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The Effect of Project Based Blended Learning on Visual Literacy Skills

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Abstract

The goal of this study is to determine the test's outcomes, including the effects of learning motivation, direct instruction, and the project-based learning model on the learning outcomes for visual literacy skills. A 2x2 factorial design was used in this experimental study. This study's subject is the eighth grade at SMPN 13 Samarinda City, which consists of four 120-student classes. The experiment's target subjects are selected using classical randomization, which consists of four classes. The Analysis of Variant (Anova) statistical test was utilized to assess the study's hypothesis. The computation's outcomes demonstrate that: In light of the analysis's findings in this study, The utilization of the Project Based Learning Model and the direct instruction approach has a substantial impact on the learning outcomes for the Visual Literacy Skill. The F calculation of 151,261 with sig = 0.000 < 0.05 illustrates this. This indicates that (1) the adoption of the Project Based Learning Model and the direct instruction technique has an impact on the learning outcomes of visual literacy skill, and (2) learning motivation has no impact on those same learning outcomes. The goal of F = 16,149 with sig = 0.000 > 0.05 demonstrates this. This indicates that learning motivation has no effect on the outcomes of learning visual literacy skills, and that the usage of the PBBL model, direct instruction, and gender do not interact to affect these outcomes. F calculates =14,351 with sig = 0.000 > 0.05. This indicates that the learning model's ability to affect the learning outcomes for visual literacy skills is independent of learning motivation.

Keywords: *Project Based Learning, Visual Literacy Skill, Teaching, Learning, University.*

Introduction

Visual Literacy Skill Learning Outcomes, which is the subject of the research, still have many students whose scores are less than KKM. This is marked when students are faced with problems, students cannot generalize from the information presented in the questions to help them find answers, when learning takes place students do not pay attention to what is conveyed by the teacher so that many students have not reached the KKM, so that it has an impact on the percentage of learning outcomes of the End of Semester Exam in grade VIII at SMPN 13 Samarinda city which gets the highest score of only 50 so that it can It is said that completeness is 50%, with the average score of their learning outcomes having to do remedial. While students' grades in other subjects are mostly better. This means that students are still experiencing difficulties in learning and have not reached the criteria that have been set from the number of students.

(Golding & Verrier, 2021) The researcher decided to apply the Project Based Learning (PjBL) approach in order to enhance student motivation and learning outcomes in this content. The reason the Project Based Learning (PjBL) learning paradigm was selected is that it gives students the chance to work more independently, create their own learning, be more practical, and generate a product. Through difficult assignments centered on questions or problems, students engage in problem-solving, decision-making, investigation, and reflection activities with the teacher acting as a facilitator. This approach is known as project-based learning. In project-based learning, the emphasis is on asking questions that help students apply ideas and concepts via hands-on practice. In order for students to benefit from their experiences and apply what they have learned to their everyday life through project-based learning. As a result of actively engaging in a challenging learning process, students will be educated to construct their own information, which is predicted to boost their motivation and help them acquire visual literacy skills.

(Gunawan, 2024; Sari & Sopiany, 2023; Yin & Huat, 2021) Project-based learning is a cutting-edge, student-centered approach to learning where teachers act as facilitators and motivators and students are allowed to work independently to create their own learning. The project-based learning approach places a strong focus

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on students' and facilitators' active participation. Students are expected to participate in the process of creating a product that demonstrates their grasp and inventiveness of the concepts they have learned and explains their understanding of the problem being solved, rather than just listening to the teacher explain the material and answering questions. It is intended that by utilizing this PjBL learning paradigm, it will inspire pupils to have a passion for learning.

According to (Eutsler, 2021) The psychological engine that propels learning activities in students, maintains learning continuity, and gives learning activities purpose in order to accomplish a goal is their visual literacy skills. Because motivation may instill in students a love of learning and persistence in their behavior, it plays a critical role in education. High learning outcomes are attained by Sisiwa who are highly driven to study; in other words, the more motivated one is, the more successfully they will learn. One may argue that learning motivation is a force that can motivate pupils to learn in order to meet learning objectives and get positive outcomes.

According to (Mira et al., 2024; Ramananda et al., 2024; RIKU, 2024), It is impossible to identify a single learning model that outperforms all others when it comes to teaching different aspects of students' personalities and instructional materials. In order to improve the learning outcomes for visual literacy skills, it is vital to investigate how the project-based learning model is implemented while taking student learning motivation into account. The learning outcomes for visual literacy skills will be impacted by the application of the project-based learning paradigm with varying student learning motivations. There have been a number of research on the project-based learning model, but none that comprehensively demonstrate how learning motivation and the project-based learning model affect students' learning outcomes in terms of their visual literacy skills. Thus, the study "The Influence of Project Based Learning Model and with Learning Motivation on Visual Literacy Skill Learning Outcomes" is of interest to the researcher. The purpose of this study is to define and clarify

Literatur Review

The capacity to comprehend and interact with visual media is known as visual literacy, and it encompasses a number of fundamental abilities needed to get a thorough comprehension of a wide range of topics. Visual literacy is a set of skills that enhances conceptual understanding and mental acuity rather than a single talent.(Irasuti & Bachtiar, 2024).

The Encounter theory, proposed by Rod Sims and John Hedberg in their 2006 book Interactions in Online Education, is another theory that guides the creation of project-based online learning models. It states that learning conducted in an online environment must be able to accommodate like classical encounters, so a teacher must be able to provide an online learning environment that can enhance communication. online communication and involvement. These concepts, which have been provided by Rod Sims and Jhon Hedberg, have been helpful in developing a set of learning outcomes that are suitable for the online learning environment and will assist in helping novice online facilitators to concentrate the experience so that students are assisted throughout their learning process.

This study also makes reference to Mayes and Fowler's (1999) theory of interaction in e-learning in addition to the two previously discussed theories. Their endeavors to produce theoretical reports about learning that serve as the foundation for comprehending technology can truly bring value, Three steps are used by Mayes and Fowler to characterize interaction: (1) Conceptualization of contact—interacting with concepts—that students have with other people's conceptualizations. It involves the interplay of fresh expositions, knowledge, and preexisting learner frameworks. Primercourseware is used to support this level. (2) Building (working with tasks), applying, and testing new conceptualizations while carrying out important tasks. Students are developing their own conceptual frameworks at this time. Secondary courseware acts as a mediator in task performance. It is intended that students would interact with assignments and receive feedback about the online assignments they are completing.

Mayer (2010: 09) drawn from Allan Paivio's work. A cognitive theory of multi-media learning assumes that the human information processing system includes dual channels for visual processing of pictorial and

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verbal auditory information. Each channel has a limited capacity to process information, so active learning of the appropriate cognitive processes is required during learning. Paivio proposed a dual-channel theory that demonstrates how humans have separate information channels for visually represented material and auditors.

Roblyer and Bennett (2001) additionally clarified that a learner's proficiency in visual literacy is demonstrated by the following indicators: (a) the ability to interpret, comprehend, and value the meaning of visual messages; (b) the ability to communicate more effectively through the application of the fundamental principles and concepts of visual design, such as simplicity, unity, balance, proportion, and emphasis; (c) the ability to produce visual messages using computers and other technology; and (d) the ability to use visual thinking to conceptualize solutions to problems. In order to increase students' visual literacy skills, Roblyer and Bennett stressed the importance of developing suitable techniques for selection, production, and evaluation as well as teaching them the fundamentals of visual communication. These skills can then be put to use in a variety of contexts and academic disciplines..(Fauzi et al., 2019).

According to Smalldino (2011, p. 68), visual literacy abilities are the capacity to accurately comprehend and produce visual messages. He asserts that there are two basic ways to build visual literacy skills in students: (a) input strategy, which teaches them to comprehend or read visuals and use visual analysis techniques with ease; and (b) output strategy, which teaches them to encode or write visuals in order to communicate with others.(Hartanto et al., 2021).

Metode Penelitian

Because it considers the potential for moderator variables to influence the treatment (independent variable) on the outcomes (dependent variable), this study employs a proper experimental design. The experimental group and the control group were the two groups that participated in this investigation. Classes A and B of eighth-grade students at SMPN Samarinda City participated in the experimental activity used in this study. Since the talents of the two classes are similar or equal, group selection is done by lottery.

Following the draw, classes A and B were chosen as the control groups to receive direct instruction, and classes C and D were chosen as the experimental groups to receive instruction using the Project Based Learning Model. In general, the following procedures are used to carry out the treatment in the form of the Project Based Learning Model and the direct instruction method: (1) Students are categorized according to learning motivation after a pre-exam concerning Visual Literacy Skill Learning Outcomes is administered. The purpose of the test is to determine students' starting ability. Before the Project Based Learning Model and the direct instruction approach are put into practice, the pre-test is administered once. (2) Using the Project Based Learning Model to conduct research (3) Conducting a post-test utilizing an instrument in the form of an evaluation question for Visual Literacy Skill Learning Outcomes in accordance with the indicators to be reached from each cycle, as well as the direct instruction technique based on Learning Motivation. Four post-tests are administered following the implementation of the direct instruction technique and the project-based learning model.

Menurut (Creswell, 2015), The population is the whole subject of the study. A population can be defined as an assemblage or gathering consisting of individuals, occasions, or objects. The population of a subject or item under study comprises all of its attributes and is not limited to a specific quantity. (Kerlinger & Lee, 2000) The population is defined as every member of the research subject with comparable features. This population is made up of several objects that are under study and share some common traits or attributes. All of the participants in this study are SMPN Samarinda City grade VIII students. The purposive simple random sample technique is one of the steps in the sampling process. Using this method, selection is done at random without taking into account the population's strata. This is carried out due to the belief that the population is homogeneous. Two classes were used to calculate the sample size: one class served as the experimental group and the other as the control group. By assigning balanced individuals to the experimental group and the control group, the sample was determined by matching. This study's sample was divided into two groups: the experimental group and the control group.

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In order to demonstrate that classes C and D and both A and B in grade VIII at SMPN Samarinda City have equal qualifications, a pre-test with dependable data collection is conducted. The findings of the pre-test are then examined using the SPSS 27 software. The analysis's findings indicate that there is no significant difference in the pre-test results for visual literacy skills between the experimental and control groups, or alternatively, that the outcomes for visual literacy skills learning are essentially the same.

The sampling procedure is executed in multiple stages, specifically employing purposeful simple random sampling in the subsequent manner: (1) Simple random sampling is employed to choose schools and treatment groups. Purposive was utilized to determine the class, and sampling was done using a random procedure via lottery. Because the class had adjusted to his school and would not be taking the final exam, he decided to enroll in SMPN Samarinda's class VIII. Using this methodology, classes C and D were obtained as experimental classes and classes A and B as control classes.

The goal of study is to quantify natural and social phenomena. If study is to be labeled writing a report rather than performing research, then using data that already exists is more suitable. On the other hand, the report might also be classified as research on the lowest possible level. There needs to be a reliable measuring instrument because research involves measurements. In research, measuring tools are typically referred to as research instruments. Thus, a research instrument is a measurement tool for social and natural phenomena that have been observed. Test questions and observation sheets are the study's equipment.

The quality of the research instrument with regard to its level of validity and reliability, as well as the accuracy of the data collection methods, are the two factors that have the greatest impact on the quality and outcomes of research. The gathering of data is a crucial stage in the research process. Since the collected data will be utilized for evaluating hypotheses

Results and Discussion

The findings of the study on creating a project-based learning model to enhance the visual literacy abilities of SMP Negeri 13 Samarinda students will be given in this result and discussion. The study's findings will be presented in line with the researcher's development processes, namely by utilizing the Dick and Carey model's development steps (2001).

Development Stages

Identifying Learning Objectives

Identifying learning objectives is carried out through literature review and field observation to explore information about needs such as what products are developed; whether the products developed have an important role in education; Literature studies related to the problems to be studied by collecting various information related to the products to be developed and formulating a research framework. The study was carried out through curriculum analysis, analysis of ICT subject results, analysis of RPS and supporting devices, observation of the teaching and learning process, teacher interviews and analysis of the needs of SMP Negeri 13 Samarinda.

Applicable Curriculum Studies

The curriculum study aims to find out the curriculum used by the State Junior High School 13 Samarinda Unesa study program. According on the findings of interviews conducted with educators and ICT specialists, the curriculum that was employed was derived from the Indonesia National Curriculum Framework (KKNI). when a topic develops in line with the agreed-upon grading based on study materials and learning outcome (PLO) programs. The SMP NEGERI 13 SAMARINDA graduates' proficiency as the first educational technology developer is supported by this ICT course. The first creator of educational technology needs to be skilled in creating instructional media. Thus, it is evident from this instance that SMP NEGERI 13 SAMARINDA pupils need to possess sufficient visual literacy abilities.

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Visual Literacy Skill Analysis of SMP NEGERI 13 SAMARINDA

The visual literacy skills of SMP NEGERI 13 SAMARINDA students can be seen from the scores of the tasks of making visual messages in the message design subject as one of the prerequisite subjects for taking ICT subjects. 65% of students out of a total of 82 people still have low scores for visual literacy skills, thus it is very necessary to improve visual literacy skills as one of the competency supporters of graduates of SMP NEGERI 13 SAMARINDA as the first educational technology developer, one of which is an educational media developer. The following are the scores of the task of making visual messages in the Message Design subject which can be used as an indicator of students' low visual literacy skills.

Analysis of Semester Learning Plans and Devices

The RPS Analysis Supporter aims to find out how the scenarios of learning activities contained in the RPS document that have been prepared by ICT subject teachers. From the results of the RPS analysis prepared by subject teachers at the Department of SMP NEGERI 13 SAMARINDA Unesa are presented in the following table 4.1:

Tabel. 4.1.

Hasil Analisis RPS

No.	Aspek RPS	Hasil Analisis
1	Use of Methods/Strategies	The use of assignments, discussions, and question and answer models is considered less effective in improving students' visual literacy skills and visual literacy skills related to the process of working on graphic media assignments.
		Never used an online learning model
2	Use of Teaching Materials	Learning teaching materials that can support the improvement of visual literacy skills have not been used.

Sumber: Data Analisis RPS (2019)

Observation of Teaching and Learning Activities

The results of the observations that have been made show that learning is still not able to activate students, the learning model used has also not been able to accommodate the improvement of students' visual literacy skills. Some students are only active in pouring ideas while others are just riding on their names, the level of plagiarism taking ideas from the internet is still very high, learning activities have not facilitated individual students to be able to produce graphic media works optimally. The ability to analyze works is still low and so is creating visuals

Subject Teacher Interview

The results of the interview with the ICT subject teacher team obtained information that the implementation of learning still does not integrate information and communication technology (ICT), students' visual literacy skills are still low, both analyzing works and creating works, if given a group

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assignment, it is certain that only one or two people are followed by other designers, this also shows that the indicator of student responsibility is still low related to the learning process.

Analysis of the Needs of SMP Negeri 13 Samarinda Students

Data on student needs analysis was obtained by filling out an assessment questionnaire on graphic subjects, learning models used by teachers, their understanding of visual literacy skills and attitudes of responsibility. It will be presented in the following

Table 4.2

No	Indikator	Jumlah Siswa	Prosentase
1	Learning Models Used by Teachers	66 students out of a total of 82 students/respondents	80.48% of respondents expect a new learning model used by teachers, especially with models that integrate TIK
2	Students' understanding of visual literacy that they must master	71 siswa dari total 82 siswa / responden	86,58% Students/respondents do not have a comprehensive understanding of visual literacy skills that they must master as learning media developers
3	Students' understanding of	68 siswa dari total 82 siswa	82,92% siswa / Respondents do not have

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visual literacy skills related to the learning process	/ responden	a comprehensive understanding of visual literacy skills as part of learning outcomes

Pembahasan

Visual Literacy Skill Learning Outcomes Between Groups of Students Applying the PjBL Model and the Lecture Method.

Statistical data from the results of the calculation of SPSS 27 between learning methods, Learning Motivation, and learning outcomes, namely: (1) Visual Literacy Skill Learning Outcomes for the PjBL Model obtained an average (mean) of 72.5694 and a standard deviation of 6.85427. While the lecture method obtained an average (mean) of 63.1364 and a standard deviation of 3.59866, (2) High Learning Motivation in the PjBL Model was obtained N: 38 and low Learning Motivation was obtained N: 34. Meanwhile, the high Learning Motivation in the lecture method was obtained N.16 and the low Learning Motivation was obtained N: 50, and (3) The Total Visual Literacy Skill Learning Outcomes that had high Learning Motivation were obtained N: 54 and the low Learning Motivation was obtained N:84.

Learning with the PjBL Model provides opportunities for students to discuss with each other. The formation of student groups can help interaction between friends in a group. Students who have high Visual Literacy Skill Learning Outcomes can help students who have low Visual Literacy Skill Learning Outcomes. This interaction can facilitate students to build Visual Literacy Skill Learning Outcomes together. So that higher Visual Literacy Skill Learning Outcomes of students are obtained.

The results of research undertaken by enhance this study. (Faridah et al., 2022) with the title The Effectiveness of the Project-Based Learning Learning Model on the Numeracy Literacy and Digital Literacy Skills of Madrasah Ibtidaiyah Students, with the results of the research obtained that the use of the PjBL (project-based learning) learning model is effectively used in improving numeracy literacy and digital literacy skills in grade V students of MI Al-Fithrah Surabaya. The results demonstrate that the independent variable (X) significantly influences all dependent variables (Y1 and Y2), with a significance value of 0.107 < 0.05. This is demonstrated by the fact that the experimental class, which is treated using the PjBL (project-based learning) learning model, outperforms the control class, which employs the traditional learning model.

This research can also be strengthened by the findings of research conducted by (Firmansyah & Sumbawati, 2023) with the title The Influence of the PJBL Model and Learning Motivation on the Learning Outcomes of Mapel DDTK Class X Titl SMKN 1 Sidoarjo, with the results of the study obtained Based on the results of the research: (1) There is an influence of the PjBL and DI learning models on cognitive and psychomotor learning outcomes with significance values of 0.000 and 0.000. However, there was no effect on psychomotor learning outcomes with a significance value of 0.965; (2) There was an influence on affective and psychomotor learning outcomes of students who had high and low learning motivation by obtaining significance values of 0.000 and 0.000. However, there was no effect on cognitive learning outcomes with a significance value of 0.140; (3) There is an interaction between the PjBL and DI learning models on cognitive learning outcomes which is reviewed from the students' learning motivation with a significance value of 0,034.

From the description above, there is a significant difference between students who are taught using the PjBL Model and students who are taught by the lecture method on learning outcomes

The Effect of Learning Motivation on Students' Visual Literacy Skill Learning Outcomes

Statistical data from the results of the calculation of SPSS 27 between learning methods, Learning Motivation, and learning outcomes with the number of students as many as 138 students were obtained as follows: with 72 respondents consisting of 38 students having high Learning Motivation and 34 students having low Learning Motivation, having an average score of 76.7059 with a standard deviation of 4.65494

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for students with high Learning Motivation and an average score of 76.7059 with a standard deviation of 6.40596. If referring to the minimum completeness value (KKM) set in grade VIII at SMPN Samarinda city, which is 70, then students who learn using the Project Based Learning Model have the above value KKM.

The Visual Literacy Skill Learning Outcomes hypothesis test results showed that there was a p-value of 0.001 ($p<0.05$) for the relationship between student learning motivation and learning outcomes. Thus, it can be observed that students' learning outcomes for visual literacy skills increase with their learning motivation, and vice versa. Lower learning motivation is associated with lower learning outcomes for visual literacy skills.

Several studies also showed a positive relationship between Learning Motivation and Visual Literacy Skill Learning Outcomes of Students. Research conducted by (Lestari et al., 2024) It was stated that there was an influence of digital literacy on learning motivation of 46.8% and there was an influence of reading interest on learning motivation of 46.2%, and there was an influence of digital literacy and reading interest on learning motivation with a percentage of 56.5%. Based on the results of the study, it is known that the combination of good mastery of digital literacy and high interest in reading, which is characterized by enthusiasm for learning, will certainly help PPKn students to be much more active, and also encouraged to be involved in learning activities. The increase in digital literacy and reading interest has a positive and significant effect on learning motivation. Considering the current era, the demand for a student to be able to face all forms of challenges in learning is through mastery of digital literacy and a strong interest in reading. The better the digital literacy and reading interest of PPKn students, the more impact it will have on the motivation to learn.

This is also in accordance with the research conducted by (Soraya et al., 2023) The results of this study show that: (1) there is a significant positive influence between digital literacy, Learning Motivation as a Moderating Variable on the teaching outcomes of students in Economics XI High School (2) Digital Literacy partially has an influence on the value of Economics learning outcomes of High School Students in Class XI (3) Learning motivation as a Moderating Variable partially has an influence that results in the value of Economics learning outcomes of High School Students in Class XI.

Thus, according to the theory, students who have high visual literacy skills will succeed in learning compared to students who have low Learning Motivation as well as this study, has shown the same results as the theory. In order for learning to succeed in accordance with the teacher's expectations, it is necessary to understand the difference in learning motivation that students have to help teachers in choosing learning strategies.

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