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## Factors Affecting the Concentration of Learning and Critical Thinking on Student Learning Achievement in Economic Subject

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### ABSTRACT

The National Examination is conducted to test the ability of students during the education process. However the average national exam results of Madrasah Aliyah Negeri 1 Pekanbaru starting from 2015-2018 always decrease. This phenomenon can not be separated from factors that affect learning achievement. This study aims to analyze the factors that influence concentration and critical thinking on student learning achievement both direct influence and indirect influence on economic subjects in Madrasah Aliyah Negeri 1 Pekanbaru (MAN 1 Pekanbaru). The population in this study were 125 students of IIS class XI. Sampling technique used was simple random sampling obtained by 95 students. Data collection uses a questionnaire with a Likert scale. The results showed that: (1) the non-physical school environment had an effect on learning achievement directly by 24.2% and indirectly had an effect of 12%. (2) learning interest influences learning achievement directly by 27.1% and indirectly by 8.8%. (3) learning concentration directly affects learning achievement by 19.5%. (4) critical thinking directly influences learning achievement by 27.3%. In general, critical thinking can affect the learning achievement.

## 1. Introduction

Education plays as an important role in the life of a nation and country because of progress and the dignity of a country lies in education. School is a formal educational institution that allows ongoing education to be able to achieve teaching goals efficiently which has an impact on learning outcomes. Poerwanto (2013) emphasizes that learning achievement is the result achieved by someone in a learning effort as stated in report cards.

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Average national examination results of the MAN 1 Pekanbaru from 2015 to 2018 always get low average national exam result compared to MAN 2 Pekanbaru. It can be seen on the National Examination Year 2018, which the average value of MAN 2 Pekanbaru is 63.42 that is higher than MAN 1 Pekanbaru with an average national exam score of 53.99. On the computer-based national exam the average value of expertise in the IIS study program, Economic subjects also received a low score.

The average value of the results of the IIS study program for Economics subjects in 2017 and 2018 got a low score compared to Sociology and Geography subjects. This was obtained by the average of Economics subjects in 2018, namely 52.41 while Sociology 59.75 and Geography 63.34. This means that the learning achievement of economics at the MAN 1 Pekanbaru is categorized as low.

The cause of the low economic learning achievement is suspected by lack of seriousness in the learning process, so that it will have an impact on student learning achievement. The reason for researching this was because the non-physical school environment, interest in learning, concentration of learning and critical thinking had been carried out well, but the researchers found data on learning achievement results in the form of national exam results categorized as low on Economics subjects. This assumption is supported by education experts who state that the low student achievement is largely due to the weak ability of children to concentrate (Petersan, 2010).

Olivia (2010) asserted that the concentration of student learning is a focus of attention and full awareness of the subject matter being studied, this statement is also supported by Slameto's opinion (2015) that the attention is focused on the content of the subject matter and the teacher. Concentrated students only pay attention to the subject matter and the teacher certainly needs a learning environment that supports learning.

The non-physical school environment is a factor that influences the concentration of learning. This is confirmed by Sukmadinata (2009) that the non-physical or social school environment is related to the relationship between students and their friends, teachers and other school staff. Another factor that determines student learning concentration is the interest in learning. This means that students must be able to maintain a good relationship between the teacher and students. There are other factors that influence the concentration of learning, namely interest in learning such as feeling happy in learning. This assumption is reinforced by Nurhasanah's research (2016) that interest in learning has a significant influence on learning achievement. So the non-physical school environment and interest in learning are factors that influence the concentration of learning and have an impact on learning achievement.

Learning achievement illustrates how the learning process is carried out by students during education, where students will process the use of the ability to think effectively to help someone compile, evaluate, and apply decisions about what is believed or done (Hamzah, 2011). This ability is said to be critical

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thinking needed in learning. Egok (2016) in his research provides a conclusion that there is a positive correlation between the ability to think critically and learning outcomes.

This study aims to analyze the factors that influence the concentration of learning and critical thinking on student learning achievement both direct influence and indirect influence on economic subjects at the Madrasah Aliyah Negeri 1 Pekanbaru.

## 2. Methodology

The type of this research was quantitative descriptive carried out in MAN 1 Pekanbaru, Riau Province. The data used are primary data of about non-physical school environment, interest in learning, concentration of learning, and critical thinking derived from questionnaires filled out by students. Secondary data comes from teachers and administration such as documentation of the results of the Middle Semester Exam (UTS), school profiles and student data.

This study used a population of class XI students in the IIS department in MAN 1 Pekanbaru with total of 125 students. The sampling method used simple random sampling obtained by 95 students. Data collection techniques using questionnaires that are tested for validity and reliability, data collection using a Likert scale. The data analysis technique used path analysis and SPSS V. 23 assistance with sub-structures as described in Figure 1. Descriptors of indicators in this study can be seen in Table 1.

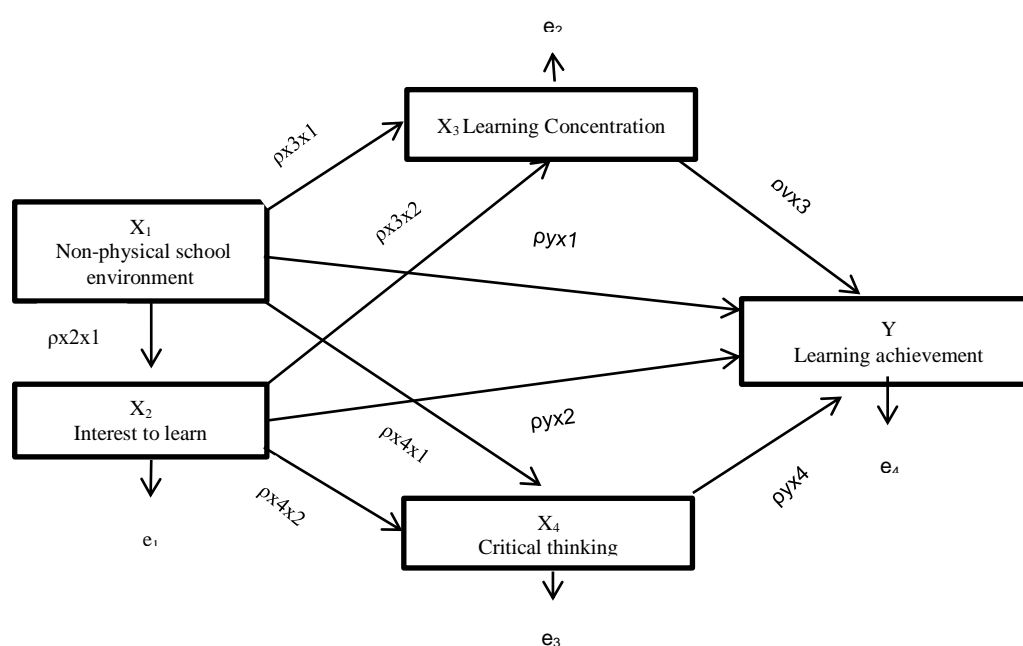


Figure 1. Design of Path Analysis of Factors Affecting the Concentration of Learning and Critical Thinking on Student Learning Achievement

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- a. Sub Struktur 1  
 $X_2 = px_{2x1} + e_1$
  - b. Sub Struktural 2  
 $X_3 = px_{3x1} + px_{3x2} + e_2$
  - c. Sub Struktural 3  
 $X_4 = px_{4x1} + px_{4x2} + e_3$
  - d. Sub Struktural 4  
 $Y = py_{x1} + py_{x2} + py_{x3} + py_{x4} + e_4$

Table 1. Research Variables and Indicators

Indicator variable	Indicator variable
Learning concentration	Attention, oral greeting, answering, giving statement, psychomotor welcome
Critical thinking	The ability to draw conclusions from observations, the ability to identify assumptions, the ability to think deductively, the ability to make logical interpretations, the ability to evaluate arguments

### 3. Results and Discussion

Description of variables in this study are non-physical school environment (X1), learning interest (X2), learning concentration (X3), learning concentration (X4) and learning achievement (Y).

#### *Non-physical school environment*

Non-physical environment is the relationship between teacher and student and the relationship between students and students, as measured by questionnaires. Data from the research results of non-physical school environment variables (X1), that the overall results of the non-physical school environment of students of MAN 1 Pekanbaru are in the very good category with an average of 47.71.

#### *Interest to learn*

The interest in learning is feelings of pleasure, interest, attention and student involvement in economic learning, as measured by questionnaires. Data from the research results of interest in learning interest (X2), that the overall results of student learning interest in MAN 1 Pekanbaru are in a very good category with an average of 59.23.

#### *Learning Concentration*

The concentration of learning is to focus students' attention on Economics lessons, as measured by questionnaires. The data from the research results of the concentration of learning variables (X3), that the overall results of student learning concentration in MAN 1 Pekanbaru are in the good category with an average of 65.43.

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### ***Critical thinking***

Critical thinking is the ability to produce and process information in learning as measured by questionnaires. Data from the research results of the concentration of learning variables (X4), that the overall results of critical thinking of students in MAN 1 Pekanbaru are in the good sanagt category with an average of 51.05

### ***Learning achievement***

Learning achievement is the result achieved by participants in the Economics learning business, obtained based on the results of the Middle Semester Exam students. Data from the results of the study are in the form of documentation of learning achievement variables (Y), that the overall results of learning achievement seen from the Middle Test Results are in a fairly good category with an average of 76.41.

### ***Path Analysis***

This study discusses the analysis of factors that influence the concentration of learning and critical thinking on learning achievement in Economics at Pekanbaru 1 State Madrasah Aliyah. With non-physical school environment variables (X1), interest in learning (X2), concentration of learning (X3), critical thinking (X4), learning achievement (Y). Figure 2 illustrates the structural 1.

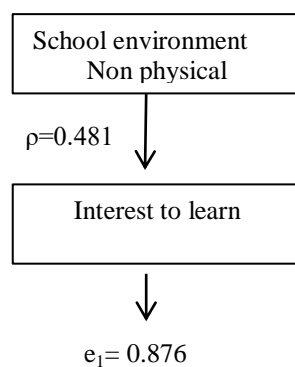


Figure 2. Effect of Non-Physical School Environment (X1) on Learning Interest (X2).

Figure 2 is known as structural equation 1 is:  $X_2 = 0.481 X_1 + 0.876e_1$  This means that the equation shows that the non-physical school environment variable (X1) has a direct influence on learning interest (X2) of 0.481 with an error of 0.876. the following illustrates structural 2.

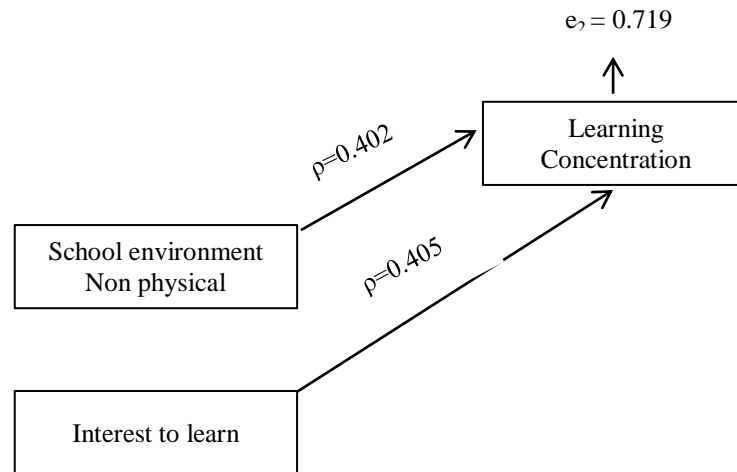


Figure 3. Effect of Non-Physical School Environment (X1) and Learning Interest (X2) on Learning Concentration (X3)

Figure 3 is known as the structural path equation 2 that is  $X3 = 0.402X1 + 0.405X2 + 0.719e_2$ . This means that the equation shows that the non-physical school environment variable (X1) has a direct influence on learning concentration (X3) of 0.402. And interest in learning (X2) also has a direct influence on learning concentration (X3) of 0.405 with an error of 0.719. The following illustrates structural 3 in Figure 4.

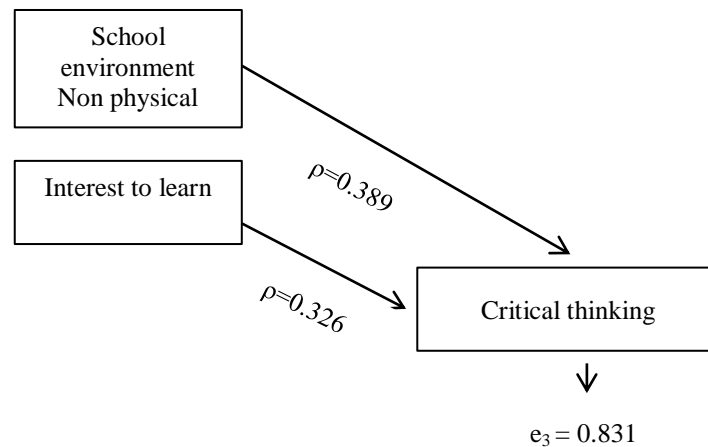


Figure 4. Effect of Non-Physical School Environment (X1) and Learning Interest (X2) on Critical Thinking (X4)

Figure 4 is known as the structural path equation 3 that is  $X4 = 0.389X1 + 0.326X2 + 0.831e_3$ . This means that the equation shows that the non-physical school environment variable (X1) has a direct influence on critical thinking (X4) of 0.389. And interest in learning (X2) also gives a direct influence on critical thinking (X4) of 0.326 with an error of 0.831. Figure 5 illustrates structural 4.

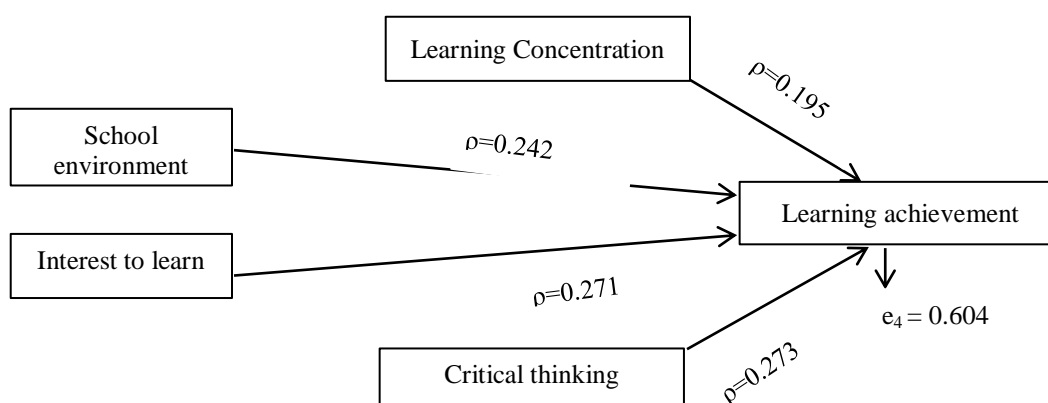


Figure 5. Effect of Non-Physical School Environment (X1) and Learning Interest (X2) on Critical Thinking (X4)

Figure 5 is known as the structural path equation 4 that is  $X4 = 0.242X1 + -0.271X2 + 0.195X3 + 0.273X4 + 0.604e4$ . This means that the equation shows that the non-physical school environment variable (X1) has a direct influence on learning achievement (Y) of 0.242. And interest in learning (X2) has a direct influence on learning achievement (Y) of 0.271. The concentration of learning (X3) has a direct influence on learning achievement (Y) of 0.195. And critical thinking (X3) has a direct influence on learning achievement (Y) of 0.273 with an error of 0.604.

**Combined Path Analysis**

Combined structural path of diagram 1, structural 2, structural 3, and structural 4 can be seen in Figure 6.

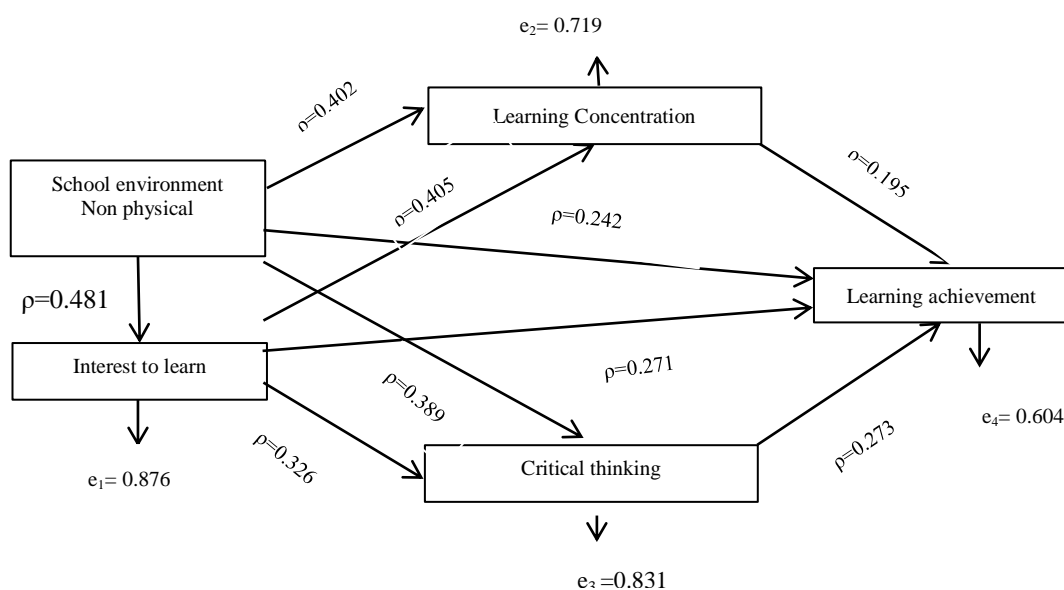


Figure 6. Combined of Structure 1, Structure 2, Structure 3 and Structure 4

Figure 6 is known as the non-physical school environment, interest in learning, concentration of learning and thinking that have a significant effect on learning achievement either directly or indirectly.

### ***Direct and Indirect Donations***

Based on simple regression calculations and multiple regressions that have been discussed, an Effective Contribution (SE) can be presented either directly or indirectly between variables (Table 2).

Table 2. Direct and Indirect Donations

<b>Variabel</b>	<b>Langsung</b>	<b>Tidak Langsung</b>	<b>Total</b>	<b>SE</b>
X1 → X2	0.481	-	0.481	23.1%
X1 → X3	0.402	-	0.402	19.9%
X2 → X3	0.405	-	0.405	24.3%
X1 → X4	0.389	-	0.389	21.2%
X2 → X4	0.326	-	0.326	16.7%
X1 → Y	0.242	0.402 X 0.195 = 0.0783	0.320	20.3%
X1 → Y	0.242	0.481 X 0.326 X 0.273 = 0.0428	0.285	18.1%
X2 → Y	0.271	0.326 X 0.273 = 0.0889	0.259	16.6%
X3 → Y	0.195	-	0.195	12.7%
X4 → Y	0.273	-	0.273	17.8%

Table 2 can be explained as following:

- 1) The contribution of the non-physical school environment (X1) directly affects the interest in learning (X1) of 23.1%.
- 2) The contribution of the non-physical school environment (X1) directly affects the learning concentration (X3) of 19.9%.
- 3) The amount of contribution to learning interest (X2) directly affects learning concentration (X3) of 21.3%.
- 4) The contribution of non-physical school environment (X1) directly influences critical thinking (X4) of 21.2%.
- 5) The magnitude of the contribution of learning interest (X2) directly affects critical thinking (X4) of 16.7%.
- 6) The contribution of the non-physical school environment (X1) directly affects learning achievement (Y) of 0.242, and the indirect effect through the learning concentration variable (X3) is 0.0783 with the total contribution given is 20.3%. Then the effect indirectly on learning achievement (Y) through interest in learning interest (X2) and critical thinking (X4) is 0.0428 with the total donations given amounting to 18.1%.
- 7) The magnitude of the contribution of learning interest (X2) directly affects learning achievement (Y) of 0.271, and the influence indirectly through and critical thinking (X4) is 0.0889 with the total contribution given is 16.6%.
- 8) The contribution of learning concentration (X3) directly affects learning achievement (Y) of 12.7%.
- 9) The amount of critical thinking contribution (X4) directly affects learning achievement (Y) of 17.8%.



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Based on the results of testing hypothesis 1, there is a significant influence between the non-physical school environment on learning interest. This is in line with the results of research conducted by Febriyanti (2017), which there were the positive influence between the school environment and interest in learning. Nurmaliza et al. (2018) concluded that there was a positive influence on the environment and interest in learning. Therefore, the better the non-physical environment, the learning interest of students will increase.

The results of testing hypothesis 2 shows that there is a significant influence between the non-physical school environment on the concentration of learning and hypothesis 3 imply there is a significant influence between interest in learning towards the concentration of learning. This is in line with the opinion of Surya (2009) that the factors that influence the concentration of learning are the learning environment, one of which is the non-physical school environment and interest in learning. Li (2016) concluded that "Overall, these findings suggest that low interest leads to lower learning concentration", namely low interest in learning is always influenced by low concentration of learning. Therefore, the better the non-physical environment and interest in learning, the concentration of student learning will also be good.

The results of testing hypothesis 4 that there is a significant influence between non-physical school environment towards critical thinking, this is in line with the research of Kurniawan et al. (2015) conducted a study by giving the conclusion that the school environment has a positive influence on high-level thinking skills. The results of testing the hypothesis 5 that there is a significant influence between interest in learning towards critical thinking in line with the research of Fikri et al. (2017) also provides research conclusions that students with high interest in learning have critical abilities in problem solving. Therefore, the better the non-physical environment and interest in learning, the more critical thinking students will be.

The results of testing hypothesis 6 that there is a significant influence between the non-physical school environment on learning achievement reinforced by Sandrawati's research (2016) that there is a significant positive effect of students' social or non-physical environment on the learning achievement of Probolinggo Public Middle School 9. Learning outcomes increase when the teacher is involved in developing the ability of students through discussion, this illustrates that the non-physical school environment has a positive effect on learning achievement when the relationship between teachers and students is carried out. Hypothesis 7 that there is a significant influence between interest in learning towards learning achievement, Lestari (2013) also gives the same conclusion in his research that learning interest influences learning achievement. The results of testing the hypothesis 8 there is a significant influence between the concentration of learning on learning achievement, this is corroborated by the Malawi (2013) study that there is a positive and significant influence between the concentration of learning on learning achievement by making an effective contribution of 23.9%. The results of hypothesis 9 that there is a significant influence between critical thinking on learning achievement and strengthened by Sari et al. (2017) give the

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conclusion that critical thinking has a significant effect on the learning outcomes of Economics subjects in class X IPS in Majosari MAN. In line with the research of Juwita et al. (2018) that learning achievement is influenced by many factors, one of which is soft skills, to improve soft skills it requires skills in critical thinking. Therefore, the higher the non-physical environment, interest in learning, concentration of learning and critical thinking, student achievement will increase.

#### 4. Conclusion

Results of this research may conclude that there was a direct and indirect significant influence between the non-physical school environment, interest in learning, concentration of learning and critical thinking on learning achievement in Economics at MAN 1 Pekanbaru. This means that economic learning achievement is not only influenced by the environment of non-physical scholars but also supported by interest in learning, concentration of learning and critical thinking as an intervention variable. To achieve a concentration of learning and high critical thinking students must be able to create a good non-physical school environment and high learning interest. Furthermore, to achieve high achievement students must have a good non-physical school environment, high interest in learning, high concentration of learning and high critical thinking. The efforts of the teachers in learning create a good relationship with students, so that increasing interest in student learning and being able to create a concentration of learning and critical thinking that is useful in education certainly has an impact on learning outcomes obtained by students.

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