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Research Article

COMMUNITY OF INQUIRY LEARNING MODEL ON METACOGNITIVE SKILLS IN SCIENTIFIC AND CRITICAL READING COURSES ON STUDENTS OF ENGLISH EDUCATION STUDY PROGRAM

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Abstract

The purpose of this study was to determine the effect of the Community of Inquiry learning model on metacognition skills in the Scientific and critical reading course in English Education students. This study used a quasi-experimental design by comparing two groups, experimental and control. The experimental group used the Community of Inquiry learning model, and the control group used the learning model usually done by lecturers. The research subjects were 140 students, were divided into 70 students for the experimental group, and 70 students for the control group. The data analysis technique used was to compare the two groups which were calculated statistically. The results of the analysis test show that there is an effect of the Community of Inquiry learning model on metacognitive skills in the Scientific and critical reading course in English Education students for the control and experimental classes with a significance level of 0.000 (< 0.05), it can be concluded that there is an effect of the Community learning model. of Inquiry on metacognitive skills. Students in the control group showed better metacognitive skills than the control group.

Keywords: Community of Inquiry Learning Model, Metacognitive Skills, English Education.

INTRODUCTION

Education plays a very important role in creating intelligent, peaceful, and open human beings. Therefore reforms in the education sector must be carried out to improve the quality and quality of education. One of the ways to improve the quality of education is achieved by improving the teaching and learning process. Teacher-centered teaching and learning activities and emphasis on mastery of cognitive concepts with objective tests Make students passive in learning because they tend to remember or memorize without understanding what their teacher teaches but also seem monotonous. After all, the teaching scheme is the same so they have difficulty in learning. As a result, students find it difficult to solve them when faced with problems. This, in this way, teachers must develop new nuances in the teaching and learning process to improve the quality of learning by improving metacognitive skills (Siegel 2012). The search for meaning is at the core of any educational work. in college, this process requires a high level of critical thinking and research. Critical thinking and questioning are based on students' awareness and ability to take responsibility and control for constructing meaning and affirming knowledge. This awareness and skill have been called metacognition. According to Tobias e Everson (2009), Metacognition is a "high-level executive process" that controls and coordinates other cognitive processes involved in learning, remembering, practicing or solving problems" (p. 108). Research on metacognition over the last 30 years has proven this. Students with metacognitive awareness and abilities are more successful in academic settings (Stewart, Cooper, and Molding, 2007). In the conclusion of this study, Young and Fry (2008) state that it "seems" that when metacognition is assessed through the calibration of performance measures, there is support for the relationship between metacognitive skills and performance measures".

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Although considerable metacognitive research has been conducted in traditional learning environments, this cannot be said to Understand metacognition in asynchronous online learning environments. The importance of understanding metacognition in context-based texts of online learning becomes clear when looking at the greater responsibility for self-regulation. So debatable Participation in in-depth discussions in online discussion forums requires metacognitive strategies (Topcu & Ubuz, 2008). Despite the apparent need for online metacognition Learning also notes that metacognition research is hampered by a "lack of tools, facilities, etc." The model to be used to identify Community of Inquiry [metacognition] in context (Murphy, 2008). Despite the lack of research and instrumentation related to the study of metacognition in online learning contexts, there is a widely recognized theoretical framework for this with associated cognitive models. as a guide for mixed learning experience research and online practice; this is the Community of Inquiry (CoI) (Garrison & Anderson, 2003; Garrison & Vaughan, 2008). Much work has been done to validate this framework (Arbaugh *et al.,* 2008; Ice *et al.,* 2007) and provide operationalized cognitive models. a survey with the potential to contextualize and understand metacognition in online learning environments. Theoretical frameworks and cognitive models are the best options for developing and validating metacognitive constructs related to the Community of Inquiry online research. In this context, this study aims to develop and validate metacognitive constructs based on psychological literature education and reflection on the learning process, especially in online research communities. measures of as well as metacognitive constructs and all indicators used here are adapted from the Community of Inquiry theoretical framework. With this construct we have. The aim is to explain how students demonstrate metacognition in language lessons in an online learning environment. One of the learning strategies that can be used in online learning is the Community of Inquiry (CoI). Community of Inquiry-based learning can be applied by forming a community or study group, which is then

referred to as a research community. Voughan (2010) states that a Community of Inquiry is a combination of Community of Inquiry-based learning and blended learning, to make the learning process more interactive and innovative. One of the main characters of Community of Inquiry is Garrison, who integrates online skills into the process and stages of Community of Inquiry-based learning. Metacognition skills must be possessed by students because if they have these skills well, students will be able to reflect on the learning patterns carried out by these students. Metacognition refers to students' thinking activities to think about something, apply certain appropriate learning strategies, monitor their learning progress, and reflect on what has been done concerning their learning. Metacognition is students' knowledge and awareness of cognitive processes or knowledge of their minds. Therefore, metacognition becomes very important, because it involves the process of one's cognition of something and can be used as a guide to organizing further cognition in the future (Desmita, 2009). Furthermore, Saraswati, *et al.,* (2011) stated that metacognition is important because knowledge about cognitive processes can guide students in assembling and choosing the model used to evaluate positive performance.

Teaching will produce good results if it is supported by modern educational tools and media in presenting the teaching and learning process in the classroom, as a result of the development of appropriate science and technology to support the subjects being taught. The purchase of educational facilities and infrastructure is felt to be very conducive to the teaching and learning process and easy-to-achieve educational goals. This study aims to determine and analyze the influence of the Community of Inquiry Learning Model on Metacognitive Skills in students of English Education study programs. The purpose of this research is to provide guidelines and a basis for learning Community of Inquiry and metacognition skills in research and can be used as a reference for conducting the learning process.

METHODS

This research is included in a quantitative study with a Quasi-Experimental research design by comparing the two experimental and control groups. This study uses non-equivalent control group design, there are two learning classes, namely the experimental class that makes the Community of Inquiry model and the control class that carries out conventional learning. 70 students in the experiment and 70 students in the control group. Metacognitive skills in this study used an essay test which was assessed with an assessment rubric adapted from Corebima (2009) with a score range between 1-7. The data analysis technique in this study was to compare the two groups using the T-test.

RESULTS AND DISCUSSION

Test the hypothesis about the effect of the Community of Inquiry learning model on metacognitive skills using t-test analysis, namely the independent sample t-test (Table 1).

Table 1. Metacognitive skill difference test table

	Metacognitive Skill	
	Group	
	Experiment	Control
N	70	70
Mean	24.16	19.47
Std. Deviation	5.897	7.397
Std. Error Mean	.705	.884

Based on the data in table 1, the calculation of the results of the different test of metacognition skills tests, the test shows the average score of metacognition skills in the experimental class is 24.16, while in the control class is 19.47. Judging from the average, the experimental class has a higher average metacognitive skill than the control class. To find out whether the difference is significant, an independent sample t-test was conducted as follows:

Table 2. Table of independent sample t-test metacognitive skills

Independent Samples Test				
			Metacognitive Skill	
			Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F		2.754	
	Sig.		.099	
t-test for Equality of Means	t		4.144	4.144
	df		138	131.470
	Sig. (2-tailed)		.000	.000
	Mean Difference		4.686	4.686
	Std. Error Difference		1.131	1.131
	95% Confidence Interval of the Difference	2.450	2.449	12.149
		6.921	6.922	21.593

According to the data in table 2, the test results show a significant level of 0.000 <0.05, so it can be concluded that there is a significant difference in the mean value of Metacognition Skills between the experimental class and the experimental class. Control Class Based on the results of the independent sample t-test, it can be seen that the Community of Inquiry learning model that has been given affects students' Metacognition Skills for English Education Study Program Students. Metacognition skills consist of knowledge about metacognition or knowledge about cognition and regulation of cognition. regulation of metacognition (Dasoeta, 2008). Metacognitive knowledge consists of declarative knowledge, procedural knowledge, and conditional knowledge. Metacognition regulation consists of planning, information, Management Strategy (IMS), Understanding Monitoring (CM), Debugging Strategy (DS), and Evaluation (Schraw and Dennison, 1994). When compared with the average score of pretest and posttest scores for metacognition, the ability indicator between cognitive knowledge skills and cognitive regulation shows almost the same/not very different results, precisely in the good category. The closeness of the value obtained through the capacity of cognitive knowledge cannot be separated from the regulation of cognition given the importance of regulation of cognition as a strategy of metacognitive knowledge to achieve cognitive goals (Dasoeta. 2008). If the capacity of both is good, students can solve problems in learning well. This is following the results of Siegel's research (2012), students who have good cognitive knowledge tend to have good cognitive regulation as well. So

metacognitive skills must be developed through a process or form of learning that can train students in metacognitive knowledge and metacognitive regulation. The process of developing metacognition can be done using strategies, approaches, and learning models that require activities related to awareness and understanding of cognitive regulation. Collaborative online learning is an active learning method in which students solve problems together in an online learning environment; students can independently identify, formulate and exchange problems, negotiate, answer questions, explain and discuss to build knowledge. Garrison and Vaughan (2008) emphasize the importance of a theoretical framework in adopting certain techniques, such as online collaborative learning to avoid bias due to the gap between theory and practice. Community of Inquiry research is a coherent framework that provides a means to model practice and reflects or evaluate results (Garrison, 2011; Garrison & Vaughan, 2008). Garrison and Arbaugh (2007) note that the Community Of Inquiry framework has proven useful in guiding research and practice in online higher education. Castellanos-Reyes (2020) points out that the Community of Inquiry framework is one of the most widely used frameworks in online teaching and learning by researchers around the world. The ability to build a positive learning environment is reflected in the Social Presence. Garrison et al. (1999) classified Social Presence into three sub-components: emotional (affective) expression, such as personal expression and values; open communication; and group cohesiveness. Teaching Presence also includes three sub-components: educational design and organization, speech facilitation, and hands-on education. The core of discourse, Cognitive Presence, is operational critical thinking, which consists of trigger events (problem identification) for further investigation, exploration, integration (synthesizing and interpreting ideas that arise during exploration) and solutions (maintaining solutions or their implementation) exist new skills and knowledge learned in different contexts (Garrison *et al.,* 1999).

Fiock (2020) states that the Community Of Inquiry framework is one of the most widely used frameworks for building online communities. Junus et al. (2019) implemented a Cognitive Lab course to teach students the Community of Inquiry framework integrated into the Linear Algebra course. The study found that students equipped with the Community of Inquiry framework experienced increased levels of communication skills, self-regulation, co-organization, and learning strategies. Research on how to teach community structure of Community of Inquiry as an area of learning in different subjects is currently limited. In response to this research gap, current research explores the application of role play as a method of teaching the structure of the Community of Inquiry. The Community of Inquiry Framework is one of the areas of the CAI course that aims to equip students with the necessary skills to interact in collaborative online learning by implementing the Community of Inquiry Framework. A Community of Inquiry and metacognition-based learning study by Seraphin et al. (2012) argues that metacognitive reflection cannot be separated from Community of Inquiry-based learning, which supports students to develop better critical thinking. Sukaisih and Muhali (2014) report on the implementation of the problem-solving learning model in the survey because it can fundamentally improve student learning outcomes and metacognitive awareness. In addition, Muhali (2018) shows that the application of the reflective metacognition learning model can continue to increase metacognitive awareness, but its impact on metacognitive knowledge and metacognitive ability is contradictory. This study shows that Community of Inquiry-based learning can empirically improve knowledge metacognition and awareness, but there is no specific study that examines the consistency of the impact of applying Community of Inquiry-based learning models on knowledge and metacognition awareness. Consistent with the previous explanation, the implications of the Community of Inquiry-based learning model related to the results of this study were found to be significantly different from the knowledge about metacognition of prospective teachers from the three experimental groups, while the metacognitive awareness of students in Group B and Group C was not significantly different. These results indicate that the survey learning model does not have a consistent impact on the level of metacognitive knowledge and metacognitive awareness of prospective teachers at Muhammadiyah University Surabaya.

In general, it was found that knowledge of metacognition differed significantly across the three topic groups. The difference lies in the ability of the subjects, especially their declarative knowledge. Declarative knowledge is considered as epistemological knowledge or understanding of students' thinking and knowledge in general (Kuhn & Dean, 2004) – is knowledge about students' skills, intellectual resources, and abilities (Schraw & Dennison, 1994) and the factors that influence one's performance (Schraw, 2006) to solve problems (Muhali, 2018). Other declarations knowledge also has different implications when applying knowledge to problem-solving (procedural). Procedural knowledge refers to a person's knowledge or belief given an order. A person has a self-perceived attitude about how to do something (Rompayom *et al.,* 2010) with cognition awareness and management, including strategic knowledge (Cross & Paris, 1988; Kuhn & Dean, 2004; Screw, 2006). The ability to understand oneself is related to knowledge of the use of thinking and strategies, knowledge of learning abilities (measures) and the type of students' strategies to be applied (Downing, 2009; Gleitman, 1985; Weinert & Kluwe, 1987; Muhali, 2018). Students' confidence in their own declarative and procedural knowledge Knowledge is highly dependent on the conditioned knowledge they have when dealing with a group. Accuracy in using declarative knowledge following the context of the problem being solved.

Based on the results and discussions that have been shared, it is necessary to give a way of emphasizing the role of declarative knowledge in the learning phase of research models that can support the possibility of constructing components that are built comprehensively. Considering the influence of metacognition and critical thinking on the effectiveness of foreign language acquisition, it is necessary to take into account the influence of motivation and participation in various types of activities. In this case, the current student's participation in projects that require knowledge of English increases his motivation to master a foreign language, and encourages the development of critical thinking and metacognitive skills, especially procedural knowledge, information management, and planning strategies. However, to talk about it, as a rule, it is necessary to conduct additional studies to compare the basic level. The development of these parameters among students of the two groups before the start of work on the project. Metacognition awareness in offering contextual problems. Therefore, it encourages teacher candidates to consciously explore in-depth knowledge.

Conclusion

This study concludes that the success of learning English is statistically significantly correlated with the level of critical thinking and the level of different indicators of metacognitive awareness. The result is the development of critical thinking and self-reflection. Your cognitive skills can help you improve your academic performance in English. However, one should not jump to conclusions about the impact of criticism on language acquisition levels. However, higher education entry qualifications often correlate with, but do not accurately reflect English language proficiency. For this, further studies are needed on the subject, using more precise and specialized tools. The evaluation of the level of knowledge of a foreign language is related to the university's evaluation system. Examination of the relationship between metacognition, critical thinking, and foreign language acquisition is impossible without considering the linguistic context in which students find themselves. Environmental conditions, especially relevant activities that require language skills, can improve students' foreign language skills and the development of critical thinking and metacognitive skills.

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