A COMPARATIVE STUDY BETWEEN STUDENTS' MOTIVATION AND THEIR ACHIEVEMENT IN LEARNING MATHEMATIC THROUGH LISTENING TO CANON IN D MAJOR (PIANO) AND CONCERTO (PIANO AND ORCHESTRA) NO 1 IN B FLAT MINOR AT EIGHTH CLASS SMP **NEGERI 1 SUMBER KABUPATEN CIREBON**

A THESIS

Submitted to the Mathematic Department of IAIN Syekh Nurjati Cirebon In Partial of the Requirements For the Degree in Education (S. Pd)



Written By: Haifa Zahra (58451022)

MATHEMATIC EDUCATION DEPARTEMENT OF TARBIYAH **INSTITUT AGAMA ISLAM NEGERI (IAIN) SYEKH NURJATI CIREBON** 2012

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PREFACE

No words could be said except our praises and thanks be to Allah the Almighty, the Lord of the 'Alamin, the Most Gracious, The Most Merciful that always gives us true guidance and help for everything until writer could finish the thesis proposal about "A Comparative Study Between Students Motivation and Their Achievement in Learning Mathematic Through Listening to Canon In D Major (Piano) And Concerto (Piano And Orchestra) No 1 In B Flat Minor At Eighth Class SMP Negeri 1 Sumber Kabupaten Cirebon".

Peace be upon our prophet Muhammad SAW, his family, his companions, and us as his followers. Amiin.

Alhamdulillah, this thesis proposal has been finished on the time that has determined. Although, in the process of this writing, writer found many problems about the research planning that will do. And In this opportunity, writer wants to give the special thanks to:

- 1. Mr. Prof. Dr. H. Maksum, M. A, as Rector of IAIN Syekh Nurjati Cirebon.
- 2. Mr. Dr. Saefudin Zuhri, M. Ag, as the Dean of Tarbiyah Faculty of IAIN Syekh Nurjati Cirebon.
- 3. Mr. Toheri, M. Pd, as the chairman of Mathematic Education Department of IAIN Syekh Nurjati Cirebon.
- 4. Mr. Reza Oktiana Akbar, M. Pd, as the first supervisor
- 5. Mr. Mustopa, M. Ag, as the second supervisor
- 6. Mr. H. Djuhana Dadang Suryana, M. Pd, as Headmaster of SMPN 1 Sumber
- 7. Mrs. Magfiroh, S. Pd as mathematic teacher of SMPN 1 Sumber
- 8. All of the lecturers and staffs of Mathematic Education Department of IAIN Syekh Nurjati Cirebon.
- 9. My parent and all friends who have helped me in finishing the thesis either formally or informally.

Next, writer asks the suggestion and innovation critic that could be help to write next proposal better than it. Because, writer aware this proposal has a lot of mistake and so far from being perfect. And the Last, Writer hopes this proposal can be helpful for riders and of course for writer also.

Cirebon, July

Writer

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ABSTRACT

Haifa Zahra. A Comparative Study Between Students Motivation And Their Achievement In Learning Mathematic Through Listening To Canon In D Major (Piano) And Concerto (Piano And Orchestra) No 1 In B Flat Minor At Eighth Class SMP Negeri 1 Sumber Kabupaten Cirebon.

Mathematics is one of important things in the world. Everyone wants to get the best education about it for increasing their knowledge. But to get it, all of people especially for students at every level of education had to spend long time. It is because of sense boredom in the learning process that could decrease learning achievement. So that, many teachers offered some teaching techniques to arise student's motivation that could improve their achievement. One of those techniques is listening music during learning process. Many education experts said that music is one way of increasing respond of brain stimulation. It was proven by their research about music.

The purpose of this research is to know: 1) whether there is a significant influence of listening to Canon in D Major (Piano) on student's learning motivation 2) whether there is a significant influence of listening to Canon in D Major (Piano) on mathematics learning achievement 3) whether there is a significant influence of listening to Canon in D Major (Piano) on both students learning motivation mathematics learning achievement 4) whether there is a significant influence of listening to Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's learning motivation 5) whether there is a significant influence of listening to Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning achievement 6) whether there is a significant comparative of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's learning motivation 7) whether there is a significant influence of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning achievement. And the frame of thinking in this research is about learning process. The entertaining and fun learning process will affect students' psychology and make their feeling are more comfortable to learn. The feeling will give the extrinsic motivation and affects learning achievement. Then, this music will be correlated with student motivation and their achievement in mathematics learning and also compared between them.

It is a comparative research. Population of this research is all students in class VIII SMPN 1 Sumber Kabupaten Cirebon in the second semester by eight classes and each of them is 28 students. The sample of this research is class VIII E and VIII H are numbered 54 students by random sampling technique. The collecting data are by questionnaire and test method. Analysis techniques are path analysis, spearman rank correlation coefficient, and kruskal-wallis test. The result of this research is: on significance level 0.05, first hypothesis; there is a significant

influence of listening to Canon in D Major (Piano) on student's learning motivation. Second hypothesis; there is no a significant influence of listening to Canon in D Major (Piano) on mathematics learning achievement. Third hypothesis; there is a significant influence of listening to Canon in D Major (Piano) on both students learning motivation mathematics learning achievement. Forth hypothesis; there is no a significant influence of listening to Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's learning motivation. Fifth hypothesis; there is

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no a significant influence of listening to Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning achievement. Sixth hypothesis is; there is no a significant comparative of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's learning motivation. Seventh hypothesis is; there is a significant influence of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning achievement.

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CHAPTER 1 **INTRODUCTION**

A. The Background of Problem

Education is one of the most important things in the world. Everyone wants to have the best education. At every education level, many subjects to be studied. And one of subjects which were preferred by the school is mathematics. It could be seen by the kind of national examination subjects that always give. One of them is mathematics.

Among other subjects, mathematics is the most difficult one. Because it was learned about some formulas which was relate and always use in every level. It made some of students didn't like mathematics. This is in accordance with Ruseffendi (2006:15) opinion. He said that the weakness of mathematics in Indonesia students is in consequence of their fear and loathing on this subject. Sofiyan (2009:1) said that the result of diagnostic test by Survanto and Somerset in 16 schools stated that the mathematics test result was really low. He also said that the result from TIMSS (Third International Mathematics and science Study) showed that Indonesia in mathematics subject is ranked 34th of 38 countries. It was worried condition.

Many factor that cause why mathematics is a subject that the most feared and hated. Beside of the hard material, it could appear from teachers. As has been said by Sofiyan (2009:2), He stated that the learning experience with uncomfortable or confusing teacher shaped negative attitude on mathematics

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subject. He also said that it could be mathematics teacher challenge. From the students' negative attitude, I conclude that they had less motivation on studying mathematics.

In my opinion mathematics is important and crucial lesson. Even Morris Kline in Jujun S Suriasumantri (1983:172) was so brave to say that "The up down of the country is depending on forward of Mathematicsal aspect". Based on that statement, what will be happen in our country if there are many students who don't like mathematics.

It is firstly coming from the condition of learning process that is so boring, although many books that has written about effective learning process in mathematics, such as: "Cara-Cara Terbaik Mengajarkan Matematika" by Randi Stone, "Metode Mengajar Matematika 1" by Lisnawati Simanjutak, "Pengantar Kepada Membantu Guru Mengembangkan Kompetensinya dalam Pengajaran Matematika untuk Meningkatkan CBSA" by Ruseffendi and many more. All of these books have the same purpose. It is how to create the fun mathematics learning process until could make students entertained in studying mathematics. Randi Stone (2009) in his book "Cara-Cara Terbaik Mengajarkan Matematika" said that in learning process, a teacher has to make student have positive thinking and take them to share the experience in mathematics.

Actually, there are many ways to make the condition of class is so wonderful and fun. But, sometimes the difficult matter has strong influence in learning motivation. To solve this problem, music is so helpful. As for Music, I

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found some of music facts in online source (Music Education Statistics and facts:1:2009) as follow:

- Gallup Poll on "American Attitudes Toward music" at 2003 said that 78% of Americans feel learning a musical instrument helps students perform better in other subjects.
- 2. Neurological Research at March 15, 1999, stated that Students who were exposed to music-based lessons scored a full 100% higher on fractions tests than those who learned in the conventional manner.
- 3. International Association for the Evaluation of Educational Achievement (IAEEA) Test, 1988, found that the schools that produced the highest academic achievement in the United States today are spending 20% to 30% of the day on the arts, with special emphasis on music.
- 4. Gardiner, Fox, Jeffrey and Knowles shown that students of lower socioeconomic status who took music lessons in grades 8-12 increased their math scores significantly as compared to non-music students. But just as important, reading, history, geography and even social skills soared by 40%.

The facts above are some real conditions and findings of research which stated that music helps student learning well. It is in accord with some theories that I read in many books about psychology, one of them said that music effects both teacher and students. As a teacher, you can use music to manage the heart, change students mental, and develop learning environment. Music helps student work well and remember more and more. Music affects learning and beside that, many students like music (Bobby deporter, 2010:110) and also Collin Rose (2006:241) told about interest story about music:

Albert Einstein has a big problem with physical formula. And "The Answer" from his hard work is so fantastic. He takes that violin and plays Sonata Beethoven and Mozart. Then, he stands up and says "I get the answer".

Terry Wyler and Douglas Webb in Gordon Dryden (2003:311) stated that music is short way to memorize system. Even, Masri kuadrat (2009:154) said symphony and music could be used as a tool to express learning schema. Based on theory, there is influence between using music classic instrument on developing student learning motivation. It could affect feeling to learn then get motivation to do any mathematics tasks.

So, how come it happens? In other that, I'm very interested to analyze these problems. Does music still affect learning? If yes, what music that available for learning? Does all music have same influence? To answer these questions, I have planned to observe about music. Not only comparing between two kinds of music classic, but also observing the influence each of them toward student motivation and mathematics learning achievement. To reduce the appearance of other factors that could affect this research. I studied in a homogeneous population. SMPN 1 Sumber is one of RSBI School in Cirebon. This school has developed the international level school management. And the students there are selected students that had good achievement both academic and non academic. This school opened eight study groups which each of them contain 28 students. So that, in this opportunity I would try to make a research

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about a comparative study between students motivation and their achievement in learning mathematics through listening to Canon In D Major (Piano) and Concerto (Piano And Orchestra) No 1 In B Flat Minor At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.

B. The Identification of Problem

With reference to background of problem above, could identify some problems that have relationship with student's motivation and mathematics learning achievement as dependent variables. There are:

- 1. Is there a significant comparative of student's feeling on student's motivation and mathematics learning achievement?
- Is there a significant comparative of sound melody on student's motivation 2. and mathematics learning achievement?
- Is there a significant comparative of art thinking by sound on student's 3. motivation and mathematics learning achievement?
- Is there a significant comparative of student's psychology (mainly in brain 4. and heart) on student's motivation and mathematics learning achievement?
- Is there a significant comparative of music on student's motivation and 5. mathematics learning achievement?

C. The Limitation of The Problem

As we have already noted on background research and problem identification, so this scope of research is limited on comparative study between students motivation and their achievement in learning mathematics

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through listening to Canon In D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor at eighth grade of students in SMP Negeri 1 Sumber Kabupaten Cirebon.

D. The Formulation of The Problem

Then, the formulations of problem are:

- Is there a significant influence of listening to Canon in D Major (Piano) on student's learning motivation At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?
- 2. Is there a significant influence of listening to Canon in D Major (Piano) on mathematics learning Achievement At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?
- 3. Is there a significant influence of listening to Canon in D Major (Piano) on both students' learning motivation mathematics learning Achievement At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?
- 4. Is there a significant influence of listening to Concerto (Piano and Orchestra) No 1 in B Flat Minor on student's learning motivation At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?
- 5. Is there a significant influence of listening to Concerto (Piano and Orchestra) No 1 in B Flat Minor on mathematics learning Achievement at Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?
- 6. Is there a significant comparative of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's

learning motivation At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?

7. Is there a significant comparative of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning Achievement At Eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon?

E. Goal of Research

This research has a goal to examine the problems which were already formulated. That is to find how far both classic music and student learning motivation affects learning mathematics at the second grade student of SMP Negeri 1 Sumber Kabupaten Cirebon. Especially, this research purpose to:

- 1. Know whether there is a significant influence of listening to Canon in D Major (Piano) on student's learning motivation at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.
- Know whether there is a significant influence of listening to Canon in D 2. Major (Piano) on mathematics learning achievement at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.
- 3. Know whether there is a significant influence of listening to Canon in D Major (Piano) on both students learning motivation mathematics learning achievement at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.
- 4. Know whether there is a significant influence of listening to Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's learning

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motivation at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.

- 5. Know whether there is a significant influence of listening to Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning achievement at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.
- 6. Know whether there is a significant comparative of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on student's learning motivation at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.
- 7. Know whether there is a significant influence of listening to Canon in D Major (Piano) and Concerto (Piano and Orchestra) No 1 In B Flat Minor on mathematics learning achievement at eighth grade of students SMP Negeri 1 Sumber Kabupaten Cirebon.
- The Function of Research F.

The function of this research consists of two aspects are:

Theoretical Function, for developing science 1.

From theoretical aspect, the researcher hopes this research can give contribution to educational world and a new discovery in psychology science of mathematics learning. And also as a constructor and the research finding that had been done.

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2. Practical Function

From practical aspect, the researcher hopes this research can give contribution to mathematics teachers to increase student's motivation and mathematics learning achievement. Student's parents, to make thinking change that motivation affect learning achievement. And Students, to know that music is helpful for increasing learning achievement that is in consequence of growing motivation.

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