The effectiveness of value clarification technique (VCT) and problem-based learning (PBL) models on social problem-solving skills viewed from emotional intelligence

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Abstract: The purpose of this research is to find out significant differences in the social problem-solving skills between classes that apply the Value Clarification Technique (VCT), Problem Based Learning (PBL) model, and the class that applies the direct learning model. The research population included all fifth-grade students in Cilacap Regency public elementary schools. This research employed a cluster random sampling technique. An experimental method with a 3x3 factorial design was used. The data analysis used two-way ANOVA test with SPSS 21. The results showed that (1) there were differences in the effectiveness of the use of VCT, PBL and direct learning models on the social problem solving skills (F_A = 7.176, p = 0.01 < 0.05), (2) there was no difference in the effectiveness between high, moderate and low emotional intelligence on the students' social problem solving skills (F_B = 0.35, p = 0.966 > 0.05), and (3) there was no interaction of the effect between the use of VCT, PBL, and the high, medium and low emotional intelligence categories on the students' social problem solving skills (F_{AB} = 0.619, p = 0.649 > 0.05).
Keywords: Elementary school student, emotional intelligence, learning model, social problem-solving skill

INTRODUCTION

21st-century education is different from the education system applied decades ago. The fundamental difference lies in the achievement of student learning outcomes (Malik, 2018). Student learning outcomes in the 21st-century education are not only in the mastery of all learning materials, but it also demands that the students must have cognitive and social skills. These skills can help students in facing the progression of the era that is full of challenges. The 21st century is marked primarily by the rapid pace of innovation in all aspects of human life (Prayitno, 2018). The competitions and challenges faced by the students in the future are increasingly complex, as the flow of globalization is getting stronger, information is developing rapidly, and technology is more sophisticated. The current technological developments have been used in various dimensions of life, including the workforce, so that education should be applied to produce qualified human resources in order to able to adapt to the changing time (Cascio & Montealegre, 2016).

One of the best-qualified human resources is obtained from the success of the education system. Through the education system, the state can preserve and maintain the noble values and excellence of the next generation (Pinyoanuntapong, 2013). Education is considered as a reflection of a nation and vice versa, a nation is formed by the education system (Ongardwanich, Kanjanawasee & Tuipae, 2015). A great country can be seen from the quality/character of the nation (people) itself. In the 21st century, human resources must have competent talents and the ability to learn and think freely, good analytical thinking and problem solving, creativity, ability to communicate and work in teams, and the ability to work in various situations or multidimensions (Quieng, 2015). The progress of science and information technology in the globalization era requires Indonesia to be citizen who have moral and knowledge, as stated in the National Education System Law No. 20 of 2003 Article 33 which states that:

The function of national education is to develop the nation's capabilities and shape the nation's character and civilization with dignity in order to educate the life of the nation for the purpose of developing the potential of students to be faithful human beings who are devoted to God Almighty, noble, healthy, knowledgeable, capable, creative, independent and become democratic and responsible citizens.

In order to achieve these educational goals, a learning process needs to be carried out. Learning is a mental and thinking process which optimally utilizes all the potentials possessed by each individual. In other words, learning is the process of not only memorizing several facts but it is a conscious interaction between individuals and their environment. The Regulation of Minister of Education and Culture of the Republic of Indonesia No. 103 of 2014 states that students are the subjects who have the ability to actively search, process, construct and use knowledge. Therefore, in the learning process, students should not only accept the knowledge given by the teacher but are also required to play an active role in the learning process.

Learning must provide students with the opportunity to construct previously-owned knowledge, to be meaningful, to be independent, to link the material with real life, and to truly understand and apply their knowledge (Rennie, *et al.* 2003; Kicken, Brand-Gruwel, & Van Merriënboer, 2008; Loyens, Magda, & Rikers, 2008). Students need to be guided and directed to solve problems, find everything for themselves and strive to realize their ideas because ideally learning activities are focused on getting as much knowledge as possible and how to apply all of those knowledge in real life, because people will never be free from problems (Dalton & Crosby, 2010).

The gradual development of students is not only limited to their cognitive aspects but also their affective and psychometric aspects through an internal appreciation of the problem at hand. The world of education must constantly innovate as a whole, such as improving the quality of educators, fulfilling school infrastructures, and improving learning systems with innovative learning models and updating curricula adapted to the times (Nurdyansyah, 2017).

In reality, humans will always deal with problems concerning their lives, ranging from personal, family, social, and national to the world problems. In this globalization era, everyone feels that the outbreak of problems such as student brawl, bullying, persecution, poverty, drug use, sexual harassment, murder, garbage, traffic jams, and accidents have become social problems which have not been completely resolved. The consequences are quite serious and really require the attention of parents and educators (teachers) because the perpetrators and their victims are the students of elementary-school, junior-high-school, senior-high-school and even college students. One of the causes of these problems is the inability of students to overcome problems that occur in their living environment. They tend to solve their own problems without paying attention to the norms of society; they prioritize momentary emotions, spontaneously do dangerous things, are easily influenced by their friends, and are not accustomed to solving problems appropriately. The role of parents in guiding students' problem-solving skills is lacking, and families pay a lack of attention to children's needs, despite the absolute need of family guidance towards a better education

The 21st-century learning focuses on real-life problems that support inquiry-based learning experiences, provide opportunities to work collaboratively to formulate and also solve problems in learning and how learners learn (Pacific Policy Research Center; 2010). Problem-solving skills are a measure of one's quality and are an important component of the 21st-century education (Wismath *et al*., 2014: 1). Baines (1984: 118) argues that problem solving is a relevant skill to provide possible solutions by analyzing, clarifying the nature of the problem, and gathering all the necessary data. Problems can be triggered by one or several causes that are considered as disturbing. If a student does not have the ability to cope with the stresses caused by this disorder or cannot adapt to sudden changes, he/she will experience problems. If one cannot get out of the problem, this condition can have an effect in the formulation of the next problem. For example, a person is involved in the use of illegal drugs including alcohol (alcohol and other drug abuse) and the bad effects (the new problems that arise) due to the use

of these drugs. The effect is in the form of disorders in one's life dimensions, which are physical, psychological, social, or spiritual dimensions (Taftazani, 2017).

Problem-solving skills indicators that determine the students' success or failure in solving social problems are explained by Olkun and Toluk (2004) and Polya (1980); they stated that the indicators of problem solving include (1) identifying the problem, (2) formulating the problem, (3) planning problem solving, (4) solving problems according to plan, and (5) evaluating results. Problem solving affects the ability and academic achievement of students (Perveen, 2010) to help solve difficult problems (Oztruk & Guven, 2016) and contribute to students' achievement and development of knowledge (Hodiyanto, 2017; Sappaile & Djam 'an, 2017; Diaz, Felmer, Randolph & Gonzalez, 2017).

Many factors affect one's social problem-solving skills, including motivation, beliefs, the right attitude, habits, and emotions. Emotions color the way of thinking in dealing with situations. Unconsciously, emotions are often seen in it, which causes someone not to think effectively. Thus, emotional intelligence is one important internal and very influential factor on the success of learning, which can train students' skills e.g. the abilities to manage their feelings, motivate themselves, be tough, not frustrated in facing problems, accept others' opinions, have high empathy, and manage relationships (Barling, 2000). According to the theory of developmental psychology, the elementary-school age is the initial stage to achieve a stable personality. Therefore, the development of emotions, attitudes and behaviors needs to be guided by both the teacher and parents (Goleman, 2004: 211)

Goleman (2015: 58) reveals five indicators of emotional intelligence that can be guidelines for individuals to achieve success, i.e. self-awareness, which means the ability to monitor feelings from time to time; self-regulation, the ability to manage emotions as a result of the failure of basic emotional skills; motivation, the ability to regulate emotions to achieve goals; empathy, the ability to recognize others' emotions; basic social skills; and building relationships, the ability to manage others' emotions.

The problem that arises in learning is the students' low or lack of problem-solving skills. It can be seen from the results of PISA (Program for International Student Assessment) research which shows that Indonesia's ranking in 2015 obtained an average score of 403, lower than the overall average score of 439, which placed Indonesia in the 62nd position out of 70 participating countries, Indonesia's achievements are in the bottom 10 (OECD, 2016). Based on this international assessment of scientific literacy, it is known that the competence of Indonesian students is still low. That is because the competence of Indonesian students is still merely theoretical. They cannot analyze and integrate various scientific disciplines in solving problems yet, while the questions given in the assessment are applicable and contextual to find solutions to solve them (Lunenburg, 2011). Therefore, the learning process should not just mean transferring knowledge but it should directly involve them to find concepts and think critically and creatively in solving problems.

In addition, there is a lack of development of character values in learning. This can be seen in learning such as the lack of students' mastery of the material being taught, giving up if faced with a problem, cheating on tests, slow learning, easily emotional, and lack of confidence in solving problems, lazy in doing the tasks, unable in utilizing existing information sources, lacking of enthusiasm in following the lessons, how students are only positioned as recipients instead of knowledge diggers with their various experiences, students are still shy about conveying their ideas, and the learning itself that is still teacher-centered and based on textbooks (Nagaraju, 2013; Emaliana, 2017).

As a result of such learning process, many bad behaviors arise in students, such as lack of tolerance with their friends, low curiosity because they are always given practical knowledge, the lack of work attitude in learning because they are always given conveniences by the teacher, less communicative in learning because the learning process is conducted in a one way communication, the lack of sense of responsibility for tasks, the lack of concern for fellow friends and the environment, and other negative attitudes (Dewantoro & Sartono, 2019).

The problem for teachers and principals is not to determine the values students must follow, but how to hone students' skills to solve problems, especially the problems related to

values in society and how to develop these values in daily life (Dewantoro & Sartono, 2019). To solve this problem, teachers can build communication networks and learning interactions through the provision of information that is very meaningful or of high value and is relevant to the needs of students. From the problems above, innovations in learning are needed to solve problems in daily life by improving the mindset of teachers, applying problem-based learning models because these models can improve their operational thinking skills, helping students improve their skills to solve social problems, while also improving their learning outcomes (Dogru, 2008; Mukhopadhyay, 2013) and internalizing values in learning, because basically not only education is learning to transfer knowledge, but it is also to increase awareness of values in students (Utyupova, 2016).

Value Clarification Technique (VCT) learning model is a teaching model to assist students in finding and determining a value that is considered good in dealing with a problem through the process of analyzing existing values instilled in students and important choices been made (Witteman, Holly & Scherer, Laura & Gavaruzzi *et al.*, 2016; Adu, Ige, & Adu, 2018). VCT has three main stages, namely choosing, giving gifts, and acting (Witteman, Holly & Scherer, Laura & Gavaruzzi *et al.*, 2016).

According to Pieterse, de Vries, Kunneman, Stiggelbout, & Feldman-Stewart (2013), the purposes of VCT are (a) helping students to realize and identify their own values and the values of others, (b) helping students to communicate their own values to others openly and honestly, and (c) helping students to use the ability to think rationally and emotionally aware to understand their own feelings, values, and behavior patterns. The purpose of VCT specifically is to help students to understand their values and attitudes towards their goals and to respect and appreciate these values (Oliha & Audu, 2015). The VCT learning model can improve students' abilities to (a) communicate/express ideas, beliefs, values and feelings, (b) be empathic, (c) solve problems, (d) be assertive, (e) make decisions, and (f) have convictions (Crump, 2013)

The learning process using VCT has some steps to be followed. Firstly, the teacher gives stimulus and explores students' knowledge by asking questions about social problems around them as well as the delivery of material. Secondly, the teacher divides the students in groups based on the number of students. Thirdly, the teacher gives a brief explanation of the material about the various social problems and how students' attitudes should be in dealing with such problems. The fourth step is the clarification process in which the teacher guides students to think about which choices they will choose, whether they are appropriate or inappropriate in the stories/articles. The next step continues by giving the students a chance to analyze the values of the stories/articles that the teacher has shared with each group. Meanwhile, the sixth step is conducted by the opportunity of each group to present the results of their discussion in front of the class. Then, the seventh or last step requires the teacher and the students to conclude the learning process that they have done (Attarian, 1996; Dewantoro & Sartono, 2019).

Problem Based Learning (PBL) is a learning approach that initiates student learning by creating a need to solve authentic problems. During the problem-solving process, students build domain knowledge and develop both problem-solving skills and independent-learning skills while working towards finding the solutions to problems(Hung *et al*,2014). PBL is also defined as an inquiry process to solve questions, curiosities and uncertainties about complex phenomena in real life (Barell in Trinter, Moon, and Brighton, 2015).

The purpose of the PBL model is to shape and develop the child's personality so that students can learn independently and work in teams through a problem-based learning process using inquiry thinking or thinking like adults by understanding deeply, interpreting, configuring and solving problems. Problems are presented by the teacher to be solved by the students with various perspectives on completion (Mierson & Parikh, 2000; Beringer, 2007).

PBL has some advantages for students. They can acquire long-term knowledge transfer skills and increase their learning responsibilities (Tseng, Chiang & Hsu, 2008). PBL emphasizes on meaningful learning because students are required to be active in learning activities, explore their knowledge, conduct investigations and solve their own problems, not just knowing the theory given by the teacher alone. The students also need the ability to self-direct, increase their

understanding of the material, logical thinking skills, communication, problem solving, and collaboration. PBL motivates oneself to always be better, increases good relationships between the students and their teacher, and increases attention and interest in learning. In addition, PBL has a positive effect on attitudes such as learning, interests, curiosity and cognitive traits of the students (Abdullah & Tarmizi, 2010; Demirel, 2016; Akçay, 2009; Mergendoller, 2006).

The steps for using PBL include (1) problem orientation by the teacher based on real problems, in which the teacher explains to the students the objectives to be achieved in learning and raises the problem to them, (2) organizing students to learn, in which the teacher explains the tasks to be done by the students and they are given the opportunity to form discussion groups, (3) guiding students' investigations (individually or in groups), in which the teacher guides the students in conducting group discussions, (4) presenting problem solving, in which the students present the results of the discussion in front of the class, and (5) the analysis and evaluation of problem solving, in which the teacher provides an evaluation of the process of investigation carried out by the students regarding social problems (Rubiah, 2016).

This research is different from the studies conducted by previous researchers because this research uses a quantitative method with the 3x3 factorial design. This research consists of 3 variables, namely learning model, emotional intelligence and social problem-solving skills. The effectiveness of 2 models, the value clarification technique and the problem-based learning model on the social problem-solving skills of elementary school students viewed from emotional intelligence, is compared. This research is video-based with the discussion of problems of social issues in the school environment and in the area around students. Other researches for social studies usually use qualitative methods, some of which use quantitative methods, but are limited to a 3 x 2 factorial design. This research aims to determine:(1) the difference in the effectiveness in the use of VCT, PBL, and DL (Direct Learning) on the students' social problem solving skills, (2) the difference in the effectiveness between high, moderate and low emotional intelligence on the students' social problem solving skills, and (3) the interaction between the use of VCT, PBL, and high, medium and low emotional intelligence categories on students' social problem solving skills.

The research conducted by Hakim *et al.* (2018) shows that the VCT learning model can improve students' problem-solving skills in social studies learning about the proclamation of independence in State Elementary Schools the State Elementary School Cimanis 2 Sobang Pandeglang. The similarities of the current research with those of Hakim, Taufik, and Atharoh is the use VCT on problem-solving skills, the research subjects of the fifth-grade students of elementary schools, and the type of quantitative research. The difference is that in the research of Hakim *et al.,* the material is the proclamation of independence and the comparison model in the control class is a direct learning model; 3 x 2 research design. Meanwhile, the material in this research is about social problems around us and the comparative model of this research is PBL and DL, a 3 x 3 Research Design.

Ogundiran's research (2012) states that the VCT strategy/model is very good in helping humans to make a decent living, maintain decisions, behave according to norms and uphold Nigerian cultural values that are appropriate because decisions and behaviors are based on the values that they make and helping students to identify preferences, desires, attitudes, feelings to evaluate and change the order of values that are not in accordance with Nigerian culture. The similarity of Ogundiran's research with the current research is that both of which use VCT, which discusses Social Studies. The difference is that Ogundiran's research is qualitative, its subjects are for students and teachers in general, and it is conducted in Nigeria, while this research is quantitative, the subjects are the fifth-grade students, and it is conducted in Indonesia.

METHOD
Research Design

This research used a quasi-experimental method because the researcher could not control all the external variables that can affect the dependent variable. Therefore, for the research related to improving the quality of learning, it is recommended to use quasi-experimental

techniques in its implementation Khotari (2004: 47). The factorial design used in this research is 3 x 3. The students were divided into two classes based on the learning models compared, namely VCT and PBL models in the experimental class and DL in the control class. Before and after treatment, the students were given a pre-test and post-test to assess their social problem-solving skills viewed from emotional intelligence. The treatment in each class was conducted 8 times, 8 x 35 minutes.

Research variables

Research variables are important to understand because they are related to the data analysis technique used. There are three variables that are examined in the research which are the independent, the dependent, and the moderator variable. The independent variable in this study is the learning model (VCT, PBL and DL). Meanwhile, the dependent variable is the ability to solve social problems. The dependent variable is the response variable or criteria that are assumed to get the influence of other variables (Gower & Shanks, 2014). Apart from those two variables, the moderator variable is emotional intelligence. Moderator variables are the variables that affect the relationship between independent and dependent variables (Creswell, 2009). Thus, in this research, the aim is to examine the dependent variable (the ability to solve social problems) when it is influenced by the independent variables (VCT, PBL and DL learning models), which are helped by seeing the moderator variable (emotional intelligence). By seeing the interactions of those variables, the researcher will be able to test the hypotheses in this study.

Participants

This research was conducted in State Schools of Cilacap Regency, Central Java, Indonesia. Population is a group of individuals who live in a particular area and time, while sample is a part of the population to be studied (Sugiyono, 2000); (Taherdoost, 2018). The population in this research is the fifth-grade students of the elementary schools in Cilacap Regency in the academic year of 2018/2019. The samples were 152 fifth-grade students in six elementary schools in Cilacap Regency. They were randomly selected through a predetermined sampling method. 54 students from four elementary schools were given treatment using the VCT model and 49 students were treated using the PBL model. 49 students of two other elementary schools as control classes were taught using the DL model. This sampling was done based on groups/a specific area to see a very large number of research population so as to streamline the time, energy and effectiveness of the data sampling. The sampling method being used enables each item in the population to have an equal chance of being included in the sample.

The sampling technique in this research used cluster random sampling technique. The researcher divided the population of students in the public elementary school in Cilacap into several groups based on the sub-district. The researchers selected several clusters according to the research being carried out through systematic random sample selection. Then from a number of sub-district clusters that have been randomly selected, the researcher can choose to include all elementary school students as subjects, or choose a number of subjects from each sub-district cluster through systematic random sampling. Random sampling has the greatest freedom from bias and it also has the ability to represent the most valuable sample in terms of time and effort for a particular sampling error rate (Brown, 1947).

Data Collection

The data were collected through both test and non-test techniques. The social problem-solving test consisted of 10 essay questions, and for the non-test, a questionnaire sheet of emotional intelligence consisting of 35 statements was used. The steps to prepare the test instruments in this research are explained as follows: 1) Reviewing the theories and theme taken. Social problem-solving is a skill possessed by someone with critical, creative, reflective and clear thinking in finding, understanding, and identifying a problem that concerns communities, individuals or groups by taking appropriate action to solve the problem based on the data or information obtained with several indicators of understanding social problems that occur in the

surrounding environment, finding out or investigating the cause of social problems that occur, planning how to solve social problems from the obtained information or data, choosing the best way to solve the problems and taking into account the strengths and weaknesses that occur, writing the thoughts on answer sheets, and applying values and social problem-solving skills in everyday life. In accordance with the Regulation of the Minister of Education and Culture of the Republic of Indonesia No.57 of 2014 concerning the Curriculum of Elementary Schools/ *Madrasah Ibtidaiyah*, there are nine themes in the curriculum for the fourth grade of elementary schools in one school year. The researcher chose the sixth theme. This theme was chosen because the material discusses social problems that helped the researcher in making test questions about social problem-solving skills. The social problems the students learned were bullying, fighting, and brawl; 2) determining the indicators of social problem-solving skills. The test instrument was developed from Polya's indicators in solving a problem, namely; first, understanding the problem faced, which means students are able to generate and develop ideas, trigger various solutions, and be responsive in seeing the mistakes of an object. Second, making a plan in solving the problem, which means that students can use various ideas in any situations, are able to see the problem from various perspectives, and are able to find alternative solutions based on the present strengths and weaknesses. Third, carrying out the plan to solve the problem, which means that students can choose the best solution to solve the social problem by considering the strengths and weaknesses that occur and the information obtained. Fourth, checking and considering the accuracy of the results that can be later applied in life, which means that students can write the results of their logical thinking and are able to apply the value of social problem-solving skills in everyday life (Polya, 1980; Isrok'atun, 2006); 3) Creating an outline, questions of social problem-solving skills, answer keys and assessment guidelines; 4) Conducting a content validity test with expert validators. The test instrument was validated through content and construct validations (Cohen, Manion, & Morrison, 2018). The experts assessed whether the test items and the substances of the material are suitable and are the representation of the outline made, and whether or not the items are measurable. The researchers involved four experts to assess or validate the instrument made; 5) Performing trials in specified samples; 6) Analyzing the trial results. The calculation was performed using SPSS 21. In calculating the validity, the researcher used the product moment correlation formula by Karl Pearson (Cohen, Manion, & Morrison, 2018). After r had been obtained, it was compared with r table. The instrument items are said to be valid if $r \geq r$ table. The validity test results show that all the test items are valid. Afterwards, reliability is used to measure the level of reliability of the social problem-solving skills. The formula used is Cronbach's Alpha, as it is able to describe a measurement test (Cohen, Manion, & Morrison, 2018). The instrument can be used if the reliability index is $r11 \geq 0.70$. The reliability of test results based on the trial analysis shows that the data have a reliability coefficient of 0.733.

After preparing the instrument of test for data collection, the researcher also needs to prepare the questionnaire in order to be used in the non-test area of the data collection. The steps to prepare the emotional intelligence questionnaire in this research are explained as follows: 1) Conducting a preliminary study of emotional intelligence; 2) Determining the type and form of the questionnaire directly with the checklist form. This research used a Likert scale by giving scores of 0, 1, 2, 3, and 4 (Cohen, Manion, & Morrison, 2018); 3) Creating a questionnaire outline based on trusted literature by Goleman (2015, 58) with the indicators of recognizing one's emotions (recognizing and understanding one's own emotions, understanding the causes of emotions), managing emotions (controlling emotions, expressing emotions appropriately), motivating oneself (optimistic, drive for achievement), recognizing other people's emotions (sensitive to other people's feelings, listening to their problems), and building relationships (able to work together and communicate) 4) Making a questionnaire according to the indicators on the outline made with a description of each indicator item; 5) Performing a validation test with 3 expert validators namely a linguist, an evaluation expert and a psychology lecturer; 6) Testing the instrument; 7) Calculating instrument trial results. The calculation was performed using SPSS 21. The internal consistency was calculated using the product moment correlation formula by Karl Pearson. (Cohen, Manion, & Morrison, 2018):

There are 35 consistent and feasible items. The questionnaire reliability test used the Cronbach's Alpha formula with an index of r11 ≥ 0.70. The reliability of the test results based on the trial analysis shows that the data have a reliability coefficient of 0.909 (high reliability) (Khotari, 2004: 47)

In the data collection process, the researcher has fulfilled the ethical principles in consideration. The research samples that are 152 fifth-grade students of State Elementary Schools are consent in their inclusion in the research, without any means of coercion whatsoever. Coercion here means a force against their will in order to participate in the research by other parties. The other parties include the researcher, the teachers, or any respectable adults in the participants' life. They are respected, which means that they will not be forced to say or do something against their own will. Their opinions will also never be used against them in any harmful ways. This research is also conducted in the respect of their identity, which are kept in secret. The subjects of this research are considered as minors, as fifth-graders are below the age of 18. However, declining to participate in this research will never result in their academic or clinical condition. Before, during, and after the research is conducted, the participants are guaranteed not to have any consequences that entailed the research. Moreover, this research is also conducted in the principle of fairness, which means that nobody in the subjects will receive more or less benefits than the others. The principles that are considered in conducting this research is in line and in concordance to the five ethical principles proposed in profession's code of ethics (ACA, 2005), and are considered by Institutional Review Boards (IRBs), which include the following: (a) respect for persons, (b) autonomy, (c) protection of vulnerable populations, (d) beneficence, and (e) justice (Wester, K. L., 2011)

Data Analysis

The data in this research were analyzed descriptively and with prerequisite tests. The descriptive analysis is using the interpretation of scores. The score interpretation was used to assess the subjects' emotional intelligence and social problem-solving skills. To make a scale or range of scores on each variable, the maximum score, minimum score, mean, range and standard deviation must be known (Balta & Asikainen, 2019).

The prerequisite tests consist of normality, homogeneity, and balance tests carried out before the two-way ANOVA analysis. Then, the normality test is conducted to determine whether the sample under study is normally distributed or not. The normality test in this research used the Kolmogorov Smirnov's One-Sample Test with SPSS 21. The Sig. value of the PBL experimental group is 0.092 > 0.05, of the VCT significance value is 0.200 > 0.05, and the value control group is 0.071 > 0.05. Based on these results, we can conclude that at the significance level of 5%, the data in the PBL and VCT experimental groups and in the control group were normally distributed.

Afterwards, the homogeneity test is used to determine whether several population variants are the same or not. The homogeneity test used Levene's test with SPSS 21 (Gravetter & Wallnau, 2016). Based on the calculation of the homogeneity test with SPSS 21, the Sig. value is 0.075 > 0.05. This means that the three sample groups are from populations with the same initial ability variance.

In addition, the balance test is conducted in order to find out whether the experimental class and the control class have the same ability or not. The balance test used one-way analysis of variance technique with unequal cells aided by SPSS 21. The balance test was done through one-way analysis of variance with unequal cells. The results of the test conducted with SPSS 21 show the Sig. value of 0.338 > 0.05. Thus, we can say that at the significance level of 0.05, all the three sample groups have the same initial ability.

RESULTS

After conducting data collection, both using test and non-test, there are a few results shown by the analysis of data collected as follows. The first result to be explained is the distribution of the subjects' emotional intelligence, as shown in Table 1.

Table 1. *The distribution of student data based on learning models and emotional intelligence*

Group	Emotional Intelligence			Total
	High	Moderate	Low	
Control	14	22	13	49
PBL	15	20	14	49
VCT	19	26	9	54
Total	48	68	36	152

Source of data: Processed SPSS output, 2019.

Based on the table above, it can be seen that the total number of students both in the control class and the experimental class is 152, consisting of 48 students with high emotional intelligence, 68 students with medium emotional intelligence, and 36 students with low emotional intelligence.

Table 2. *The distribution of score data of the social problem-solving skill based on learning models*

Descriptive Statistic	Group					
	Control		PBL		VCT	
	Pre-test	*Post-test*	*Pre-test*	*Post-test*	*Pre-test*	*Post-test*
Mean	64.92	73.86	66.14	78.94	68.31	80.31
Median	67	73	67	80	68.50	81.50
Mode	63	73	67	77		83
Maximum Score	93	93	87	93	87	97
Minimum Score	40	57	40	60	40	60
Standard Deviation	11,376	8.37	13,685	8.57	10,372	8.86

Source of data: Processed SPSS output, 2019.

Based on the data presented in the table above, it can be seen that each learning model can produce different outputs and can effectively improve students' social problem-solving skills. It is evidenced by the results of students' pretest and posttest scores. The average score of the students' social problem-solving skills using the direct learning model before being treated in the control class is 64.92 and after being treated becomes 73.86. The average score before being treated with the PBL model is 66.14 and after the treatment becomes 78.94. The average score on the VCT model before the treatment is 68.50 and after the treatment becomes 81.50.

Based on the results of the pretest obtained, the normality test of the data can be done to determine whether the sample is normally distributed or not. The analysis was performed using SPSS version 21 data processing program through the Kolmogorov Smirnov's normality test. The results of the normality test of the data from the two groups in the initial states are based on the pretest scores. The normality test for the initial state can be seen in Table 3.

Table 3. *Normality test of initial state data (Pretest)*

		Normality Test					
	Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	Df	Sig.	Statistic	Df	Sig.
Score	Control	.121	49	.071	.962	49	.115
	PBL	.117	49	.092	.952	49	.044
	VCT	.092	54	.200*	.975	54	.314

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction; Source of data: Processed SPSS output, 2019.

From Table 3, it is clear that the normality test results obtained using the Kolmogorov-Smirnov test show that the Sig. value of the PBL experimental group is 0.092 > 0.05, of the VCT experimental group is 0.200 > 0.05, and of the control group is 0.071 > 0.05. Based on these results, we can conclude that at the significance level of 5%, the data in the PBL and VCT experimental groups and in the control group were normally distributed. Meanwhile, the final state data normality test for the two groups are based on the posttest scores. The results of the normality test analysis at the final state can be seen in Table 4.

Table 3.4. *Normality test of final state data (Posttest)*

		Normality Test					
	Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	Df	Sig.
Score	Control	.100	49	.200*	.977	49	.444
	PBL	.125	49	.054	.955	49	.059
	VCT	.119	54	.054	.966	54	.123

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction
Source of data: Processed SPSS output, 2019.

From Table 4, the normality test results obtained using the Kolmogorov-Smirnov test show that the Sig. value of the PBL experimental group is 0.200 > 0.05, of the VCT experimental group is 0.054 > 0.05, and of the control group is 0.054 > 0.05. Based on these results, we can conclude that at the significance level of 5%, the data in the PBL and VCT experimental groups and in the control group were normally distributed. Based on the results of the pretest and posttest of the control class and the experimental class, the homogeneity test of the data can be done to determine whether the population used is homogeneous or not. The analysis was conducted with SPSS version 21 data processing program through the Levene's Test. The results of the homogeneity test for the initial state data (pretest) of the two groups based on the pretest scores can be seen in Table 5.

Table 5. *Homogeneity test of initial state data (Pretest)*

Levene Statistic	df1	df2	Sig.
2,631	2	149	.075

Source of data: Processed SPSS output, 2019.

From Table 5, the Sig. value of 0.075 is obtained. Because the Sig. value of the initial state data in the two classes is greater than the significance level of (α) 0.05, it can be concluded that the population have the same or homogeneous variance. Meanwhile, the data homogeneity test of the two groups in the final state is based on the posttest scores. The analysis results of the homogeneity test in the final state can be seen in Table 6.

Table 6. *Homogeneity Test of Final State Data (Posttest)*

Levene Statistic	df1	df2	Sig.
.988	8	143	.448

From Table 6, the Sig. value of 0.448 is obtained. Because the Sig. value of the final state data from two classes is greater than the significance level (α) of 0.05, it can be concluded that the population in this research have the same or homogeneous variance.
Source of data: Processed SPSS output, 2019.

A quantitative approach was used in this research, so the data analysis used a statistical approach. This research involved three hypotheses that were then tested using two-way ANOVA with unequal cell contents. Two-way ANOVA is used to investigate whether there is an influence

of the independent and moderator variables on the dependent variable and the interaction of the independent and moderator variables on the dependent variable used in the research. The scores of students' social problem-solving skills in the experimental class I and experimental class II are grouped according to the students' emotional intelligence categories from the results of the test of social problem materials after learning. Based on statistical calculations with a significance level (α) of 5%, the results of hypothesis testing are summarized in the following table.

Table 7. *Summary of two-Way ANOVA with unequal cells*

Tests of Between-Subjects Effects

Dependent Variable: Social problem-solving skills

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1356.558[a]	8	169,570	2,230	.028
Intercept	834646.679	1	834646.679	10977.440	.000
Learning Model	1091.156	2	545,578	7,176	.001
Emotional Intelligence	5,279	2	2,639	.035	.966
Learning Model * Emotional Intelligence	188,363	4	47,091	.619	.649
Error	10872.705	143	76,033		
Total	932012.000	152			
Corrected Total	12229.263	151			

a. R Squared = ,111 (Adjusted R Squared = ,061)

Source of data: Processed SPSS output, 2019.

The test decisions for the research hypotheses based on Table 7 are as follows:
a. First Hypothesis
   The results of the two-way ANOVA test with unequal cell contents obtained F = 7.176 with p = 0.01 < 0.05, so H_0 is rejected and/or H_1 is accepted. This means that at a significance level of 5% there are differences in the effectiveness of the use of PBL, VCT, and DL models on the social problem-solving skills. The VCT model is more effective in solving social problems than PBL and DL.
b. Second Hypothesis
   The results of the two-way ANOVA test with unequal cell contents obtained F = 0.35 with p = 0. 966 > 0.05, so H_0 is accepted. This means that at a significance level of 5%, there is no difference in the effectiveness or high, moderate, and low emotional intelligence does not give a different effect on the social problem-solving skills.

c. Third Hypothesis
   The results of the two-way ANOVA test with unequal cell contents obtained F = 0.619 with p = 0.649 > 0.05, so H_0 is accepted. This means that at the significance level of 5%, there is no interaction between learning models and emotional intelligence on social problem-solving skills. In other words, differences in the social problem-solving skills of the participants in each category of learning models are not consistent with each category of students' emotional intelligence or vice versa.

DISCUSSION AND CONCLUSION

Based on the two-way Anova test results that have been described above, it was found that there were differences in the effectiveness of social problem solving skills between students using the Value Clarification Technique (VCT), Problem Based Learning (PBL) and Direct Learning (DL) models for fifth-grade students of State Elementary Schools in Cilacap Regency because there was a difference in the treatment of learning activities. The students taught with the VCT model have better pretest and post-test results than those taught with the

PBL model, and the PBL model is better than DL.

The VCT learning model can reveal the students' emotions to think actively and logically after seeing social problems around them presented by the teacher (providing stimulus and exploring students' knowledge). The students force themselves both individually and in groups to dare to participate in reasoning, consideration and moral decision-making in solving a problem freely based on conscience as an expression of consistent self-awareness. This model can also encourage students to solve problems based on good and bad, and true and wrong considerations and the consequences that may arise from the choice that must be accounted for. This will lead to an attitude of respect (as an expression of feeling happy, and proud of the value of one's choice and daring to confirm the value that has been chosen in public). At last, the awareness to act (the will and ability to try to implement and continue to repeat it in terms of the value of the choice reflected in one's life) will arise.

This is in line with the opinion of Hervinovira (2014), Hakim (2018), and Faridli and Harmianto (2011) that the VCT model can make students more daring to participate in learning and express their opinions or the message of the material delivered by the their teacher, find concepts that are learned by themselves without having to depend on the teacher so as to provide experience and learning to be meaningful, think more actively in solving existing problems, find solutions to the problem both individually and in groups so as to make conclusion with logic, and improve their social problem solving skills. VCT can raise the self-awareness of positive values or good attitudes such as tolerance, responsibility in completing tasks, caring for friends, mutual respect and negative values in dealing with a problem through the process of analyzing the existing values instilled in the students (Parmiti, 2018; Barriyah *et al.*, 2018). The VCT model can also improve students' learning outcomes and understanding in social studies subjects because they are related to social problems around the students. (Parmiti, 2018).

Meanwhile, the PBL model can make students actively conduct various investigations to solve social problems, but there is a lack of emphasis in instilling values to students. This model fits the real life of students, and the concept of knowledge has stronger durability. This is as stated by Tseng, Chaing & Hsu (2008) that the PBL model makes students acquire long-term knowledge skills, understand real-life problems and increase their learning responsibilities. For the DL model, students are not really required to think critically and logically in solving problems. This is consistent with the opinion of Sanjaya (2007) that the DL model gives students a very limited opportunity to control their understanding of learning materials and one-way communication that can result in the limited knowledge possessed by the students to what is given by the teacher (Sanjaya, 2007).

In the results, it is also evidenced that emotional intelligence does not have a different effect on social problem solving skills because the emotional condition of students can change at any time, for example when filling in a questionnaire, they students were not careful enough, lacking understanding because of the first experience of filling out a questionnaire, lacking confidence in their own answers, feared of making wrong answers, less focused in learning, not careful in analyzing social problems, and confused about how to solve a social problem appropriately. This is as stated by Aisyiyah (2017) that emotional intelligence is influenced by the environment, dynamic, and can change at any time. According to Goleman (2015), high and low emotional intelligence is influenced by several internal (psychological and physical) and external factors (family environment, community, education, experience). Student age differences also affect emotional intelligence (Ishak, 2011); (Adegboyega, 2017). Besides, gender also affects the level of emotional intelligence of students (Alavinia and Alikhani, 2014).

in addition, the results also shown that there is no interaction between learning models and emotional intelligence on the social problem solving skills because in the implementation of learning with the VCT, PBL and DL models, the teacher is already good in implementation so that the students are enthusiastic in participating in the learning. However, the teacher still does not provide stimuli to students. The teacher does not yet fully have the ability / high questioning skills that can dig up the students' abilities. Less conducive atmosphere also contributes to students' emotional changes, as said by Aisyiyah (2017) that emotional

intelligence is influenced by the environment, dynamic, and can change at any time. The environment can be a home, school or community environment. Parenting with affection and education of the values of life, both religious and socio-cultural values, has an impact on the emotional intelligence of the children (Asghari & Besharat, 2011). A good and advanced community environment encourages students to live with high competitiveness or full of competition rather than a simple community environment. Student's personality is an internal factor that can be nurtured and strengthened from within (Brackett, M. A., & Mayer, J. D, 2011; Lekaviciene & Antiniene, 2016). School environment can develop emotional intelligence because the school helps students develop intellectual, moral, spiritual and emotional potentials (Behera, 2016). The level of individual education affects the emotional intelligence of the students (Hanim, F., Rauf, A., Tarmidi, *et al.*, 2013). The school environment is a conducive environment for social development (Brackett, M. A., & Mayer, J. D, 2011). A positive learning atmosphere can reduce students' difficulties during the learning process so as to increase emotional intelligence, interest and motivation of the students to learn (Pashiardis, 2008).

Based on the results of the research conducted by applying the VCT, PBL and DL models to improve social problem solving skills in the fifth grade, we can sum up that (1) there is a difference in social problem solving skills of students taught with VCT, PBL and DL models, in which the students' social problem solving skills taught with VCT are more effective than with the PBL model, and PBL is more effective than DL; (2) there is no difference in the social problem solving skills between the students with low, medium, and high emotional intelligence, in which the social problem solving skills of the students who have medium social intelligence are better than those who have high emotional intelligence, better than those who have low emotional intelligence; and (3) there is no interaction of the effect between the use of VCT, PBL, and the high, medium and low emotional intelligence categories on the students' social problem solving skills.

This research is limited in the description of the actual conditions based on the indicators of the social problem-solving skills. The results of quantitative calculation of the scores of the social problem-solving skills between models in the experimental class and the control class do not differ too much because these skills really require students' good understanding, logical thinking, knowledge and learning experience. With these limitations, other researchers can examine more deeply the social problem-solving skills applied to innovative learning models or approaches. Teachers are expected to be able to better train students' understanding of social problem solving skills and deepen their thinking skills by giving HOTS-based questions related to social problems around students so that they are accustomed to solving problems with higher-order thinking skills and able to solve problems that occur or faced properly in order to achieve national education goals and the demands of the 21st century education, one of which is developing critical-thinking and problem-solving skills. This skill can be familiarized by practicing it in 2013 thematic learning curriculum where the learning activities are student-oriented and involve students' knowledge and experience. Self-maturity and the maturity of students' thinking are also largely determined by their daily life experiences because the classroom is a real laboratory for students and a place for discussing and solving problems found in the community, and then solving together with peers and assisted by teacher. If this problem-solving skill is trained to students, they will get used to constructing knowledge from experience and social interactions, which will make them think about their social environment.

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