The Role of the Self Organized Learning Environment (SOLE) Learning Model Assisted by E-learning Applications to Improve Motivation and Learning Outcomes

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Abstract

The purpose of this study was to increase students' motivation and learning outcomes through a self-organized learning environment (SOLE) learning model assisted by e-learning applications. This research uses the classroom action research method. The subjects of this study were students of class XI Marketing Department at SMK Negeri 1 Puhpelem in Wonogiri Regency, Indonesia. Data collection techniques using observation, interviews, questionnaires, tests, and analysis of documents and archives. The data collected were analyzed descriptively qualitatively and quantitatively. The results showed an increase in students' motivation and learning outcomes through the role of a self-organized learning environment (SOLE) learning model assisted by e-learning applications. The results of the study obtained a comparison of the increase in learning motivation and learning outcomes of students in class XI Marketing A SMK Negeri 1 Puhpelem at the pre-action stage by 34.86%, increasing in cycle 1 to 64.39% and increasing again in cycle 2 by 85.17%. Learning outcomes increased in the pre-action stage by 33.33%, increased in cycle 1 to 68.57%, and increased again in cycle 2 by 88.57%. learning motivation for class XI Marketing B SMK Negeri 1 Puhpelem at the pre-action stage was 33.12%, increased in cycle 1 to 67.35%, and increased again in cycle 2 by 86.25%. Learning outcomes increased in the pre-action stage by 31.25%, increased in cycle 1 to 74.29%, and increased again in cycle 2 by 91.42%.

I. Introduction

The development of science and technology in the era of industrial revolution 4.0 led to increasingly complex global competition. The implementation of learning from home during the COVID-19 pandemic, which was instructed by the government, demands that all learning activities use digital technology which is a form of distance learning.

The outbreak of this virus has an impact of a nation and Globally (Ningrum *et al*, 2020). The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). Covid 19 pandemic caused all efforts not to be as maximal as expected (Sihombing and Nasib, 2020).

Distance learning is a basic reciprocal relationship between educators and students through a network with an educational process that is not limited by space and time (Moore, Dickson, & Galyen, 2011: 130). The implementation of learning from home is currently still experiencing many problems.

The results of interviews with teachers at SMK Negeri 1 Puhpelem Wonogiri, it is known that the problems that occur include: a) students feel learning from home is like a long holiday, b) assignments while studying from home are not controlled by the teacher and are often ignored by students, and c) many children (58%) do not like learning from home, based on the results of the National Children's Forum survey as of April 2020 (Mashabi, 2020: 1). Initial data obtained from online business subject teachers, the learning model used by teachers during the pandemic is still dominant with WhatsApp group and google classroom media. When doing assignments, students are allowed to browse on the google search engine using internet-connected gadgets, but according to subject teachers, this method is less effective. Problems still arise such as low student motivation in learning, students are not enthusiastic about participating in online learning, and students are not disciplined to complete tasks according to the allotted time. The results of the questionnaire using a google form questionnaire that was distributed via WhatsApp groups to 70 students of class XI Marketing at SMK Negeri 1 Puhpelem showed that students' interest in making individual assignments was still low, indicated by 60% or 42 students who felt bored because the teacher gave assignments that were too many. The enthusiasm for participating in learning is still low because 45% or 32 students stated that the learning methods used by teachers were less varied. Students also lack discipline, because 70% or 49 students stated that they were often late in submitting assignments. Then the intensity of students asking questions to the teacher when learning takes place is still low, because 40% or 28 students stated that it was difficult to find learning materials so they could not understand the subject matter presented by the teacher properly. Then as much as 5% or 4 students stated that they had never completed the tasks given by the teacher during online learning. Low learning motivation occurs in class XI students is also influenced by several factors, namely external and internal factors. The final test results obtained are also not optimal.

Table 1. Odd semester final test for online business subject class XI marketing at SMK Negeri 1 Puhpelem

Class	Amount learners	KKM	Mark Average	The highest score	Lowest Value	Percentage Complete	Percentage Not Complete
XI PM A	35	75	72.5	85	60	55%	45%
XI PM B	35	75	70.5	86	55	60 %	40 %

Source: Primary data from the end of semester examination of SMK Negeri 1 Pupelem which was processed

Based on table 1, the table shows that the percentage of completeness of UAS results is still below the target set by the school of 85% complete. Exam results at the end of semester g from online business subjects at SMK Negeri 1 Puhpelem Class XI Marketing A with 35 students, the percentage level of unfinished students is 45 % or 15 students, while in Class XI Marketing B with 35 students, the percentage level of unfinished students is 40% or 14 learners. Minimum completeness criteria (KKM) for online business subjects determined by SMK Negeri 1 Puhpelem is 75.

Understanding these problems, a solution is offered to apply the self-organized learning environment (SOLE) learning model assisted by e-learning applications. Dolan, Leat, Mazzoli, Mitra, Todd, & Wall (2013: 11) state that SOLE is a learning model that

trains students to organize themselves into groups and learn independently using computers connected to the internet with minimal teacher support. The choice of action using the SOLE learning model when distance learning took into account several previous studies. Weisblat, Stiles, & McClellan (2019: 61) state that the SOLE learning model can be applied to elementary school-aged children by using technology and the internet in classroom learning. Celina, Kharrufa, Preston, Comber, & Olivier (2016: 484) argue that the SOLE learning model is sufficient to support distance learning activities designed for social activists. Referring to the two research results, further strengthens the choice of the SOLE learning model in this study. The SOLE learning model is applied to students with the help of e- learning applications that support distance learning. Mitra (2013: 4), argues that SOLE is a learning model designed to help teachers arouse the curiosity of students (innate sense of wonder) by organizing student-driven learning. The SOLE learning model has role stages in the form of 5 minutes of questioning, 30-45 minutes of investigation, and 10-20 minutes of review (Mitra, 2013: 14). Utilization of e-learning by educational institutions has a very good impact on the learning process, among others, students become more motivated to study remotely (Keramati, Afshari, & Kamrani, 2011: 19), increase knowledge (O'Neill, Stevens, Clarke, Cox, O'Malley, & Humphreys, 2011: 368), improve learning outcomes (Pavlik & Anderson, 2008: 101), improve skills continuously (Fernandez, 2003: 13), flexibility and convenience of learning anytime and anywhere (Goda, Yamda, Kato, Matsuda, & Miyagawa, 2015: 7 2), cost efficiency (Fry, 2001: 233), and management of learning programs (Courts & Tucker, 2012: 121). Along with the development of digital technology, learning systems, learning materials, and individual assessments have been designed for online learning (Wang, 2014: 189). The role of the self-organized learning environment (SOLE) learning model assisted by e-learning applications is expected to help overcome the problems faced by teachers and students at SMK Negeri 1 Puhpelem, Wonogiri district, Indonesia.

II. Research Method

The research conducted is classroom action research by applying the SOLE learning model assisted by e-learning applications. The subjects of this study were students of class XI marketing department at SMK Negeri 1 Puhpelem in Wonogiri Regency, Indonesia. Data collection techniques using observation, interviews, questionnaires, tests, and analysis of documents and archives. The questionnaire used to measure learning motivation was adopted from the Motivation Strategy for Learning Questionnaire (MSLQ), a 31-item self-report instrument consisting of 6 motivation subscales: Intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, self-efficacy for learning and performance, test anxiety (Duncan & McKeachie, 2005: 119). And using a Linkert scale. The collected data were analyzed descriptively for qualitative and quantitative analysis.

III. Results and Discussion

3.1 Results

The results showed that the role of the SOLE learning model assisted by e- learning applications could improve student learning outcomes. Judging from the results of the implementation in cycle I and cycle II, it shows the role of the SOLE learning model assisted by e-learning applications in increasing learning motivation and student learning outcomes in online business subjects for class XI marketing A and B SMK Negeri 1

Puhpelem. Increasing students' learning motivation in pre-action, cycle I, and cycle 2 as shown in the table below:

Table 2. Results of student learning motivation questionnaire for marketing department XI A SMK Negeri 1 Puhpelem at the Pre-action stage, Cycle I and Cycle II

| No	Indicator	Pre-action	Cycle I	Cycle II
1.	Intrinsic goal orientation	36.96	67.50	81.42
2.	Extrinsic goal orientation	34.82	66.78	83.39
3.	Task value	34.04	64.76	85.95
4.	Control of learning beliefs	33.39	65.89	86.60
5.	Self-efficacy for learning and performance	34.37	68.75	87.27
6.	Test anxiety	35.57	60.28	86.42
Amount		209.12	394	511.04
Average		34.86	64.39	85.17

Source: Processed primary data, 2022
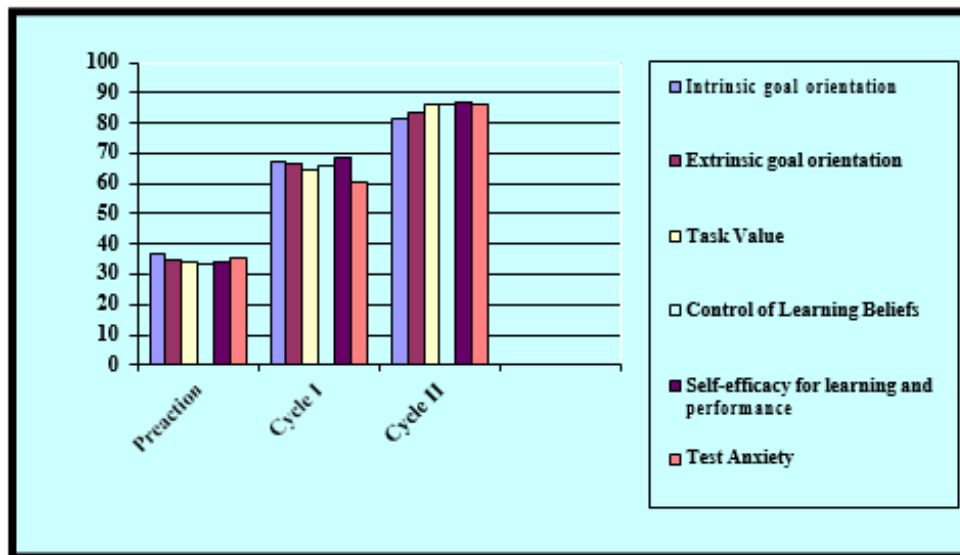
Figure 1. *Comparison of student motivation in marketing XI department of marketing A SMK Negeri 1 Puhpelem at the Pre-action stage, Cycle I to Cycle II*

Table 3. Results of student learning motivation questionnaire for marketing department XI B SMK Negeri 1 Puhpelem at the Pre-action stage, Cycle I and Cycle II

| No	Indicator	Pre-action	Cycle I	Cycle II
1.	Intrinsic goal orientation	31.42	67.67	82.67
2.	Extrinsic goal orientation	32.50	68.92	86.96
3.	Task value	33.69	68.45	87.38
4.	Control of learning beliefs	33.75	66.42	84.64
5.	Self-efficacy for learning and performance	32.50	70.08	88.30
6.	Test anxiety	34.85	62.57	87.57
Amount		198.72	404	517.54
Average		33.12	67.35	86.25

Source: Processed primary data, 2022
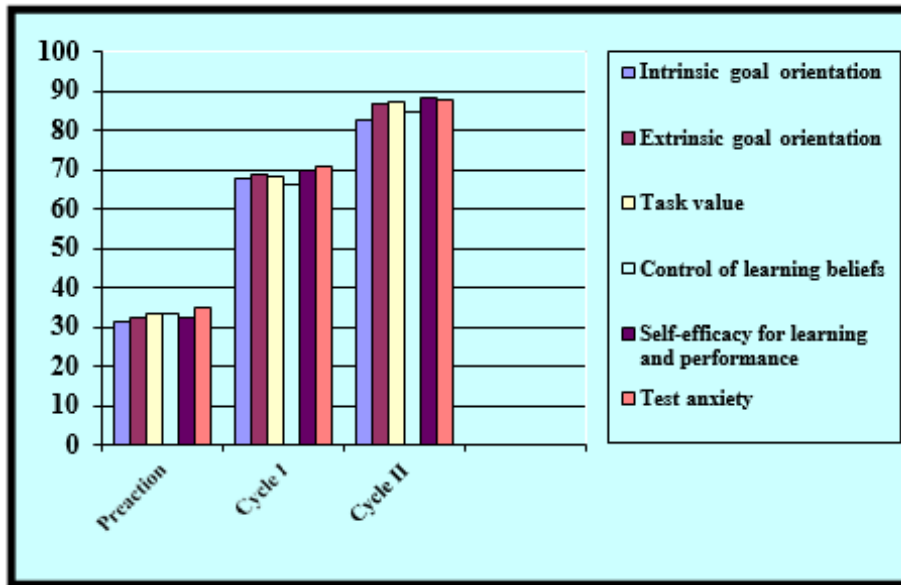
Figure 2. Comparison of learning motivation of students of marketing XI department B SMK Negeri 1 Puhpelem at the Pre-action stage, Cycle I to Cycle II.

The increase in student learning outcomes can be seen from the comparison of student learning outcomes in pre-action, cycle I, and cycle II as shown in the table below:

Table 4. Learning outcomes of students of marketing XI department A SMK Negeri 1 Puhpelem at the Pre-action stage, Cycle I and Cycle II

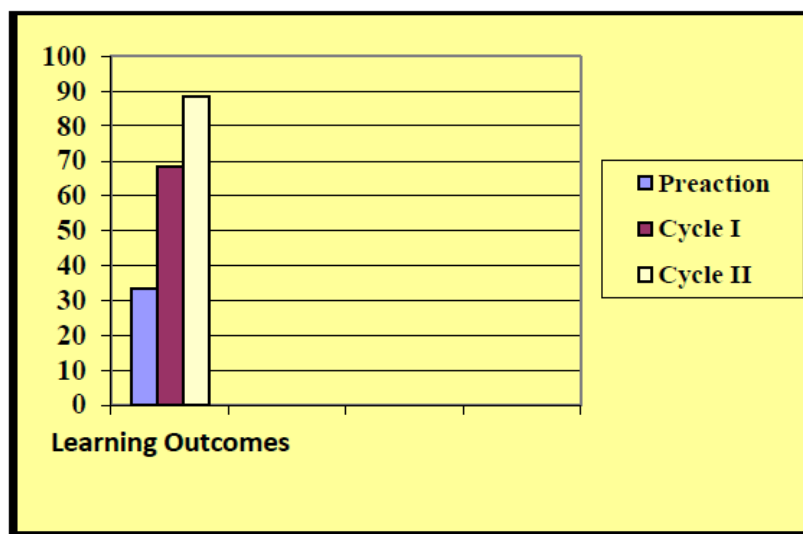| Action	Number of Students	KKM	Total Score	Average	Complete Description	Description	
						Complete	Not Complete
Pre-action	35	75	2470	70.58	33.33%	12	23
Cycle I	35	75	2702	77.34	68.57%	24	11
Cycle II	35	75	2801	80.03	88.57%	31	4

Figure 3. Comparison of student learning outcomes of marketing XI department A of SMK Negeri 1 Puhpelem at the Pre-action stage, Cycle I to Cycle II

Table 5. Student learning outcomes of marketing XI department B SMK Negeri 1
Puhpelem at the Pre-action stage, Cycle I and Cycle II

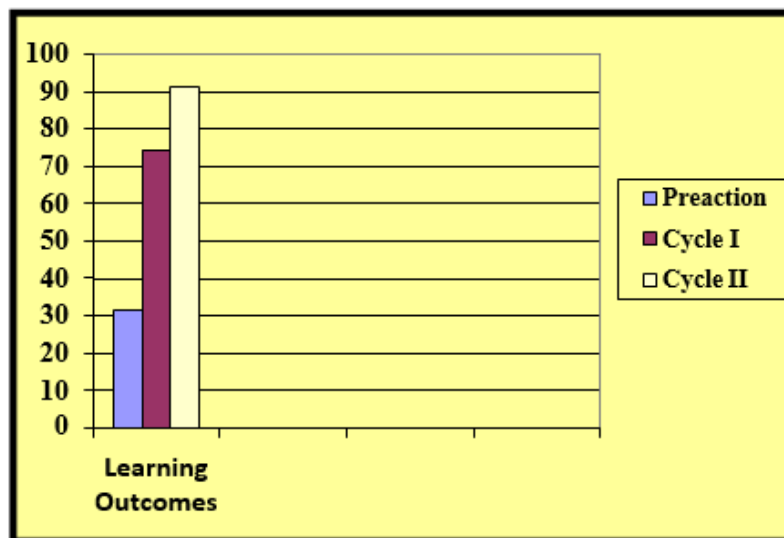| Action	Number of Students	KKM	Total Score	Average	Complete Description	Description	
						Complete	Not Complete
Pre-action	35	75	2460	70.28	31.25%	11	24
Cycle I	35	75	2749	78.54	74.29%	26	9
Cycle II	35	75	2822	80.63	91.42%	32	3

Figure 4. Comparison of Student Learning Outcomes of Marketing XI Department B SMK Negeri 1 Puhpelem at the Pre -action stage, Cycle I to Cycle II.

3.2 Discussion

Widoyoko (2014: 49-88), there are nine learning outcomes assessment techniques, namely tests, observations, self-assessments, peer assessments, performance assessments, portfolio assessments, project assessment (project assessment), product assessment (product assessment), and journal assessment (journal assessment). The data of cycle I and cycle II showed that student learning outcomes had increased from pre- action to cycle II. The improvement of student learning outcomes consists of the affective domain (attitude and activity), the psychomotor domain (student performance and portfolio), and the cognitive domain (test). The increase in learning outcomes in the affective domain is seen from the awareness of students towards learning and actively participating in group discussions. Students' discipline in following school rules and submitting assignments on time, students' responsibility in doing assignments shows an increase, and a very high tolerance for other students because each student respects the opinions of other students.

Psychomotor learning outcomes are measured by performance appraisals during the discussion process and group portfolio assignments. The improvement in psychomotor learning outcomes is seen from the results of observations during the discussion process and student discussion reports. The results of the discussion report are prepared with complete and structured material and the collection of assignments at the appointed time. Cognitive learning outcomes are reflected in the increase in student learning outcomes as measured by written test results at the end of each cycle. Students' written test scores have increased, this is due to the increase in students' understanding of the material presented through the SOLE learning model assisted by e-learning applications.

This study strengthens several previous research results, namely Suciati (2021: 321) states that the SOLE model can improve understanding and learning motivation. Mitra & Crawley (2014: 79) state that SOLE can increase motivation to try to study harder because students will be preoccupied with self-discovery, various knowledge in the community. Asmawati, Hidayat, & Atikah (2021: 91) states that the SOLE learning model has an effect on improving literacy skills and learning outcomes. Marlina (2021: 71) also states that the online SOLE (Self Organized Learning Environments) learning model can improve learning outcomes. Keramati, Afshari, & Kamrani (2011: 19) states that the use of e-learning media in the learning model used has a very important effect on learning outcomes, motivation, and teacher education. Agreeing with this, Harandi (2015: 423) states that e-learning is an element that can also affect student motivation. As several studies have shown the use of e-learning strategies is better than traditional learning methods with respect to the motivation of learners. According to O'Neill, Stevens, Clarke, Cox, O'Malley, Humphreys, (2011: 268) e-learning can improve students' understanding because most students show an optimistic attitude towards their learning experience, so that it can improve learning outcomes.

IV. Conclusion

The results of the study of using the SOLE learning model assisted by e-learning applications showed that the action that had been given was successful, because it had met the criteria for the success of the action that had been previously applied, namely if 8 5% of students achieved scores above the KKM and with an average value an average of 80.00 then the action is said to be successful. In addition, the action is also said to be successful if the learning motivation of students has increased seen from the ability of students in the aspects of intrinsic goal orientation, extrinsic goal orientation, task value, learning confidence control, self-efficacy for learning, and student performance and students' anxiety levels. So it can be concluded that the Self Organized Learning Environment (SOLE) model plays a role in increasing the motivation and learning outcomes of students at SMK Negeri 1 Puhpelem, Wonogiri Regency, Indonesia.

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