

# The Effectiveness of Contextual Teaching Learning and Quantum Learning Models on Critical Thinking Skills and Self-Confidence of Fifth Graders

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## The Effectiveness of Contextual Teaching Learning and Quantum Learning Models on Critical Thinking Skills and Self-Confidence of Fifth Graders

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### Abstract

This study aims to find out and analyze the improvement in critical thinking skills and self-confidence using contextual teaching learning (CTL) and quantum learning (QL) models for fifth graders. This study employed a quasi-experimental research design. The population of this research was fifth graders of SDN Mento involving 28 students, SDN Muntung 30 students, and SDN Canggal 28 students. These samples were selected using random sampling technique. The data in this study was obtained from tests and observation. The data analysis in this study included t-test by using SPSS 23.0 software. The results indicated that there was improvement in the critical thinking skills using CTL learning model with t-score 20.868 at sig. 0.000 as well as in the self-confidence with t score 2.845 at sig. 0.006. There was an improvement in the critical thinking skills using QL learning model with t score 3.061 at sig. 0.003 and in the self-confidence with t score 4.724 at sig. 0.000. The conclusion of this study is CTL and QL models are effective to enhance critical thinking skills and self-confidence of fifth graders.

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## INTRODUCTION

In dealing with the current development and the education world, education is an important issue that requires concern and action. Therefore, to develop education, various efforts have been carried out to achieve the education goal as expected.

According to Law No.20 of 2003 on National Education System, education means conscious and well-planned effort in creating a learning environment and learning process so that learners will actively develop their full potential for acquiring spiritual and religious strengths, personality, intelligence, morals and noble characters as well as skills that one needs rationally through self-development to achieve sufficient potential in the education field.

Empowering thinking skills and creativity is a learning strategy that students should do during the learning process (Kristanto, 2015). In the learning activities, students should understand and apply the information they obtain to everyday life. A meaningful learning activity does not demand students to merely memorize and store up numerous information.

With the aforementioned issues, innovation is needed in classroom learning. Teachers should design a system that can change the learning system to be more conducive so that students' critical thinking skills and learning results will improve (Winaya, 2016). According to Johnson as cited by Uki et al (2017), critical thinking is a directed and obvious process used in mental activities such as problem-solving, decision-making, persuading, analyzing opinion or assumption, and carrying out the academic process. In order to achieve students' success in education and social life, critical thinking skills should be developed. This is stated by Ennis as cited by Arifin (2017) that critical thinking is the emphasis on what should be believed or what should be done through decision-making. In addition, according to Masek et al as cited by Ivayuni (2018), the final goal of education is pursuing higher-order thinking skills such as critical thinking.

Moreover, Permendikbud No 21 of 2016 stated that there are several social skills in the core competence. Self-confidence is one of the social skills that students must possess. Thus, learning process should prompt students to develop self-confidence. Students need to get accustomed to self-confidence to shape students' characters for the current and the next generations (Khoerunnisa, et al 2016). In addition, McPheat as cited by Surya et al (2017) elaborated that self-confidence will enhance in an individual who successfully accomplishes a task. With the growth of self-confidence, students will be better at conveying opinion and communicating with their peers as well as in solving a problem.

The findings of the learning process in the fifth grade of SDN Mento show that students have difficulties in understanding learning materials. The obstacle lies in the students' boredom, they merely memorize learning materials without understanding the concept, and they are not interested in following the learning process. Furthermore, students are less confident in following learning activities. This is because the teachers teach monotonously using conventional methods. Through conventional methods, teachers provide learning materials to the students by talking at the beginning of the lesson and explaining how to answer the questions, then students do the exercises. The quiz result in the fifth grade is still below the minimum mastery criteria (75), which is 60%. Teachers less utilize the surrounding environment in the learning process. Besides conventional methods, the teachers are less able to raise students' learning motivation and to build interaction with the students. Students are less active in following the lesson. The teachers also less able to motivate the students to think critically. Teachers are less able to provide chances for the students to get accustomed to self-confidence.

Learning activities need a teacher who can ensure learning effectiveness and have the ability to design and apply a variety of strategies and models that are considered suitable with the aptitudes, interests, and the students' development level (Maasawet, 2018). Therefore,

it needs an attempt to solve the problems in the learning activities that can effectively create students to learn independently. The alternative action is implementing Contextual Teaching Learning (CTL) in the learning process.

In accordance with Nasrun as cited by Wulandari, et al (2015), implementing contextual learning will affect students' critical thinking skills. CTL learning model is also a model connecting learning materials with the context of students' everyday life. The principles of contextual learning are as follows: meaningful learning for students, learning that prompts students to perform independent learning, learning to cooperate with others, and the need for developing critical and creative thinking process (Kasuma, et al., 2017). CTL is a learning model that encourages students to be active and stimulates the brain to arrange patterns for creating meanings (Hakim et al, 2018).

The comparison model is Quantum Learning (QL). According to De Porter as cited by Ningrum et al (2015) QL is a model used in the design of learning process which is arranged as a set to create an effective learning environment, design the curriculum, provide the content, and facilitate the teaching-learning process consisting of multisensory, multiple intelligence which is compatible with the brain and encompasses a specific guideline. QL is a learning model that introduces fun learning (Huda, 2016:192). Furthermore, according to Kosasih and Sumarno as cited by Karsono (2016), QL model organizes the learning stage so as to grow excitement in learning. A fun learning environment can enhance students' motivation that directly affects the learning process. A fun and comfortable learning atmosphere can also develop students' self-confidence.

## METHOD

This study employed an experimental research design to figure out the effect of CTL learning model and QL learning model on the students' critical thinking skills and self-confidence. The research subjects included fifth graders of SDN Mento involving 28 students,

fifth graders of SDN Muntung involving 30 students, and fifth graders of SDN Canggal as many as 28 students. The research scale on the two variables was observed in the three classes, designed as the experimental class and the control class. The sample of experimental group in this study involved 58 students, and the sample of control group involved 28 students.

The methods of data collection in this study were interviews and documentation. The instruments of evaluation included test and non-test. The techniques of testing instruments included instrument validity test and instrument reliability test. The techniques of data analysis were formulating Null Hypothesis, organizing the data, determining significance level, testing the pretest score, testing the posttest score, testing the hypothesis, testing the effect size, conducting significance test of the difference between the means of pretest and posttest scores, and conducting t-test technique.

## RESULTS AND DISCUSSION

The research was carried out by implementing CTL and QL learning models. According to Sanjaya as cited by Komariah, et al (2016), there are seven components of CTL model, i.e. constructivism, inquiry, questioning, learning community, modeling, reflection, and authentic assessment. Meanwhile, DePorter as cited by Sasmita and Fajriyah (2018) elaborated that QL model has six syntax mantic, i.e. Grow, Experience, Name, Demonstrate, and Celebrate (TANDUR). The variable measured in this study was the effectiveness of these learning models on critical thinking skills and self-confidence. Based on Parker as cited by Pertiwi et al (2017), critical thinking skills are collecting various possibilities and making decisions as well as drawing conclusions by developing cohesive, logical, reliable, concise, and convincing reasoning through a well-organized process involving mental activities. Meanwhile, self-confidence is a booster in getting achievements (Yanti and Fauzyah, 2016).

The Effectiveness of CTL Model on Critical Thinking Skills

Based on the results of pre-test and post-test on theme 2 subtheme 1 learning 1 using Contextual Teaching Learning (CTL) learning model regarding its effect on critical thinking skills, it is found out that the difference between the control class and the experimental class on theme 2 subtheme 1 learning 1 obtained t-score 20.86 with Sig. (2-tailed) 0.000. If compared to the significance level at 0.05, the Sig. (2-tailed) value was lower than 0.05; thus, it can be concluded that the hypothesis is accepted. In other words, Contextual Teaching Learning (CTL) model is effective to improve critical thinking skills of fifth graders. The effectiveness of CTL model on the critical thinking skills can be seen in the following table:

**Table 1.** The Effectiveness of CTL Model on Critical Thinking Skills

		Independent Samples Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	T	df	Sig. (2-tailed)
E	Equal variances assumed	8.887	.004	20.868	60	.000
	Equal variances not assumed			21.564	31.000	.000

The Effectiveness of CTL Model on Self-Confidence

Based on the results of pre-test and post-test on theme 2 subtheme 1 learning 1 using Contextual Teaching Learning (CTL) learning model regarding its effect on self-confidence, it is revealed that the difference between the control class and the experimental class on theme 2 subtheme 1 learning 1 obtained t-score 2.845 with Sig. (2-tailed) 0.006. If compared to the significance level at 0.05, the Sig. (2-tailed) value was lower than 0.05; thus, it can be concluded that the hypothesis is accepted. In other words, Contextual Teaching Learning (CTL) model is effective to improve self-confidence of fifth graders. The effectiveness of CTL model on self-confidence can be seen in the following table:

**Table 2.** The Effectiveness of CTL Model on Self-Confidence

		Independent Samples Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
	Equal variances assumed	7.19	.004	2.845	60	.006
	Equal variances not assumed			2.832	57.601	.006

The Effectiveness of QL Model on Critical Thinking Skills

Based on the results of pre-test and post-test on theme 2 subtheme 1 learning 1 using Quantum Learning (QL) model regarding its effect on critical thinking skills, it is revealed that the difference between the control class and the experimental class on theme 2 subtheme 1 learning 1 obtained t-score 3.061 with Sig. (2-tailed) 0.003. If compared to the significance level at 0.05, the Sig. (2-tailed) value was lower than 0.05; thus, it can be concluded that the hypothesis is accepted. In other words, Quantum Learning (QL) model is effective to enhance critical thinking skills of fifth graders. The effectiveness of QL model on the critical thinking skills can be seen in the following table:

**Table 3.** The Effectiveness of QL Model on Critical Thinking Skills

		Independent Samples Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
E	Equal variances assumed	2.459	.122	-3.061	60	.003
	Equal variances not assumed			-3.087	57.758	.003



### The Effectiveness of QL Model on Self-Confidence

Based on the results of pre-test and post-test on theme 2 subtheme 1 learning 1 using Quantum Learning (QL) model regarding its effect on self-confidence, it is revealed that the difference between the control class and the experimental class on theme 2 subtheme 1 learning 1 obtained t-score 4.724 with Sig. (2-tailed) 0.000. If compared to the significance level at 0.05, the Sig. (2-tailed) value was lower than 0.05; thus, it can be concluded that the hypothesis is accepted. In other words, Quantum Learning (QL) model is effective to elevate self-confidence of fifth graders. The effectiveness of QL model on self-confidence can be seen in the following table:

**Table 4.** The Effectiveness of QL Model on Self-Confidence

		Independent Samples Test				
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
E	Equal variances assumed	2.633	.110	-4.724	60	.000
	Equal variances not assumed			-4.680	53.411	.000

### CONCLUSION

Based on the results and discussion as elaborated above, Contextual Teaching Learning (CTL) model is effective to enhance critical thinking skills with t-score 20.868 at sig. 0.000 and to elevate self-confidence with t-score 2.845 at sig. 0.006. Furthermore, Quantum Learning (QL) model is effective to improve critical thinking skills with t-score with t-score 3.061 at sig. 0.003 and to boost self-confidence with t-score 4.724 at sig. 0.000. Therefore, it can be concluded that CTL and QL models are effective to enhance critical thinking skills and self-confidence of fifth graders.

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