



Empowering Student's Creativity Through Pixton Integrated Project Based Learning in Elementary School

Aynin Mashfufah*

*Master of Basic Education, Graduate School, Universitas Negeri Malang, Indonesia

E-mail: aynin.mashfufah.pasca@um.ac.id

Candra Utama**

**Elementary School Teacher Education Study Program, Faculty of Education,

Universitas Negeri Malang, Indonesia

E-mail: candra.utama.pasca@um.ac.id

Esti Untari***

***Elementary School Teacher Education Study Program, Faculty of Education,

Universitas Negeri Malang, Indonesia

E-mail: esti.untari.fip@um.ac.id

Novia Siska Puspita Sari****

****Elementary School Teacher Education Study Program, Faculty of Education,

Universitas Negeri Malang, Indonesia

E-mail: noviasiskap@gmail.com

Moh. Alif Hidayatulloh*****

*****Elementary School Teacher Education Study Program, Faculty of Education,

Universitas Negeri Malang, Indonesia

E-mail: mohalifhidayatullah@gmail.com

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Abstract

The characteristics of students, especially elementary school student, are familiar with the use of gadgets and even digital applications. In addition, the integration of technology in learning is currently not uncommon as a result of the covid-19 pandemic. This research aims to empower students' creativity through project-based learning by integrating the Pixton application. The method used is pre-experimental with a single-subject design. The research sample involved 28 elementary school grade V students and was grouped into 7 groups. The data collection method uses a creativity assessment rubric with four creativity indicators. The data is analyzed in a quantitative descriptive manner and presented in the form of graphs to see trends across all indicators of creativity. The results of the study show that students' creativity collaboratively develops very well in the aspect of generating digital comic story ideas according to the topic of bullying. The implication of this study is that digital application-assisted learning provides an opportunity to provide engaging learning for students and real experiences.

Keywords: *project-based learning, creativity, pixton, digital comic.*

Abstrak

Karakteristik peserta didik khususnya siswa sekolah dasar, sudah tidak asing lagi dengan penggunaan gawai bahkan aplikasi digital. Selain itu, integrasi teknologi dalam pembelajaran saat ini bukanlah hal asing akibat dari pandemi covid-19. Penelitian ini bertujuan untuk memberdayakan kreativitas peserta didik melalui pembelajaran berbasis proyek dengan mengintegrasikan aplikasi Pixton. Metode yang digunakan adalah pra-eksperimen dengan desain subjek tunggal. Sampel penelitian melibatkan 28 siswa kelas V sekolah dasar dan dikelompokkan menjadi 7 kelompok. Metode pengumpulan data menggunakan rubrik penilaian kreativitas dengan empat indikator kreativitas. Data dianalisis secara deskriptif kuantitatif dan disajikan ke dalam bentuk grafik untuk melihat kecenderungan pada seluruh indikator kreativitas. Hasil penelitian menunjukkan bahwa kreativitas siswa secara kolaboratif berkembang sangat baik pada aspek menghasilkan ide cerita komik digital sesuai dengan topik perundungan. Implikasi dari penelitian ini adalah pembelajaran berbantuan aplikasi digital memberikan kesempatan untuk memberikan pembelajaran yang menarik bagi siswa dan pengalaman nyata.

Kata kunci: *pembelajaran berbasis proyek, kreativitas, pixton, komik digital.*

INTRODUCTION

Creativity as one of the 21st century learning skills is important to be developed for every student to be able to face the challenges of the world in the future (Geisinger, 2016). Creativity is shown by the originality and usefulness of ideas. However, students need to select from many idea and determine the most useful idea. Thus, creativity actually also involves a person to be able to evaluate more useful ideas (Zhu et al., 2017). Similar to the demands of the world of education and the challenges of future careers, a person is not creative enough with new things, but is able to develop alternative solutions and is confident (Stolz et al., 2022).

Creativity is also needed by teachers to face current technological developments. For example, the presence of artificial intelligence (AI) is able to provide information easily through the commands we give. The habit of a teacher who only gives lectures to students can now be replaced by AI. This certainly threatens the existence of teachers in the classroom because AI is able to become personalized tutoring or personal guidance (Wang et al., 2024). This phenomenon must certainly be a consideration that a teacher needs to present a learning strategy that is fun and provides a meaningful experience for students. AI has been used by students in learning, teaching, assessment, administration, and has an impact on student learning and teacher teaching practices (Chiu et al., 2023). A study explains that AI is able to develop students' ability to respond to challenges and solve problems. This means that AI also has a positive impact on the development of a person's creativity (Habib et al., 2024).

The problem is that there are still those who have not been able to create a learning environment that encourages students to be creative. Based on the results of observations in one of the public elementary schools in Malang City during the preliminary study, it was still found that learning habits were fully regulated by teachers, learning has not given students options to explore ideas, interests, ways of learning or completing assignments, and the assessment is also only focused on the final assessment with a written test. This kind of learning practice closes access for students to develop their potential, talents or creativity (Beghetto & Kaufman, 2014). Therefore, the education system, principals, and teachers need

to change the paradigm and work together to create a learning environment that encourages students to be actively involved as learning subjects to increase their creativity at all levels of education (Morris, 2018). This includes encouraging students to experiment with creative things, providing supportive feedback to students as they do so, and setting examples of creativity in everyday activities in the classroom (Harris & de Bruin, 2018).

The theory of constructivist learning explains that a learning must prioritize the role of students to be actively involved in authentic learning to build knowledge and facilitate a collaborative learning environment in the problem-solving process (Reigeluth et al., 2017). Interaction with the social environment helps students have meaningful learning to build a knowledge (Jonassen, 1999). Project-based learning, for example, is able to encourage and motivate a person to dig deeper into information to find problem-solving ideas, develop student creativity and can be adapted to various learning preferences (Yu, 2024).

Complex and not simple problems need to be presented in learning. This problem has various solutions and solutions, and requires active students to make decisions (Jonassen, 1997). When students collaborate with external parties in their environment, it will trigger various perspectives on a problem phenomenon. Interaction between parties in a community with various cultures and backgrounds is a means to share ideas according to the existing context (Hung et al., 2008).

As the theory of humanism learning which is a strong basis in the implementation of the current independent curriculum explains that students must be given an independence of learning or freedom in terms of self-development, find problems that are considered important to be studied and solved with their own ideas and methods (Rogers, 1969). Freedom of learning requires a learning environment that invites students to learn with their experiences.

Referring to these theories and problems that arise in the field, learning should be carried out holistically or not only strengthen cognitive aspects but also skills and attitudes. As has been researched by Hosokawa & Katsura (2018) and Zhang et al., (2018) that a person's creativity is also determined by the student's level of cognitive intelligence, emotion management skills, social intelligence, and mental health. Raising the problem of bullying that currently often occurs among elementary school students can be done with interesting learning while inviting students to develop their creativity and determine attitudes in dealing with bullying. Yang & Lu (2024) has researched that learning that involves students to collaborate with others with *a role playing* model helps students recognize cause and effect, consider solutions and manage emotions better so that they can make good decisions.

Learning that is interesting and can develop student skills can be done, one of which is by integrating technology that suits the needs of students in elementary school. Technology in learning can encourage interactive learning (Tuma, 2021). However, clear learning objectives remain important so that the negative impact of technology can be minimized and teachers can provide meaningful learning experiences (Christopoulos & Sprangers, 2021). As has been researched by Şahin & Erol (2022), history learning can be facilitated with the Pixton application so that learning is more interesting and meaningful. Practicing vocabulary and grammar in English lessons is also more efficient using this app (Cabrera et al., 2018).

Based on this background, learning needs to facilitate students so that they can develop their ideas. Technological advances can be an opportunity to design more interesting learning. Pratiwi et al., (2023) has conducted research by utilizing the Pixton application in learning to

increase students' interest in mathematics through the *Realistic Mathematic Education* approach. Pixton has also been used to improve students' ability to master vocabulary and grammar in learning English (Cabrera et al., 2018). Learning history is also a fun learning by utilizing the Pixton application to produce an interesting story (Şahin & Erol, 2022). By considering previous studies and paying attention to bullying cases among elementary school students today, a study was conducted that is expected to empower students' creativity and prevent more cases of bullying. In this study, it is hoped that students will be able to develop their creativity but also instill an understanding of what bullying is to self-awareness to prevent bullying from happening again in daily life through fun learning. In this independent curriculum learning, it is necessary to provide opportunities for students to be able to develop and be empowered to become creative learners through collaboration with their peers in the elementary school environment (Carvalho & Santos, 2022). The research entitled project-based learning assisted by the Pixton application was carried out to empower the creativity of elementary school students. This research is expected to be able to facilitate students to be creative by utilizing advances and positive sides of technology in learning. Students are trained to develop story ideas after understanding what bullying is, examples of bullying and how to overcome it through a learning process.

METHODS

This research is quantitative research with *a single subject design*. The design of this study is used when there is a limitation of the number of samples. In addition, in this study, to measure students' creativity in designing digital comics, it was assessed in the learning process (not assessed before and after the treatment). Referring to the continuous assessment that emphasizes the assessment of student performance, student creativity is measured through the performance of designing the digital comic (Creswell, 2012). The participants involved were elementary school students. The number of samples involved was 28 elementary school students and grouped into seven groups.

This research procedure uses ADDIE. In the initial stage, an analysis of problems in the field was carried out in Pancasila learning using the learning observation method. The results obtained during this problem analysis are that students have not played an active role in learning because the strategy used is to observe videos and continue with group discussions answering the questions provided in the students' worksheets. The use of technology to facilitate learning has also not been carried out. Referring to this problem, a project-based learning assisted by the Pixton application was designed based on the results of a literature review by considering the advantages of using the Pixton application by integrating it into learning problems and the high cases of bullying among elementary school students.

The learning development stage includes validation of learning plans to assessment instruments to learning experts. The results of the validation of learning experts show that there is still a need for improvements in the indicators of student creativity assessment so that the rubric of student performance assessment is in accordance with the creativity indicators. The initial indicators consist of being able to pour out their ideas by making comics that are suitable for the material, being able to explore and express thoughts or feelings in the form of works, and students are given the freedom to think creatively transformed into the following indicators: determining problems that need to be solved through projects (originality of ideas),

producing possible alternative ideas according to the problem (fluency), determining selected solutions according to mutual agreement (elaboration), and adjust strategies/times/solutions according to the conditions faced (abstain from making early decisions). The validated teaching materials are then applied in learning to find out the extent to which students' creativity can be empowered or developed through project-based learning procedures with the Pixton application. The last is the evaluation of all stages of research carried out.

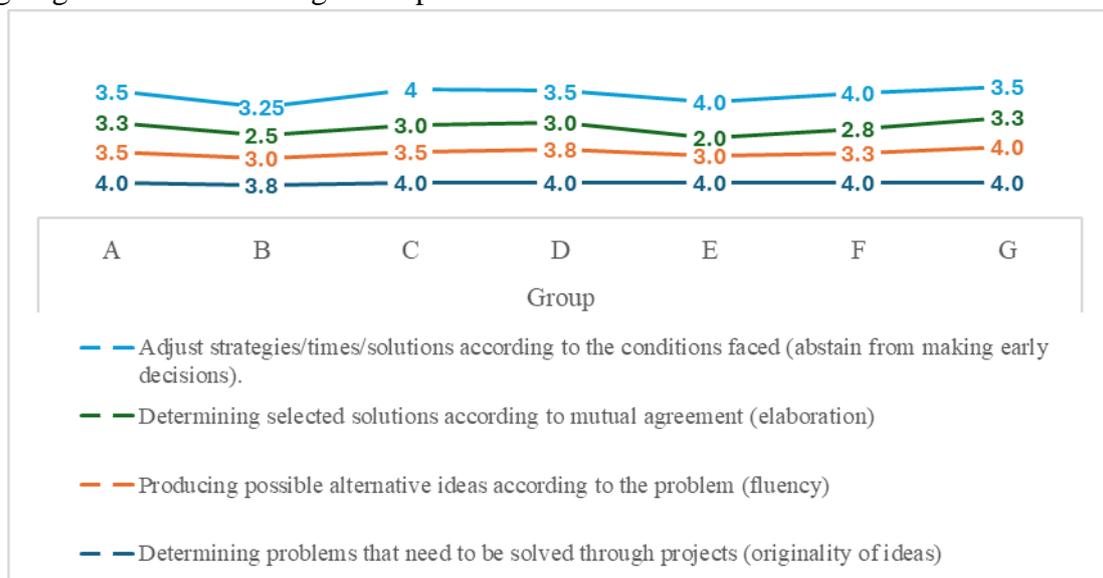
Research data collection techniques, especially on student creativity variables, use performance observation techniques. This work demonstration was carried out during the learning process with a group learning strategy. Observations are aimed at all indicators of creativity assessment. At this stage, the researcher observes the students' abilities during the demonstration using the learning model that has been developed.

The research instrument used is the rubric on assessing creativity in designing digital comics to prevent bullying. The assessment rubric consists of indicators, namely determining problems that needed to be solved through the project (originality of ideas), producing possible alternative ideas according to the problem (smoothness), determining selected solutions according to mutual agreement (elaboration), adjusting strategies/times/solutions according to the conditions faced (abstaining from making early decisions). The assessor uses a Likert scale of 1 = not seen, 2 = not good, 3 = adequate, 4 = good.

The results of the assessment of group performance with the Likert scale are then categorized into 5 categories, namely very good, good, enough, lacking, and not creative according to the formula (Widoyoko, 2017). As has been explained, this creativity assessment uses a performance technique, so there is no initial and final assessment. The data analysis used is quantitative descriptive with the categories that have already been explained. Thus, the data obtained is presented in the form of a graph to see the tendency of each group on each assessment indicator.

RESULTS AND DISCUSSION

The following graph 1 is the results of the assessment of students' creativity in groups in designing e-comics according to the performance assessment rubric.



Graph 1. Student creativity assessment

Based on the assessment graph, it is known that indicator A (determining the focus of problems that need to be solved through e-comic projects according to the topic of bullying) tends to be stable with the category of very good in the seven groups with the lowest score in group B of 3.8. Indicator B (generating possible alternative e-comic storyline ideas according to the focus of the problem) in each group is different. There are three groups with good categories and four groups with very good creativity assessments. Indicator C (determining the selected solution/selected e-comic story according to the group's mutual agreement) shows a striking difference between groups. The lowest is group E which is in the poor category and the highest assessment belongs to groups A and G which is in the good category. Indicator D (adjusting strategies/time/solutions according to the conditions faced) is the lowest in group B with a good category.

Figure 1 below is the documentation during the implementation of the project-based learning effectiveness test with the help of the Pixton application. In Figure 3 is an example of a digital comic that has been created by grade V students. The titles of digital comics are very diverse, for example, stop bullying your friend, what is bullying, Hey,,,Don't Bully, Make Friends Without Hurting Each Other, Making Friends Is Easy, Verbal bullying etc.



Figure 1. Students design digital comics with a group

Creativity as one of the Pancasila Student Profiles needs to be supported by learning that provides real experiences to students. One of them is through project-based learning. As the cone of learning experience Dale explains, learning by experiencing oneself has an impact on the ability to analyze, define, create, and evaluate. As has been researched by Zou et al. (2024) that learning that is centered on problems that are close to the context of students' daily lives can attract student motivation and engagement and contribute to the achievement of learning outcomes. In addition, students' ability to analyze and create is facilitated by providing information on the stages of project-based learning and the stimulus that exists at the beginning of learning (Beghetto & Karwowski, 2017). When students explore their ideas to determine stories related to bullying, teachers as facilitators need to provide appropriate direction and reinforcement so that the completion of the e-comic project can go well (Hobri et al., 2019; Montag-Smit & Maertz, 2017). The part that needs to be considered is as long as the student plans the solution of the problem with the project, the division of tasks and the

specified time plan. Figure 2 below is an example of a digital comic that has been created by group 1.

Students' creativity in designing bullying topic comics is very important to be associated with the student's real-life context. When determining the focus of the problem, students are directed to choose the context of bullying problems that often occur among elementary school students, either at school, at home or in the community. The purpose of determining this topic is to train students to understand the extent of the boundaries and differences between bullying and jokes. This understanding is expected to be able to prevent bullying among students and strengthen the sense of affection and solidarity between fellow students. In addition, this digital comic creation project on the topic of bullying develops students' creativity to think about strategies for solving bullying problems. The story generated from this digital comic provides insight to students that it takes courage to uncover the truth. This shows that contextual aspects need to be incorporated into the learning process (Jurs et al., 2023). In addition, a learning environment that presents the context of real-world problems, facilitates scaffolding and prioritizes collaborative discussions between students is able to encourage students to think and act more creatively (Harris & de Bruin, 2018; Weng et al., 2022).



Figure 2. Examples of digital comics generated in the project

Comics as one of the media that are loved by students in elementary schools because of the combination of visualization and text in an interesting storyline (Hobri et al., 2019). This opportunity is important for creating learning with bullying topics that are of interest to students. During collaborative learning, students communicate to explore ideas, evaluate, and determine their ideas in the form of digital comics. Thus, students appreciate each other and work together. The social system built in this learning process learns skills as well as positive attitudes that play an important role in preventing bullying. This is in line with research (Şahin & Erol, 2022) that students respond very well to history learning, their motivation increases and they are able to build more intensive communication with fellow group members.

In this project-based learning, student is involved in determining the problem and solving it related to the current bullying problem. Students are encouraged in collaborative learning to come up with a story idea that shows examples of bullying cases and how to

overcome and prevent them through an interesting work. Thus, students must first understand cognitively what bullying is, examples of bullying and how to overcome bullying. Providing clues or information related to learning objectives is also important for students to be able to better demonstrate their learning performance (Montag-Smit & Maertz, 2017). This is in line with research (Yu, 2024) that project-based learning with teacher guidance effectively develops the potential that students have according to their interests.

Project-based learning that utilizes a digital application facilitates students in expressing their ideas in an e-comic. As has been researched by Gomez-del Rio & Rodriguez (2022) that project-based learning encourages students to integrate their concepts so that they are skilled in creating a new idea or idea. The determination of the story about bullying provides an opportunity for students to generate ideas that then from several of these ideas still need to be processed and reviewed to choose one selected idea. This shows that the aspect of creativity also requires the ability to evaluate the most relevant, most useful and most interesting aspects of ideas. In the next stage, students' ability to develop selected e-comic story ideas or ideas is encouraged by considering aspects of diverse working group opinions. Collaboration in a group also determines the level of creativity of the e-comic work produced. This is in line with research conducted by Stolaki et al. (2023) that diverse creativity among members of the working group determines or shows creativity in group performance. In addition, learning that facilitates students to devote ideas to create a story can develop students' imagination as if they are experiencing it in real life and can help students determine points of view related to the problem that must be solved with the storyline in accordance with applicable norms (Yang & Lu, 2024).

In addition, student engagement in learning is influenced by student creativity (Avcı & Durak, 2023). This is shown by the contribution of students starting from determining the focus of the problem after being given a stimulus, searching for ideas in designing the e-comic storyline, Furthermore, students in the group are also involved to evaluate the most relevant stories to the e-comic topic to then develop with the Pixton application. Thus, learning that is integrated with the right technology or application can attract student motivation and increase student engagement at any stage in the learning process as has been researched by Pratiwi et al., (2023) that the Pixton application is able to provide a meaningful learning experience.

CONCLUSION

Learning that integrates digital applications is proven to be effective in facilitating students to develop their creativity. The Pixton application utilized in the completion of projects related to the topic of bullying encourages students to be actively involved in determining and generating creative ideas for comic storylines, roles contained in the storyline and determining body positions and facial expressions according to the storyline. Thus, students' creativity can be developed in a real way through learning that is based on real experiences and specifically prioritizes students' interests. However, this study still has limitations on the number of samples used and still needs to be further researched about the impact and perception of students related to bullying after participating in this learning.

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