The Effect of Online Learning Assisted by Google Classroom and Zoom Meetings on Students' Creative Thinking Ability

Amiruddin Badaruddin¹, Hikmawati², Sarnely Uge³, Wa Ode Lidya Arisanti⁴, Mauludin Hamid⁵

¹ Elementary School Teacher Education, Universitas Halu Oleo, Indonesia  
Email: amiruddin.b@uho.ac.id  
² Elementary School Teacher Education, Universitas Halu Oleo, Indonesia  
Email: hikmawati@gmail.com  
³ Elementary School Teacher Education, Universitas Halu Oleo, Indonesia  
Email: uge@gmail.com  
⁴ Elementary School Teacher Education, Universitas Halu Oleo, Indonesia  
Email: arisanti@gmail.com  
⁵ Elementary School Teacher Education, MI Ummusshabri Kendari, Indonesia  
Email: hamid@gmail.com

Abstract. The face-to-face learning process in the classroom is still found to be teacher-centered so students are not actively involved and the impact on students' creative thinking skills is low. Meanwhile, during the COVID-19 pandemic, learning is carried out online. For this reason, it is necessary to maximize online learning in order to improve students' creative thinking ability. The purpose of this study is to analyze the effect of online learning assisted by Google Classroom and Zoom meetings on students' creative thinking ability. This type of research is a quasi-experimental research. The research design used a pretest-posttest control group design. The results of the study show that: 1) The score of students' creative thinking ability in the experimental class with an average pretest value of 37.3 increased to 81.5 while the control class obtained an average pretest score of 33.8 increased to 72.3 which means the ability to think the creativity of the experimental class students in the natural science learning of ecosystem materials experienced a significant increase compared to the control class; 2) The results of the N-Gain Score test obtained an average value of the experimental class of 71.7 or 71.7%, which means that the use of interactive video integrated google classroom is quite effective in online learning. While the average value of the control class is 58.6 or 58.6%, which means that the use of Zoom meetings is less effective in online learning. Thus, it is concluded that online learning assisted by Google Classroom integrated with interactive video has a greater effect than the Zoom meeting on the creative thinking ability of the fifth-grade students.

Keywords: Online Learning; Creative Thinking Ability; Ecosystem.

INTRODUCTION:

During the COVID-19 pandemic, all aspects of life are dominated by technological sophistication, including the field of education (Dianda & Pandin, 2021; McFarlane, 2019). One of the policies issued by the government in the field of education is to implement online
learning, as an effort to prevent the spread of Covid-19 in schools widely. The policy establishes a distance learning program online or in a network where students learn from their homes. Such conditions greatly affect the process and learning outcomes as well as the emergence of social restrictions between teachers and students. Social distancing is done to reduce physical contact with other people and objects that may be contaminated with Covid-19 (C.C & Patha, 2020). Initially, students studied together in class shifted to students studying independently at home. Closing schools exposes students, teachers, and parents to new situations (Huber & Helm, 2020).

Most students and teachers were forced to switch from offline to online learning due to the COVID-19 pandemic which had a significant impact on learning (Suherman et al., 2021; Sudarmaji et al., 2022). Every teacher must carry out online teaching, and be directed to use various digital tools and resources to solve problems and apply new approaches to learning (Eickelmann & Gerick, 2020). Student involvement is a main factor in learning interactions during the pandemic that are carried out independently. Independent learning has an advantage if students are ready to learn independently (Rascón-Hernán et al., 2019). In addition, independent learning positively affects students' lifelong learning (Salleh et al., 2019). Students' independence in learning cannot be separated from how students must have the skills to learn and evaluate their work both now and in the future (Oktaviani, Elmanora, & Doriza, 2021)

The term online-based learning is defined as a learning process in a network (online) that uses various digital platforms that have been chosen by the teacher and each school. Digital technology is used as a tool to facilitate the impact of the pandemic and this process requires students to access the internet and have technological devices, such as laptops, computers, or other electronic devices (Thomas et al., 2021). Online learning is a learning process in which students and teachers interact using the internet, intranet, extranet or software, or other media (Efriana, 2021).

Online learning is learning using synchronous and asynchronous approaches. The synchronous approach is the learning process carried out on the same schedule, thus allowing direct interaction (Zainul et al., 2020). For example, using Zoom Meeting, Google Meet, Microsoft Teams, and so on. The asynchronous approach means that students do not have to communicate simultaneously but gives teachers flexibility in preparing learning materials and allows students to learn from home, and this approach works best in the digital era (Daniel, 2020). For example, Google Classroom, Moodle, Edmodo, WhatsApp, Telegram, Google Form, LMS, SPADA, and so on. In this case, the teacher does not need to deliver the material at a fixed time or at the same time as the student, the material can be posted online and accessed by students using an email that fits the schedule, and the teacher can check student participation regularly. Online learning offers students flexibility (Rosser-Majors et al., 2022). Flexible learning is a student-centered approach because it gives students a wide choice of activities in their learning (Zayapragassararazan, 2020).

The arising problem is the implementation of online learning cannot run optimally. The limitations of space and time owned by students are clearly measurable through the supporting facilities available by themselves or from the school. Learning that is carried out outside the school environment, online learning, encourages the provision of more extra tasks and responsibilities to students. No exception, teachers also have big challenges to be able to create a fun, effective, and quality learning environment. It is fun in that students are enthusiastic about learning without having to be accompanied by a teacher, effective in terms of the learning process running at a minimum like offline learning, and quality in terms of student competence is well achieved.

The reflection of online learning is not only an effort to improve cognition, but more emphasis on skills, responsibilities, and character. Sometimes students are not able to understand learning and teachers cannot control and evaluate students whether they have understood the material being taught or not (Efriana, 2021). This is the real situation of students in the independent learning phase. Independent learning is the condition of individuals who have the initiative to learn, set learning goals and learning strategies, and evaluate or reflect on themselves in their learning activities (Asmar & Delyana, 2020). Independent learning is part of cognitive learning theory which states that behavior, motivation, and aspects of the learning environment affect student learning achievement (Naibaho, 2019). Therefore, teachers, students
and parents must work together in fulfilling children's education.

Sufficient supporting facilities do not necessarily maximize online learning activities. Lack of mastery of technology, limited data quota, internet network constraints, socio-cultural problems, student study habits, and familiarity with using the latest technology that is not accustomed to studying with smartphones and computers are big problems (Tathahira, 2020; Mishra et al., 2020). This problem is felt and faced by students and parents at home. In addition, inadequate teacher competence is also difficult to avoid. Teachers are required to make online learning successful with all its limitations. Adequate teacher competence is very much needed in the situation of the Covid-19 pandemic. There is no reason to avoid challenges, especially teachers must be able to operate IT, and develop their competencies by participating in various competency trainings in order to remain professional and skilled teachers by utilizing various learning resources through communication technology, information, and other media both online (in networks) or offline (outside the network). Although it is unavoidable from the negative risks of using technology (Hendratno, 2022), the positive impact is also greater because the demands of technology for online learning are very much needed in the Covid-19 situation (Sudarmaji et al., 2022).

Various learning applications are available to support learning activities at home, including Google Classroom, video conference, telephone or live chat, Zoom, Google Meet, Instagram, Telegram, WhatsApp group, YouTube, LinkedIn, or other media (Mishra et al., 2020; Octaviani, 2021). Some of these applications are used by students and teachers to interact with each other. The existence of this application is an educational innovation in responding to the challenge of the availability of varied learning resources. Learning time is more flexible. However, individuals who do not want to be flexible will still be left behind, that is, they will not succeed in learning (Kozlowski et al., 2019).

The condition of the covid-19 pandemic has led to real online learning. In addition to teachers who must be competent, students must also think more creatively in building a learning experience than before. Students' creative thinking ability is still considered low when viewed from the offline learning process. The challenges of online learning are even more difficult, thus increasing the burden on teachers and students including parents (Efriana, 2021). Therefore, teachers are required to try to take advantage of the use of digital media platforms as much as possible. Online learning requires a high level of self-organization, concentration, and planning skills (King & Prior, 2019; Schiavio et al., 2021). It is also an opportunity for teachers to learn information technology tools in online learning in order to have digital competence (König et al., 2020; Chauhan, 2017).

The process of creating students who have creative thinking skills during online learning is not easy. Successful learning requires collaborative roles between teachers, students and parents who are in line with government support in providing supporting facilities. Providing good education to children in challenging times means providing great support for the success of achieving national education. Education is assistance, or guidance given by people who are responsible for students.

In principle, the problems faced during the Covid-19 pandemic are not only related to how the online learning process takes place but how to implement learning activities in various situations and the process continues properly even though it is full of challenges. Referring to the problems that occurred, the teacher used one of the digital platforms, namely Google Classroom integrated with interactive video as an experimental class and a Zoom application as a control class. From these two applications, we will see how much influence they have on students' ability to think creatively.

Google Classroom is a free collaboration tool for teachers and students where teachers can create online classrooms, invite students to class then create and distribute assignments, discuss, and assess assignments independently and observe student learning progress (Okmawati, 2020; Fransiska, 2022; Yunus & Syafi‘i, 2020). Google Classroom can also reduce time and energy in the learning process (Azhar & Iqbal, 2018).

Teachers need to create positive conditions in the learning process to attract students and make them more creative and active. This shows that teachers must know what students want and need. The class will become more positive and interesting by using the stimulus of guidance, direction and providing support to students in class. The embodiment of
study tries to analyze the different effects given by the two platforms in each group. This research also focuses on students' creative thinking skills. For this reason, it is necessary to examine these problems with the aim of analyzing the effect of online learning assisted by Google Classroom integrated interactive video and Zoom meetings on the creative thinking skills of fifth-grade students at MI Ummusshabri Kendari.

Through this research, it is hoped that it can provide both theoretical and practical implications. Theoretically, it is expected that the selection of appropriate media or learning methods can affect student achievement. Meanwhile, practically, the results of this study can be used as input for teachers and prospective teachers. Improving themselves in relation to the teaching that has been done and student achievement that has been achieved by paying attention to the right media or learning methods and student motivation to improve student achievement.

**METHOD**

This research is type a of quasi-experimental study using a pretest-posttest control group design. The population in this study were students of class V at MI Ummusshabri Kendari for the academic year 2019/2020 with 60 students divided into two classes. There were 30 students in each class. The sampling technique used is purposive sampling. The selection of this sample is adjusted to the research objectives and based on certain considerations, namely the research results are not to be generalized. Class VA was used as the experimental class and class VB as the control class. The data was collected using an instrument in the form of a test that was used to measure students' abilities which were developed based on indicators from the lesson plan. The instrument developed is a test instrument for students' creative thinking skills accompanied by an assessment rubric. The data were analyzed by using SPSS ver. 25. The data analysis technique was carried out in various stages, namely the normality test, and homogeneity test, and ended with N Gain Score test. The data analyzed were the data obtained before giving treatment and after giving treatment to each group. The research design drawings are as follows:

This effort, one of which can be integrated with interactive videos in Google Classroom. Interactive videos support thematic learning (Sandy et al., 2021). Similar to the Zoom meeting, it is also one of the learning media used during the COVID-19 pandemic. The use of Zoom meetings is considered productive and beneficial for students and has an impact on increasing teacher creativity in online learning. Zoom Meetings can also display videos but the obstacles include when students broadcast videos or record, will be disturbed by an inadequate internet network videos cannot be played or the sound is disturbed (Helda et al., 2021). Both are equally used in online learning, although the effect is not necessarily the same and the goal is to help children's independent learning process at home.

Independent learning by utilizing technology has a positive relationship with student engagement (Rashid & Asghar, 2016). This shows that the use of Google Classroom has a positive impact on students' creative thinking skills. Students who are independent and active towards technology are more motivated to adopt online learning and achieve learning goals (Geng, Law, & Niu, 2019). Online learning practices significantly affect student success so that is relevance between online learning and student achievement (Rosser-Majors et al., 2022).

Online learning is a solution for situations and circumstances that make traditional learning impossible to apply (Wargadinata et al., 2020). It is also a challenge for teachers and students (Pokhrel & Chhetri, 2021; Mu'awanah et al., 2021; Basilaia & Kvavadze, 2020). In today's era, traditional learning is very limited, and online learning overcomes the weaknesses of traditional learning, namely Online learning is more efficient in providing tasks on a large scale and additional information in online learning can be accessed at any time (Hoi et al., 2021). Technology-based learning, such as online, is able to facilitate better learning and training and reduce problems associated with traditional learning (Panigrahi et al., 2018).

In addition, through the selected learning application, a teacher can interact with students indirectly with applications that can be accessed using the internet network. Utilizing online learning, is considered quite appropriate in the Covid-19 pandemic situation. Although there have been many studies using the Google Meeting and Zoom platforms as media, this

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

This shows that the use of Google Classroom has a positive impact on students' creative thinking skills. Students who are independent and active towards technology are more motivated to adopt online learning and achieve learning goals (Geng, Law, & Niu, 2019). Online learning practices significantly affect student success so that is relevance between online learning and student achievement (Rosser-Majors et al., 2022).

Online learning is a solution for situations and circumstances that make traditional learning impossible to apply (Wargadinata et al., 2020). It is also a challenge for teachers and students (Pokhrel & Chhetri, 2021; Mu'awanah et al., 2021; Basilaia & Kvavadze, 2020). In today's era, traditional learning is very limited, and online learning overcomes the weaknesses of traditional learning, namely Online learning is more efficient in providing tasks on a large scale and additional information in online learning can be accessed at any time (Hoi et al., 2021). Technology-based learning, such as online, is able to facilitate better learning and training and reduce problems associated with traditional learning (Panigrahi et al., 2018).

In addition, through the selected learning application, a teacher can interact with students indirectly with applications that can be accessed using the internet network. Utilizing online learning, is considered quite appropriate in the Covid-19 pandemic situation. Although there have been many studies using the Google Meeting and Zoom platforms as media, this
Table 1. Research Design: Pretest-Posttest Control Group Design

<table>
<thead>
<tr>
<th>Pre-Test</th>
<th>Treatment Group</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₁</td>
<td>X₁</td>
<td>O₂</td>
</tr>
<tr>
<td>O₃</td>
<td>X₂</td>
<td>O₄</td>
</tr>
</tbody>
</table>

Description:
O₁: Pre-test experimental group
O₂: Post-test experimental group
O₃: Pre-test control group
O₄: Post-test control group

RESULTS AND DISCUSSION

Result

The research was carried out on class V MI Ummuushabri Kendari by giving different treatment, namely class VA as an experimental class by applying online learning assisted by google classroom integrated interactive video while class VB as a control class by applying online learning assisted by zoom meeting. Each class consists of 30 students. Online learning materials related to ecosystems that focus on science learning.

As previously mentioned, the data analysis technique was carried out in various stages, namely normality test, homogeneity test and ended with N Gain Score test. The results of the normality, homogeneity and N-Gain Score tests are presented in the table 2.

Tabel 2. Normality Test of Students' Creative Thinking Ability

<table>
<thead>
<tr>
<th>Class</th>
<th>Shapiro-Wilk</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>df</td>
</tr>
<tr>
<td>Pre-test experiment</td>
<td>0.124</td>
<td>30</td>
</tr>
<tr>
<td>Post-test experiment</td>
<td>0.149</td>
<td>30</td>
</tr>
<tr>
<td>Pre-test control</td>
<td>0.111</td>
<td>30</td>
</tr>
<tr>
<td>Post-test control</td>
<td>0.122</td>
<td>30</td>
</tr>
</tbody>
</table>

The results of the normality test using the Shapiro-Wilk test showed that the significance value of the pretest and posttest of the experimental class and control class was greater than 0.05, so it could be concluded that the data were normally distributed.

The homogeneity test used is Levene's test, which is done by finding the difference between each data and the group average. The results of the homogeneity test using Levene's test showed a significance value of 0.882 which was greater than an alpha of 0.05, so it can be concluded that the variance of learning outcomes data in the control and experimental classes is homogeneous.

Tabel 3. Homogeneity Test of Students' Creative Thinking Ability

<table>
<thead>
<tr>
<th>Statistic</th>
<th>df₁</th>
<th>df₂</th>
<th>Sig.</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.221</td>
<td>3</td>
<td>116</td>
<td>0.882</td>
<td>Homogeneous</td>
</tr>
</tbody>
</table>

The results of the homogeneity test using Levene's test showed a significance value of 0.882 which was greater than an alpha of 0.05, so it was concluded that the data was homogeneous.

N-Gain Score Test

Tabel 3. N-Gain Score Test of Students' Creative Thinking Ability

<table>
<thead>
<tr>
<th>Class</th>
<th>Average</th>
<th>Control Class</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eksperimental</td>
<td>71.7</td>
<td>58.6</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>44.4</td>
<td>Min</td>
<td>30.4</td>
</tr>
<tr>
<td>Max</td>
<td>100</td>
<td>Max</td>
<td>80.9</td>
</tr>
</tbody>
</table>

The test results above show that the average N-Gain Score for the experimental class is 71.7 or 71.7%, including in the quite effective category with a minimum N-gain score of 44.4% and a maximum of 100%. Meanwhile, the average N-Gain Score for the control class is 58.6 or 58.6%, which is included in the quite effective category with a minimum N-Gain Score of 30.4% and a maximum of 80.9%.

Therefore, it is concluded that there is an effect of online learning assisted by google classroom and zoom meeting on students' creative thinking skills of ecosystem material.
The effect that occurs in the experimental class is greater than in the control class.

Discussion

Based on the result of analysis, the descriptive statistical test shows the score of students' creative thinking skills in the experimental class with an average pretest value of 37.3 increased to 81.5 while the control class obtained an average pretest score of 33.8 increased to 72.3 which means the creative thinking ability of the experimental class students experienced a significant increase compared to the control class. Likewise, the results of the final test, the N-Gain Score test, it shows that the average value of the experimental class is 71.7 or 71.7%, which means that the use of interactive video integrated google classroom is quite effective in online learning. While the average value of the control class is 58.6 or 58.6%, which means that the use of zoom meetings is less effective in online learning compared to using google classroom. It is concluded that online learning assisted by google classroom integrated interactive video has a greater effect than the zoom meeting on students' creative thinking skills in science learning the ecosystem material at class V of MI Ummusshabri Kendari.

The findings above are in accordance with the results of the study that the advantages of students when studying online, one of which was Google Classroom, could improve students' abilities and have a positive impact (Gunawan et al., 2020). Google Classroom is recommended as an active learning medium that can control student-centered learning well, even more open to the discussion process, investigating student assignments and building more creative thinking for students who are actively involved (Shaharanee, Jamil, & Rodzi, 2016). This statement implies that students have a greater opportunity to construct their creative thinking skills because knowledge is built through an independent learning process.

Previous research also expressed the same opinion that with google classroom that students could access the learning activities easily, they could communicate with other students in their subject electronically, they could decide when they wanted to learn, and they could work at their own pace. Students could regularly access online resources and they had the autonomy to ask their tutor what they did not understand. Students experienced a sense of satisfaction and achievement and they felt at ease in working collaboratively with other students. The students were also happy to print lectures and exercise materials from resources uploaded by their teachers. Responses to the Google Classroom Evaluation survey showed that the teachers were able to give better individual attention and students developed a group feeling in such a classroom setup. Students also felt that learning through the Google Classroom was not boring and it was not a waste of time. They found it to be an effective medium of studying (Gupta & Pathania, 2021; Batubar et al., 2021). The results of other studies show the help of Google Classroom media had a positive influence on student learning outcomes (Paristiohati et al., 2020). Similar research shows that they are more willing to learn using Google Classroom than the non-online or conventional learning platforms. Therefore, applying Google Classroom in online learning is effectively boost students’ information literacy (Dewi et al., 2022). Google classroom learning platform is one of the effective ways of enhancing student active engagement in an online learning environment (Noah & Gbemisola, 2020).

Another reason for this finding is that one of the most distinct and effective virtual learning media is interactive video and interactive video-based learning techniques have been used in various classroom settings with the aim of activating cognitive processing activities (Palaigeorgiou et al., 2019). Interactive video is defined as a video-based hypermedia that combines video structuring and dynamic information presentation above and beside the video (Meixner, 2017). Interactive videos can improve student achievement in learning (Papadopoulou & Palaigeorgiou, 2016). Interactive videos facilitate students to do independent learning and make students active (Palaigeorgiou et al., 2018). So, using google classroom integrated with interactive video is more effective than zoom meeting.

Likewise, the use of zoom meetings is considered productive and useful for students in delivering presentations, holding debates, providing feedback to speakers, creating classrooms that are more formal than traditional learning, students must be prepared to sit properly, dress properly, and prepare resources. learning (Erna et al., 2022). In addition, the existence of zoom meetings can increase teacher
creativity in online learning and is one of the suitable media to be used as distance learning media during the COVID-19 pandemic (Gray et al., 2020). Previous research also expressed the same opinion that the use of zoom is felt to be easy and has a significant effect on student learning satisfaction (Wedari et al., 2022). Zoom too very interactive and can replace face-to-face meetings (Handayani, 2021). To use platforms was more important than individual context variables in assessing student perception. The use of zoom is felt to be easy and has a significant effect on student learning satisfaction (Wedari et al., 2022). Zoom too very interactive and can replace face-to-face meetings. Other research shows that there is an increased students' interest in learning by using zoom app (Kasman & Hamdani, 2021).

The weakness of zoom meetings when compared to google classroom integrated interactive video lies in the effectiveness of the available time of about 40 minutes for free, the rest of the account owners must install premium or paid applications (Gunawan, Suranti, & Fathoroni, 2020). Using a video conferencing platform in the learning process, most of the microphones or screens are turned off to reduce noise, and of course the activities of interacting and responding to each other are not as obvious as face-to-face learning.

In addition, the use of zoom is a big problem for low-income parents because it requires internet quota and gadget support, and poor or slow connections consume a lot of data quota compared to whatsapp, google form, google classroom and others (Mu'awanah et al., 2021). Online learning can run optimally if it is supported by an adequate Telkom network infrastructure (Giatman, Siswati, & Basri, 2020). Therefore, zoom meetings are a form of online learning whose use is greatly influenced by network connections and the availability of data quotas. This indicates that the existence of a zoom meeting or video conference cannot accommodate learning activities properly.

However, zoom meetings and google classroom have the same benefits in terms of sharing and receiving information without having to meet directly with students and both can be one of the important media in online learning that functions to prevent the spread of covid-19. For this reason, online learning is not just material that is transferred through internet media, it is also not just assignments and questions sent through social media applications. Online learning through the process of planning, implementing, and evaluating, as well as learning that occurs in the classroom. A teacher develops more creative teaching methods in teaching the new generation of students, because growing students' creative thinking can significantly affect students' creativity and learning achievement (Lin & Wu, 2016). Learning practices will be effective by developing technology (Rosser-Majors et al., 2022). Expertise, adaptability and facing global challenges are needed by a teacher (Okmawati, 2020). Indirectly, online learning forms limitless learning activities. Online learning methods are more open, flexible, and remote (Naidu, 2022). Applying knowledge and developing creativity in limitless learning situations can facilitate creative thinking and an active learning attitude as well as improve problem-solving skills and learning outcomes.

Creative thinking does not arise from birth but is acquired, built, and honed from learning to work together so as to promote a learning environment that can facilitate collaborative development creative thinking skills are needed by a teacher because teachers do not only transfer knowledge (Khoiri et al., 2017). Creative thinking can be improved by training (Celume et al., 2019). This training process is slowly formed from various children's learning activities from home. Creative thinking is also seen as a core skill in the 21st century (Malik & Ubaidillah, 2020; Yildiz & Yildiz, 2021). The characteristics of the 21st century are marked by technology that is developing so rapidly that education continues to develop following the times. The ability to think creatively is influenced by various factors, including personal characteristics, cognitive abilities, social environment and learning (Lucchiari et al., 2019).

In addition, creative thinking is needed during the 4.0 industrial revolution because learning can be done anywhere and at any time (Roqobih, Yuliani, & Rahayu, 2019). Creativity, being the greatest potential of human resources, can be trained and learned through several strategies and skills to teach creative thinking. Creative thinking ability is a person's ability to take actions that lead to the creation of new information transmissions (Zubkova et al., 2019). Creativity is an important aspect of learning because of creativity, students become more fun to learn, activate a variety of information, and more easily solve problems of
daily life. Someone who has creativity is certainly based on curiosity and imagination. Schools are places for creative thinking culture so that teachers must have a mission to educate students who are equipped with creative thinking skills (Senel & Bağçeci, 2019). When students have creative thinking skills, they will tend to be more prepared to solve problems (Wijaya et al., 2021).

However, if we look at the results shown by the experimental class and the control class after being given treatment, both platforms Google Classroom or Zoom Meeting, provide an increase in students’ creative thinking skills. As Bary (2021) stated that teachers should select media or technologies that are most appropriate for promoting active student learning. Therefore, these two platforms can still be used to support the learning process today. Furthermore, it is also necessary to pay attention to the creativity of teachers in explaining learning materials through online media so that students remain motivated to learn online.

The implications of this research are to make a real contribution to the teacher, it is necessary to consider the needs, comfort and joy of children in determining the right application during online learning conditions. The limitation lies in the limited number of samples so generalization is only in the context of the research population. For this reason, this study suggests that more samples should be used so that research can be generalized and conduct research on various learning applications (outside Zoom), so that it is expected to provide an overview of varied online learning application media.

CONCLUSIONS AND SUGGESTIONS

Based on the result of analysis of this study, it can be concluded that the increase in creative thinking skills of the fifth grade students of MI Ummusshabri Kendari in the experimental class occurred significantly when compared to the control class. The application of online learning assisted by google classroom integrated interactive video and zoom meeting has a positive effect on students' creative thinking skills in science learning material Ecosystems. However, using Google Classroom integrated with interactive video turns out to be more effective or has a greater impact than the Zoom meeting.

REFERENCES


Dianda, A., & Pandin, M. G. R. (2021). E-


