EFFECT OF LEARNING STYLE TO MATHEMATICS LEARNING ACHIEVEMENT OF 7TH GRADE SMPK ST. ALOYSIUS WEETEBULA

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Abstract
Learning achievement is one of the important part that can not be separated from education. Student's learning style is something to consider in the teaching and learning activities in the classroom. There are three learning styles will be addressed in this research; visual (tend to learn through what they see), auditory (learning by what they hear) and kinesthetic (learning through movement and touch). This study aims to obtain an empirical description of the effect of learning styles (visual, auditory, kinesthetic) to mathematics learn achievement.
The approach used in this study is a quantitative approach. The results were obtained: the most dominant learning style used is auditory learning style with a frequency of 67 people. From the results of multiple linear regression was obtained: there is no significant positive effect between learning styles on mathematics learning achievement of student's at 7th Grade SMPK St. Aloysius Weetebula. Value of the adjusted coefficient of determination (Adjusted R Square) is 0.003%, which means learning achievement dependent variable explained by the independent variables of learning styles by 0.3%. While the rest is explained by variables beyond the variables used in the study.

Keywords: learning style (visual, auditory and kinesthetic), learning achievment.

Introduction

Learning achievement is one important part which can not be separated from the world of education. In teaching and learning activities at school there are two important subjects of teachers and students. Student learning style is something to keep in mind in teaching and learning activities in the classroom. Marsh in (Suyono and Hariyanto, 2011: 147) also revealed that each student has their own learning style, such as a signature that is a person's specificity.

Learning style according to Heinich dkk in Benny quoted by Sutikno (2013) is a habit that someone shows in processing information and knowledge and learn a certain skill. Broadly known there are three learning styles, namely visual, auditorial, and kinesthetic learning styles (Sutikno, 2013: 14) and (Suyono and Hariyanto, 2011: 149).

a. Visual learning style is a learning style where vision plays an important role.

b. Students who have an auditorial learning style are students who are easier to learn by listening.

c. Students with kinesthetic learning styles are students who can learn through physical movements.

The problem formulation of this research is:

1. Is there any influence between visual learning styles on student's mathematics learning achievement?
2. Is there any influence between auditorial learning style on student's mathematics learning achievement?
3. Is there an influence between kinesthetic learning style on student's mathematics learning achievement?
4. Is there any influence between visual, auditorial and kinesthetic learning styles on student's mathematics learning achievement?

The purpose of this study to answer the problem formulation.

The benefits of this research are:

1. For students: To be able to know what learning styles they have.
2. For teachers to be able to know the learning styles of students and adjust what methods fit the learning style of students during the learning process.
3. For parents: to be able to know the learning style of their children and direct the way of learning according to the learning style.

Theory

There are several notions of learning in terms of several sources, among others, Skinner in Sutikno (2013: 3) interpreted learning as a process of progressive adjustment of behavior. Usman (1995: 5) defines learning as the process of changing individual behavior because of inter-individual interaction and individuals with their environment. Morgan in Sutikno (2013: 3) defines learning as a relatively settled change in behavior as a result or results from past experience.

According to Winkel cited by Nuniek Pradita Sari Achievement learning is a proof of a student's learning success or ability in doing the learning activities according to the weight achieved, the weights in question are visible student grade or expressed in the form of report cards, index of study achievement, number of graduation and predicate of success. Sundari, cited by Nuniek Pradita Sari, defines learning achievement results obtained during the lesson at a certain period in an educational institution whose results are declared within a certain time in a teaching program and the results are expressed in the form of report cards, index of study achievement, graduation rate and predicate of success. While Suryabrata, who was also quoted by Nuniek Pradita Sari, defines that learning achievement is a result of the act of undertaking the stated judgment with numbers or symbols, where it's all about progress or student learning outcomes over a period of time.

According to Zainal, cited by Dewi A. Sagitasari, learning achievement has several main functions, among others:

a. As an indicator of the success and quantity of knowledge that has been mastered students.
b. As a symbol of desire curiosity gratification, as an information material in educational innovation. Assuming that learning achievement can be a driving force for students in improving science and technology, and acting as a feedback (feed back) in improving the quality of education.
c. As an internal and external indicator of an educational institution. Internal indicator in the sense that learning achievement can be the productivity level of an educational institution. An external indicator in the sense that the high level of achievement can be used as an indicator of the success rate of students in the community, and
d. As an indicator of the absorption (intelligence) of students. Therefore, it is important to know the achievements that students achieve in the teaching and learning process achieve success indicators in the learning process.

Learning achievement is things that can not be separated from learning activities, and basically it is interaction results between various factors both of in the individual (internal factors) as well as from Suryabrata, quoted by Dewi A. Sagitasari, in general says that, the factors that affect learning achievement can be classified into two namely: (1) internal factors, namely factors derived from in the individual, includes physiological factors and psychological factors, and (2) external factors, ie factors derived from outside the individual self, including social factors and non-social factors. Physiological factors derive from the physical state of the

individual self itself, usually closely related to physical functions such as senses and the health of others.

Learning achievement in school environment understood as the value or grade given by the teacher on students based on mastery. Or skills that students have through the evaluation of learning is done. Mathematics as one of the lessons given based on the curriculum that has been achieved demands a lot of potential and student effort in it order able to achieve achievement or optimal result. Learning achievement is referred to in this study is the level of success achieved by the seventh grade students of SMPK St. Aloysius Weetebula through the list of math scores in the odd semester reporting academic year 2013/2014.

A person's ability to understand and absorbing lessons is definitely different levels. Some are fast, moderate, and some are very slow. Therefore, they often have to resort to different ways to be able to understand an information or same lesson. According to Nasution, who was quoted by Sagitasari (2010: 25), learning style or "Learning style" students are how students act and using stimulants which he receives in the learning process. According to Sufyan and Dadi (2009: 66) learning style is a combination of how to absorb, organize, and process information that enters the brain. Learning styles by Heinich et al in Benny cited by Sutikno, is a habit that is shown by individuals in processing information and knowledge as well as learning a skill.

There have been many attempts made for recognize and categorize the way people learn, how to enter information into the brain. Outline, there are 7 commonly known approaches with different reference frames and developed also by different experts with its respective variance. Adi Gunawan, quoted by Sagitasari, is an expert of mind technology and self-transformation in his book "Born to be a Genius" summarizes the seven ways of learning, namely:

Approach based on information processing; determine a different way in viewing and processing new information. This approach was developed by Kagan, Kolb, Honey and Umford Gregorc, Butler, and McCharty. (2) Approach based on personality; determine the different character types. This approach was developed by Myer-Briggs, Lawrence, Keirsey & Bartes, Simon & Byram,Singer-Loomis, Gray-Whellright, Holland, and Geering. (3) The approach is based on sensory modalities; determine the degree of dependence on certain senses. This approach was developed by Bandler & Grinder, and Messick. (4) Approach based on environment; determine the different responses to physical conditions, psychological, social, and instructional. This approach was developed by Witkin and Eison Canfield. Approach based on social interaction; determine the different ways of dealing with others. This approach was developed by Grasha-Reichman, Perry, Mann, Furmann-Jacobs, and Merill. (6) Approach based on intelligence; determine different talents. This approach was developed by Gardner and Handy. (7) Approach based on brain region; determine the relative dominance of different parts of the brain, such as the left brain and right brain. This approach was developed by Sperry, Bogen, Edwards, and Herman.

Teti Widiyanti, in her research entitled "The Effect of Learning Styles on Mathematical Problem Solving Abilities", concluded that students' learning styles effect on ability mathematical problem solving. Dewi A. Sagitasari, in her research entitled "The Relationship Between Creativity and Learning Style With Junior Student Learning Achievement", conclude that:

a. VII junior high school students in Godean has a high enough creativity as much as 49.42%, dominant learning style is visual learning style of 44.1%, and learning achievements are quite competent as much as 37.21%;

b. There is a positive and significant relationship between creativity and learning style with mathematics learning achievement VII junior high school students in Godean. With the regression equation Y = 19.610 + 0.802 X1 + 0.177 X2, obtained correlation coefficient value of 0.906 and value of determination coefficient of 0.820, or the variance of mathematics learning achievement.

Methodology

This study includes the type of survey research with a quantitative approach. The population in this study is all students of grade VII SMPK St. Aloysius Weetebula is even semester in academic year 2013/2014. Class VII is divided into four classes. In this research, the sample size is 127 students. Obtained based on the table determining the number of samples from a specific population developed from Isaac and Michael with a 5% error rate (Sugiyono, 2009: 128). The sampling technique used in this research is random sample or simple random sample. Data in this research is quantitative data type. Data sources are respondents, researchers themselves, documents. Data collection techniques used in this study are questionnaires / questionnaires and documentation. Technique of data analysis with validity test.

Results and Discussion

Of 115 samples, there were 20.87% of students who studied visual and kinesthetic style, or 24 people each and who studied auditorial style as much as 58.26% or 67 people. In the first hypothesis about the relationship between visual learning style and mathematics learning achievement of grade VII SMPK St. Aloysius Weetebula points out that there is no significant positive relationship. This is shown through the results of simple regression analysis, obtained

tcount value of 2.905. The tcount is greater than the ttable (t (0.05; 22) = 2.073873). While the coefficient of determination of 0.917 shows that 91.7% variance of mathematics learning achievement can be explained through the visual learning style. In the second hypothesis concerning the relationship between auditorial learning style and mathematics learning achievement of grade VII students SMPK St. Aloysius Weetebula points out that there is no positive and significant relationship. This is shown through the results of simple regression analysis, obtained by tcount of 0.562. The tcount is greater than the ttable (t (0.05; 65) = 1.997138). This means that there is a significant positive influence between the learning style of auditorial with the achievement of learning mathematics. While the coefficient of determination of 0.191 shows 19.1% variance of mathematics learning achievement can be explained through the style of auditorial learning.

The results of this study indicate that in an effort to improve student achievement, the student's learning style of auditorial needs to be considered. In the third hypothesis about the relationship between kinesthetic learning style and mathematics learning achievement of grade VII SMPK St. Aloysius Weetebula points out that there is no positive and significant relationship. This is shown through the results of simple regression analysis, obtained by tcount of 0805. The tcount is greater than the ttable (t (0.05; 22) = 2.073873). This means that there is a significant positive influence between the learning style of auditorial with the achievement of learning mathematics. While the coefficient of determination of 0.146 shows 14.6% variance of mathematics learning achievement can be explained through the style of auditorial learning. The results of this study also shows that in an effort to improve student achievement, the student's visual learning style should be considered. Fourth hypothesis about the relationship between creativity and learning styles with mathematics learning achievement of students of grade VII

SMPK St. Aloysius Weetebula shows that there is a positive and significant relationship. This is shown through the result of multiple regression analysis of 3 predictors, obtained Fcount value of 0, 127. Price Fhitung much smaller than Ftabel value with 1% significance level equal to 2.685643. This means that the three learning styles of visual, auditorial and kinesthetic learning styles together have an influence on the achievement of mathematics learning of grade VII of SMPK St. Aloysius Weetebula.

Conclusion

Based on the results of research data can be concluded that:

1. VII Student of SMPK St. Aloysius Weetebula who has a visual learning style of 24 people or as many, 67 auditorial learning styles and 24 kinesthetic learning styles. Thus it can be concluded that the students of grade VII SMPK St. Aloysius Weetebula tends to have an auditorial learning style.
2. VII Student of SMPK St. Aloysius Weetebula who has the highest learning achievement of math 93 and lowest 69. For visual learning style maximum score of 84 and minimum 70, for auditorial learning style maximum value 93 and minimum 69, while kinesthetic learning style maximum value 85 and minimum 70. There is a significant positive relationship between visual learning style with mathematics learning achievement of grade VII SMPK St. Aloysius Weetebula.
3. Based on the above, it can be concluded that learning styles have an effect on improving student's mathematics learning achievement, so that it can get attention from parties related to education, especially teachers, parents, and students themselves.

By looking at the influence between student learning styles with student's mathematics learning achievement, then the teacher's task helps the students to know their own learning style, because by knowing the learning styles of the students, the teacher can adjust his teaching style with the teaching style of the students so that the students can easily accept and understand what they teach. This is closely related to efforts to improve the quality of graduates SMPK St. Aloysius Weetebula. To the students are advised to know each learning style in order to achieve the desired goals so as to realize the ideals. Given this research is only regression it becomes a challenge to be studied whether the learning style will affect student achievement. Therefore, it is necessary to continue with experimental research so that the educator knowing how the contribution of learning style and other factors to the achievement of student achievement in school.

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