AM	0	0	0
Total			14	

Table 3. Participants' completion time of *Edpuzzle* activities (from Section B)

Indicators	Time Range	Lessons		
		1	2	3
Extremely on Time	1:00 PM - 5:00 PM	2	3	2
Moderately on Time	6:00 PM - 1:00 PM	2	1	2
Slightly on Time	12:00 AM - 5:00 AM	0	0	0
Poorly on Time	6:00 AM - 1:00 AM	0	0	0
Total			4	

Table above shows that most students in both sections have watched the *Edpuzzle* videos and answered the embedded questions extremely and/or moderately on time. This means most students have turned in their *Edpuzzle* activities on time, which is between 1:00 PM and 11:00 PM before their synchronous sessions. Therefore, this implication suggests that most of the students in the Contemporary Issues class have done their *Edpuzzle* tasks before the synchronous sessions, making them join the synchronous sessions with prior knowledge at hand. None of the student participants completed their *Edpuzzle* activities after the deadline, which means none of them joined the synchronous sessions without watching the *Edpuzzle* videos fully and answering all embedded questions. With that, we, the researchers, infer that *Edpuzzle* can allow students to fully watch the videos and answer their embedded questions on time. Mischel (2018) asserted that teachers can monitor the progress of the students who are viewing the video. This encourages students to complete their *Edpuzzle* activities on time, knowing that their teachers will monitor them.

The second research instrument used to answer the first research question is the rubric, which was used to evaluate the quality of the responses of the students during synchronous sessions. Figure 1 shows that most of the students' scores from the evaluation of the quality of their responses during the three synchronous sessions are either Very Good or Good. Specifically, out of 18 students who participated in the actual implementation of the intervention, 44.4% got Good-quality responses, while 38.9% got Very Good quality responses. Unfortunately, no student participants got Excellent quality responses during the synchronous sessions, even after watching the *Edpuzzle* videos and answering

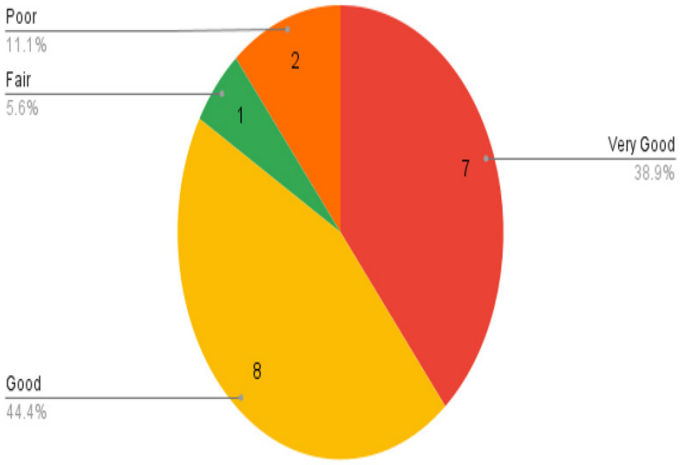

Figure 1. Overall quality of responses of the students during synchronous sessions

their embedded questions. This implies that *Edpuzzle* improves the quality of the responses of the students during synchronous sessions to a certain extent, where students can just have Very Good or Good quality responses and not excellent ones. We, the researchers, infer that *Edpuzzle* cannot guarantee that even if students have good scores in their *Edpuzzle* activities and complete them on time, they can still not provide excellent quality responses during synchronous sessions. As Carney (2017) stated, *Edpuzzle* allows students to rewind or rewatch important parts of the video. That is why, despite having good scores in *Edpuzzle* videos, it is not guaranteed that they can answer the questions during synchronous sessions excellently since they were given limited time and the questions are of a higher order of thinking in the synchronous session.

Perceptions of Teachers and Students on the use of Edpuzzle

The second research question is addressed using the focus group discussion with the students and interviews with the teachers. The aim of the focus group discussion and interviews conducted by the researchers is to gather the perceptions of the students and teachers on the utilization of *Edpuzzle* as an asynchronous activity for the students and their opinions on how it contributes to the class participation and quality of responses of the students during synchronous sessions. Based on the findings of the researchers during the interviews, the following emerging themes were identified: the mixed perceptions of teachers in using *Edpuzzle* and their perceptions on how it affects the teaching and learning process.

Teacher's mixed perceptions of using Edpuzzle

The teachers who utilized *Edpuzzle* in their classes revealed that they generally find *Edpuzzle* easy to use, especially since they can easily utilize the basic functions of the software, like uploading and editing videos, and being creative in their lessons. However, Teachers express difficulties in organizing the responses of students who have interacted with *Edpuzzle.* This implies that while the platform is user-friendly for creating content, managing the data generated by student interactions can be a challenge. Teachers mention concerns about their limited control over students who are using *Edpuzzle.* Teachers are also concerned about motivating students to watch *Edpuzzle* videos. Some students appear to be disengaged or fatigued with this mode of instruction, which raises questions about how to keep students motivated and attentive. This suggests that they may find it challenging to ensure

that all students are actively engaging with the videos as intended. This finding implies that it is easy to use *Edpuzzle* as an asynchronous activity for the students, but the teachers find it hard to organize the data of the students after they have watched the videos and to monitor each student's behavior, actions, and motivations while watching the videos.

Teacher's perception of how Edpuzzle affects the teaching and learning process.

Teachers find *Edpuzzle* as a tool for participation and creativity. Teachers reported that *Edpuzzle* helps students prepare for synchronous sessions, enabling them to actively participate and provide creative responses to questions. Irrelevant answers are minimized, suggesting improved student engagement and comprehension. Likewise, when *Edpuzzle* is used in class, the subject matter seems to be deepened. *Edpuzzle* allows teachers to focus on deepening the subject matter during synchronous sessions, as students have already learned the lessons from the *Edpuzzle* videos. This is particularly valuable given the limited time available for synchronous sessions. However, teachers raised concerns regarding its utilization given that some students did not perform well on assessments despite completing the *Edpuzzle* activities on time. They express concerns about whether all students truly understand the subject matter before delving into deeper discussions. Hence, teachers recommend *Edpuzzle* to others and plan to continue using it, even in face-to-face settings. This suggests that *Edpuzzle* can be integrated into various teaching modalities beyond online learning.

Moreover, based on the findings of the researchers during the focus group discussion, the following emerging themes were identified: Students' positive impression of using *Edpuzzle* and some minor challenges in using this application.

Students' positive impression of using Edpuzzle

Students generally have a positive impression of *Edpuzzle*. For one, they mentioned that because of it, they can have an enhanced understanding of the lesson. Students generally express positive feedback about *Edpuzzle*, emphasizing its effectiveness in helping them better understand the lessons. They find it valuable for clarifying forgotten or confusing parts of the content by rewinding or rewatching videos. In the same manner, *Edpuzzle* personalizes learning and practice. *Edpuzzle* activities allow students to personalize their learning experiences. They use the platform not only to understand the material better but also to practice and improve their comprehension. This highlights the platform's adaptability to individual learning needs. Moreover, the platform supports the visual learning style of the students. Some students mention that they are visual learners and appreciate *Edpuzzle* as a learning tool. This suggests that the platform aligns with different learning styles, catering to those who benefit from visual content.

As a result, students seem to be more prepared and more confident during synchronous sessions. Students believe that *Edpuzzle* enhances their preparedness and confidence in answering questions during synchronous sessions. They feel more assured because they have already gained an understanding of the lesson from the *Edpuzzle* videos. Because of this, they feel that class discussions are more engaging. Students express that *Edpuzzle* videos engage them more effectively due to the interesting questions embedded within the content. This engagement encourages active participation, as they are motivated to answer the questions. During the focus group discussion, many students rated *Edpuzzle*'s effectiveness in increasing their participation during synchronous sessions very highly, often giving it a score of 10 out of 10. They believe it significantly contributes to their active involvement in class discussions. Students also report that *Edpuzzle* helps improve the quality of their responses during synchronous sessions. This is reflected in their performance, with most students achieving "Very Good" or "Good" scores in terms of response quality.

Some minor challenges in utilizing *Edpuzzle*. While for the students *Edpuzzle* has been helpful in general, students believe that there are some minor challenges and issues that they have encountered upon using the software. Some students mention that the challenges mostly are technical. Some of these concerns include poor internet connections, lengthy videos, and competing assignments from other subjects. The problem with internet connection is something that cannot be addressed entirely by the use of this software considering that connectivity is a concern of all parts of the country. However, the lengthy videos and competing assignments may be areas where teachers who ask their students to utilize *Edpuzzle* may look at it considerately.

4.0 Conclusion

The purpose of this action research was to determine whether the online teaching tool, *Edpuzzle*, can increase participation and improve the quality of responses of the students in their "Contemporary Issues" subject. With this aim in mind, during asynchronous *Edpuzzle* activities, the student's participation increased, and they only answered multiple-choice questions that cater to their lower level of cognitive skills based on Bloom's Taxonomy. On the other hand, the students' quality of responses did not improve during synchronous class discussions since they encountered challenging questions that catered to their higher level of cognitive skills. Therefore, the findings of this action research study proved that the use of *Edpuzzle* as an asynchronous activity for the students increased their participation but did not improve the quality of their responses to an extent where they could get excellent scores in the quality of their responses during synchronous sessions. The use of *Edpuzzle* can only apply to specific topics that do not involve analysis or application level. It can only be used to introduce new topics or concepts. If the teacher wants to advance the thinking skills of the students, *Edpuzzle* is no longer applicable to that.

Moreover, the research findings affirmed that utilizing *Edpuzzle* in the classroom allows students to better understand the lessons based on their scores from the embedded questions in *Edpuzzle* videos and become more confident in answering questions during synchronous sessions, even though the quality of their answers was not excellent. Even if the majority of the student participants completed their *Edpuzzle* activities from moderately to extremely on time and got very good to excellent scores in the multiple-choice with constructed responses test, the quality of the responses of the students did not excellently improve. Furthermore, *Edpuzzle* can help students strengthen or reinforce their knowledge and understanding level questions, but not for higher-order thinking levels. Hence, *Edpuzzle* was able to activate the prior knowledge of the students. The study highlights the effective use of *Edpuzzle* as an online teaching tool to enhance student engagement and understanding of lessons. This finding can be valuable for educators and institutions seeking to integrate technology into their teaching methods to improve the overall quality of education. By demonstrating that *Edpuzzle* increased student participation in asynchronous activities, the research sheds light on the importance

of using technology to encourage student engagement in remote or online learning environments. This understanding can inform strategies to boost participation, which is crucial for effective learning. Moreover, the research underscores the significance of assessing student responses and learning outcomes. While *Edpuzzle* improved students' understanding and confidence, it also revealed that the quality of their responses did not significantly improve. This highlights the need for a well-rounded assessment approach to measure various aspects of learning beyond participation.

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