Model of Mathematical Creative Thinking Ability Based on Character Education for Elementary School Students Jakarta

*Alberth Supriyanto Manurung[1,a] Abdul Halim[2,b], Syurya Muhammad Nur[3,c]
[1,2,3]Universitas Esa Unggul, Jakarta, Indonesia

[a]alberth@esaunggul.ac.id , [b]abd.halim729@gmail.com, [c]syurya.muhammadnur@esaunggul.ac.id

Abstract

The ability to think creatively mathematically is the basis for students solving mathematical problems. Based on initial observations made on students at SDN Duri Kepa 05 Pagi Jakarta, it was revealed that working on mathematics problems was a problem, therefore a creative learning model was needed to train students' creative thinking abilities. Thus, the ability to think creatively mathematically can be used as an alternative solution to educational problems. This research aims to analyze the mathematical creative thinking abilities of fifth grade students through character education for students in elementary schools. The type of research used is comparative causal research, also called ex-post facto research with a quantitative approach. The respondents in this study were 32 class V students. Data analysis in this research uses descriptive and inferential statistics in the form of simple linear regression analysis. Based on the research results, it shows that student character education can significantly improve their mathematical creative thinking abilities. Students' mathematical creative thinking abilities are influenced by students' character education by 68.7%. Meanwhile, 31.3% was influenced by other factors outside of students' character education.

INTRODUCTION

There are still gaps in the implementation of character education in various educational institutions. Some schools may be more successful than others in integrating character values into the curriculum. There are still gaps in the implementation of character education in various educational institutions. Some schools may be more successful than others in integrating character values into the curriculum.

Character education is an important aspect of education which aims to form positive values, attitudes, and behavior in individuals. There are various developments related to character education, one of which is the Technology approach in Character Education with digital applications and platforms specifically designed to help students understand and internalize character values. Utilization of social media and the internet requires a more proactive approach in teaching digital ethics and positive online behavior.

Environmental influences, both physical and social, influence attitude problems. Students who come from harmonious families and have adequate financial resources tend to show good attitudes and behavior. Likewise, vice versa, students who receive less attention and students from less fortunate families tend to face many problems in learning (Wulandari et al., 2023).

Therefore, as educators, teachers must be able to offer solutions to students to reduce learning difficulties. Students' attitudes can be seen in the first and second core competencies in the context of the independent curriculum (Lubis & Rangkuti, 2020). Likewise, students who receive less attention or from less well-off families tend to experience many problems in learning. Therefore, teachers as educators must be able to provide solutions for students to reduce learning difficulties. In relation to the independent curriculum, problems with student attitudes can be seen in the first and second core competencies. In the first core competency, which contains spiritual attitudes, students are expected to have a religious attitude and be able to tolerate each other between religious communities.

Meanwhile, in the second competency (KI II) students are expected to have good social attitudes such as helping each other, respecting, being disciplined and so on. These two competencies show student characteristics because character education is very necessary for students to become intelligent and characterful individuals (Lestari et al., 2017). Based on Presidential Regulation Number 87 of 2017, it promotes character education called PPK. PPK is an educational movement under the responsibility of the educational unit to strengthen the character of students through harmonization of heart, feeling, thought and sports with involvement and cooperation between educational units, families, and society as part of the National Movement for Mental Revolution (GNRM). It is very necessary to strengthen character education in learning so that the knowledge and skills possessed by students are in balance with their character. The knowledge they have can be misused if students do not have good character (Danim, 2020). Based on initial observations made on students at SDN Duri Kepa 05 Pagi Jakarta, especially related to students' social attitudes, the teacher revealed several student attitudes that often emerged during the learning process. When studying, students often make noise, which can disturb their friends. Students play with toys meant to be played with during recess. If the interaction is going well, the discussion will not disturb other friends. Students often disturb their friends in various ways, such as throwing rolls of paper or doing bad things, making their friends not focus on studying. damaging school facilities for disorderly students. Playing ball in class and breaking the window, playing with a wooden ruler, and finally breaking. Elementary schools still face some common problems.

One of the problems in learning is that teachers continue to apply the lecture approach. As a result, students do not understand what the teacher teaches.

Students cannot give their opinions about the problems given by the teacher; they cannot determine the right source to obtain information, they cannot combine and predict the right decision about the problem. This is related to students' low level of creative mathematical thinking (Safitri et al., 2021). Therefore, a creative learning model is needed to train students' creative thinking abilities. Thus, creative mathematical thinking skills can be used as an alternative to solving educational problems (Hung, 2006).

The ability to think creatively mathematically certainly influences the development of children, where each child has different characteristics from each other so that it can show the child's character in solving the problems they face and according to several psychologists, the above problems are included in the development of science, this can observe through attitudes that reflect the child's actualization. Humans as organisms have the urge to develop which ultimately causes them to become aware of their existence and develop a negative attitude towards their abilities, viewing everything they do as something that is difficult to resolve, whereas for positive things they always view everything they do as something that is very easily resolved, in general the ability to think creatively mathematically is clearly influenced by the environment so that it requires a deeper study of how to respond to problems. Many learning models are used to solve educational problems, one of which is the creative thinking ability model. This model influences child development, because each child has unique

characteristics that show how they solve problems.

According to several psychologists, this problem is included in the development of science. As living creatures, humans have the urge to develop, which ultimately causes them to become aware of their existence and develop a negative attitude towards the abilities they have, so that they view all the work they do as something that is difficult to complete, while a positive attitude always views the work they do as something that is difficult to complete. easy to solve, in general the mathematical creative thinking ability model is clearly influenced by the environment so that it requires a deeper study of how to respond to problems.

Some people consider mathematics to be an abstract science that is difficult to use in everyday life (contextual). Nevertheless, mathematics is a tool for solving universal problems. The mathematical thinking process shows this (Marini, 2018). Creating superior Human Resources (HR) (2019–2024) requires five strategic actions that must be taken. Increasing character education and continuous practice of Pancasila are two of these strategic actions (Lubis & Rangkuti, 2020).

Character education such as compassion, example, morality, behavior, and diversity must be taught and nurtured to students. This is in accordance with Article 1 Paragraph 1 of Law number 20 of 2003 concerning the National Education System which states that teachers must be able to carry out learning that directs their students to actively

develop their potential to have religious spiritual strength, self-control, personality, intelligence, morals. noble and other skills needed by himself, society, nation and state (Muhammad Fadhli, 2016). From these functions and objectives there is the sentence "developing the potential of students", this means that students must always develop in terms of potential. This potential can be in the form of soft skills and hard skills.

The term "hard skills" is used in the field of mathematics. According to Hendriana in (Lufri et al., 2019), there are eight hard skills in mathematics: 1) the ability to understand mathematics; 2) mathematical reasoning ability; 3) mathematical problem solving abilities; 4) mathematical communication skills; 5) mathematical connection ability; 6) ability to think logically mathematically; 7) mathematical critical thinking skills; and 8) creative mathematical thinking abilities. The statutory mandate and national education goals state that these eight types of abilities must be possessed by students to achieve and develop in accordance with national education goals. This article will discuss students' mathematical creative thinking abilities.

According to Poerwadarminta in (Putri & Manurung, 2020), thinking can be defined as using human reason to consider and decide something. According (Wanelly & Fauzan, 2020)states that thinking is cognitive behavior at a higher or highest level because, especially in the context of an abstract order, thinking is a process of recognition through the manipulation of various objects and concepts. Therefore, the ability to think

can only be achieved by having certain ideas and balanced with strong reasoning power. In other words, the ability to think depends on the level of reasoning power and mastery of ideas with a certain level of abstraction (Butar-butar and Roza, 2020).

Many different perspectives are given on its relationship to creative thinking. For example, (Manurung. S. Alberth, halim. A, 2020) defines creative thinking as a habit of thinking that is trained by paying attention to intuition, activating imagination, revealing new potential, opening amazing points of view, and generating unexpected ideas. In addition, he stated that creative thinking is a mental activity that fosters new ideas and understanding. Creative thinking is not as structured as critical thinking; it focuses on logic.

Creative thinking, according to (Demitra, 2012) is defined as placing emphasis on quantity diversity and suitability when providing various options for solutions based on the information provided. Based on several opinions that have been presented, it can be concluded that creative thinking is a mental activity related to sensitivity to problems, considering new information and unusual ideas with an open mind, and being able to make connections in solving these problems. Creative ability is generally understood as creativity. Often, individuals who are considered creative are good synthetic thinkers who spontaneously build connections between things that other people are unaware of. For students' creativity to be realized, there needs to be encouragement within the individual (intrinsic motivation) as well as

encouragement from the environment (extrinsic motivation).

According to (Cobb & Hodge, 2011) creative thinking requires persistence, self-discipline and full attention, including mental activities such as: asking questions; consider new information and unconventional ideas with an open mind; building connections, especially between disparate things; connecting things freely; applying imagination to every situation to produce something new and different; and listening to intuition. In this case, encouragement and affirmation are needed from educators and friends to see students' creative thinking abilities. According to (Danim, 2020) in his research used four indicators of creative thinking ability, namely: fluency, flexibility, originality, and elaboration. In line with this opinion, (Lestari et al., 2017) mentions five types of creative behavior to measure a person's creative abilities, namely: fluency, flexibility, elaboration, sensitivity, originality. Based on the description that has been presented, the indicators of creative thinking that are often used are as follows.

Fluency is defined as the ability to create a multitude of ideas. This is one of the strongest indicators of creative thinking, because the more ideas there are, the greater the possibility there is of getting a significant idea. Flexibility: This characteristic or indicator describes an individual's ability to change his mentality when a situation arises, or the tendency to view a problem instantly from various perspectives. Flexibility is the ability to overcome mental obstacles, changing approaches to a problem. Don't get trapped by assuming rules or conditions that cannot be applied to a problem. Elaboration is defined as the ability to describe a particular object. Elaboration is a bridge that must be crossed by someone to communicate their creative ideas to the public. It is this factor that determines the value of any idea given to others outside himself. Elaboration is indicated by the number of additions and details that can be made to a simple stimulus to make it more complex. The originality indicator refers to the uniqueness of any response given. Originality is demonstrated by a response that is unusual, unique, and rare. Thinking about the future can also stimulate original ideas. The types of questions used to test this ability require interesting uses of common objects. Based on this description, it can be concluded that the four indicators of creative thinking above provide a view of the creative process. This creative process will help individuals to create creative ideas and solve certain problems in the process of life. Some of these indicators can be used as indicators to measure a person's creative thinking ability in solving certain problems, for example in the field of mathematics.

Character is an individual's personality, character, ethics, or disposition which is framed from the disguise of various accepted temperaments and underlies the individual's views, thoughts, disposition, and way of acting (Insani et al., 2021). These ethics consist of various qualities, ethics, and standards such as authenticity, mental fortitude to act, dependability, respect for others. Character training is the most common way to direct students to become

individuals who are fully characterized in the components of heart, mind, body, feelings, and goals. Ultimately, character is defined as a quality that is close to home, in the feeling of knowing what is good, needing to do good, and actually having the right behavior, which rationally comes from the mind, heart, training, and feelings and goals (Dwintari, 2017). Meanwhile, according to character education, it is a process of teaching morals to school members which includes information, attention or readiness, and activities to implement these qualities, both towards God, oneself, other people, climate, and identity with the aim that they become man.

Character education is a national movement to create schools that foster a young generation who are ethical, responsible, and caring. Character education is not just about teaching what is right and what is wrong. More than that, character education is an effort to instill good habits (habituation) so that students can behave, and act based on the values that have become their personality. In other words, good character education must involve good knowledge (moral knowing), good feelings or loving good (moral feeling) and good behavior (moral action). Character education is the creation of a school environment that helps students develop ethics, responsibility through modeling, and teaching good character through universal values (Dwintari, 2017).

Seeing that Indonesian society itself is very weak in mastering soft skills. According to (Rohim, 2021) character education does not just teach what is right

and what is wrong, but also instills habits about what is good. In this way, students will understand (cognitively) what is right and wrong, be able to feel (affectively) good values (loving the good/moral feeling), and good behavior (moral action), and habitually do it.

Character education has three main functions (Insani et al., 2021). First, the function of forming and developing potential. Character education shapes and develops students' potential to think well, have a good heart, and behave in accordance with Pancasila philosophy. Second, the repair and strengthening function. Character education improves and strengthens the role of the family, educational unit, community, and government to participate and be responsible in developing the potential of citizens and building the nation towards an advanced, independent, and prosperous nation. Third, the filter function. Character education sorts out one's own national culture and filters out the culture of other nations which is not in accordance with the nation's cultural values and dignified national character (Wahjud, 2015).

The character education values developed in Indonesia are sourced from religion, Pancasila, culture and national education goals, namely: (1) religious, (2) honest, (3) tolerance, (4) discipline, (5) work hard, (6) creative, (7) independent, (8) democratic, (9) curiosity, (10) national spirit, (11) love of the country, (12) respect for achievements, (13) friendly/ communicative, (14) loves peace, (15) likes reading, (16) cares about the environment, (17) cares about social issues, and (18) responsibility.

METHOD

The method used in this research is a mixed method of quantitative and qualitative methodology. The quantitative methodology used in this research is the survey method (Wahab, 2018). The design used in this research is the exploratory sequential design. The exploratory sequential design is that in the first stage the researcher collects and analyzes qualitative data, then in the second stage collects quantitative data based on the results of the first stage. The main weight in this strategy is on qualitative data. The following is the exploratory sequential design.
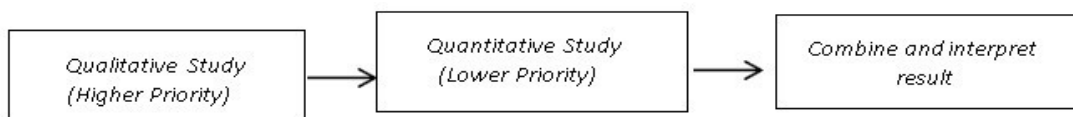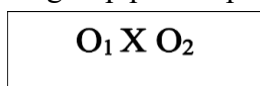

Chart 3.1 Adapted from Creswell and Plano in Fraenkel

The experimental design used in this research is pre-experimental designs. There are no control classes in this design. The form of pre-experimental design used is one-group pretest-posttest design.

$$O_1 \; X \; O_2$$

The one-group pretest-posttest design was chosen because the results of the treatment in the research could be known more accurately, because the researcher could compare the situation before being treated and the situation after being treated. The following is an overview of the one-group pretest-posttest design.

Information:

O_1: Pretest value (before treatment)

O_2: Posttest value (after treatment)

The population of this study were fifth grade elementary school students in Kebon Jeruk District, West Jakarta, in this case taking the population from three elementary schools in Kebon Jeruk District which had the same student characteristics and habits. In theory, population can be interpreted as all values, both the results of calculations and measurements, both quantitative and qualitative, from certain characteristics regarding a group of objects that are complete and clear (Sugiyono, 2017). The sample in this study was class IV students of SDN Duri Kepa 03 Pagi who were taken using the Cluster Sampling technique. (Sugiyono, 2017)In Cluster Sampling the sampling process is by selecting one SDN from three SDNs representing one sub-district which has the same characteristics among them. SDN to be selected as a sample.

Data collection in this research was carried out in two stages. The first stage of data collection was carried out to obtain information and assess creative mathematical thinking abilities. The first stage of data collection was carried out by means of observation, interviews, and documentation studies. The second stage of data collection was carried out by means of tests. Observation activities are directed at activities to pay attention accurately, record learning activities, and consider the relationship between aspects of the activity.

Observations were carried out to obtain data about mathematical creative thinking abilities. This observation was carried out in August 2023. An interview is a question-and-answer activity between the interviewer and the interviewee about the problem being studied, where the interviewer aims to obtain perceptions, attitudes, thought patterns and information from the interviewee that is relevant to the problem being studied.

Through interviews, researchers will obtain information that is not obtained in other data collection such as observation. The interviews used in this research were: A structured interview is an interview conducted using a written interview instrument guide which contains questions to be asked to the informant. Unstructured interviews are more flexible and open. Unstructured interviews are freer in their implementation compared to structured interviews because conducting interviews is carried out naturally to explore the informant's thoughts and ideas openly and does not use an interview guide.

Documentation is a data source used to complete research data, in the form of written sources, videos and images (photos), all of which provide information for the research process.

The test in this research is in the form of an assessment sheet carried out by arts and culture teachers and researchers. This test is given to students before conducting research or before students are given action (pretest) and at the end of the research (posttest). The pretest and posttest in this research were carried out with the aim of finding out whether there were changes after students experienced action or treatment.

Data analysis techniques are the process of systematically searching and organizing the results of interviews, notes and materials collected to increase understanding of everything that has been collected and make it possible to present what has been found. Research designs in mixed methods are divided into three, namely sequential explanatory design, sequential exploratory design, and concurrent triangulation design (Sugiyono, 2017).

Sequential explanatory design is the collection of quantitative and qualitative data carried out sequentially. The first stage was carried out using quantitative then the next stage or second stage was carried out using qualitative. So, this design data analysis technique places more emphasis on quantitative data. Sequential exploratory design is a combination of qualitative and quantitative sequentially. The first stage was carried out using qualitative then the next stage used quantitative. The concurrent triangulation design is a combination of qualitative and quantitative which is carried out by mixing the two equally, with a percentage of 50% quantitative and 50% qualitative. This research uses a sequential exploratory research design, namely collecting and analyzing qualitative data and then analyzing it quantitatively. In line with this, in this research the researcher used two data analyzes, namely qualitative analysis and quantitative analysis. To analyze the ability to think creatively mathematically, refer to the opinion expressed by Miles & Huberman in

(Pianta et al., 2020) stated three stages that must be carried out in analyzing qualitative research data, namely data reduction, data presentation, and drawing conclusions or data verification (conclusion drawing/verification).

To fulfill the prerequisites for data analysis, all data that has been collected must be tested for data normality and homogeneity. This is done with the aim of finding out whether the data is normally distributed or not and to find out whether the data is homogeneous or not. The normality test in this research uses calculations using the One-Sample Shapiro-Wilk test with the SPSS program. Meanwhile, to test data homogeneity using the One-Way Anova test with the SPSS program.

The hypothesis in this research was tested using the T-Test test formula. This test is used to determine the difference in conditions before and after the sample is given treatment. The T-Test was carried out to test the hypothesis of instilling cultural values through Mathematical Creative Thinking Skills Based on Character Education for Students at SDN Duri Kepa 03 Pagi Jakarta.

RESULT AND DISCUSSION

The description of the data that will be presented from the results of this research is to provide a general overview of the distribution of data obtained in the field. The data presented is raw data which is processed using description techniques. The description of this data is presented in the form of a frequency distribution, total score, average score, standard deviation, mode, median, maximum score, and minimum score accompanied by a histogram. Data description is useful for explaining the distribution of data according to frequency, to explain the highest tendency, middle tendency, and to explain the distribution pattern (maximum-minimum), to explain the pattern of data distribution or data homogeneity. Based on the title and problem of the research problem, this research consists of two independent variables and one dependent variable, namely mathematical creative thinking ability (Y), student character education (X). Data was collected from 32 fifth grade students at SDN Duri Kepa 03 Pagi in Kebon Jeruk District, West Jakarta using non-test instruments.

Mathematical creative thinking ability data was obtained through a questionnaire with 25 statement items with 32 respondents. Scoring is done using a Likert scale, using five alternative answers, namely: Always, Often, Sometimes and Never. The theoretical score range is between 25 to 100. Based on the collected observation data, a maximum score of 92 and a minimum score of 43 are obtained, the empirical range is between 43 - 92, the average is 66.81, the standard deviation (SD) is 11.24, and the variance is 126. 35. The description of the variable Mathematical creative thinking ability is presented in table 1 as follows:

Table 1. Description of Mathematical Creative Thinking Ability Score

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Mathematical Creative Thinking Ability	32	49	43	92	66.81	1.987	11.241	126.351
Valid N (listwise)	32							

Student character education data was obtained through a questionnaire with 25 statement items with 32 respondents. Scoring is done using a Likert scale, using five alternative answers, namely: Always, Often, Sometimes and Never. The theoretical score range is between 25 and 100. Based on the collected observation data, a maximum score of 84 and a minimum score of 42 are obtained, the empirical range is between 42 - 84, the average is 67.78, the standard deviation (SD) is 9.814 and the variance is 96.305. The description of the student character education variable is presented in table 2 as follows:

Table 2. Description of Student Character Education Scores

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Student Character Education	32	42	42	84	67.78	1.735	9.814	96.305
Valid N (listwise)	32							

The data normality test was carried out on the regression estimate error $\hat{Y}$ on X using inferential statistics, namely Lillefors. Details of each research data normality test result are as follows:

For the general regression equation $\hat{Y} = a + bX$, we get a = 27.7 and slope b = 0.6, therefore the general regression equation $\hat{Y} = 27.7 + 0.6X$.

Table 3 Summary of Regression Test Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	27.701	7.843		3.532	.001
	Mathematical Creative Thinking Ability	.600	.116	.687	5.180	.000

Testing the regression estimate error $\hat{Y}$ on X produces a maximum Lcount of 0.102. As for Ltable, at the real level α = 0.05, a value of 0.2898 is obtained. From the results of the comparison between Lcount and Ltabel it turns out that Lcount < Ltabel, namely 0.140 < 0.2898, from these results Ho is accepted, and it can be concluded that the regression estimate error $\hat{Y}$ on X is normally distributed. The normality test for the estimated error $\hat{Y}$ for a normally distributed X is presented in table 4. as follows:

Table 4 Summary of Normality Test Results

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Mathematical Creative Thinking Ability	.140	32	.115	.956	32	.211
Student Character Education	.175	32	.014	.928	32	.034

After the data analysis requirements are met, inferential analysis is carried out to test the hypothesis which is carried out to draw conclusions whether the research hypothesis that has been formulated is supported by the empirical data obtained. Testing this research hypothesis uses regression and correlation formulas. The hypothesis is analyzed using simple regression and correlation formulations, details of the test results are as follows: simple regression analysis testing includes regression significance testing and regression linearity testing which is carried out using the F test. Meanwhile, simple correlation analysis testing is in the form of a correlation significance test using the t test. The simple correlation technique used is Product Person Moment.

Table 5. Summary of Linearity and Significance tests for Y on X Regression

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.687[a]	.472	.455	7.248	1.764

a. Predictors: (Constant), Mathematical Creative Thinking Ability
b. Dependent Variable: Student Character Education

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1409.550	1	1409.550	26.833	.000[b]
	Residual	1575.919	30	52.531		
	Total	2985.469	31			

a. Dependent Variable: Student Character Education
b. Predictors: (Constant), Mathematical Creative Thinking Ability

From Table 5, it can be concluded that the correlation between mathematical creative thinking ability and student character education is significant and linear, meaning that the regression equation $\hat{Y} = 27.7 + 0.6X$. can be used as a tool to explain and draw conclusions regarding the role of mathematical creative thinking abilities and student character education. Next, correlation

testing was carried out with Product Person Moment to determine the strength of the role of the variable Mathematical creative thinking ability and student character education. From the calculation results, the correlation coefficient is rxy = 0.687. Testing the significance of the correlation coefficient using the t test obtained a t value of 3.532 while t table at the significant level α = 0.05 with 30 degrees of freedom obtained a value t table = 1.69 The strength of the contribution of variables X and Y is shown by the correlation coefficient and the results of the t test can be seen in table 5 it can be seen that the results of the t test analysis show that tcount is 3.532 and ttable is 1.19, meaning that there is a positive application between the variables Mathematical creative thinking ability and student character education, because $t_{count} > t_{table}$, namely 3.532 > 1.19. The coefficient of determination is 0.687, explaining that 68.7% of the variance in the variable mathematical creative thinking ability is explained or determined by the student's character education. From the results of the analytical calculations above, it can be concluded that there is a positive relationship between the variable Mathematical creative thinking ability and student character education.

The above statement is in line with previous research, when each student's character gives rise to a curious nature when working on mathematics problems, creative thinking is needed (Van Nguyen et al., 2020). Students generally feel challenged to work on these problems, thereby bringing out the ability to think creatively mathematically. When facing difficult challenges, students are slow to work on math problems. The research results also support the statement that students who have good creative thinking skills will always try to understand the material to solve the questions given by the teacher (Bereiter & Scardamalia, 2000).

Based on the regression equation, it was found that the mathematical creative thinking ability and students' character education had a positive correlation, which means that the higher the student's character education, the higher the mathematical creative thinking ability. In line with the opinion that students' character education regarding mathematics lessons can be changed and improved, namely by using appropriate learning strategies, one of which is learning that involves creative students and improves mathematical thinking so as to enable students to learn optimally (Uce et al., 2016).

This is also in line with the results of how high or low a student's character education is, which will influence the level of success in overcoming mathematics problems (Strobel & van Barneveld, 2015). The results of the hypothesis test on students' character education have a significant effect on their mathematical creative thinking abilities. At a sufficient level of ÿ = 0.05, a sig value of 0.00 < ÿ = 0.05 is obtained. This means that student character education has a significant influence on mathematical creative thinking abilities.

It is known that the R square value is 0.687. This can be interpreted as saying that the variability of mathematical creative thinking abilities is influenced by

students' character education by 68.7%. Meanwhile, 31.3% were influenced by factors other than students' character education. In the opinion quoted previously, self-efficacy influences a person through choice of action, effort and persistence (Safitri et al., 2021). The action factor is a very important factor as a source for forming a student's character education because it is because a person's success in carrying out certain tasks or skills will improve the student's character education. In the learning process, students will make decisions when working on or completing practice questions given by the teacher. The decision to be chosen by students is influenced by, among other things. Character education: Students with high character education tend to choose complex assignments because they contain more challenges than individuals with character education.

Students' character education determines how much effort the individual makes and how long the individual persists when facing obstacles and unpleasant experiences. Individuals with strong student character education will be more active, enthusiastic, and persistent in their efforts to overcome challenges. Individuals who are not confident in their abilities will reduce their actions or even give up when facing obstacles (Chamidiyah, 2015). In carrying out research, students with high character education tend to give positive responses by being more active in asking questions, working on the questions given well, and submitting them on time. Meanwhile, students with low character education tend

to be careless in doing questions and do the questions as is (Dwirahayu et al., 2018). This shows that students with high character education have higher interest or involvement than students with low character education.

One implementation of the research that has been carried out is by using the variable Y test instrument, namely the ability to think creatively in mathematics. The non-test results given to students are in the medium category which shows that they can understand story questions coherently but not in the language. Apart from that, students are also able to create questions related to problems, but changes to the mathematical model still need to be improved. Meanwhile, the non-test results given to students were in the high category, that is, students had understood the story questions coherently but had not yet understood the language. Apart from that, students have also been able to create questions related to problems, changing mathematical models correctly.

CONCLUSION

The student character education model for creative mathematical thinking abilities has an impact on students' success in participating in class learning because students who have high character education will tend to give a positive response by being more active when participating in learning and doing the exercises given by the teacher. teacher well.

Students with low character education tend to be passive and work on practice questions wisely. Students with high character education meet four indicators of creative thinking ability: The

process of understanding problems, the process of modeling problems, the process of using concepts in solving problems, and the process of interpreting and evaluating situations. This shows that students in the high self-efficacy category have good numeracy literacy skills.

Students in the character education category are meeting three indicators of creative thinking ability, namely the process of understanding problems, modeling problems, and using concepts in solving problems. This shows that students in the medium character education category have quite good creative thinking abilities.

These results indicate that students with low character education have less creative thinking abilities. Apart from that, the results of this research also show that the better the students' character education, the better their creative thinking abilities will be.

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