

# THE EFFECT OF LEARNING MANAGEMENT SYSTEM (LMS) ASSISTANCE IN THINK-PAIR-SHARE STRATEGIES ON LEARNING OUTCOMES AND STUDENTS MOTIVATION

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## ABSTRACT

**Abstract:** The purpose of this study was to determine the effect of Learning Management System (LMS) assistance in think-pair-share strategies and the effect of think-pair-share strategies on student learning outcomes and motivation. The research sample were 40 students of XI IPA 1 and XI IPA 2. The results showed that there were differences in learning outcomes and motivation between students who were taught with the Learning Management System (LMS) in the think-pair-share strategy and students who were taught with think-pair-share.

## INTRODUCTION

Materials in chemistry that can be described in three levels are acid-base materials. Chemistry material with unique difficulty is acid base with symbolic, sub-microscope, and macroscopic representation (KOUSATHANA & TSAPARLIS, 2002). Material with an acid base can be taught directly in class. Face-to-face learning is direct connection between teachers and students during an educational activity (Hidalgo, 2010). (QULEZ, 2004) The majority of the problems assigned throughout the class only involved calculation content. This method is student-centered, allowing students to think independently and generate their own ideas; they are then grouped in pairs to discuss their ideas and train their social interaction in order to explain their ideas and consider those of others (Rosita & Leonard, 2015). One of the several efforts to improve communications between students or between students and professors is the use of technology in learning activities whenever and wherever the internet is accessible (Bencheva, 2010). The application of technology to the learning process is referred to as Learning Management System (LMS). LMS (Learning Management System)-assisted learning is learning that makes use of internet resources to facilitate something that is crucial to face-to-face learning. (Husamah, 2015).

The commonly utilized Learning Management System (LMS) can be found at <http://www.schoology.com/>. Suitable with the learning process, develop a Learning Management System (LMS) to enhance the efficacy and work efficiency of the learning process. The construction of a learning management system was accomplished by including new features and optimizing the process of applying learning (Salindeho et al., 2018).

The application of the benefits of online learning to optimize the learning process is based on a deliberate learning approach. The learning strategy's intended action is think-pair-share learning (Kothiyal et al., 2013). According to (Bamiro, 2015), the thinking stage in think-pair-share learning allows students to produce more detailed answers, which is particularly helpful for enhancing chemical learning outcomes. The think-pair-share learning technique provides a substantial association between metacognitive knowledge and learning outcomes, according to Chikmiyah and Sugiarto (2012).

Motivations have a significant impact on giving spirits, happiness, and interest in the learning process; therefore, you should focus a great deal of effort on them (Fatmawati & Imron, 2017). According to Sardiman (2007), the foundation of making motivation is divided into two parts. Base motivation is the motivation that is innate. Additional motivation is motivation that exists due to learning. (Keller & Hrastinski, 2008) stresses the significance of establishing and using the fundamental principles of motivation for online learners. Intrinsic and extrinsic motivation can arise and develop in pupils (Astuti, 2018). Intrinsic motivation comes from within the individual, while extrinsic motivation comes from the environment. This type of learning is commonly referred to as e-learning, which refers to lessons that are provided electronically and in which internet-based learning sources are utilized (Pratiwi & Rini Kurnia Fitri, 2014).

This study aims to determine the influence of LMS (Learning Management System) in the Think-pair-share approach on the learning outcomes and motivations of Madrasah Aliyah Negeri students in Tulungagung.

### METHOD

The design of the research was experimental research with posttest -only control group. The population in this research was all of students of 11 Grade of science class of Madrasah Aliyah Negeri (MAN) 3 Tulungagung who were attending chemistry class. The two instruments on this research were treatment instrument and measurement instrument. Treatment instruments in the research were acid base teaching material, syllabus, student worksheet, lesson plan, *learning management system (LMS)*. Measurement instruments were used student test question sheet and student motivation questionnaire sheet.

The obtained data in this research were (1) the result on students test question sheet; (2) the result of the implementing learning process; (3) questionnaire score of students motivation of each aspect; (4) questionnaire score of students motivation. Steps of the research were (1) planning and arranging lesson plans, question test of learning results, students observation sheet, students motivation questionnaire and validated by professional validator; (2) doing learning process based on lesson plan; (3) observing student activity; (4) giving students motivation questionnaire; (5) taking student learning results.

### RESULTS AND DISCUSSIONS

The average student learning outcome score in the experimental class was 78.75, whereas the average student learning outcome score in the control class was 73.50. This score indicated that including LMS into the think-pair-share method for the experimental class was more effective than using the same strategy in the control class for achieving superior learning results. Figure 1 depicts all the variations in student learning outcomes between experimental class and experimental class.

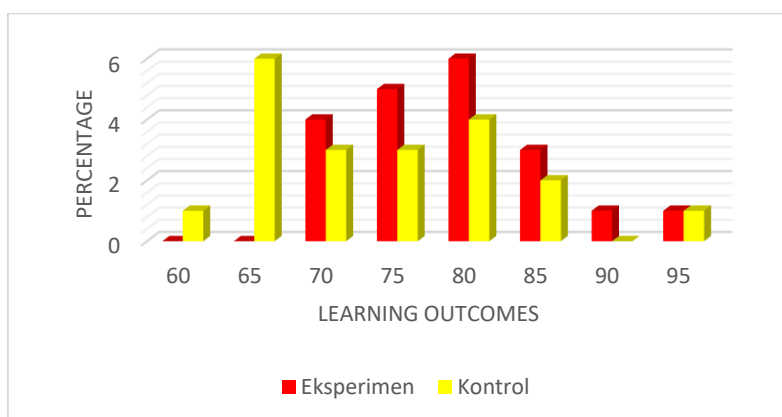


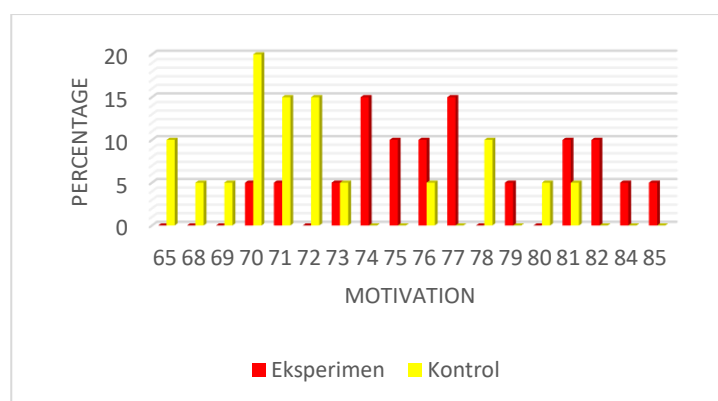
Figure 1. the differences of students learning outcomes between experimental class and experimental class

Differences in the thought process gave students the opportunity to develop higher knowledge. The pairing technique increased social contact among students. The practice of sharing was enhancing the interactivity of the classroom and the students' participation in giving ideas and discussing their outcomes.

The experimental class's students' responses were more diverse, while remained appropriate to the context of the questions asked, than those of the control group, which had few differences or similarities because the source used was identical to the lesson.

This research was also developing student potential for optimizing interactions, such as increasing participation in discussions of answers or ideas, providing feedback on either identified or unidentified concepts, fostering a sense of community, and enhancing communication skills and learning motivation. Due to the exchange of knowledge within a narrow scope, the pairing procedure improved student interaction.

Through sharing activities such as conversations and presentations, students received new knowledge and applied it to the resolution of problems. Students' knowledge of learning resources and the applicability of the studied theory can be compared during the discussion process. Both the control class and the experimental class are able to construct their reasoning utilizing the available instructional materials or the supplementary materials and instances provided.



**Figure 2. Difference of Student Motivation Score between Experiment Class and Control Class**

The results of the students' motivation questionnaire study showed the average score of the experimental class was 77.29 while the control class was 72.19. The result showed that *think-pair-share* with the help of LMS (*Learning Management System*) was more effective than applying *think-pair-share* in improving student learning motivation. The difference of student motivation scores can be seen on Figure 2.

**Table 1. Percentage of student motivation in each aspect**

Motivation Aspects	Motivation Percentage ( criteria )	
	Experimental class	control class
Interest	77 (good)	70 (quite good)
Attention	78 (good)	73 (quite good)
Consequence	76 (good)	74 (quite good)
Persistence	77 (good)	72 (quite good)
Study time	73 (quite good)	71 (quite good)
Performance	79 (good)	75 (good)

According to Table 1, the obtained data of student interest aspect of *think-pair-share* learning with the aid of LMS (*Learning Management System*) was 77% (included in the good category), whereas student interest of *think-pair-share* learning with the aid of LMS (*Learning Management System*) in the *think* step affected the interest and feeling of pleasure when independently solving questions. The implementation of this method increased student engagement with learning. According to (Syarakov et al., 2012), increased student engagement will cultivate a more positive attitude among students, allowing them to be more independent in academic activities and contribute to better learning outcomes.

Student attention aspect of applying *think-pair-share* with the assistance of LMS (*Learning Management System*) was (in the good category), whereas student attention of applying *think-pair-share* was 73%. (Included in the quite good category). Those presentations demonstrated that learning activities will be carried out effectively if students pay attention to their teachers' directions and concentrate on finishing their assignments. If the subject matter is relevant to the students' requirements, there will be a greater focus on learning, as students will perceive the subject matter as something that is required.

Concentration element of class which is utilizing *think-pair-share* learning with the assistance of LMS (*Learning Management System*) in the learning process was 76 percent (included in the good category), while which was 74 percent (included in the quite good category). Students' motivation in terms of concentration can be observed in their attentiveness during the problem-solving process through conversation. This concentration required pupils to pay attention to explanations from both classmates and teachers.

77 percent of students in a class taught using the *think-pair-share* method and a learning management system (LMS) were diligent (included in the good category). 72 percent of students in a class taught using a *think-pair-share* technique had the same behavior (included in the quite good category). The student's diligence in studying course material will significantly facilitate the timely and accurate execution of duties in accordance with existing principles. In addition, students' diligence can be observed through their participation in group work and conversations.

The study time component of the lesson taught through *think-pair-share* with the use of LMS (*Learning Management System*) yielded 73%. (Included in the quite good category). While 71% of students in the lesson taught through *think-pair-share* rated the study time aspect as important (included in the quite good category). Due to student tenacity in adopting and researching theories during the learning process, whether in class or outside of class, student study time had a significant impact on theory comprehension.

The student performance aspect of the class taught by think-pair-share learning with LMS (Learning Management System) was 79 percent (included in the good category), whereas the student performance aspect of the class taught by think-pair-share learning alone was 75 percent (included in the good category). The students' performance was evident when they presented their group's discussion result in front of the class on the sharing step. The willingness of students to answer each question will also contribute to their success.

As demonstrated by (Abulencia et al., 2013), the existence of learning aids enables students to acquire chemistry ideas independently. According to Sugiharti and Suyitno (2015), this learning boosted students' problem-solving activity and skill. The same research by (Cooper & Robinson, 2000) indicates that this stage makes students more critical in their responses to certain encountered difficulties. According to (Indrayani, 2013), autonomous student preparation is one technique to focus students' attention on new information and initial knowledge. (Cetin-Dindar & Geban, 2011) discovered that self-esteem and performance characteristics were highly useful in promoting chemistry study success.

## CONCLUSION

According to the findings and discussions of this study, there were disparities in the learning outcomes of students who were taught with a Learning Management System (LMS) and think-pair-share vs those who were taught with think-pair-share alone. The outcomes of students taught with LMS (Learning Management System) on the think-pair-share approach were superior to those of students taught with the think-pair-share method alone. There was a difference in student motivation between students who were taught with LMS (Learning Management System) and those who were taught with think-pair-share.

According to the findings of this study, it is advised that this research be used by educators as an alternate technique that highlights the importance of time and place in the learning process. In this study, the think-pair-share technique with the usage of LMS (Learning Management System) should be utilized to help students solve unsolvable problems in the classroom and can be used to solve difficulties outside of the classroom.

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