Indonesian Journal of Informatics Education

Active Learning Strategies in Synchronous Online Learning for Elementary School Students

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Abstract:

The Covid-19 pandemic gives an impact on education field. The face-to-face learning pattern in schools has shifted to distance learning which is carried out online. The implementation of online learning during the pandemic forces a digital transformation in education, causing several problems, two of which are technology and human resources. This article discusses the appropriate online learning strategies to use during a pandemic, especially for synchronous interaction models. Qualitative research with a narrative approach was used to explore teachers' experiences in learning, especially those related to the form of interaction between teachers and students during the Covid-19 pandemic. Active learning was chosen based on the results of observations and literature review through journal articles and proceedings that discuss interactive distance learning methods. Active learning strategies assisted by video conferencing applications that can be applied in online learning in elementary schools include: the use of Student Response Systems; Think Pair Share; One Minute Paper; Small Group Discussion; and Short Student Presentations.

Keywords: Active Learning, Online Learning, Synchronous, Video Conference.

Introduction

The Covid-19 pandemic that occurred in Indonesia and almost all over the world has affected all aspects of social life (Worldometer, 2020). The government took preventive steps in the form of large-scale social restrictions to prevent the spread of this epidemic, which then affects learning activity at school. The learning interaction pattern at school, which was previously carried out face-to-face, has turned into long-distance or online interactions (Rochman, 2020). UNESCO confirmed that more than 850 million students in the world are encouraged to study from home to avoid spreading the disease. This has also happened in Indonesia where a number of regions have closed schools and implemented online learning (Fithra, 2020.).

Based on the circular of the Minister of Education and Culture No. 3 of 2020 concerning the Prevention of Covid-19 in the Education Unit on March 9, 2020 (Ministry of Education and Culture, 2020); reinforced by an appeal in the Minister of Health Circular Letter No. HK.02.01/MENKES/199/2020 on March 12, 2020 (Ministry of Health, 2020); and the Circular of the Secretary General of the Ministry of Education and Culture No. 36603/A.A5/OT/2020 on March 15, 2020, the Education and Culture Office in almost all provinces in Indonesia issued "Study from Home" instructions by utilizing online learning media. The agency's decision to implement online learning is getting longer.

Online learning is carried out by using several media whose content is filled in by the teacher through Schoology, Google Classroom, Zoom, Google Meeting, and Social Media such as Whatsapp and online learning media where the content have been provided by service providers, such as RumahBelajar, IndonesiaX, RumahPintar, Zenius, Ruang Guru, and others (Adit, 2020). Online learning is considered not to be as effective as face-to-face learning, especially for elementary school levels. Various obstacles have emerged, starting from the technical and infrastructure side to the human resources of organizers and participants (Rika, 2020).

Based on the results of observations through online questionnaires with elementary school teacher respondents from various regions in Central Java, it is known that more than 70% of the 100 primary school teacher respondents in grades one to six of the KKG (Teacher Working Group) have difficulty implementing effective online learning. From the observations, online learning problems can be divided into two main domains, they are technology aspect and human aspect. In terms of the technology domain, the barriers found include: 1) limited internet network infrastructure and bandwidth, 2) lack of students and teachers' access facilities, such as laptops or smartphones, and 3) many choices of e-learning applications. Meanwhile, in terms of human aspects, the obstacles found include: 1) unfamiliarity of teachers, students, and parents with the use of technology, 2) difficulty in changing interaction pattern or learning materials that can be understood, 3) inflexibility of interaction time due to the lack of digital devices of the students since their parents are working at the learning time, 4) difficulty in monitoring the students' progress.

As a result of the identified problems, teachers were forced to lower the learning standards starting from learning outcomes, assessments, and evaluations related to the competencies that students must achieve. This resulted in the development of students not in accordance with the expectations and lesson plans that had been prepared previously. This article discusses the appropriate online learning strategies and approaches to use during a pandemic, especially for synchronous interaction models. Based on the problems outlined earlier, active learning was chosen based on the results of observations and literature review through journal articles and proceedings that discuss interactive distance learning methods.

Literature Review

The pandemic has significantly changed the education system starting from tertiary level to early childhood education. Several studies have addressed the implementation of distance learning online during the pandemic. This distance learning forces a digital transformation in education. This transformation of education into a model of distance interaction presents challenges not only for educators and students, but also for parents as students guardian at the primary and early childhood levels. Parents must be involved to monitor the intensity of involvement and motivation of children in distance learning. Distance learning during a pandemic is not only limited to using website-based e-learning or providing online assignments to students, but also the varied use of digital media that influences student engagement and interest in distance learning process (Bogdandy & Tamas, 2020).

To complete the actuality of the problem, this article refers to a similar phenomenon occurring in the neighbouring country, namely Malaysia. In Malaysia, students and university students are also

facing educational transformation as a result of lockdown regulation during the Covid-19 pandemic. The phenomenon was derived from scientific articles investigating online learning case studies during the pandemic period at the higher education level in Malaysia. In the article, the students were not fully prepared for distance learning. Some of the factors that influence this unpreparedness include uneven internet accessibility, distraction during lectures, unattractive learning materials, many assignments, unsupportive environment at home to online learning, and difficulties in communication between lecturers and fellow students (Nassr et al., 2020).

Another study by Mahmood discussed the impact of online learning during a pandemic in several developing countries. This research described the technical problems experienced by educational institutions during online learning for their students (Mahmood, 2020). This research is relevant to refer to since the conditions in developing countries described in the article are relevant to conditions in rural areas in Indonesia that share the same infrastructure difficulties. Some of the problems related to infrastructure include the unavailability of an adequate internet connection and students' lack of digital devices to take part in online learning. This problem is common in rural areas. Due to limited infrastructure, teacher-student interactions are hampered as a result of passive interactions in class. This results in decreased student interest and involvement in completing assignments on time (Waqar, 2020).

Apart from referring to the conditions of online learning in terms of the difficulties experienced by students, this article also refers to the conditions of online learning in terms of teacher performance during work from home activities. WFH did not fully have a positive impact since there were some negative impacts arose due to WFH implementation, namely decreased work motivation since during WFH, many economic factors were considered, such as household electricity bills and economic difficulties. There were also obstacles from the transformation of conventional forms of interaction into virtual ones, for example, a work atmosphere that did not match expectations when interacting with students or work piles up. Another barrier that emerged was distraction from other media during online activities (Purwanto et al., 2020).

If a summary is drawn from the relevant research studies, the problem of online learning lies in interest, motivation, involvement, activeness, type of material, and infrastructure. It takes a long time to reconstruct the material content, meanwhile, the problem in terms of infrastructure is an obstacle that cannot be immediately resolved. However, problems in terms of interest, motivation, involvement, and activeness of students and teachers can be immediately sought for solutions. This article proposed a solution through a combination of synchronous online technology use with active learning methods. The majority of teachers stated that maintaining student motivation, activity, and concentration in the long learning process was a challenge.

Lack of motivation resulted in suboptimal learning outcomes (Liu et al., 2012). If a solution is not sought immediately, this problem can grow bigger. These problems usually occur in large classes with little interaction. In large classes, active students could understand material better than the passive ones (Butler, 1992). In one study, there was evidence to show that students who were active in learning had better cognitive abilities (Prince, 2004). In distance learning, there are several approaches to create teaching and learning activities more interactive. Some of them include dividing the class into small groups, carrying out question and answer with participants, using responses from participants, providing problems that can be solved, leading discussions, using role playing, and using effective presentation skills.

Research Method

This research used qualitative methods with a narrative research approach. The narrative approach was used to explore problems encountered by teachers in learning activity, especially those related to interaction between teachers and students during the Covid-19 pandemic. Narrative research consists of many models and comes from the socio-humanities scientific discipline. Narrative can be defined as a theme lying in a particular text or discourse, or a text used in qualitative research (Creswell & Poth, 2016).

Participants in this research were elementary school teachers from several regions in Surakarta, Central Java. Participants were spread out in several compositions, namely 10 teachers from districts in the Surakarta residency and 10 teachers from schools within the Surakarta residency. Participants were determined using purposive sampling technique. The sample taken was relatively small from the total teacher population in the Surakarta residency in order to increase the depth of meaning of

information obtained from interviews (Campbell et al., 2020). Table 1 below is an interview instrument used to interview teachers who conduct online learning.

Table 1. Interview Instruments

Main Question	Description
Overview of online learning implementation in their schools	Summary of online learning that teachers in their respective schools should share.
The most frequent media used in online learning	The online media most frequently used by teachers.
Why using that media	The reasons that must be explained by the teacher about the use of these media.
The obstacle faced when using that media	Barriers that must be explained by the teacher when using the media.
Problems presented by parents to teachers	The problems experienced by parents are then conveyed to the teacher.

Through interviews, the participants described their experiences in applying teaching and learning strategies carried out in elementary schools during the large-scale social restrictions (PSBB) period. These teaching and learning activities were described starting from the strategy of preparation, implementation, and strengths and weaknesses. Primary data collection was carried out by structured interviews with participants and then documented. The conclusions on primary data was carried out using the narrative content analysis technique of the interviews described by the previous participants.

From the interview results, it was obtained the steps of distance learning, the form of teacher-student interaction, the form of interaction between students, the psychological impact of distance learning, and the level of attention as well as interest of students during distance learning. From the interview results, a distance learning strategy will be developed by carrying the concept of technology-assisted active learning to maintain student interest and attention.

The data validation used triangulation techniques, namely the triangulation technique of Norman K. Denzin (1978: 179-183) and Uwe Flick (2006: 444). Theory triangulation and data triangulation were selected. In this data validation, the applied data triangulation produced a combined data description from various sources and at different times, different places, and different people. The theory triangulation was chosen by considering the use of data approaches obtained from various perspectives. The theoretical viewpoint placement focused on learning theory and educational theory. Both theories were positioned side by side to strengthen the benefits of research.

Results and Discussion

After conducting interviews from 20 respondents from several regions in Surakarta with the instruments described in table 1, we summarize the results of the interview and present them in table 2 below

Table 2. Interview Results

Main Question	Summary of Answer
Overview of online learning implementation in their schools	Online learning in primary schools has not run optimally due to : • Slow internet connection (10%) • Most students do not have their own digital devices (12%) • Student learning time depends on parents (12%) • Most students find it difficult to focus on studying because there are many distractions at home (10%) • Most of the students were late in doing assignments and did not even do and was done by the parents (12%)

	• Most of the students did not actively participate in interacting by asking questions or discussions (44%)
The most frequent media used in online learning	• Whatsapp Group (78%) • Google Meeting (22%)
Why using that media	• The WA group is most familiar to students and parents in the online learning process of primary schools. (78%) • Not familiar with using synchronous online applications (22%)
The obstacle faced when using that media	• Students lack supervision (13%) • teachers find it difficult to assess student abilities (25%) • students are inactive and less enthusiastic (62%)
Problems presented by parents to teachers	• Students play games more often than study (30%) • Online learning makes students lazy to learn less enthusiastic about learning, and neglects assignments (70%)

From the summary of the answers shown in Table 2, we conclude that the majority of problems faced by teachers are student boredom and inactivity in participating in online learning. Active learning in online learning can be done with synchronous online applications such as Google Meet, Skype, Zoom, Cisco Webex, etc. So far, the use of synchronous online applications is only used to deliver material without creative interactions that stimulate student interest, there are some strategies needed to integrate active learning interactions while using synchronous online applications.

Active learning is a learning activity that encourages students to respond actively to learning. In a true sense, active learning is an activity to maximize all the available resources of the students in order to obtain optimal learning outcomes. Active learning is adjusted to the nature, personality, and tendencies of students in the learning activity. Active learning also aims to keep students focus on any given learning activity and actively respond to teacher interactions (Singhal et al., 2020).

In their publication, Bonwell and Eison described active learning as an instructional activity that involves students doing something and thinking about what they do in class participation. The description of active learning is derived into a framework that creates a holistic view that includes activities in active learning. The framework includes exploring experiences, ideas, and reflective dialogue between teachers and students (Bonwell & Eison, 1991). If the three aspects are applied during learning process, it can be useful for considering how students find new information and ideas.

Active Learning Strategies in Online Classes

The active learning strategy chosen must meet the learning objectives for students. The purpose of active learning is not only to encourage students' participation to respond to teacher interactions, but also stimulate them to think about what they are doing. When applying this strategy further, it is necessary to consider how effective this strategy is for the achievements that will be obtained by students.

Here are some questions to think about when implementing active learning:

1. *What skills should students achieve at the end of an online classroom session?*
2. *Which active learning strategies allowing students to achieve these skills?*
3. *When will students capture information and express opinions?*
4. *When will students reflect on what they have learned?*

One of these active learning components can be done before, during, or after an online class session. The active learning component in the online class can technically be described through the following five strategies:

1. The Use of Student Response Systems

Student Response Systems are tools that teachers use to receive immediate feedback about teaching and learning activity. It is sometimes referred to as a classroom response system by using

clickers, note cards, telephones, and computers. SRS is used in small or large classrooms to facilitate recording attendance, involve students in lectures, make sure important points are understood, give low-risk quizzes, or as a way to ask students for opinions or attitudes that are usually uncomfortable to share. The types of questions asked can range from multiple choice, true-to-false, numeric answers, short answers, matching, and clicking on images or pictures. By using responses, an instructor can continue the material, provide more instruction if students do not meet learning objectives, or start a discussion based on responses. The possibilities are endless as SRS can be used together with other teaching tools; namely Think-Pair-Share, Peer Instructions, and Jigsaw (Wang & Tahir, 2020).

2. Think Pair Share

Think pair share literally is interpreted as pair-sharing, in which a method designed to push the flow of interaction and communication. Thinking pair share (TPS) was originally introduced by Frank Lyman with the aim to offer a variety of discussions that can be develop into a more creative way (Lyman, 1987). Think pair share can be combined with a student response system or by using the polling feature in video conferencing applications (Gunnell, 2020).

3. One Minute Paper

One Minute Paper is a form of active learning. One-minute papers are carried out by asking students in the form of simple questions about the material that has been taught. The short questions can be one or two questions. One-minute paper aims to determine students' understanding and find out what aspects that are not yet understood by students (Rasyid et al., 2014). One-minute paper application can be done before and after online classes. The question model on a one-minute paper can include important points in the lesson, experiences related to the lesson, things students like in the lesson, and difficulties experienced. One of the steps that can be carried out is by integrating a polling system in a video conference application (Gunnell, 2020).

4. Small Group Discussion

Small group discussion is a way of interaction to learn more about a problem raised by the teacher on a topic or material. Small group discussion can reinforce the problem-based learning approach (Mennin, 2007). The characteristic of problem-based learning is student-centered learning, thereby can be categorized as active learning (Silberman, 1996). In its application to video conferencing applications, small group discussions can be held in a span of 15-30 minutes. One video conferencing application that supports the small group discussion is Zoom with the breakout room feature. The teacher can divide students into 4-5 members to enter the breakout room and discuss the problems presented by the teacher (Hogan & Sathy, 8 CE).

5. Short Student Presentation

Short presentations provide opportunities for students to interact and exchange ideas with peers. This activity encourages students to synthesize and communicate their knowledge, in which requires higher order thinking skills (Mahendra et al., 2019). High-order thinking skills are needed as one of the 21st century skills (Afandi et al., 2018). Online learning is a challenge in itself in building higher-order thinking skills, but this can be overcome by, for instance, doing a short presentation in an online class session. Short presentations can be applied to almost all share screen features of video conferencing applications, such as Google Meet, Microsoft Teams, Zoom, Cisco Webex, and others (Shaw, 2020).

Conclusion

Active learning can be chosen as a synchronous online learning strategy in elementary schools. In its implementation, active learning can be used as an instructional activity that involves students in doing something and thinking about what they are doing in participating in class, thereby that the implementation of learning can be carried out optimally to manage students' abilities in order to obtain optimal learning outcomes. The active learning component in online classes can technically be described through five strategies. First, the use of Student Response Systems as a tool to receive direct feedback about teaching and learning activity. Second, Think Pair Share as a method to encourage students to get into the flow of interaction and communication. Third, One Minute Paper as a means to ask students in the form of simple questions about the material that has been taught. Fourth, Small Group Discussion as a method in the form of interaction to allow students to deeply learn about a problem raised by the teacher on a topic or material. Fifth, Short Students Presentations as a tool that provides opportunities for students to interact and exchange ideas with peers.

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