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STUDENTS' PRACTICE OF MATHEMATICS AND ITS EFFECT ON THEIR NUMERICAL SKILLS IN PROBLEM-SOLVING IN SECONDARY SCHOOLS IN FAKO DIVISION, SOUTH WEST REGION OF CAMEROON

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Abstract

For several decades mathematics has been called the "critical filter", because students who are inadequately prepared in mathematics during secondary school lose many career choices that would otherwise be available to them. Also, for those students who pursue post-secondary education in Cameroon, success in O-Level mathematics is a pre-requisite for most degree programmes in business, computing and the sciences. This makes mathematics very pivotal in reshaping the future and students' attitude towards mathematics an area of concern. Negative attitudes towards mathematics are damaging, leading to disengagement, increased anxiety and lack of confidence, and reluctance to try to improve skills. Cameroon needs graduates with advanced mathematics skills to promote innovation, data synthesis, and technology if it is to solve challenging problems and be competitive in the global scenario. This study examined students' practice of mathematics and its effect on their numerical skills in problem-solving in secondary schools in Fako Division, South West Region of Cameroon. The objective is to find out whether students' practice of mathematics has any influence on their numerical skills in problem-solving. The mixed research methodology with convergent parallel design was used. The target population comprised 6350 form five students from secondary schools in Fako Division. The accessible population was made up of 1036 students and the sample size of the study was made of 512 form five students from six colleges using the random sampling technique. There were also 26 teachers and 6 Heads of Mathematics Department. Data was collected using questionnaire and interview guide. Instruments were validated and the reliability coefficients gave satisfactory values of 0.75 and 0.743 for students' and teachers' questionnaire respectively. The statistical analyses and findings reveal that students' practice of mathematics has a positive correlation with their numerical skills in problem-solving. It was recommended that: (1) problem-solving should be part of each curricular unit and begin in kindergarten. For this to be effective, the teaching of problem-solving should not be isolated, instead, it can serve to support and enrich the learning of mathematics concepts and notation. (2) teachers should cultivate students' interest in mathematics as early as possible. Varying classroom instruction practices could be a remedy to enhance students' understanding, achievement, and motivation in learning mathematics.

KEYWORDS: Mathematics, attitude, practice, problem-solving, computational, numerical, analytical, skills

INTRODUCTION

Attitude towards mathematics is defined as a general emotional disposition toward the school subject of mathematics. This is not to be confused with attitude towards the field of mathematics, towards one's ability to perform in the field of mathematics or toward some specific area within mathematics (e.g., geometry, word problems). Generally, a positive attitude towards mathematics (as well as any other subject) is valued for the following reasons: a positive attitude is an important school outcome in and of itself, attitude is often positively, although slightly, related to achievement, a positive attitude towards mathematics may increase one's tendency to select mathematics courses in high school and college and possibly one's tendency to select careers in mathematics or mathematics related fields.

In every mathematics lesson, the teacher is conveying, even if consciously, a message about mathematics which would influence this attitude. Once attitudes have been formed, they can be very persistent and difficult to change. Positive attitudes assist the learning of mathematics; negative attitudes not only inhibit learning but, very often persist into adult life and affect the choice of Job. Learning mathematics does not only involve thinking and reasoning, it is dependent on the attitudes of the learners towards learning and mathematics (Kele & Sharma, 2014). A student with a positive attitude towards mathematics is more confident when learning mathematics, enjoys mathematics, is motivated to do more, actively engages during mathematics lessons, gets more practice and achieves more. When students display a positive attitude towards mathematics, improvements can be seen in: emotions, motivation, confidence, engagement, working memory, numerical processing. According to the American Psychological Association (APA), feelings that impact a persons' mood and emotional reaction can be referred to as affect, and character towards mathematics is an example of affective state. Research considers affect to exist on a sliding scale – ranging from positive to negative. Naturally, this means in a school full of students, you will see a huge range of different affective states related to mathematics learning (Laney, 2019). He went on to say, for every student who looks forward to the next mathematics lesson, there is another who feels confused and defeated. One student might not like mathematics because they think the subject is not useful and may not devote time to practice it, while another dislikes it because they doubt their own ability to succeed. Practice of mathematics is a student attitudinal construct.

Chubb (2018) asserts, if we were to consider reading instruction for a moment, everyone would agree that it would be important to practice reading. Most of us will likely think of picture books for the children to read and not reading pages of random words in a page. Pictures might help give clues to difficult words, the storyline offers interest and motivation to continue and the messages within the book might bring about rich discussions related to the purpose of the book. This kind of practice both encourages students to continue reading, and helps them continue to get better at the same time. However, this is very different from what we view as "practice" of mathematics. He went further to say that, to many, "practice" of mathematics brings about childhood memories of completing pages of repeated random questions, or drill sheets where the same algorithm is used over and over again. Students who successfully completed the first few questions typically had no issues completing each and every question. For those who were successful, the belief is that the repetition helped. For those who were not successful, the belief is that repeating an algorithm that did not make sense in the first place was not helpful – even if they can get an answer, they might still not understand. In Dan Finkel's Ted Talk (5 principles of extraordinary Math Teaching) he had attempted to help teachers and parents see the equivalent kind of practice of mathematics. Below is a table explaining the role of practice as it relates to what Dan Finkel calls play.

Table 1: Table explaining the role of practice as it relates to what Dan Finkel calls play.

	"Practice"	
	Rote Practice	**Dynamic Practice**
Goal	-Mastery of basic skills -Memorizing rules, formulae and algorithms	-Understanding of facts, rules, formulae and algorithms -Applying facts, rules, formulae and algorithms
Focus	-Following procedures -Paper – and - pencil	-Relationships between concepts and procedures -Sense – making
Roles	-Student passive (little or no thinking/ decision making)	-Student active (thinking and decision making are required to be successful)
Process	-Drill -Repetition	-Physical experiences -Games, Puzzles -Elements of choice is a feature

Source: https//buildingmathematicians.wordpress.com

When practice involves active thinking and reasoning, our students get the practice they need and the motivation to sustain learning! When practice allows students to gain a deeper understanding or make connections between concepts, our students are doing more than passive rule following. They are engaged in thinking mathematically. If students only practice recall, they would not develop a full understanding of mathematical concepts or be able to build on these concepts moving forward. It is also unlikely they will perform well on high stakes assessments (Spalding, 2023).

Mathematics games and mathematics in everyday situation are two sub indicators for students' practice of mathematics. Play games that involve numbers and calculation. We all love playing one game or another in our free time. Students can pick a fun game or app and utilize their leisure time to polish their mathematical skills. Brown, Lewis and Harcleroad (1977) cited in Nekang (2016) defined instructional game as a structured activity with set rules for play in which two or more students interact under clearly designed instructional objectives. In a typical game, participants make decisions as if they are in actual situation. Games require strategies, tactics and initiative from players (students). There must be a winner. The greatest strength of games in mathematics teaching/learning is in the ability of a game to provide drill and practical application.

Statement of the problem

Anything in the world can be perfected with practice, and more so when it is mathematics. All pupils need opportunities to practice skills and routines which have been acquired recently, as to consolidate those which they already possess, so that there may be available for use in problem-solving and investigational work. The amount of practice which is required varies from pupil to pupil, as does the level of fluency which is appropriate at any given stage. When students do not practice mathematics, they may develop negative attitude towards the subject. Negative attitude from students towards mathematics could lead to low intake/dwindling enrolment of students in mathematics or mathematics related disciplines in tertiary education. This may also lead to fewer professional mathematicians. There are far too many schools than teachers with a degree/ diploma in mathematics. Thus, those who teach mathematics in our schools especially lay-private schools may not have a qualification in mathematics. Such teachers may not have a mastery of what they teach and in the long run can cause potential mathematics majors to fall off from the mathematics train. The implication is that there will be a "swing away from science" caused by a "drift away from mathematics". Worse still, the country in the near future will have a dearth of qualified personnel in the critical skills area of the country. Cameroon needs graduates with advanced mathematical skills to promote innovation, data synthesis and technology if it is to solve challenging problems and be competitive in the global scenario by 2035. But this cannot be the case if students have questionable problem-solving skills as a result of lack of enough practice of mathematics. This study attempts to provide a solution.

Objective(s) of the study

The study sought to find out whether students' practice of mathematics has any influence on their numerical skills in problem-solving.

Review of Related Literature

Problems represent gaps between where one is and where one wishes to be, or between what one knows and what one wishes to know. Problem-solving is thus the process of closing these gaps by finding missing information, re-evaluating what is already known or, in some cases redefining the problem (McGraw Hill, 1997 as cited in Nekang, 2016). Problem-solving skills are skills students need to function properly in and beyond the mathematics classroom. Students "need to develop a sense of number that enables them to recognize relationships between quantities, to use the operations of addition, subtraction, multiplication and division to obtain numerical information, to understand how the operations are related to one another, to be able to approximate and estimate when appropriate and to be able to apply their understanding to problem situations" (Burns 2007, p.157) in (Switzer, 2010). Numerical skills encompass perceiving, processing, and calculating numbers and symbols, crucial for problem-solving and organizational success. These skills involve numerical perception, control, rapid calculations, estimation, mathematical logic, percentages, dividends and more. Employers value numeracy for reasoning with data, often assessing it through online tests and interviews. Developing these skills through practice, understanding mathematical concepts, and embracing mistakes is key to enhancing numeracy. In fields like accounting, basic mathematics operations, decimals, fractions and percentages are fundamental in understanding concepts and solving problems. A good problem-solving programme must include appropriate content. The content must be of suitable difficulty and must include at least 3 types of experiences designed to improve problem-solving performance: Regular sessions devoted to solving a variety of kinds of problems; Instruction in the use of various problem-solving strategies; Practice aimed at the development of specific problem-solving thinking procedure and skills.

In 2022, Wongupparaj and Kadosh published a paper online on relating mathematical abilities to numerical skills and executive functions (EF) in informal and formal schooling. The study was carried out in Chonburi province in Thailand and included 505 children (6-to 7- year old preschoolers and first graders). 50.2% of the participants were female. All participants were native of Thai and attended 12 public schools. The domain specific early mathematics is composed of eight paper –and pencil tests (the dot-dot comparison test, the dot-number comparison test, the number comparison test, the mental number line, the numerical strop test, the numerical shifting test, the number sets test the numerical operations test. The dot –dot comparison was used to assess the enumerating ability by comparing 2 sets of data that reflect subitizing and counting systems of children's early numerical abilities. All children were instructed to circle which set of dots contained more dots without counting as accurately and quickly as possible in 2.5 minutes. The results showed using Multiple Analysis of Variance (MANOVA) that primary school children were superior to preschool children over more complex tests of domain specific early mathematics; number specific executive functions; mathematical abilities, particularly for more sophisticated numerical knowledge; and number specific EF components. Mathematical skills are regarded as an important tool and an integral part of effective functioning in everyday life. These skills are the keys to analyzing and interpreting information and also making basic or complex decisions (Reyna VF et al as cited in Wongupparaj & Kadosh, 2022). Our study focused on secondary school students and we used Pearson Product Moment Correlation as our statistical tool.

Nazari et al. (2019) published an article titled 'Distributed practice in mathematics: Recommendable especially for students on a medium performance level?' The study was carried out in Germany. They investigated the effect of distributed practice on the mathematics performance of 7th graders. The initial sample included 142 7th graders of four schools located in and around a middle-sized German City in neighbourhoods with a medium socio-economic status. All students attended higher level courses aiming at the German higher education entrance qualification "Ahitur. Before the students were assigned to one of the two practice condition, they were ranked by their mathematics grade of their last school certificate, and then, within each grade group, they were randomly assigned to one of the two conditions, ensuring that the overall mathematics performance was roughly equal in both conditions before manipulation. After a stochastic lesson, one group of students worked three sets of exercises massed on one day, while the other group of students worked the same exercises distributed over three days. Bayesian analyses of the performance two weeks after the last practice revealed no evidence for an effect of practice condition. However, in a test after six weeks, strong evidence for a positive effect of distributed practice was revealed. Exploratory analyses indicated that especially students in the medium performance range benefited from distributed practice. Their study contributes to answer the questions of why and under which circumstances distributed practice proves a useful learning strategy in realistic learning contexts, even beyond learning of rather simple verbal content.

Cao Thi et al. (2023) carried out a cross-sectional study in Vietnam on factors affecting the numeracy skills of students from mountainous ethnic minority regions in Vietnam. The study was crucial for the staff and policy-makers to narrow the gap in quality of mathematics education between the mountainous and developed regions and to create human resource strategies for minority regions in Vietnam. There has been many efforts to improve mathematics education in the northern mountainous regions of Vietnam, however, the results are not as expected. The sample was made up of 755 middle school students (410 girls, 345 boys) from grades 6 to 8 in 8 provinces in northern Vietnam. In each province, one school was chosen using the convenience sampling method where 30 to 35 students were randomly selected for each grade. Using factor analysis, they discovered the impact of the 8 independent variables on the dependent variable. Students' efforts (practice of) and language skills were most influential, and teachers did not have a substantial effect. Thus, their study demonstrated that students' practice of mathematics has an effect on their numerical skills. In this paper, we use the mixed research method with convergent parallel research design.

The National Council of Teachers of Mathematics (NCTM) argued that problem-solving should become the "the focus of mathematics in school" (1989, p.6). According to NCTM (1989, 1991), centering mathematics instruction around problem-solving can help all students learn key concepts and skills within motivating contexts. The use of open, contextualized problems seems sensible at many levels. Instead of having students complete meaningless exercises and memorize what the teacher tells them, why not have students learn key mathematical ideas while solving interesting problems? Any good mathematics teacher would be quick to point out that student's success or failure in solving a problem often is as much a matter of self-confidence, motivation, perseverance and many other non-cognitive traits, as the mathematical knowledge they possess. An individual's failure to solve a problem successfully when the individual possesses the necessary knowledge stems from the presence of non-cognitive and meta cognitive factors that inhibit the appropriate utilization of this knowledge. These factors are of at least four types: affects and attitudes, beliefs, control and contextual factors (Garfola et al., 1985). Classroom activities designed to develop problem-solving ability include: Teacher-student planning; effective discussion procedures; effective procedures for presenting data for group consideration; and cooperative organization for group activity. However, a classroom that is organized around significant problems cannot limit its activities to studying the textbook and listening to lectures. Its source of information must include whatever will lead to the understanding of current problems. Peer interaction can foster cognitive development by allowing children to acquire new skills and restructure their ideas through discussion. Having a partner can increase the amount of time students' work on a task. However, collaborative contexts can facilitate children's acquisition of skills because partners often bring different skills to the task.

Gerald and Denis (2023) carried out a study in Philippines on students' achievement and problem-solving skills in mathematics through Open-Ended Approach (OEA). Open-Ended Approach is one of the instructional approaches that have the potential to help students develop their problem-solving skills. OEA focuses on finding correct response rather than offering a single solution to a problem at hand. The study investigated the achievement and problem-solving skills in mathematics of the grade 8 students in Binuangan National High School through OEA. It sought to identify the levels of achievement in mathematics of students who were exposed to OEA and those exposed to non-OEA, determine the problem-solving skills of students who were exposed to OEA and those exposed to non-OEA in terms of a) self-confidence in solving problems; b) putting effort in solving problems; and c) procedure followed to solve problems; compare the levels of achievement in mathematics of students were exposed to OEA and those exposed to non-OEA; and find out the difference on problem-solving skills of students who were exposed to OEA and those exposed to non-OEA. The researchers adopted the quasi-experimental research design in the study. The experimental group and the control group pre-test results showed very poor student achievement; however, after exposure to OEA, the experimental group's post test results showed great student achievement. Compared to OEA and non-OEA, students exposed to OEA demonstrated greater problem-solving skills. Between the pre-test and posttest, OEA considerably raised students' achievement levels. Additional findings showed that students exposed to OEA had significantly better problem-solving skills than those exposed to non-OEA

Materials and method

The researcher used the mixed-research method that involves both quantitative and qualitative research methods. We made use of the convergent parallel design. This design is used when the researcher collects and analyzes both quantitative and qualitative data simultaneously during the same phase of research process, keeping the methods independent and then merging the results into an overall interpretation. The accessible population was made up of 1036 students and the sample size of the study was made of 512 form five students from six colleges using the random sampling technique. There were also 26 teachers and 6 Heads of Mathematics Department. The questionnaire was administered to 512 form five students of the six selected secondary schools in Fako Division. Simple random sampling technique was used to select the respondents who took part in the research from the six schools. A questionnaire was constructed based on the objective(s) of the study. The 4-point Likert scale type scale was used to construct the questionnaire items with each item having four options (Strongly Agree, SA = 4; Agree, A=3; Disagree, D=2; and Strongly Disagree, SD=1). The questionnaire was validated both face wise and content wise. The direct delivery technique was used to administer the questionnaire. In each school, permission was obtained from the Vice Principal who delegated the Dean of Studies or the Head of Mathematics Department to assist in the effective administration of the instrument. Students were met in class and were reminded of the anonymity of their responses, the objectivity and sincerity while filling the questionnaires. They were also advised to work independently. All the necessary explanations concerning the questionnaire were made to the respondents at the beginning of the exercise. The respondents were then given enough time to fill their copies, after which they were collected, giving a return rate of 100%. The statistical method that was used to analyze the data for the study was descriptive statistics and Pearson Product Moment Correlation to test the Hypothesis.

Findings and Discussion

Research Question: What effect does students' practice of mathematics have on their numerical skills in problem-solving?

Table 2: Thematic Presentation of Students' Responses to Open Ended Questionnaire Questions on What They do When Stuck on Something in Mathematics in Relation to their practice of Mathematics

Code	Code Description	Grounding	Sample Quotations
Groups	Study groups created by teachers in class or by students out of class	5	" He puts us in groups and encourage us to work harder".
Chalk-board	Calls students to solve more questions on the chalk-board	35	"The teacher sends us to the board to solve and explain to the class how we got our answer".
Persistence	Working harder than before	6	"I solve many more questions/exercises similar to those given in class".
Extra classes	Home teacher or organising more classes outside normal time	5	"The teacher organizes extra classes with students".
Remedial teaching	Additional teaching for weak students	2	"He/she knows some students are slow learners". "Students who

Time constraint	Teachers creating time to attend to students and students making time to meet teachers with their difficulties	18	perform poorly are supervised by the teacher for them to sit up". "The teacher is always busy". "He does not care". "He has no concern for us".

Both students and teachers revealed what many students do when stuck on something in mathematics in relation to practice of mathematics. The following were very recurrent amongst them. They include calling students to solve questions on the chalk-board, working harder than before, time constraint and extra time spent out of normal school hours. The fact that the teacher has to finish the syllabus and the high student/teacher ratio in some schools has an impact on the time he gives students to effectively practice mathematics.

Table 3: Thematic Presentation of Teachers' Responses to Open Ended Questionnaire Questions on What Students do When Stuck on Something in Mathematics in Relation to their practice of Mathematics

Code	Code Description	Grounding	Sample Quotations
Chalk-board	Calls students to solve more questions on the chalk-board	3	"The teacher sends students to the board to solve and explain to the class how we got our answer".
Persistence	Working harder than before	1	"They try basic examples to relate to the question".
Extra in-put	Extra hour out of normal school hours	5	"The teacher gives take-home assignments". "we take it home for research".
Time constraint	Teachers creating time to attend to students and students making time to meet teachers with their difficulties	3	"The student/teacher ratio is very high"." The teacher has to finish the syllabus".

Views obtained from interviews with Head of Mathematics Department on Students' practice of Mathematics

4 out of the 6 Head of Department pointed out that it is a departmental policy that a day does not pass without the teacher giving take home assignments to the students in all the classes. This policy is implemented and the class teacher devises ways to correct these assignments. However, one of them disagreed with the fact that if students are having difficulty, an effective approach is to give them more practice by themselves during the class. He proposed that a better thing to do is to repeat the lesson and when you see interest you can then give them more practice. Giving the students more practice when they have a difficulty is just making the situation frustrating, he concluded.

Inferential Statistics for students' practice of Mathematics

The independent variable for research hypothesis two is students' practice of mathematics, while the dependent variable is numerical skills in problem-solving in secondary schools of the South West Region. The scores of the independent variable were obtained from the responses recorded from the eight items of a four-point Likert scale questionnaire that measured students' practice of mathematics. The scores of the dependent variable were got from the eight items of a four-point Likert scale questionnaire that measured the numerical skills in problem-solving in secondary schools of the South West Region. The statistical analysis technique used in this analysis is the Pearson Product Moment Correlation. The result of the analysis is presented on table 4.

Table 4: Pearson Product Moment Correlation Analysis of the Relationship Between Students' Practice of Mathematics and their Numerical Skills in Problem-Solving

		Problem-solving skills " numerical"
Students' practice of mathematics	Pearson's Correlation	.230**
	Sig,(2-tailed)	.000
	N	512

****. Correlation is significant at the 0.01 level (2-tailed).**

The result of the analysis reveals a positive correlation between students' practice of mathematics and numerical skills in problem-solving, which was statistically significant ($r = 0.230$, $p < 0.001$, $n = 512$). An r value of 0.230** indicates a linear relationship between the two variables being analyzed and also a slight positive trend between students' practice of mathematics and their numerical skills in problem-solving. A positive correlation ($r > 0$) signifies that as one variable increases, the other tends to increase as well, showing a direct relationship. Thus, as students' practice of mathematics increases, their numerical skills in problem-solving get better.

To determine whether there is a significant influence of practice of mathematics on numerical skills in problem-solving, we perform a testing of statistical hypothesis as follows:

$H0: \rho = 0$ and $H_a: \rho \neq 0$

A test carried out using SPSS 23.0 with the testing criteria as follows:

Ho2 is rejected if sig.(2-tailed) < 0.05 or if sig.(2-tailed) ≥ 0.05. In table 4 above, it is shown that a sig.(2-tailed) value of the Pearson correlation coefficient is equal to 0.230** and based on the testing Ho is rejected. We retain Ha and conclude that there is a significant correlation between students' practice of mathematics and their numerical skills in problem-solving.

The findings show that students' practice of mathematics has a direct positive effect on their numerical skills in problem-solving. This implies that the more students practice mathematics, the better their numerical skills in problem-solving becomes. Higher numerical skills can provide the capacity to make informed decisions based on numerical data. Numerical skills are essential for success in mathematics and can be beneficial in various aspects of life, including personal finance, scientific investigation, technology and engineering and even in the military field.

These findings are in line with Gerald and Denis (2023) who studied students' achievement and problem-solving skills in mathematics through Open-ended-Approach (OEA) and concluded that students exposed to OEA had significant better problem-solving skills than those exposed to non-OEA. The findings strengthens that of Wongupparaj and Kadosh (2022) whose study on relating mathematical abilities to numerical skills and executive functions in informal and formal schooling found out that primary school children were superior to pre-school children over complex tests of domain specific early mathematics, number specific executive functions and mathematical abilities particularly for more sophisticated numerical knowledge. Also, our findings support that of Nazari et al. (2019) who investigated the effect of distributed practice on the mathematics performance of 7th graders and found strong evidence for a positive effect of distributed practice, especially students in the medium performance range. These findings align with Rheta (1985) who explored a variety of computational estimation in relation to other mathematical skills and sex differences. He found that verbal tasks were not more difficult than numerical tasks, but decimals were more difficult than whole numbers and quotients were more than products, which in turn were more difficult than sums and differences. Estimation performance was best predicted by skill in operating with tens. Our research indicates the relevancy of the findings of Cao Thi et al. (2023). Their study on factors affecting the numeracy skills of students from mountainous ethnic minority regions in Vietnam found out that students' effort (practice of) and language skills were the most influential factors that impact the numeracy levels of students in mountainous regions.

RECOMMENDATIONS

The teacher/student ratio in most of our institutions of learning is low and, in some cases, those who teach mathematics are more concerned with syllabus coverage. The implication is that there is lack of time/opportunity to practice / do problem-solving in the classroom. The teacher may not have time to attend to the students like hold individual meetings with students to track progress and set goals because, if he does, he may not complete the syllabus. He may as well not do problem-solving in the classroom because he lacks the skills to prepare problems and use them in whole-class situations, assist students in monitoring and reflecting on the problem-solving process, expose students to multiple problem-solving strategies amongst others. Students who develop proficiency in mathematical problem-solving early are better prepared for advanced mathematics and other complex problem-solving tasks. We recommend that (1) problem-solving should be part of each curricular unit and begin in kindergarten. For this to be effective, the teaching of problem-solving should not be isolated, instead, it can serve to support and enrich the learning of mathematics concept and notation. Schoenfeld (1980) opines that a course in problem-solving requires a substantial commitment from all concerned. The teacher has to be especially flexible because it is the process of problem-solving that counts and the teacher is essentially serving as a "coach" to the students. The students are being asked to think, and to create, rather than to "recite" subject matter. That is not an easy task but it is a critically important one – and ultimately a very rewarding one, well worth the effort on the part of the students. It is also, of course, a source of tremendous gratification for the teacher. (2) teachers should cultivate students' interest in mathematics as early as possible. Varying classroom instruction practices could be a remedy to enhance students' understanding, achievement, and motivation in learning mathematics.

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