

Learning Motivation on Mathematics of Homeschooling Students

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Abstract. The most important point during a learning process is the motivation to learn from the students. There are some researches which show that students' learning motivation affect the learning results. Based on the observation of tutors and researchers for two years, there is a tendency that they have low learning motivation on mathematics. However, there is an exception. It is still found that there are some homeschooling students who have high motivation in learning mathematics. This research aims to give a description on mathematics learning motivation on homeschooling students who have high motivation. This research uses qualitative approach with case study methodology. The participants of the research are students of homeschooling in Yogyakarta who have high motivation in learning mathematics, tutors and parents. The data analysis uses Berg methodology which consists of data reduction, data display and data conclusion. The research results show that high motivated students have two kinds of motivation, intrinsic and extrinsic. Intrinsic motivation shows that when students feel mathematics is important during the process of learning, they follow it well. Meanwhile, the extrinsic motivation is that the tutors and the intuition gives the reward on the achievement obtained by the students and that it has prepared the conducive learning condition in line with the students' competence for the better result. In addition, the parents always support the students of the homeschooling program.

INTRODUCTION

Having an access to education is every Indonesian right. This is stated in The 1945 Constitution of The Republic of Indonesia. Therefore, every citizen has the same right to get educated. When someone has difficulty to access the regular formal school, then the informal school can be the alternative. Lately, the non-formal education has become a trend to the Indonesians. Non-formal education has recently begun to develop in Indonesian society, which can be seen by more than 23.000 non-formal education institutions in Indonesia[1]. This is supported by the issuance of education and cultural ministerial regulation number 129 of 2014 on non-formal education primarily homeschooling.

Homeschooling has become one of the alternatives which can help students who have difficulties in following the education in the formal school. Homeschooling is a non-formal education institution under the supervision of the Education Office of Yogyakarta. This issue is regulated in article 26 section 2 of the 2003 Law Number 20 on National Education System. It is written that non-formal education is hoped to improve student's potential while focusing on the mastery of knowledge and functional skills also the development of professional attitude and behavior. Section 6 of the Law also states that the results of non-formal education is equal to the results of formal education after undergoing an equivalent assessment referring to the national education standard done by certain institution pointed by government[2].

The most important point during a learning process is the eagerness to learn from the students. Students who truly realize the importance of studying will achieve a better result and they can achieve their targets. Therefore, the most powerful trigger to study comes from the students themselves (internal trigger). The external trigger is

another point which can help to complete the internal trigger. Related to this point, students' motivation can be categorized as the external trigger. Based on the observation, most of homeschooling students' motivation can be categorized as low. There are only some students who have high motivation to study. Based on the previous researches [3]–[8], motivation strongly relates to students' achievement. When students have high motivation to study, the achievement will be high as well. However, if students have low motivation to study then the achievement will be low as well.

Broussard and Garrison define motivation as “the attribute that moves us to do or not to do something” [9]. Meanwhile, Guay et al. refers motivation as “the reasons underlying behavior” [10]. As an addition, Robbins & Judge also define motivation as “Motivation as the processes that account for an individual's intensity, direction, and persistence of effort toward attaining a goal” [11]. Therefore, it can be concluded that motivation is someone's reason to do something supported by strong persistence to achieve the goals. Schunk, Pintrich, & Meece state that motivated learning is motivation to acquire skills and strategies rather than to perform task [12]. Related to the academic field, Gottfried defines academic motivation as “enjoyment of school learning characterized by a mastery orientation; curiosity; persistence; task-endogeny; and the learning of challenging, difficult, and novel tasks” [13].

Related to this issue, Arends & Klicher state that “behavior sparked by one's own interests or pure enjoyment is called intrinsic motivation”. Furthermore, they also state that “extrinsic motivation is at play when individuals take action to capture a desired reward” [14]. According to Uno, there are some indicators on intrinsic learning motivation, they are: (1) the willingness to be successful in learning (2) there is a trigger and urgent need to study (3) there is a future hope and goal. Meanwhile, the indicators for extrinsic learning motivation are (1) there is a reward during the process of learning (2) there are interesting activities during the process of learning (3) supporting environment for the process of learning [15].

Mathematics has become a specter of lesson for the homeschooling students. It is considered difficult both in daily examinations and the National Examination. This fact is appropriate to Retnawati, Kartowagiran, Arlinwibowo & Sulistyaningsih [16], “not only homeschooling students but also students at formal schools also experience that mathematics is difficult.” This fact indirectly shows that the motivation to learn mathematics of the formal school students and homeschooling students can be categorized as low. However, not all homeschooling students have low motivation in learning mathematics. There are some students who still have high motivation in learning mathematics. This issue becomes the main aim of this research. This research aims to discuss more on the high motivation in learning mathematics of the homeschooling students. The motivation will be discussed intrinsically and extrinsically.

RESEARCH METHODOLOGY

This research is a case study research with qualitative approach. Generally, study case is a more appropriate strategy when the research question aims to find the answer of ‘how’ and ‘why’ questions, when the researchers have a few opportunities to control the investigation and when the focus of the research is the real-life contemporary situation now [17]. Case study research uses qualitative approach in which the researchers investigate the real-life contemporary context or setting. Case studies have bounded system for a case or multiple cases. Case studies also use detailed and in-depth data gathering which involves multiple sources such as observation, interview, audiovisual materials, documents and multiple reports. Case studies also report the case description and the case outline. [11](belum)

The participants of this research are some students of homeschooling who have high learning motivation according to the mathematics tutors, mathematics tutors, and parents. There are some methods used for the data-gathering. The first is interview to dig-out the related information. The second is observation to gather the data systematically and according to the standard procedures. The third is document analysis to gather the related data from books and articles. Then, the data analysis will focus more on the results of the interview with the homeschooling students and the tutors. Furthermore, the data will be described qualitatively using Berg methodology: data reduction, data display and data conclusion [18].

RESULT AND DISCUSSION

After the observation, it was found that most of the students of homeschooling came from upper middle class family. Parents who chose to put the children to homeschooling also had high education. Further, these were the reasons why students chose to study in homeschooling the students' busyness in non-academic activities, such as: being a racer and being an actress. Having an illness which made students unable to attend formal school. The uncomfortable feeling towards the quality of formal education. The inability to socialize with their environment.

The special needs that were not able to be fulfilled by the formal schools. The jobs of the parents which required parents move a lot, and this made children could not attend the formal school.

Based on the observation done by the mathematics tutor, most of the students of homeschooling did not have high learning motivation for mathematics compared to the formal school students. However, there were some students who had high learning motivation for mathematics. Those who had high learning motivation tended to follow the lesson well. They paid attention to the tutors during the teaching learning process, submitted the assignments on time and they would also answer and gave their best feedback for the tutors' questions. This research was conducted during the preparation for National Exam for Grade 9 and Grade 12 students. Therefore, the researchers also found that the students of Science Major Grade 12 tended to have high learning motivation because they hoped to get good result for the National Exam. However, for the students of Grade 12 of the Social Major, only few students who had high motivation to learn mathematics. The reason is that those students considered mathematic was difficult and they would never be able to do it. For the Grade 9 students, some students had high learning motivation and some did not. For the students who were not in period of preparing for the National Exam, those who were in the Junior High School level had higher learning motivation compared to the students who were in the Senior High School level.

The results of the final exam of the Gasal Semester for Paket B (equal to Junior High School level) of the 47 residents learn there are only 7 competent study residents. While for Paket C (equal to Senior High School level) there are 15 students who are competent from 145 studying residents. This could be related to the results of research shows that the studying residents have low motivation in learning mathematics. However, among the low is still there are some residents who have high learning motivation to learn math.

Tutors' role in learning process was very helpful to boost students' motivation to learn better. Every tutor would adapt to their students' ability when they prepare the lesson. The lesson would be different for the high motivated students and for the low motivated students. For those who had high motivation to learn, tutors would prepare a more challenging questions which exceed the standard from the Government. For those who had low motivation to learn, the tutors would prepare materials which fulfilled the competence standard for homeschooling from the Government. The purpose was to make the students to develop as persons who had good attitude and owned a logical mathematic and systematical mathematic way of solving problems.

The first participant for this research was WB1 who was in Grade 9 of Junior High Level. WB1 chose to study in homeschooling because WB1 felt that the formal school could not fulfill his needs to study. WB1 had been in two different formal schools before, but he decided to drop them out. The reason was being uncomfortable with the learning process in the formal schools. On the first year of studying, WB1 took double class. It meant that WB1 underwent two different grades. WB1 chose to study individually with distance learning method through Skype. During the teaching and learning process, the tutors could see that WB1 had a good mathematics ability. However, there was a problem with the communication, since tutors and WB1 only communicated through Skype.

On the second year, WB1 had been in grade 9 and WB1 chose to study with face to face method. It meant WB1 had to meet the tutors. This made the tutors communicate well with WB1. During the learning process, the tutors gave various exercises in a form of problem solving, critical thinking and creative thinking. WB1 thought that mathematics is an exact science so WB1 needed to get a good score. Mathematics did not require students to memorize a lot. It needed a concept understanding. WB1 future goal was to continue the study in science or mathematics field and if possible to take psychology major abroad. After graduating from homeschooling, WB1 wanted to continue the study in the best public formal senior high schools in Yogyakarta, or in a private school in Malang.

Below is the interview highlight with WB1:

- Interviewer (I) : what lessons do you like the most during your studying in homeschooling?
WB1 : Mathematics.
I : why do you like mathematics?
WB 1 : mathematics is an exact science, with exact formula and exact answer so I will not make a lot of mistakes, and mathematics do not require me to memorize a lot.
I : but sometimes you get difficult questions
WB1 : although it is difficult, there are formulas that I can use to answer the questions. I just need to understand the questions more.

In the teaching and learning process in homeschooling for a year, WB1 was very active in all classes and lessons that WB1 took. Other than mathematics, WB1 often asked the tutors to have outing class such as in the Yogyakarta City Library and in some available museums in Yogyakarta. Approaching the National Exam, WB1

always asked the tutors to give exercises which are intended for formal school students. The tutors fulfilled WB1 needs since they knew that WB1's ability was above average so the tutors needed to nurture it to make WB1 develop better. WB1 always got the first rank for each level and WB1 got the award from homeschooling. WB1's high motivation in learning mathematics showed that WB1 had high intrinsic learning motivation and WB1's extrinsic motivation was high as well.

The second interview was done with WB2 who was in Grade 11 of Senior High level. WB2 joined homeschooling since Grade 10 of Senior High Level. WB2 chose homeschooling because the uncomfortable feeling to study in formal school. WB2 also chose to have distance learning through Skype. This because the distance between WB2's house and homeschooling was far. WB2 also one of the students who had good achievement in almost all lessons and never took any remedial tests.

WB 2 felt that mathematics was one of the fun subjects to learn. The reason was because mathematics always used exact numbers and logical when doing the questions. Triggered by the being fond of mathematics, WB2 always followed and became very attentive during mathematics lesson. WB2 future goal was to be an expert in cooking. Although the future goal and mathematics did not have any relationship WB2 still followed mathematics lesson well. Besides learning with the tutors from homeschooling, WB2 also had a private teacher at home. This showed that WB2 had a good intrinsic learning motivation.

Below was the highlight interview with WB2:

I : how do compare the mathematics lesson in homeschooling and in your former school?

WB2 : the lesson is actually the same, only in homeschooling I can focus more since in homeschooling each student gets one teacher.

I : Then, how do you usually study?

WB2 : I usually study with the tutors from homeschooling then I study with my private teachers at home, depends on the lesson that I get in homeschooling

I : so, you study with other private teachers as well. What subject do you learn with your private teachers?

WB2 : I only study mathematics and English.

After the final assessment of the academic year, WB2 was also one of the students who had good achievement and WB2 also got the rank on Grade 10 of Senior High Level. When having the distance learning through Skype, the tutors in homeschooling always prepared the materials well and they always adapted the materials according to the students' ability. During the Skype session, the tutors added more challenging questions for WB2 to make WB2 improve better. According to WB2, the mathematics lesson in homeschooling could be categorized as good since it was able to accommodate the students' needs. The system of 'one lesson one tutor' made the students homeschooling able to focus more in studying. Based on this fact, WB2 extrinsic motivation could be categorized as high as well.

The next interview was with WB3. WB3 was in Saudi Arabia when WB3 joined homeschooling. WB3 had to follow her parents who had certain assignment there. Therefore, it was impossible for WB3 to join a formal school in Indonesia. During her stay in Saudi Arabia, WB3 also attended formal school. Therefore, along with taking the lesson in homeschooling, WB3 took classes in 2 different schools and 2 different countries. In homeschooling, WB3 took double class program which enabled her to take grade 7 and 8 of Junior High Level at the same time. This became a challenge for WB3 since she needed to put extra effort to study in homeschooling, plus she still attended her formal school in Saudi Arabia.

At the first time, WB3 felt that mathematics was very difficult to learn since it needed concept understanding and the questions were difficult as well. However, after WB3 joined homeschooling, she felt that mathematics was no as difficult as it was. During the first semester, WB3 learned mathematics twice a week for grade 7, and once a week for grade 8. This became a challenge for WB3, since she needed to learn and master a lot of materials within a short period of time. During the learning process, WB3 always followed the lesson attentively, did all assignments well and submitted them on time. This showed WB3 seriousness in learning. WB3 future life goals was to be an architect and this profession needed mathematics knowledge. In order to achieve her future goal, WB3 always did her best during the learning process. Therefore, it can be concluded that WB3 had high intrinsic learning motivation.

Below was the interview highlight with WB3:

I : how do you feel on learning mathematics?

WB3 : for the first time, I thought mathematics was very difficult, Sir.

I : What makes it difficult?

WB3 : it is difficult because of the formulas and the numbers. There are too many formulas.

I : Oh, I see. But, how about now? What do you think about mathematics?

WB3 : I think mathematics is not difficult when you try it. If I difficulties, I can ask the teachers. I also feel that homeschooling's teachers are nice, they teach me patiently and it makes me easier to understand mathematics.

I : so, do you like mathematics now?

WB3 : for sure, Sir.

It was a real challenge for the tutors when they had to teach WB3 mathematics once in two weeks. The learning should be concise and understandable. The tutors should prepare worksheets which covered all the required materials for a semester within a short period of meeting hour. WB3 had a good academic ability, and her scores were also good in every lesson. It showed that the extrinsic motivation was also high.

The next interview was with some mathematics tutors. During the teaching learning process, they had experienced various kinds of students. There are some who had good ability and some did not. There are some students who had high motivation to learn and some had low motivation to learn. Most of the students whom the tutors met considered mathematics was difficult and students felt that they would not need it for their future. The reason was because some students' future goals did not require mathematics. However, every academic year, the tutors still found some students who had high motivation in learning mathematics. When the tutors met these high motivated students, they would put their best effort to fulfill the students' eagerness to learn mathematics. The tutors would also try to create a conducive and interesting situation to learn so it would interest the low motivated students to study more.

Below was the highlight interview with the tutors (T):

I : how is the motivation of the students of homeschooling to learn mathematics?

T : Generally, the motivation is low. Still, there are some students who have high motivation

I : Can you give a prediction for the number of the students who have high motivation to learn mathematics?

T : more a less, there are 5 to 10 students every academic year. The most number was during the 2014-2015 academic year.

I : so every academic will have different number of students who have high motivation to learn mathematics?

T : Exactly. Since every student has different character and ability, so one of the jobs of the tutors is to motivate the students to study better for their future.

A conducive learning situation and continuous support for the students would affect the students' motivation and achievement, especially for those students who were going to join the National Exam and the Computer Based National Exam. Computer Based National Exam was new to the homeschooling students. Therefore, the tutors needed to put their extra attention and preparation in order to motivate the students and educate the students. This was stated by Retnawati, Hadi, Nugraha, Apino, & Iryanti that a special strategy was needed in order to prepare the students for the Computer Based National Exam by giving them computer based exercises as well [19]

The next interview was with some parents of the students of homeschooling. Parents surely motivated their children to study in homeschooling. They had fulfilled the children's needs and still encouraged the children to take extra courses other than homeschooling, especially for those who were in Grade 6 Elementary level, Grade 9 Junior High Level and Grade 12 Senior High Level. Those students would have National Exam and Computer Based National Exam. Parents also communicate with the tutors to find out the children's improvement.

Below was the highlight of the interview with one of the parents (P) of the students:

I : how do your children study mathematics?

P : just like other lessons. But, my children only learn an hour in week in PHLC, so I feel that my children should learn more. Then, I invited another private teacher for mathematics to teach my children at home.

I : okay, I see.

P : because my children is in Grade 9 now, so I also buy them books to make them practice more.

Based on the interview, it could be seen that parents supported and motivated their children who studied in PHLC.

CONCLUSION

Based on the interview, three students of homeschooling have high motivation in learning mathematics. However, there are some students of homeschooling who have high motivation in learning mathematics. Each has a high intrinsic motivation that includes the desire and encouragement to learn mathematics well so that it can succeed in learning mathematics as well as see the importance of mathematics for the future of the three homeschooling students. Meanwhile, the extrinsic motivation is that the tutors and the intuition gives the reward on the achievement obtained by the students and that it has prepared the conducive learning condition in line with the students' competence for the better result. In addition, the parents always support the students of the homeschooling program.

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