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LITERATURE REVIEWS: THE INFLUENCE OF STUDENT MOTIVATION ON LEARNING IN VOCATIONAL EDUCATION

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ABSTRACTS

Background: Student motivation is one of the factors that influence the quality of learning, the high level of motivation will create a good quality learning process. Purpose: this study aims to determine how much influence student motivation has on the learning process in vocational education. Method: literature study from 2010 to 2020. Data obtained from the Science and Technology Index database with the keywords vocational, vocational education, motivation. Result: Through the presented problems in Problem-Based Learning, students can become more engaged in efforts to solve issues and participate in utilizing critical thinking skills. With the presence of the EFI Scanner, students' learning motivation averages at 82.31%. From the assessment of students' learning motivation, a perseverance and determination score of 88.65% was achieved. The use of animation media in delivering electrical system materials provides higher motivation compared to using PowerPoint media. Motivation features developed with the Pre-defined set approach have a more effective impact on improving learning achievements. Conclusion: The Problem-Based Learning approach, EFI Scanner, Animation Media, and Pre-defined set have a positive influence on student learning outcomes, critical thinking skills, learning motivation, and academic achievements.

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1. INTRODUCTION

Learning is an activity of students as students who try to get changes in behavior. Learning that has clear goals will make students understand the knowledge or skills they will acquire after the learning process is complete. Students understanding of learning objectives will lead to students interest in learning. High interest is an indicator that students motivation to learn is also high (Djuniadi, 2013). According to Sjukur (2013) motivation is an internal process that activates, guides, and sustains behavior over time. Arousing interest from learners is a technique to increase motivation. Several ways can be done to generate interest in learning by way of Pre-defined sets, Problem-Based Learning, EFI Scanner, Animation Method, and Blended learning as mentioned in Figure 1.

Figure 1. Media Selection Criteria

Predefined sets is a way to realize the ideals or individual expectations by making motivational sentences. The motivational sentence is adjusted to the desire of each individual to be able to study harder. This pre-defined set is based on Maslow's theory which says that every individual has needs that are arranged in a hierarchy from the most basic level to the highest level (Djuniadi, 2013). Problem-Based Learning or PBL is progressive active learning and an unstructured problem-centered learning approach that is used as a starting point in the learning process. In short, PBL is giving students problems related to everyday life and then working in groups to find alternative solutions to solve these problems (Wulandari & Surjono, 2013). This Problem Based Learning can be applied to students majoring in Industrial Electronics mentioned in Table 1.

Table 1. Phases in Problem Based Learning

Fase dalam PBL	Perilaku Guru
Fase 1 Memberikan orientasi tentang permasalahannya kepada siswa	Guru membahas tujuan pembelajaran, mendeskripsikan berbagai kebutuhan logistik penting, dan memotivasi siswa untuk terlibat dalam kegiatan mengatasi masalah
Fase 2 Mengorganisasikan siswa untuk meneliti	Guru membantu siswa untuk mendefinisikan dan mengorganisasikan tugas-tugas belajar yang terkait dengan permasalahannya
Fase 3 Membantu investigasi mandiri dan berkelompok;	Guru mendorong siswa untuk mendapatkan informasi yang tepat, melaksanakan eksperimen, dan mencari penjelasan dan solusi
Fase 4 Mengembangkan dan mempresentasikan artefak/exhibit	Guru membantu siswa dalam merencanakan dan menyiapkan artefak-artefak yang tepat seperti laporan, rekaman video, dan model-model yang membantu mereka untuk menyampaikannya kepada orang lain.
Fase 5 Menganalisis dan mengevaluasi proses mengatasi masalah	Guru membantu siswa untuk melakukan refleksi terhadap investigasinya (penyelidikannya) dan proses-proses yang mereka gunakan.

In addition, Problem Based Learning can be utilized by students who study repairs and resetting PC systems which consist of diagnosing damage to PCs, finding and isolating problems, carrying out repairs and checking the results of PC repairs. Through PBL students gain experience in dealing with realistic problems, and emphasize the use of communication, collaboration, and available resources to formulate ideas and develop reasoning skills. (Nafiah & Suyanto, 2014). In the automotive world, the more sophisticated the technology used by vehicles, the more complicated it is to study it so it requires precision and accuracy when carrying out maintenance and repairs. One of them is the EFI system which continues to grow. One way to study it is using the EFI Scanner. This is evidenced by the many modern repair shops that already use the EFI Scanner as a tool to repair vehicles that use the EFI (Electronic Fuel Injection) system (Adnyana & Suyanto, 2013) mentioned in figure 2.

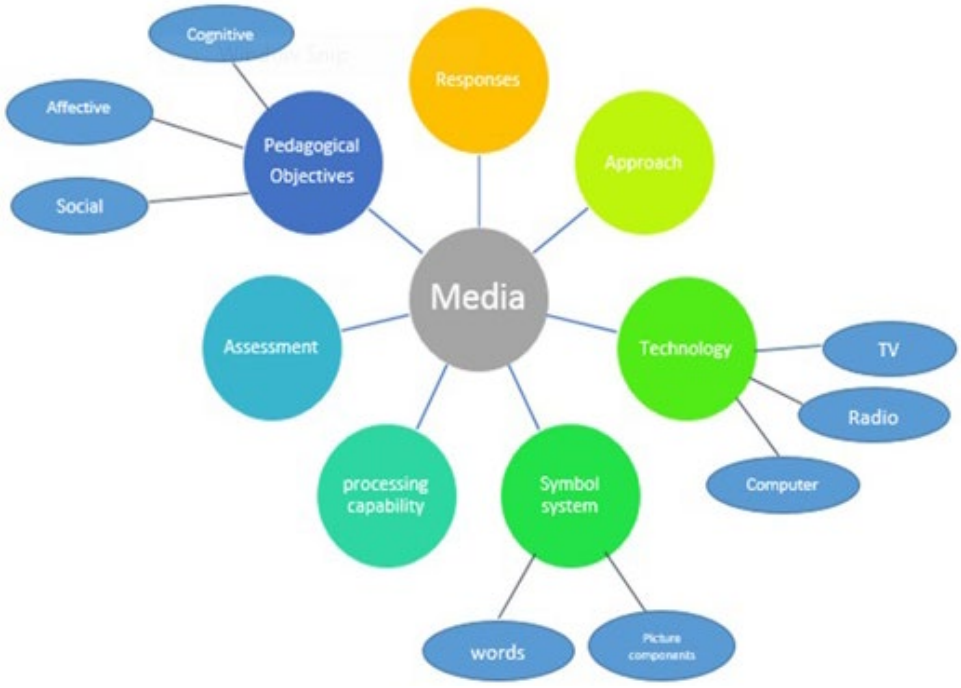

Figure 2. Instructional Media

One of the teaching methods for automotive electrical system material used is the use of animated media in conveying the concept of electricity to competency standards for repairing starter and charging systems, as well as competency standards for repairing ignition systems, especially in basic competencies, namely identifying systems and their components. The use of animated media in learning can facilitate the acceptance of a lesson and grow or increase student learning motivation (Sukiyasa & Sukoco, 2013). This is supported by the statement Aksoy (2012) namely the animation method is more effective than traditional teaching methods in increasing student learning outcomes. Blended learning as a combination of the characteristics of traditional learning and electronic learning environment or Blended learning. combines aspects of Blended learning (electronic format) such as web-based learning, video streaming, synchronous and asynchronous audio communication with traditional "face to face" learning. Besides Blended learning, there are other terms that are often used, including Blended learning and Hybrid learning. This blended learning can be applied to students who take Computer and Network Engineering Skills Competency (Sjukur, 2013).

2. METHODS

This research used Literature Review method, which is research used to collect and evaluate research related to a particular topic (Triandini, E, et al., 2019). This research was conducted by searching for data and collecting actual information using the keywords motivation, learning, and vocational education.

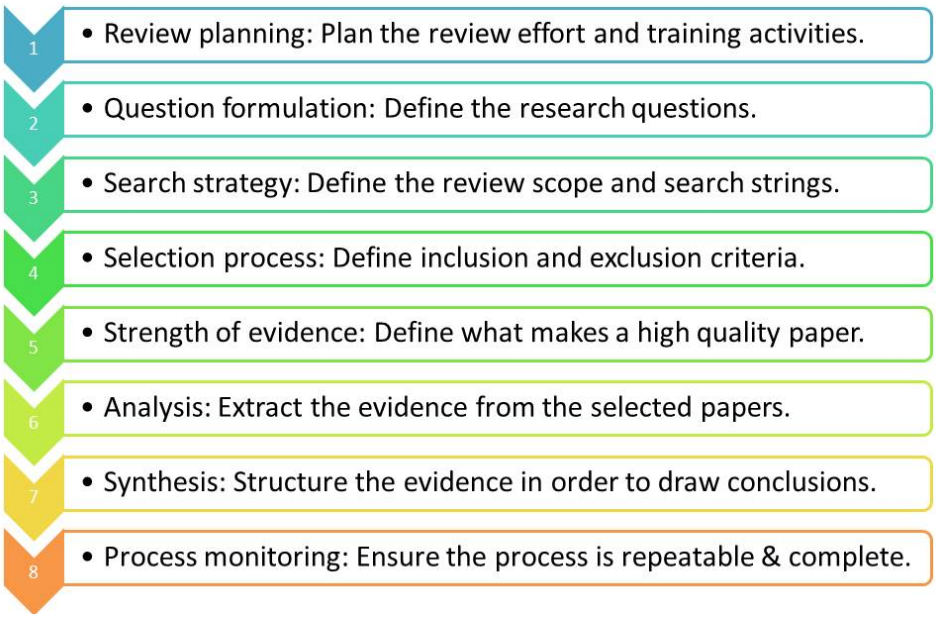

Figure 3. Literature Review Flow

The procedures carried out in this research are compiling the background and objectives, identifying problems, searching for literature data, screening literature, assessing quality, extracting data, and synthesizing final data. The literature data used is scientific article sources from various national and international journal sources.

3. RESULTS AND DISCUSSION

a) Problem-Based Learning

Based on 2 articles selected to be used as research sources on Problem-Based Learning, the first article using the quantitative approach method published in 2013 and the second article using the classroom action research (PTK) method published in 2014. Each of the 2 selected articles was carefully read to gather information about Problem-Based Learning. The Problem-Based Learning method aims to produce students to learn to learn, work together in groups to find solutions to real problems. These problems are used to remind curiosity and analytical skills and initiative on subject matter, as well as to think critically and analyze and to seek and use appropriate learning resources. Because problem-based learning is a learning environment in which problems are used for learning, problems are posed in such a way that learners find the necessary learning needs so they can solve these problems. The result presented in table 2.

Table 2. Results of Advanced Stage of Variance Analysis

Kelompok yang dibandingkan		P_{Value}	Kondisi	Keputusan Uji
PBL (1) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi tinggi	Hasil Belajar	0,000	< 0,05	Terdapat perbedaan
PBL (2) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi tinggi		0,000	< 0,05	Terdapat perbedaan
PBL (1) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi rendah		0,002	< 0,05	Terdapat perbedaan
PBL (2) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi rendah		0,002	< 0,05	Terdapat perbedaan
PBL (1) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi tinggi	Hasil Praktik	0,001	< 0,05	Terdapat perbedaan
PBL (2) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi tinggi		0,001	< 0,05	Terdapat perbedaan
PBL (1) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi rendah		0,001	< 0,05	Terdapat perbedaan
PBL (2) dengan demonstrasi ditinjau dari siswa yang memiliki motivasi rendah		0,002	< 0,05	Terdapat perbedaan

In article 1, before the research was carried out, the first step was to test the initial abilities of the research subjects by conducting a pretest to obtain initial data and then testing the balance of the samples to be used for research. Data analysis in this study used parametric statistics using the t-test and two-way analysis of variance (ANAVA) and continued with the Scheffe test. From the data on student learning outcomes, it shows that the learning outcomes of students who are taught by the Problem-Based Learning method are higher than the learning outcomes of students who are taught by the demonstration learning method. Student learning outcomes in practice taught by the PBL method are also higher than the learning outcomes of students taught by conventional learning methods.

Problem-Based Learning superior to the demonstration learning method. The significance level used in the two-way analysis of variance test was 0.05. Thus it can be concluded that there is no interaction between learning methods and learning motivation categories on learning outcomes, because the Sig value is > 0.05. Because there is no interaction between learning methods and learning motivation categories on learning outcomes, it can be stated that the achievement of learning outcomes is not influenced insignificantly by the interaction between the learning methods applied in learning and learning motivation, meaning that the Problem-Based Learning learning method will produce results learning is higher than the demonstration learning method in terms of students who have high or low motivation. It can be seen in the table 3.

Table 3. Improving Student Learning Outcomes

No	Keterangan	Siklus I	SiklusII
1	Nilai Tertinggi	89,65	88,8
2	Nilai Terrendah	50,50	78,38
3	Rata-rata	78,16	83,2
4	Tuntas (N ≥75)	21 (68,97%)	29 (100%)
5	Belum Tuntas (N<75)	9 (31,03%)	0 (0%)

In article 2, the implementation of Problem-Based Learning to improve critical thinking skills in cycle I shows that it has not reached the criteria, because the percentage is only 68.4% of what should be 80%. This happened because the students still did not dare to express their thoughts in front of other people, for fear of making mistakes. Then, after the implementation of cycle II, the percentage of students' critical thinking skills increased to 80.4%. Based on the results of the increase, it shows that the success criteria have been achieved. The increase in critical thinking skills is because students have been able to apply the stages in critical thinking through Problem-Based Learning.

b) EFI Scanner

Based on one of the articles used as research sources, students were very enthusiastic in carrying out the practice because they were already able to do the EFI Scanner, this was evidenced by the large number of students using the EFI Scanner. However, the use of the EFI Scanner makes practice activities less than optimal because practice targets have not been achieved. This is because students use EFI Scanner more because of its attractive appearance. With the EFI Scanner, students' learning motivation reached an average of 82.31%, from the results of the assessment of student learning motivation it was obtained that a score of perseverance and tenacity reached 88.65%. This is influenced by the use of the EFI Scanner which is the main attraction for students.

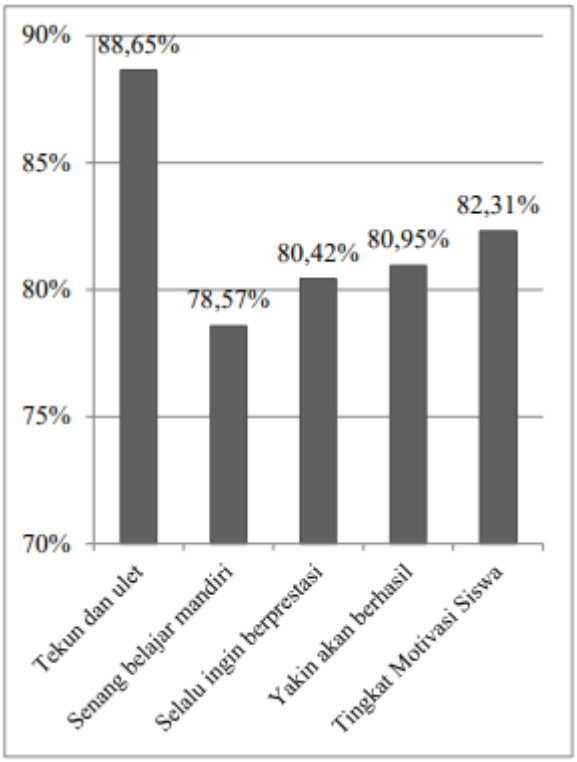

Figure 4. Student's motivation to study

The indicators of learning motivation observed in this study include (1) being diligent and tenacious in facing learning difficulties; (2) enjoy independent learning; (3) always want to excel; and (4) sure it will work. For indicators of being diligent and tenacious in facing learning difficulties, the data collected is 88.65%. The indicator of happy independent learning from the data collected is 78.57%. The indicator always wants to achieve 80.42% of the data collected and the indicator is sure that 80.95% of the data will be successful. The overall average of student learning motivation is 82.31%. Overall, the average student motivation is included in this high category as seen from the average learning motivation obtained which is 82.31%.

c) Animation Media

Table 4. Data Homogeneity Test Results

	Data	Lavene's tes equality of variances		Kesimpulan
		F	Sig.	
Equal variances assumsed	Pretes	3,565	0,064	Homogen
	Posttes	0,254	0,616	Homogen
	Motivasi	0,883	0,351	Homogen

Based on the results of the analysis, it shows that the delivery of automotive electrical system material using animated media can increase student learning motivation. Through animation media, the work process or working principle of an electrical system can be observed more realistically than still image media. Students can observe material that is more real, especially an electrical system work process, where electricity is an abstract material. Motivation is needed to improve learning outcomes. The teaching and learning process in

schools will not be effective if there is no readiness for students to learn. Readiness to learn includes the motivation to learn in students, so that all the lessons given can be well received. Research shows that the use of animated media in the delivery of electrical system material provides higher motivation than learning using PowerPoint media.

Table 5. Independent Sample T-Test Test Results

variabel	T hitung	T tabel	Df (degree of freedom)	Taraf signifikansi	Kesimpulan
Hasil Belajar	3,279	2,000	61	0,05	Signifikan
Motivasi Belajar	3,124	2,000	61	0,05	Signifikan

The material conveyed through animated media is clearer and closer to reality can increase students' understanding. Learners more easily accept the material or more easily understood. Easy-to-understand subject matter certainly provides better learning outcomes. Thus, animated media contributes positively to learning outcomes. The use of animated media in learning automotive electrical system material shows that student learning outcomes taught with animated media are higher than learning outcomes taught with PowerPoint media. The difference in the mean scores indicates that animation media is more effective in improving student learning outcomes. Using animation media in learning makes it easy for students to receive abstract lessons.

d) Predefined sets

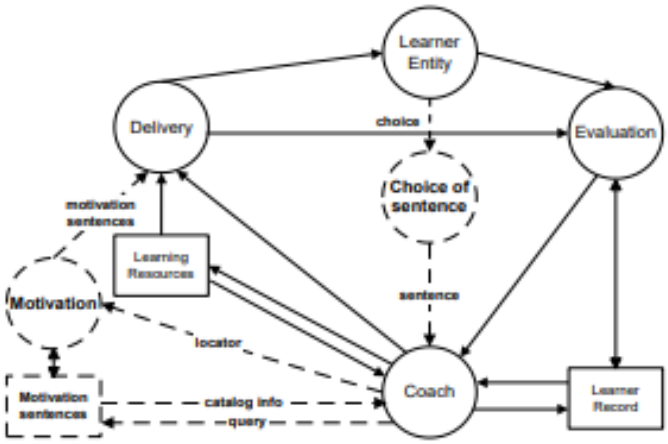

Figure 5. Architecture features motivation with Pre-defined sets approach

The motivation in this study was developed using a pre-defined set approach and has been successfully implemented. The pre-defined set approach gives flexibility to students to choose motivational sentences that have been prepared to motivate themselves during learning. The test results show that the motivational features developed with the Pre-defined set approach are more effective in increasing learning achievement.

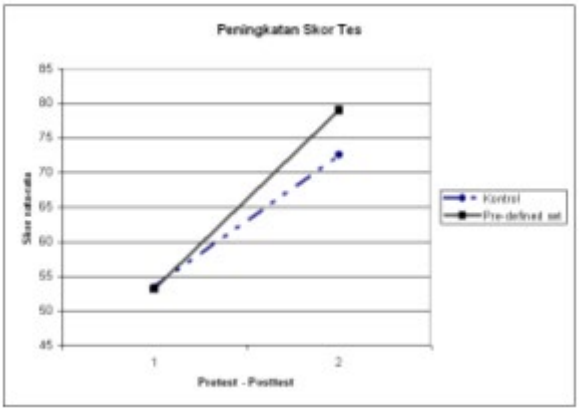

Figure 6. Graph of Increasing Test Scores

Based on the value data obtained by students, it can be concluded that there is an increase in scores for students who take the Pre-defined set approach. This shows that the motivational features with the Pre-defined set approach have a positive effect on learning achievement in the e-learning system.

4. CONCLUSION

From the analysis of the selected articles focusing on various aspects of education, it becomes evident that Problem-Based Learning (PBL) serves as a powerful pedagogical approach. Through meticulously examining two articles, one utilizing a quantitative approach in 2013 and the other employing classroom action research (PTK) in 2014, valuable insights into the efficacy of PBL have been garnered. The methodology of PBL aims to cultivate a profound learning experience for students, fostering collaborative problem-solving and real-world application. This methodology not only ignites curiosity and analytical thinking but also nurtures initiative and critical analysis within subjects. As students tackle the problems presented in PBL, their engagement in problem-solving endeavors deepens, accompanied by the utilization of critical thinking skills. In tandem with PBL, the incorporation of an EFI Scanner as an educational tool significantly heightens students' learning motivation, attaining an average score of 82.31%. Among these scores, the dimensions of perseverance and tenacity attained a notable 88.65%, further demonstrating the positive impact of the EFI Scanner. Equally noteworthy is the adoption of animation media, which has proven instrumental in conveying intricate subject matter to students. The animation medium's ability to simulate real-world scenarios enhances students' comprehension, thereby optimizing their learning outcomes. Furthermore, the implementation of a pre-defined set approach in motivational development exhibits its efficacy in enhancing learning achievements. This conclusion underscores the collective positive influence of Problem-Based Learning, the EFI Scanner, animation media, and the pre-defined set approach on various dimensions of education, including learning outcomes, critical thinking skills, learning motivation, and academic achievements.

5. REFERENCES

Adnyana, IGM, & Suyanto, W. (2013). Using the EFI Scanner as a learning medium to increase student interest, motivation, and achievement. Journal of Vocational Education. https://doi.org/10.21831/jpv.v3i2.1601

Aksoy, G. (2012). The Effects of Animation Technique on the 7th Grade Science and Technology Course. Creative Education. https://doi.org/10.4236/ce.2012.33048

Djuniadi, D. (2013). Features of online learning motivation with a pre-defined set approach. Journal of Vocational Education. https://doi.org/10.21831/jpv.v2i1.1015

Nafiah, YN, & Suyanto, W. (2014). Application of the Problem-Based Learning model to improve critical thinking skills and learning outcomes student. Journal of Vocational Education. https://doi.org/10.21831/jpv.v4i1.2540

Sjukur, SB (2013). The effect of Blended learning on learning motivation and student learning outcomes at the SMK level. Journal of Vocational Education. https://doi.org/10.21831/jpv.v2i3.1043

Sukiyasa, K., & Sukoco, S. (2013). The effect of animated media on learning outcomes and student motivation in automotive electrical system material. Journal of Vocational Education. https://doi.org/10.21831/jpv.v3i1.1588

Triandini, E, et al. (2019). Metode Systematic Literature Review untuk Identifikasi Platform dan Metode Pengembangan Sistem Informasi di Indonesia. 2, Denpasar: Indonesian Journal of Information Systems (IJIS), Vol. 1.

Wulandari, B., & Surjono, HD (2013). The effect of Problem-Based Learning on learning outcomes in terms of PLC learning motivation in Vocational Schools. Journal of Vocational Education. https://doi.org/10.21831/jpv.v3i2.1600