Kumon Learning at SMA PAB Saentis Kaliserayu Street, District Percut Sei Tuan Village Saentis

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Abstract

The learning conducted in schools so far tends to apply classical teaching techniques that do not pay attention to the stages in the variation of their teaching methods. For that reason, various parties must care about advancing education starting from the elementary school level. In this community service activity, there are many efforts that want to be implemented, one of which is applying appropriate learning principles to improve the quality of children's education, even if carried out by parties outside the school. One of the roles of parents greatly influences the success of the learning obtained by the child. Motivating and sparking curiosity and interest in a subject will greatly ease a child's ability to remain in a constant zone or condition of being open and aware of learning a subject, especially in mathematics. For that reason, a good method of studying a subject is needed, one of which is known as learning techniques. A condition where all parties cooperate and interact will build a positive direction so that education can develop towards a better and higher quality. In this research activity, the theme revolves around teaching mathematics to school children using the KUMON method. Repetition is intended to add value in learning new material and linking it in a hierarchical structure to previously learned material, so that it will be recalled automatically when the child is faced with problems that require connecting past material with upcoming material.

***Keywords**: Parental Involvement, Student Motivation, Mathematics Learning, KUMON Method, Elementary Education*

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Introduction

In the era of globalization, with the advancement of science, technology, and culture that is continuously developing and progressing, individuals who are sufficiently capable of facing all problems and able to adapt to the current environment and conditions are needed. Therefore, intensive training and development are needed to build the desired individuals. This can be done, among other ways, through education. According to [1], education is a process aimed at influencing students to adapt as well as possible to their environment, thereby causing changes within themselves that enable them to function effectively in society. Education is inseparable from the process of teaching and learning; the learning process that develops in the classroom is generally determined by the roles of teachers and students as individuals directly involved in that process. Therefore, in the learning process, to improve learning outcomes such as reasoning ability, the enhancement of students' reasoning skills somewhat depends on how the teacher delivers the lesson to their students. So, the ability and readiness of teachers in teaching play an important role in the success of the student learning process. This shows the correlation between the improvement of students' reasoning skills and the teaching methods used by the teacher[2]. The study by the International Association for the Evaluation of Educational Achievement (IEA) in East Asia, for example, shows that the reading skills of 4th-grade elementary students in Indonesia rank the lowest compared to neighboring countries. The highest average reading test score was achieved by Hong Kong (75.5), followed by Singapore in second place (74), while Thailand was in third place (65.1). The Philippines ranked one position higher than Indonesia (52.6), while Indonesian students scored 51.7, managing to master only 30% of the reading material. Many factors can influence students' learning outcomes. From the results of the interview, it actually shows a lot of complaints from students about math lessons being difficult, uninteresting, boring, and feared by many children. Complex calculations and difficult formulas make many children dislike math lessons.Moreover, most teachers use conventional teaching models that rely heavily on lectures, where the teacher's only goal is to transfer knowledge to the students, making them passive. Teachers only utilize the lecture method and assignments (homework) for students.

The teacher has not yet accustomed students to learn independently with feedback[3]. After finishing explaining the material, the teacher instructs the students to independently work on the questions found in the textbook or LKS book. Similarly, according to a study by one of the Kumon instructors, the process of learning mathematics at Kumon has not yet shown a significant improvement in learning outcomes. The learning process takes place conventionally. where the teacher plays an active role in delivering the material and the students passively receive the material conveyed by the teacher[4].

Before the Kumon method existed, parents exerted all their efforts for their children, from private tutoring to attending study groups, using various methods at that time, including conventional methods or using the abacus as a counting aid. Before Toru Kumon created a method, the first time he saw his child's textbook, he felt that the exercises and lessons were not systematically arranged, so Toru Kumon did not want to teach his child using that book.

Therefore, a learning method that can develop students' potential is needed, namely through the application of the Kumon method. Through the actions taken by the teacher, students' reasoning abilities in mathematics will improve. The mathematics subject scores after the research are expected to have 80% of students achieving the minimum score to meet the Minimum Completeness Criteria (KKM) for the mathematics subject. In order to improve students' performance in mathematics, teachers need to enhance their teaching methods, one of which is implementing the Kumon method. Thus, by implementing the Kumon method in mathematics learning, it is expected to improve students' academic performance. The Kumon method is a learning system that provides individualized learning programs. According to each individual's ability, which allows students to explore their potential and develop their skills to the fullest, linking concepts, skills, individual work, and maintaining a comfortable and

enjoyable atmosphere. (Suyatno, 2009:189) This method, which originated in Japan and was born in July 1954, is indeed considered effective in improving children's math skills at school. The Kumon learning method emphasizes activities based on each student's abilities, allowing them to explore their potential and develop their skills to the fullest.

Kumon learning not only teaches counting but also enhances students' ability to focus on tasks and boosts their self-confidence. Therefore, with the use of the Kumon learning method, it is expected to improve students' academic performance. (Suyatno, 2009:189) In the Kumon method, the initial level for each Kumon student is determined individually, with students being given tasks from a level they can complete easily and without mistakes. The worksheets have been designed in such a way that students can understand how to solve the problems on their own. If students continue to learn at their own pace, they will catch up with the curriculum appropriate for their grade level and even surpass it. (Suyatno, 2009:189) The Kumon learning method in mathematics education is expected to enhance students' mathematical reasoning abilities. Reasoning is the process of thinking that uses arguments, statements, premises, or axioms to determine the truth or falsity of a conclusion. (Sihotang, 2012:94) Based on the background as mentioned above, it is necessary to conduct research on "The Effectiveness of the Kumon Method in Improving Students' Mathematical Reasoning Skills.

Literature Review

According to Dimyati and Mudjono (2019), learning outcomes are a process of mutual influence between two components of the learning and teaching process, involving the interaction between the learner and the instructor. Meanwhile, according to Suprijono (2019), Learning Outcomes are attitudes obtained after someone has received material or engaged in learning activities, which can include patterns of attitude, activities, skills, and appreciation after undergoing the stages of learning. Furthermore, Horward L. Kingkeys in Rusman (2015) defines the essence of learning as learning is a process by which behavior (in the broader sense) is originated or changed through practice. Learning is a process by which behavior (in the broadest sense) is generated or changed through practice or training.

From several opinions above, it can be concluded that the essence of learning is the change that occurs upon the completion of the learning process, which involves two parties: the one who teaches and the one who receives the learning. This will result in a change, whether in attitudes, activity patterns, or appreciation, which are the outcomes obtained after the learning process.Thorough planning and preparation play a crucial role in the success of a learning process. For that reason, it is necessary for both learners and those receiving the education to be open and maximize the learning process with thorough preparation, so that during the implementation phase, there will be no sudden or rushed learning activities that can lead to boredom and disinterest in the subject being faced[5].

The role of parents also has a significant impact that cannot be overlooked because with the care and attention given to the child, the learning process received by the child will also yield maximum results.The essence of learning is a process where an activity is carried out with a high level of awareness to achieve a change and implement activities that have been planned with the target of achieving changes in attitudes through knowledge obtained from a learning experience. According to Benyamin Bloom (Nana Sudjana, 2009), the cognitive domain relates to intellectual learning outcomes that consist of six aspects, namely:

1. Knowledge, for example, memorized knowledge to be remembered such as formulas, definitions, terms, articles in laws, these terms indeed need to be memorized and remembered to master them as a foundation for other knowledge or understanding of concepts.
2. Understanding, for example, explaining with sentence structure, providing other examples that have been exemplified, or revealing application instructions in other cases.

3. Application refers to the implementation based on the realities present in society or the realities found in the reading text.
4. Analysis is the effort to break down an integrity into its elements or parts so that the hierarchy or structure is clear.
5. Synthesis is the ability to find unique relationships, the ability to formulate plans or operational steps for a task or problem presented, the ability to abstract a large number of phenomena, data, and observation results into a focused direction.
6. Evaluation is the decision-making about the value of something, which can be viewed in terms of objectives, ideas, methods of operation, problem-solving, material methods, and so on.

Learning in various subjects used by teachers has become increasingly diverse with the passage of time, requiring creativity from learners to discover which learning techniques and strategies best suit their learning styles[6]. For the educators, it is also necessary to know whether the techniques used have already provided optimal results in learning or if there is still a need to search for better learning techniques to maximize those learning outcomes.

The implementation of the KUMON method can be carried out through various steps aimed at enabling children to solve problems related to the material that has been taught with full discipline and independence. With discipline, it will naturally foster the courage to solve existing problems, including those in community life[7]. For that reason, the participation of several parties is necessary in implementing learning based on the KUMON technique.There are several parties that must be involved here besides the two parties that must be present in every learning activity; there are also parties that determine the success of KUMON learning, namely the family and the social community[8]. Various factors also influence the success of KUMON learning, whether they originate from within the learner or from outside the learner.The implementation of KUMON learning can have a long-term effect on students, contributing to the development of a child's personality, which tends to rely on teachers or material providers in a classical learning system. However, when compared to learning using the KUMON technique, significant differences can be observed. With the KUMON method, various problems presented in the form of questions are directly faced by the students, who then seek solutions to each problem, finding and searching for answers, resulting in a valid and accountable response.KUMON is a technique that is still rarely applied in school education.

This learning method demands the effectiveness of students in thinking at a high cognitive level, so they do not overly depend on the teacher as the one who provides or delivers the material. Therefore, students are given time to think and utilize their full potential, which will naturally build their self-confidence when the questions or problems presented can be solved well. Self-confidence will eventually build a sense of independence, which is certainly a good attitude to have for a quality individual, necessary for solving every problem encountered in daily life[3]. Starting with the condition where the problem is presented in the form of subject matter context, it will then develop into issues encountered in daily life.

Research Methodology

The type and design of the research for the application of the KUMON method use a quantitative research type where the priority data is quantitative data collected using questionnaires and then analyzed using quantitative data analysis methods[9]. According to [10], quantitative research is a scientific method that adheres to scientific principles because it meets these principles concretely and empirically, objectively, measurably, rationally, and systematically. The quantitative method aims to test the hypothesis that has been formulated to study a sample from a population. The data collection uses research instruments and data

analysis that are quantitative or statistical in nature. This research uses numbers with statistical calculations and aims to test the hypotheses that have been formulated. The instrument in this study is the tool used to collect data at the research site. To collect data related to the success of the learning used and its correlation with the learning outcomes obtained by students, it can be seen by outlining and gathering the data obtained by distributing questionnaires to students in the XI grade after the implementation of learning using the KUMON model. To see the results of the score, it can be reviewed from the learning outcomes that have been conducted, specifically on the material of Quadratic Equations and Quadratic Inequalities.

Results

This research consists of one independent variable that will be examined and proven for its influence on the dependent variable, where the independent variable is learning and the dependent variable is learning outcomes. Therefore, the influence between the independent variable and the dependent variable will be proven by choosing a simple linear regression test.

Table 1. Results of simple linear regression test

Coefficients[a]										
	Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	36.823	5.418		6.796	.000					
pembelajaran	.099	.129	.116	.763	.449	.116	.116	.116	1.000	1.000
a. Dependent Variable: hasil belajar										

Where the learning variable affects the dependent variable of learning outcomes by 0.099 and the constant value, when no variable influences it, will result in a learning outcome value of 36.823. Regarding the test results in the form of a partial test, the following SPSS output can be seen:

Table 2. Results of the t-test hypothesis test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	36.823	5.418		6.796	.000
	pembelajaran	.099	.129	.116	.763	.449

a. Dependent Variable: hasil belajar

Then the testing criterion is that if the calculated t is greater than the table t, the alternative hypothesis is proven and the null hypothesis is rejected. From the calculation, the t value obtained is 6.796, which is greater than the table t = 0.697 and sig = 0.763 > sig 0.05, thus it can be proven that the learning variable has a positive and significant effect on the learning outcome variable.

Conclusion

This research provides the results of data quality tests consisting of validity and reliability, where all statements in the questionnaire measuring the variables of learning and learning outcomes are declared valid and reliable using SPSS version 25 data analysis. For the regression analysis test, a simple linear regression analysis was used, with the general form of the resulting equation as follows: Y = 0.099X + 36.823 Where the learning variable affects the dependent variable of learning outcomes by 0.099, and the constant value when no variable influences it will result in a learning outcome value of 36.823. The results of the alternative hypothesis test were accepted, and the null hypothesis was rejected. From the calculation, the t-value obtained was 6.796, which is greater than the t-table value of 0.697, and sig = 0.763 > sig 0.05. Therefore, it can be proven that the learning variable has a positive and significant effect on the learning outcome variable. For the determination test, the coefficient of determination value obtained is 0.099 or 9.9%, influenced by the learning factor, while the remaining is influenced by other factors not explained in this study.

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