

# The Effect of the Use of Mind-Map-Based Quantum Learning Models and Reading Interest on Argumentation Writing Skills for High School Students

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## ABSTRACT

Abstract-This study aims to determine the effect of using mind-based quantum learning models and reading interest in argumentation writing skills of class X students of SMA 1 Linggo Sari Baganti. The theory used in this study is a quantum learning model based on mind maps, reading interest, and writing arguments. This type of research is *quasi-experimental* (quasi-experimental) and the design used in this study is *factorial 2x2*. The population of this study was class students of SMA 1 Linggo Sari Baganti. Sampling amounted to 62 uses a *purposive sampling technique*. The data collection was conducted through *t* test, consisting of tests initial ability in the form of reading and interest final ability to use performance tests for the ability to write arguments. Data analysis and discussion were carried out descriptively analysis in accordance with the concept of experimental research. *First*, average Life Skills students taught writing argument with quantum learning model based mind map is 81.00, while students taught with the conventional model is 79.40. *Second*, the average argument writing skills of students with high reading interest taught with mind map-based quantum learning models is 86.25, while students with high reading interest taught with conventional models are 84.4. *Thirdly*, leverage writing skills argumentation low reading interest of students taught by quantum learning model based mind map is 75.75, while a low reading interest of students who are taught by the conventional model is 74.4. *Fourth*, there does not influence the interaction between the model of learning by reading interest towards learning outcomes k Life Skills write arguments in class X Linggo Sari Baganti 1 Public High School, South Coastal District. District .

**Keywords:** Influence, Learning Model, Mind Map, Reading Interest

## 1. INTRODUCTION

Learning Indonesian language and literature is directed to be skilled in communicating effectively and efficiently, in accordance with the objectives of the curriculum. Writing is a productive and expressive activity. Productive because writing produces a form of writing that is useful and can be read by many people at different places and times. Writing is also an expressive activity because a person can express his feelings in writing.

Writing skills are activities that cannot be separated in the entire learning process experienced by a person during the learning process at school. A writer must be skilled at utilizing the structure of language and vocabulary. In accordance with the content standards of the KU (SI) Education Unit Level Curriculum (KTSP) in 2006, the writing skills that students must master are writing arguments, summaries, personal letters, official letters, descriptions, narratives, and expositions. One of the learning materials that must be taught to students is learning to write arguments. Argumentation is writing

that aims to convince or persuade readers about the truth of the author's opinion or statement. In the learning process to write this argument, there must be a lesson plan that is carried out optimally so that learning objectives can be achieved. Based on initial observations and interviews that have been conducted. *First*, when the teacher asks students to write arguments, the students are unable to put their ideas into writing. *Second*, in terms of the students' mean scores obtained from the results of the argumentation essay writing assignment, the results are still low.

The same problem also occurs in other schools. *First*, in Darma Yulia's (2012) research, it was found that vocational students were unable to design argumentation writing. However, not all students are able to design writing because they find problems around writing. The problem is learning to write arguments in SMK 1 Batusangkar especially X K1 class, students are still not able to meet the minimum completeness criteria (KKM) of 80. *Secondly*, the same problem was also found in studies Darmayanti (2014), that in SMA Negeri 4 Singaraja

only 25% of students were able to write argumentation paragraphs well and 75% of students were unable to write argumentation paragraphs well. The indicators used by the teacher so far are assessment in terms of content, writing organization, language, vocabulary, and writing techniques.

In the learning process, interest is a very important factor to be cultivated in students. In addition, interest is a source of motivation that encourages students to carry out an activity, so that learning can achieve the expected results. One of them is to foster interest in reading in students. Reading interest also has a big influence in writing. Reading interest is an important factor that must be cultivated in students when they master writing skills. This is in line with the opinion of Sudiana (2004) which states that reading interest is one of the factors that significantly influences reading and writing skills.

In line with the results of the BPS survey, the results of the UNESCO ( *United Nations Educational, Scientific and Cultural Organization* ) survey also show that the lowest reading interest in the ASEAN ( *Association of Southeast Asian Nations* ) is Indonesia. The low reading interest is evidenced by the reading index for the Indonesian people which only shows around 0.001, meaning that out of a thousand people, only one person still has a high reading interest. This figure is still far from the reading interest rate in Singapore which has a reading index of up to 0.45%. (Viva.co.id, 2015).

The mind map-based quantum learning model is a learning model that is carried out by changing the various interactions that exist in and around learning situations. A pleasant learning environment will be able to combine self-confidence, study skills, and communication skills. This learning model pays close attention to the learning environment that is designed in such a way that students feel important, safe, comfortable, and can learn as optimally as possible. Mind map-based quantum models provide tips, hints, strategies, and whole processes that can save time, sharpen understanding and memory, and make learning a fun and rewarding process. Based on the descriptions and phenomena described above, it can be concluded that the research entitled "The Effect of Using a Mind Map-Based Quantum Learning Model and Reading Interests on Argumentation Writing Skills for Class X Students of SMA Negeri 1 Linggo Sari Baganti" is important to carry out.

## 2. METHODS

This type of research is quantitative research, because in this study the data is processed in the form of numbers. The results of the students' argumentation writing skills test were analyzed using statistical formulas. In line with Arikunto's opinion (2006: 10) which states that in quantitative research, the results of many measurements are required to use numbers,

starting from the process of collecting data, interpreting data, and the appearance of the results.

This research was conducted using a *quasy experiment* method. The research design used was a 2x2 factorial. Factorial design is the most efficient design to investigate two effects or more factors (Suwanda, 2011: 145). The research site was conducted at SMA Negeri 1 Linggo Sari Baganti. This research was conducted in the even semester of 2015/2016. When the research was carried out in April 2016, following the lesson schedule set by the school. The material taught is writing argumentation paragraphs.

The population of this study were students of class X SMA Negeri 1 Linggo Sari Baganti, Linggo Sari Baganti District, who were registered in the 2015/2016 academic year. The number of students is 151 students spread over 5 classes, namely class X.1 to class X.5. Therefore, this study only uses two classes which will be designated as research samples.

Data analysis. *First*, collecting daily scores for the first semester of Indonesian language grade X semester I at SMAN 1 Linggo Sari Baganti. *Second*, perform a normality test using the *Liliefors* test, to see whether the sample is normally distributed or not. *Third*, perform a homogeneity test of variance. The homogeneity test of variance was carried out by testing the Bartlett (Riduwan, 2007: 178). *Fourth*, to test the mean similarity of the six classes with a one-way analysis of variance. *Fifth*, if the six classes have the same average, then two classes are taken randomly as a sample by lot. In determining the sample, first conduct a preliminary study to determine the character and skills of class X students of SMAN 1 Linggo Sari Baganti before selecting the sample, carried out the normality test, homogeneity, and the average similarity test. The test uses the daily test scores of class X students in Indonesian subjects. The research sample is class X4 and class X5. The reason for choosing this class was because the two sample classes had almost the same standard deviation (from the normality results). After that, the sample class of this research was class X 4 (experiment I) as many as 32 people and class X5 (experiment II) as many as 30 people.

At the last meeting, a test of the ability to write argumentation paragraphs was held to measure students' comprehension ability in writing argumentation paragraphs. The test given is in the form of a performance test, namely writing argumentation paragraphs which are carried out in the experimental class and the control class after the learning material is writing argumentation paragraphs. The instrument used to collect data in this study consisted of two instruments, namely a questionnaire sheet and a performance test. Questionnaire sheets are used to determine students' reading interest while tests are used to measure the level of students' ability in writing argumentation paragraphs.

The steps in preparing the test instrument are as follows. *First*, create a grid based on the indicators of writing paragraphs of argument. *Second*, validating the indicators of writing argumentation paragraphs to the validators and Indonesian teachers. *Third*, determine the theme before writing arguments. *Fourth*, conduct operational analysis to see the suitability of the argumentation text given to students.

In the data collection process in writing argumentation essay skills, it can be done by using the following five data collection techniques, (1) students are given a test sheet to write argumentation essays, (2) students are given the opportunity to read general instructions and specific instructions contained in the test, (3) students are given performance sheets for writing places, (4) students are given 90 minutes to write arguments on the performance sheets that have been given, (5) after completion, student work sheets are collected then checked according to the aspects and performance that have been predetermined.

The normality test is carried out to find out whether there is data with normal distribution or not. Riduwan (2003: 187), said that to test the normality of the data used was the Liliefores test. The homogeneity test aims to determine whether the data has a homogeneous variance or not by using the Barlet test. Riduwan (2003: 184) says that to test the homogeneity of the data, the Barlet test is used.

### **3. RESULT**

#### *3.1 Differences Model Learning-Based Quantum Mind Map And Model Conventional against Skills Writing.*

Before the test k Life Skills write done, tingkat skills between classroom experiments and grade control in writing is believed to have been different. The presumption is raised because of differences in treatment which is applied to the second class of the samples are in learning to write. During the process of learning occurred student classroom experiments and classroom control feel the atmosphere of learning are different in writing. It is caused due to a class of experiments using the learning model based quantum mind maps. Will but on grade control using a model of the conventional.

Differences in the two classes are addressed by the average value of the test k Life Skills write are different. The writing average of the experimental class was not much different from that of the control class. On average skill class experiment in reading is 80.97 were in the top KKM has been set and is on qualifying well (B). This is due to the effect of the treatment are determined on a class experiment that uses the learning model based quantum mind maps. Would however, not much different from the class of the control that uses the model of conventional. The average skill of students in the control class in reading is 74.63 are at the top under the KKM, the average value of which was obtained by the class of

experiments is high compared with the average value of which was obtained by the grade control. Following this will be explained more detailed picture of k Life Skills Writing student classroom experiments and classroom control.

From the analysis of the data conducted on a sample of research grade experimental No 27 the value is in the above KKM, whereas 5 the other is at the bottom KKM. In grade control, a sample study only 20 people who value on top of KKM, while 10 others are still not yet completed or not yet meet the standards of the KKM. Can be said that the skills of the two classes of samples of research is relatively not equal to the difference in the level of thoroughness that is not much different.

Learning outcomes are benchmarks or benchmarks for determining the level of success of students in knowing and understanding learning material. The learning outcomes of students are closely related to the formulation of learning objectives planned by the teacher. This is also influenced by the ability of the teacher as a learning designer. For this reason, teachers are required to master a learning model that can help students interact actively with other students or students with teachers. Learning outcomes are the level of mastery achieved by students in learning in accordance with predetermined goals. According to Dimyanti and Mudjiono (2002:200), learning outcomes are the level of success achieved by students after participating in learning activities, where the success rate is marked by numbers, letters, words and symbols. So, learning outcomes are indicators to determine whether a learning process is achieved or not. Because learning outcomes are the level of mastery achieved by students, it is important to set standards and conduct preliminary tests, as a benchmark to show the level of student success in mastering the material.

According Trianto (2013:18) learning is a process of change in behavior remains of yet know be out, of not understanding be understood, of less skilled becoming more skilled, and of customs old into the habit of new, as well as beneficial for the environment as well as the individual's own. Meanwhile, according to Subiyanto (Trianto, 2013:19) teaches at essentially no more than just help the students to acquire the knowledge, skills, attitudes, and ideas and apresi which leads to changes in behavior behavior and growth of students. How to teach the teachers who either are kuncu and persyarat for students to be able to learn with good. One of the motorway o k measuring that students have learned to good is that if the students were able to learn what that should be studied, so that the indicator results of learning are desired can be achieved by the students.

The first research hypothesis testing results indicate that in general are not there differences in the results of learning to read between the students who were taught using learning model based quantum

mind map with students who are taught by a model of learning conventional in the student class X SMA Negeri 1 Linggo Sari Baganti. The average k Life Skills write students are taught using learning model based quantum mind maps is 80,97, while students who are taught by a model of conventional is 74,63. As is the case with the teacher's role in carrying out learning activities in textbooks, the role of students is not explicitly stated either. Explicit statements of student roles are generally written on the teacher's instructions. Because it tends to be stated implicitly, teachers need to make inferences on the role of students in most learning activities. In order for students to be facilitated in recognizing, caring, and internalizing character, students must be given an active role in learning.

### *3.2 Skills Writing Students with Interest Read Higher Taught by Learning Model-Based Quantum Mind Map And Model Conventional*

The second hypothesis testing results show that there are differences in the results of learning to read between students who have interest in reading high which is taught by using learning model based quantum mind map with students who are having interest in reading high which is taught by the model learning konvensional. The average Life Skills write students' interest in reading high which is taught by using learning model based quantum mind maps are 86,38, while students' interest in reading high which is taught by the model konvensional is 82,40.

In concept models by Istarani (2012:1), model of learning is a series of presentation materials teaching that covers all aspects before and after learning that do the teachers and all the facilities are related to that used in directly or not directly in the process of learning to teach.

Through initial abilities, students will basically have an effect on the learning outcomes achieved (Ali 2012:74). Thus, through the initial ability of the teacher can determine the extent to which students' knowledge of a material. Students' initial knowledge is needed by the teacher to measure the extent to which students' abilities are related to the material to be taught. Students' initial abilities can be seen from the results of students' reading interest. After getting a score along with the average value of students that earn from interest read the students are, the ability to beginning students just plain we differentiate. Differences are grouped on the basis of students with interest in reading high and students with an interest read low in both classes is a class experiment with using the learning model based quantum mind maps and grade control by using a model of the conventional.

### *3.3 Skills Writing Students with interest in reading Low who Taught by Learning Model-Based Quantum Mind Mapping and Model Konvensional*

The third hypothesis testing results indicate that not there are differences in the results of learning to read between students who have interest in reading low which is taught by using learning model based quantum mind map with students who are having interest in reading low which is taught by the model learning konvensional. The average k Life Skills write students' interest in reading the low that is taught by using learning model based quantum mind map is 75.56, while the students' interest in reading the low that is taught by the model of conventional is 66.87.

In accordance with what was explained earlier, although students with low initial abilities in the experimental class got learning outcomes that were not different from the control class, it was necessary to increase their initial ability with reading interest. This is because there is no influence between initial ability and reading interest in influencing writing skills. Through reading interest as an initial ability the teacher can determine the extent to which students' knowledge of a material. Students' initial knowledge is needed by the teacher to measure the extent to which students' abilities are related to the material to be taught. The initial ability of students can be seen from the scores of students' reading interest given.

Teachers must first have a description of the behavioral and personal characteristics of students when they are about to enter and begin the learning process. Initial ability is the level and type of behavior characteristics that students have previously had when starting teaching and learning activities. Basically, initial knowledge greatly influences the learning outcomes achieved.

### *3.4 The Interaction Between Mind Map Based Quantum Learning Model and Conventional Model with Reading Interest in Influencing Writing Skills*

An interaction occurs when the effects of factors that one depends on factors other in mempengaruhi something (Irianto,2004: 225). This means that each individual factor between the learning model based quantum map of the mind and conventional with interest read mutually dependent one each other in influencing k Life Skills write. The interaction process between these variables can be explained as follows.

Based on the test Annava against the hypothesis fourth to note that not there is interaction between the learning model based quantum mind map and conventional with interest read to k Life Skills. Previously that interaction is the effect of the

treatment model of learning specific to the group of students with who has the ability to beginning certain that the study is the ability of the beginning in terms of interest in reading. Interest in reading can determine success within kLife Skills write. Multitude of factors other as a support such as motivation, interest, intelligence, talent and so forth . In addition, the teacher's readiness factor in using quantum learning models based on mind maps and conventional learning in writing will also have an effect on student writing learning outcomes. Interaction between the learning model based quantum mind maps and models the conventional with interest in reading also can be seen from the results of the average test k Life Skills. Such as that seen in the graph interaction follows.

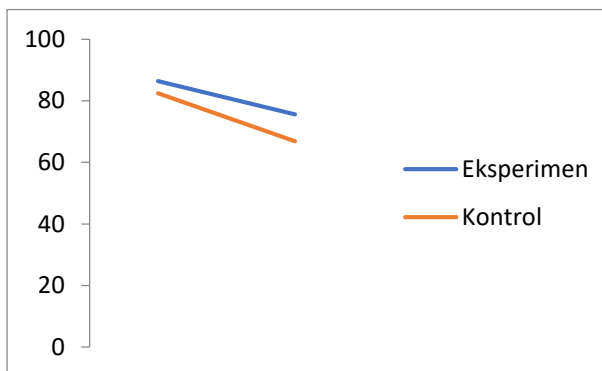


Figure 1. Graph interaction between Learning Model-Based Quantum Mind Mapping and Model Konvensional with interest read on Skills Writing

Based on Figure 2, it can be seen that point A is a group of experimental class students who have high reading interest with an average value of 86,38, point D is a group of control class students who have high reading interest with an average value of 75.56, Point C is a group of students in the experimental class who have low reading interest with an average score of 82.40, and point B is a group of control class students who have low reading interest with an average score of 66.87 . With no presence of pieces of line indicated by the graph, it can be concluded that there is an interaction between the learning model with interest in reading students towards k Life Skills write class X SM A State 1 Linggo Sari Baganti

With no presence of interactions such, can be concluded that each factor (models of learning and interest in reading ) are not mutually dependent of each other in influencing write. That is, using the learning model based quantum mind maps and models of teaching the conventional right applied for students both with interest in reading high and interest interest in reading low.

#### 4. CONCLUSIONS

Based on the description, analysis, and discussion of the research data that has been carried

out, it can be concluded that four things are as follows.

1. Exist differences in outcomes learning k Life Skills write arguments between students who are taught by the learning modelbased quantum mind map with students who are taught by a model of learning conventional in the student class X SM A State 1 Linggo Sari Baganti district, the South Coast. The average Life Skills writing argumentation of students who are taught by the learning model based quantum mind maps is 80,97, while students who are taught by a model of conventional is 74,63.
2. Exist differences in outcomes learning Life Skills write arguments between students who have interest in reading high that taught the learning model based quantum mind map with students who are having interest in reading high which is taught by the model of learning conventional. The average argumentation writing skills of students with high reading interest who were taught with a mind map-based quantum learning model was 86,38 while students with high reading interest who were taught using conventional models were 82.40.
3. Exist differences in outcomes learning Life Skills write arguments between students who have interest in reading low that taught the learning model based quantum mind map with students who are having interest in reading low which is taught by the model of learning conventional. On average skills of writing argumentation students ' interest in reading low that taught the learning model based quantum mind maps are 75,56 while the students' interest in reading the low that is taught by the model of conventional is 66.87.
4. Exist differences the interaction between the model of learning with interest read about the results of study k Life Skills write arguments in the student class X SMA Negeri 1 Linggo Sari Baganti South Coastal District.

So can we conclude, that as a whole the learning model based quantum mind map right is used to k Life Skills write arguments both students with interest in reading high or students with interest in reading low. And also the learning model based quantum mind map right is used to k Life Skills write arguments both for students who have interest in reading high and students with interest in reading low.

Based on these results and conclusions, the suggestions shown to the parties are as follows: *Firs* , for schools to improve the management of education in schools that can be done by providing learning infrastructure needed for developing student potential and smooth teaching and learning processes such as providing books just as a source of reading are new to support the skills of students in reading and writing . *Second* , the language and literature teacher Indonesia BC A State 1 Linggo Sari Baganti in order to motivate and provide a learning model are varied and

interesting to avoid boredom and kenejuhan students in learning. *Third*, students students SMA Negeri 1 Linggo sari Baganti order to be able to practice in earnest in learning, so that later skilled in the language not only skilled in writing but also skilled on the four aspects of language more , namely, listening, speaking, and reading. Because at basically me writing is a thing that is most important , because with write will open and give an insight into the area along with knowledge because there are other skills without which there would be a counterbalance tidak writing skills .

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