The Effect of E-Problem Based Learning on Students' Interest, Motivation and Achievement

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The limitation of face-to-face meetings imposed by the Covid-19 pandemic has encouraged education environment to develop learning models with technology which can be integrated with Electronic-Problem-Based Learning (E-PBL). The study revealed whether the E-PBL Model, significantly affected (1) motivation, (2) learning interest, (3) achievemen, (4) motivation toward students' achievement, (5) learning interest toward students' achievement and (6) motivation toward students' learning interest in the entrepreneurship course. This study was quantitative, employing E-PBL software. The subjects of the study were 129 students of Economics Education department at STKIP PGRI Jombang, Indonesia who were taking entrepreneurship course by implementing E-PBL in academic year 2019/2020. Data were collected using observation, interviews, and questionnaires and analyzed using Path Analysis. The E-PBL Model significantly affected motivation, learning interest, achievement, motivation toward students' achievement, learning interest toward students' achievement and motivation toward students' learning interest in the entrepreneurship course It is recommended that teachers implement the E-PBL Model because it can increase learning motivation and interest that finally increase learning achievement.

Keywords: E-PBL, motivation, interest, learning achievement, entrepreneurship course

INTRODUCTION

The local governments of Indonesia have decided not to let schools conduct face-to-face meetings due to the Covid-19 pandemic since the middle of March 2020. Schools and campuses around Indonesia are encouraged to have online meetings. In the meantime, the e-University represents the development of the higher education learning model to

support learning and better information provision through the internet. The internet also supports the teaching and learning process at universities. Online classes have been a solution during the Covid-19 pandemic (Purwanti & Krisnadi, 2020; Rachmat & Kisnadi, 2020).

Online classes can be facilitated by various existing online platforms (Suhada et al., 2020) such as Zoom, Google Classroom, e-mail, and so forth. A fun and exciting learning model can help to reduce boredom in learning. Students following online learning also need various learning models to avoid boredom (Widiyono, 2020). In addition to using an interesting learning model, a teacher's creativity is also crucial to build fun learning activities for students (Hikmat et al., 2020). One of the learning models that can help reduce students' boredom in online learning is the Electronic-Based Problem-Based Learning (E-PBL) Model. E-PBL provides students with learning tasks to learn through experiences and real-world conditions based on problems given (Yamin, 2013). Baturay & Bay (2010) state that web-based education as an alternative to face-to-face learning is now being expanded to apply for higher education. Many efforts are made to provide rich and engaging multimedia content to learners. The use of multimedia technology has a significant effect on student learning, and so does the chosen teaching methodology. Supported by a Constructivist approach, Problem-Based Learning is one method that can be applied in a web-based learning environment.

E- PBL is an example of a student-centered learning environment. Students in small groups typically work on problems that have been formulated in order to obtain information and select the best self-skills for investigating problems and offering the best solutions (Palupi, et al., 2020). In student-centered learning, students have an active role and take advantage of classroom practices such as observation, generating questions, discussing, and self-studying.

Student-centered learning methods are becoming increasingly popular in education (Baeten et al., 2010). The methods were developed as a reaction to teacher-centered learning, which focused on transmitting knowledge and meaning from teachers to students. On the other hand, in student-centered learning, students have an active role and take advantage of classroom practices such as observation, generating questions, discussing, and self-studying. The active learning models are believed to promote a deeper understanding of materials and facilitate transferring knowledge to other domains or working (Baeten et al., 2010).

The e-PBL learning model is based on Barrows and Myers' (1993) e-PBL model. E-PBL learning model begins with unstructured practical problems and moves on to cooperative learning and independent online learning. Model development E-PBL-based learning is an alternative innovative learning method intended for the presentation of material information management accounting based on real-world cases with complete information. E-PBL learning model starts from practical problems that do not structured that puts the solution problems and cooperative learning,independently online (Murttiati & Hermawan 2017).

The implementation of E-PBL is an alternative innovative teaching model which is intended for material information entrepreneurship course based on authentic cases. The E-PBL Model effectively develops questioning skills, thinking skills, problem-solving skills, and independent learning. Fadly (2012) confirms an increase in learning activities and achievement of learning outcomes after applying the Electronic-Based Problem-Based Learning model on the entrepreneurship course.

The entrepreneurship course aims to develop the entrepreneurial spirit in students to become dynamic, motivated, and creative individuals with good thinking skills. They can work together in doing tasks. Based on the preliminary study conducted by researchers through interviewing five entrepreneurship course lecturers at Economics Education program of STKIP PGRI Jombang, Indonesia, Unfortunately, three entrepreneurship lecturers only use conventional learning methods dominated by lecturing, questioning, and tasks. The weaknesses of conventional learning models are the lack of student interaction and understanding of the information delivered by the lecturers.Conventional learning models emphasize observable behavioral changes, but the independent university curriculum demands observable behavioral changes and changes in students' critical thinking skills. Therefore, the lecturers should be better to implement E-PBL model that does not burden students with learning facts to improve learning outcomes.

Munawaroh (2020) and Amaral, & Fregni, (2021) found that combining the Problem Based Learning model with e-learning applications (E-PBL) can help students solve and explore critical thinking skills, as well as pique their interest in addressing learning challenges. The E-PBL Model is a student-centered learning model that uses problems to collect and integrate new knowledge. Students are given questions at the beginning of the learning process. They then solve problems and finally integrate knowledge in the form of reports. Problem-Based Learning on the entrepreneurship subject can provide a deeper understanding of theoretical and practical analysis.

This research is supported by Cao & Meng (2020) on the role of motivation in learning, showing a strong relationship between previous performance, motivation, and future achievement. Motivation is significantly related to achievement and all global competence dimensions of primary school learning English in China (Hu and McGeown, 2020) and foreign language achievement.

However, Setyawati et al. (2017) found that motivation influenced only 41% of the learning outcomes of economics courses using a Problem-Based Learning model with the help of mobile learning.The explanation above has motivated us to examine the effect of the E-PBL model using the online platform (website) developed by STKIP PGRI Jombang and CV Afinfo Informatika. The E-PBL software aims to help manage information on learning activities that involve interaction between lecturers and students in achieving learning objectives in the entrepreneurship course for students of the Economic Education Study Program at STKIP Jombang Indonesia. As a consequence, research is required to examine the effect of learning models on E-PBL (Electronic Problem Based Learning) learning paradigm and e-Learning on students ' motivation, interest and achievement by formulated into six research questions below:

Research questions
1. How is the effect of E-PBL toward students' motivation?
2. How is the effect of E-PBL toward students' achievement?
3. How is the effect of E-PBL toward students' motivation?
4. How is the effect of motivation toward students' achievement?
5. How is the students' learning interest toward students' achievement?
6. How is the effect of motivation toward students' learning interest?

Theoretical Review

Education needed to undergo revolutionary transformations quickly. The term 'digidemic' has been developed to describe the rapid widespread digitalisation of learning that has affected many universities around the world, with traditional face-to-face teaching being replaced by distanced teaching (Alam, 2020). Some processes and people, however, required more change than others. In the COVID19 crisis, key personnel in universities around the world knew that they needed to support students first and foremost if continued enrolment and completion of studies were to be ensured. Moving toward more flexible modes of delivery and acknowledging that learning outcomes can be met in a variety of ways is essential. McMillan (2020) states that some of the teaching and learning development should be done online and should reflect the principles of PBL Teachers must value students' self-directed and student-centered learning experiences.

Problem-Based Learning is one of the learning models where students face real-world problems to start learning and innovative learning that can provide active learning conditions. PBL employs a constructivist approach in which students attempt to solve real-world problems in a collaborative setting. Problem-based Learning (PBL) model provide scaffolding for idea integration and allow for the modification of learning activities as needed. PBL integrates student-centered, self-directed, and work-integrated learning, but PBL model must be supported by using technology. One possible reason, as Afsar (2019), Simanjutak et al. (2021). and Amaral, & Fregni, (2021) could be the monotonous paper-based PBL situations. As a result, sessions were held in an electronic environment using an existing electronic learning system (intranet platform), and all of the cases were converted into soft versions in the form of Electronic-PBL (E-PBL).

With the introduction of the E-PBL, audiovisual (AV) assistance could be embedded. The application of electronic learning (e-learning) can be made through a media site (website e) that can be accessed via the internet or web-based learning. One of Kruse's writings, "Using the Web for Learning", published on www.elearning.com, states that web-based learning has many benefits for students (Rusman, 2013). E-PBL allows students to work in groups and teach them to accept the opinions of other students in the same group, providing students with a new attitude and enthusiasm competition, as well as skills to find solutions to problems that they may face. Following these steps, students solve problems by applying their skills to a collection of previously served information and processing it to reach a solution. (Mustofa & Hidayah, 2020; Murniati and Hermawan, 2017, and Ared, 2012).

There are some previous studies dealing with E-PBL can improve students' motivation in learning. The economic education recognizes the motivational component of learning. The most widely used motivation theory is the Self-Determination Theory (SDT), as described by Ryan & Deci (2000). Various kinds of motivation underlie human behavior, depending on satisfying basic psychological requirements (Ryan & Deci, 2000). Intrinsic motivation is often defined as the desire or personal interest of an individual in completing a task. As a result, people engage in activities for their own sake rather than for the sake of extrinsic rewards. On the other hand, extrinsic motivation stems from the expectation of external incentives such as praise, rewards, rewards, and evaluations.

Motivational factors such as teaching strategies and learning motivation also affect student achievement. The positive interaction of learning experiences strengthens motivation and inspires participants to react to their surrounding challenges (Wen & Piao, 2020). In addition, using ComputerAssisted Language Learning (CALL) can contribute significantly to learning process. E-PBL also provides students' interest in some ways. Interest is a feeling of preferring a particular thing or activity without anyone telling (Asmani, 2009). The tendency of the soul towards something, consisting of feelings of pleasure, attention, sincerity, and the existence of motives and goals in achieving a goal, is called interest. Hidi (2001) states that interest and its role in learning have been conceptualized, and the focus is a specific relationship between interest and reading. Issues considered are the influence of interest on reader understanding and learning, the variables that determine reader interest, and specific processes such as attention that can mediate learning interest.

According to Djamaroh, learning outcomes that are realized in shapes, numbers, letters, and sentences that reflect the results achieved by each student are named as achievements (Syafi'i et al., 2018). Learning achievement is evidence of student achievement after participating in learning activities within a certain time in the form of changes in behavior, skills, and knowledge.Mental and attitudes that are always actively trying to improve work results in increasing income define entrepreneurship (Daryanto, 2013). The same thing is stated by Basrowi (2014), entrepreneurship is a human process related to creativity and innovation in understanding opportunities, organizing resources, and managing them so that these opportunities are realized into a profitable business.

All information encountered and known by humans through the five senses and their minds on efforts to build values through their ability, courage, determination, and creativity in taking risks in obtaining opportunities for success and knowing the factors that influence success is entrepreneurial knowledge. Hasril Amiruddin (2015), in his research entitled "An Investigation Effects of Mastery Learning Strategy on Entrepreneurship Knowledge Acquisition among Aboriginal Students", states that entrepreneurial achievement is obtained from effective entrepreneurial knowledge learning strategies. Antonio et al. (2014) state that entrepreneurial achievement comes from three main characteristics: creativity, intelligence, and personality.

METHOD

Research design

This study used a quantitative method to conduct an analysis. According to Creswell (2013), quantitative research is a type of research that explains a problem by collecting numerical data and analyzing it using statistics. The objective of this study is to analyze the influence of the ELP on learning interests, motivation and student entrepreneurial learning achievements during the Covid 19 pandemic, using a quantitative approach model. The close ended questionnaires and a test are a valid ways of collecting data in quantitative studies (Ary et al., 2010). The questionnaires and the test were sent to participants one week before the final class.

Research Subject

The subject of the study were 129 students of Economics Education department at STKIP PGRI Jombang, Indonesia who were taking entrepreneurship course by implementing E-PBL in academic year 2019/2020. They were aged between 20 and 24 years old. Researchers did not take randomly to select the subjects because they were selected for the students who were taught by E-PBL so the researcher used intact groups.

Research Instruments

The instruments used were students' motivation questionnaire, students' learning interest questioners, E-PBL questioner and a problem -based test with the google form application. The students' motivation questionnaire aimed to obtain data on determining the kinds of the students motivation. The students were given questionnaires via Google Form. The questionnaire was adapted from Khusaini, et al., (2018) and modified to fit the participants' level. For ease of calculation, the questionnaire was designed in the Likert Scale format. While students' learning interests were used to collect data on students' learning interests related to E-PBL during the learning entrepreneur course. The questionnaire was adapted from Jegger & Adair (2014). and includes four indicators: happiness, engagement, interests, and attention. The questionnaire, which included 15 items, was completed on a Likert scale with five options: strongly agree, agree, agree, normal, disagree, strongly disagree. The E-PBL use questionnaire was then developed in order to collect data on the use of E-PBL during the learning process.

The E-PBL use questionnaire was then developed in order to collect data on the use of E-PBL during the learning process. The questionnaire, which contained a total of 20 items, was completed using a Likert scale with five choices: strongly agree, agree, agree, normal, disagree, strongly disagree. In the Entrepreneur course, there is a problem-based test with 25 items and multiple-choice answers.

There are three instruments involving of motivation   questionnaire, interest questionnaire   and a test in this research which have been valid and reliable. From 20 questions of interest, 16 questions of motivation and 25 questions of test, the validity of all of them show that R count is higher than R table 0.349. The Pearson Correlation

value for all items are confirmed valid. Then motivation questionnaire, interest questionnaire and a test were validated by experts' recommendation using a validation sheet with a Likert scale. Then the reliability three instruments showed that the Alpha Cronbach Correlation value of 0.786 with a significance of 0.00 (<0.05) so that the instrument was declared reliable. With the fulfilment of valid and reliable criteria, the test instruments in this research can be used to answer the research questions.

Data Analysis

The E-PBL model was used in the study, as were independent variable such as motivation, learning interests, and achievement. Based on the literature review and previous empirical studies, the following equation can be used to represent the relationship between variables:

$LM = \beta_1 PBL + \varepsilon_1$ …………………………………(1)
$LI = \beta_1 PBL + \beta_2 LM + \varepsilon_2$ …………………………….(2)
$LA = \beta_1 PBL + \beta_2 LM + \beta_2 LI + \varepsilon_3$ …………….........   (3)

Explaination :
PBL = Problem Based Learning
LM = Learning Motivation
LI = Learning Interest
LA = Learning Achievement

While the data analysis using Path Analysis test. The Path Analysis model in this study is as follows :
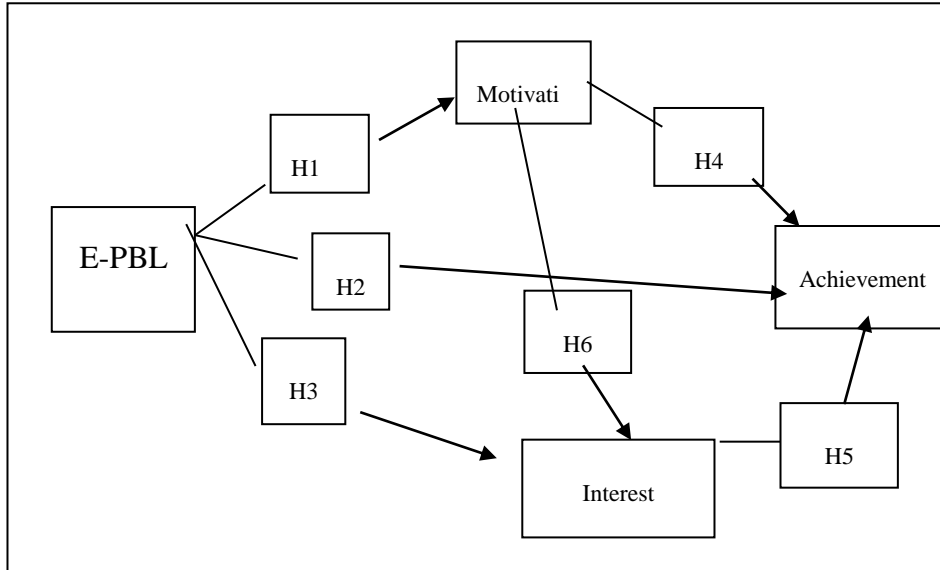

Figure 1
Path analysis model

Path analysis model is described to 6 hypotheses as the following
1. There is an effect of E-PBL toward students' motivation. (H1)
2. There is an effect of E-PBL toward students' achievement. (H2)
3. There is an effect of E-PBL toward students' motivation. (H3)
4. There is an effect of motivation toward students' achievement. (H4)
5. There is an effect the students' learning interest toward students' achievement. (H5)
6. There is an effect of motivation toward students' learning interest. (H6)

FINDINGS

The following is the construction of causal relationships between variables based on the results of Path Analysis.
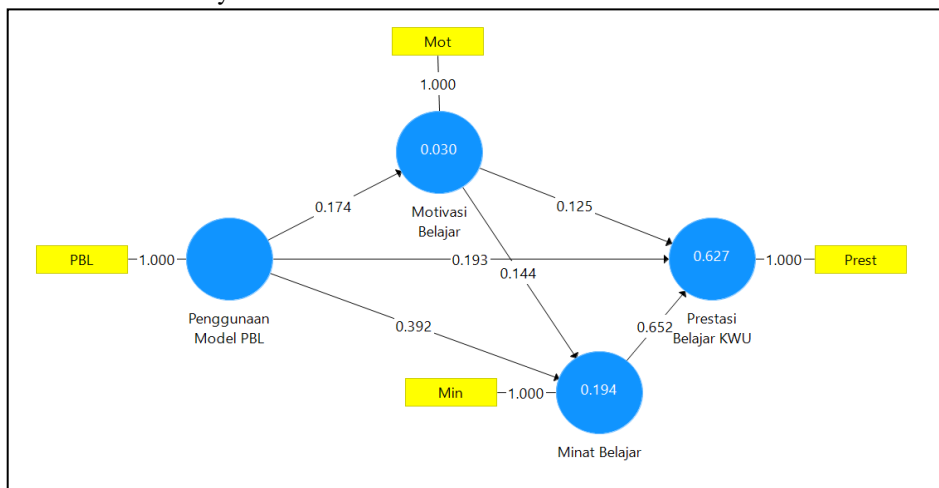

Figure 2
Statistical decomposition model

The R-Square for each latent dependent variable is presented in Table 1.

Table 1
R-Square

	R-Square	R-Square Adjusted
Interest	0.194	0.181
Motivation	0.030	0.023
Achievement	0.627	0.618

The R-Square value of the learning interest variable is 0.194, meaning that 19.4% of the learning interest variable is influenced by learning motivation. The value of R-Square of the learning motivation variable is 0.030, meaning that the use of E-PBL influences 3% of learning motivation. The R-Square value of the learning achievement variable is 0.627, meaning that 62.7% of learning achievement is influenced by the interest in learning and the use of the EPBL model. Information about the significance level of the estimated parameters is needed to see the relationship between the research variables.

The basis for hypothesis testing is the value in the output for inner weight. Table 2 provides the estimated output for testing the structural model.

Table 2
Path coefficients, mean, STDEV, T-values, P-values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Interest → Achievement	0.652	0.707	0.154	4.238	0.000
Motivation → Interest	0.144	0.155	0.069	2.081	0.038
Motivation→ Achievement	0.125	0.109	0.062	2.025	0.043
E-PBL → Interest	0.392	0.396	0.055	7.120	0.000
E-PBL→ Motivation	0.174	0.168	0.082	2.123	0.034
E-PBL → Achievement	0.193	0.166	0.085	2.276	0.023

Table 2 confirms the following results. *First*, learning interest positively and significantly influences achievement, as evidenced by a p-value of $0.000 < 0.05$ with a coefficient value of 0.652. *Second*, learning motivation positively and significantly influences interest, as evidenced by a p-value of $0.038 < 0.05$ with a coefficient value of 0.144. *Third*, learning motivation positively and significantly influences achievement, as evidenced by a p-value of $0.043 < 0.05$ with a coefficient of 0.125. *Fourth*, the E-PBL model positively and significantly influences interest, as evidenced by a p-value of $0.000 < 0.05$ with a coefficient value of 0.392. *Fifth*, the EPBL model positively and significantly influences learning motivation, as evidenced by a p-value of $0.034 < 0.05$ with a coefficient value of 0.174. *Sixth*, the EPBL model positively and significantly influences learning achievement, as evidenced by a p-value of $0.023 < 0.05$ with a coefficient value of 0.193. The indirect effect between variables is presented in Table 3.

Table 3
Specific indirect effects mean, STDEV, T-values, P-values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
E-PBL → Motivation → Interest	0.025	0.026	0.019	1.324	0.186
Motivation → Interest → Achievement	0.094	0.112	0.064	1.469	0.143
E-PBL → Motivation → Interest → Achievement	0.016	0.019	0.016	1.025	0.306
E-PBL → Interest → Achievement	0.256	0.278	0.066	3.863	0.000
E-PBL → Motivation → Achievement	0.022	0.020	0.016	1.322	0.187

Table 3 shows the indirect effect of E-PBL on achievement mediated by learning interest as evidenced by a p-value of $0.000 < 0.05$ with a coefficient value of 0.256, while the others are not significant.

DISCUSSION

The Path Analysis showed the statistical results on each variable and the causal effect between the endogenous and exogenous variables. The findings are elaborated as follows.

Interest Influenced Achievement

The path analysis confirmed that interest positively and significantly affected achievement. The finding supported the theory of Winkel (2004:188) that interest was a persistent tendency of subjects to be curious in a particular field of study or subject and feel happy to study the material. If students have a high interest in entrepreneurship courses, the hope for success will be greater. Interest is one of the critical factors that affect student achievement. Students who have a high interest in learning have the opportunity to achieve better learning achievement. Antonio, Lanawati, & Christina (2014) revealed that entrepreneurial achievement came from three main characteristics: creativity, intelligence, and personality.

A student's interest in the subject may help to keep his mind sharp so that he can grasp the lesson. In turn, a successful achievement will pique his interest, which can last for the duration. A student will not learn if he is not interested in certain materials or subjects. Students who are interested in learning, on the other hand, will appear to be compelled to study hard and get better achievement.

Motivation Influenced Interest

The finding confirmed that learning motivation affected interest. In addition to interest, success in learning is also influenced by learning motivation. Motivation plays an essential role in the success of student learning. Motivation arises from within the student consciously or unconsciously or from outside to achieve the desired goal. In essence, motivation is a psychological condition that encourages someone to do something. In learning activities, motivation can be said as the overall driving force in students that creates, ensures continuity, and provides direction for learning activities to achieve goals. Students who have a high interest in learning will study hard because they are motivated to achieve well. Based on the results from the analysis and supported by the theory, it can be concluded that learning motivation directly affected learning interest.

Interest is anything that makes students want to learn more about it, while motivation is the desire to do something useful. So students must be passionate about the subject. The motivation is required to achieve the goal. It can be highlighted that the students' interest can motivate them to get better achievement.

Motivation Influenced Achievement

The path analysis confirmed that motivation positively and significantly affected achievement. Learning motivation is an impulse that exists in students to carry out learning activities, especially in the entrepreneurship course. High learning motivation existing within the students of Economics Education STKIP PGRI Jombang will help them learn entrepreneurship to achieve maximum learning outcomes.

Student learning motivation is related to students' interest and attention to the entrepreneurship course, enthusiasm in doing entrepreneurial tasks through the E-PBL model, responsibility in doing entrepreneurial tasks, reactions to the stimulus given by lecturers, and enjoyment in doing assignments. Based on the description, it can be seen

that learning motivation is essential in learning activities in the classroom because motivation is closely related to achievement. Wen & Piao (2020) supported the finding that motivational factors such as teaching strategies and learning motivation also affect students to achieve well. Positive learning experiences strengthen motivation and inspire participants to react to environmental challenges.

A good study strategy and high study effort result from a relatively autonomous or self-determined motivation, which leads to enhanced academic success. An effective teaching strategy mediates the influence of motivation on students' achievement in Entrepreneurship course. E-PBL is one of models that can encourages students' motivation in learning entrepreneurship course.

E-PBL Influenced Interest

This study proved the influence of E-PBL on learning interests in the entrepreneurship course. Students responded positively to the use of E-PBL learning (Electronic-Problem-based Learning) during the Covid-19 pandemic. Most of them chose "agree" in the questionnaire. Their perception of the online gamification feature indicated that the content was delivered effectively and usefully while also being very easy to use.

The E-PBL model in this study gave better results than conventional learning models. In addition, E-PBL involved students directly in understanding entrepreneurship materials by directly engaging in problem-solving with directed steps. E-PBL made students more independent. E-PBL built cooperation between heterogeneous group members. In addition, E-PBL also helped students be more active in carrying out problem-solving activities because students could directly observe and do the learning independently using the E-PBL application. It increased students' interest and attention to learning. This finding is supported by Simanjutak et al. (2021). They confirms that that problem-based learning combined with computer assistance is far more effective than problem-based learning or just a traditional teaching method.

Supporting students' general interest in Entrepreneurship course appears to be encouraged by implementing E-PBL while establishing students' ability to improve in E- PBL context appears to raise students' understanding of their own responsibilities.

E-PBL Influenced Motivation

The results showed that E-PBL affected motivation. Problem-Based Learning models combined with online learning showed more advantages. This finding is consistent with the results of previous research of Ashtian Mohammad Jafarabadi Mansoor Nomanof Bahram Sadeghi Bigham (2012), showing that the Problem-Based Learning model combined with the application of e-learning was able to assist students in solving problems, developing critical thinking skills, and creating student interest in solving problems. The finding confirmed that students with high and low learning motivation could both benefit E-PBL. The result is in line with Keziah (2010) that Problem-Based Learning models could motivate students to continue to build their knowledge actively so that students who initially had low learning motivation become more challenged in dealing with learning problems.

The use of attractive models and media can also boost motivation. As a result, learners' attractiveness rises, and they become more motivated to learn. Learning outcomes will be influenced by increased motivation. E-PBL is one of teaching models which can enhance students' motivation in Entrepreneurship course.

E-PBL Influenced Achievement

The result confirmed the effect of E-PBL on learning achievement. Problem-Based Learning models combined with e-learning applications (E-PBL) have better advantages for learning outcomes. The finding is consistent with the results of a previous study by Ashtian et al. (2012), showing that E-PBL helps students solve problems, develop critical thinking skills, and grow interests in solving learning problems. This finding is consistent with the results of previous studies. Simamora (2012) and Simanjutak et al. (2021). also showed that E-PBL models resulted in better learning achievement. PBL method can encourage students to learn actively and foster the independent students' learning and students are given full responsibility for problem solving of their tasks. Thus, E-PBL could improve achievement in the entrepreneurship subject for students with high learning motivation and low learning motivation.

In the E- Problem Based Learning model, Students' ability is optimized through group work, or team work so that students can be empowered, honest, and develop their ability. They are provided implementing E-PBL because students construct their own knowledge with technology support, the problem-based learning model may improve learners' learning achievement.

PBL method provide scaffolding for integrating ideas and facilitating the change of learning activities as appropriate. PBL emphasizes student-centered, self-directed, and work-integrated learning, however e-Learning platforms must be built in accordance with PBL so E-PBL is implemented to provide the fully online and hybrid learning in Pandemic era. Moreover, e-PBL activities are also designed students become more involved in the PBL process and improve contextual learning, allowing them to progress up the integration with technology support.

CONCLUSIONS

Based on the findings and discussion, this study suggested that integrating E-problem-based learning (E-PBL) in entrepreneurship courses incorporating such as, has a positive impact on students' learning styles, learning interests, and achievement. 1) There is a significant relationship between entrepreneurial learning achievement and interests, 2) there is a significant relationship between entrepreneurial learning achievement and motivation ,3) there is a significant relationship between motivation and learning interests, and 4) there is a significant relationship between E-PBL and entrepreneurial learning achievement. 5) EPBL and learning interests have a substantial relationship. No correlation exists between E-PBL and learning style. 6)The use of the E-PBL Model has an indirect effect on entrepreneurial learning accomplishment, which is mediated by the variable learning interests. As a result, this study suggests that E-PBL was helpful in addressing students' learning styles, interests, and achievement among high school

students during both the Covid 19 epidemic and the new normal era. During the learning process, it is also advised that e-learning media be used in conjunction with other learning methods.

Based on the findings and discussion, the following suggestions are given. *First*, students have to improve their motivation and interest in learning. *Second*, lecturers are suggested upon applying E-PBL during the Covid-19 pandemic to improve student's ability in solving problems in the entrepreneurship course. Third, further studies are suggested to examine the use of e-learning media combined with other learning models. Elearning media combined with PBL can also be implemented in other courses or subjects. *Fourth*, the E-PBL model positively and significantly influences interest, as evidenced by a p-value of $0.000 < 0.05$ with a coefficient value of 0.392. *Fifth*, the EPBL model positively and significantly influences learning motivation, as evidenced by a p-value of $0.034 < 0.05$ with a coefficient value of 0.174. *Sixth*, the EPBL model positively and significantly influences learning achievement, as evidenced by a p-value of $0.023 < 0.05$ with a coefficient value of 0.193.

The limitation of our study is dealing with the subjects' selection with intake class. However, we speculate that the finding of this study can be useful to educators. By implementing E-PBL can encourage students' motivation, interest and achievement and problem solving abilities by using technology support.

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