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The Effect of Think Pair Share and Intelligence Quotient on Economics Students' Learning Outcome

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ABSTRACT

The purpose of this study was to examine the relationship between intellectual ability, the Cooperative type think pair share learning model, and the Entrepreneur lesson in grade ten at a vocational high school in Sungai Penuh. This study is a Quasi-experiment in nature. Purposeful sampling was used in this study. In total, 103 students made up the study's sample. We used two instruments to obtain this data: an experimental one and a validated one. The school has collected primary data in the form of student learning outcomes and secondary data in IQ test outcomes. On the other hand, a descriptive and inductive analysis was performed using a two-way analysis of variance. The study found that (1) the learning outcomes for students who were taught using the cooperative learning model type Think Pair Share were better than the outcomes for students who were taught using the traditional learning model. According to his research, the academic success of high-IQ students is not better than that of low-IQ students. Thirdly, there was no correlation between the cooperative learning approach (Think, Pair, Share) and student achievement.

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1. INTRODUCTION

The purpose of education is to shape future generations into capable, contributing members of society. The results of students' education at any given grade or institution might shed light on the quality of their education. The success of an individual's attempt to better themselves via education is influenced by both their own motivation and circumstances. The way in which information is acquired is a crucial component in determining the final results of any educational endeavour. The instructor's ability to inspire and direct student learning is on full display as a direct result of the students' evolving input. Learning outcomes are skills gained by students as a result of participating

in the course of study, as defined by Sudjana (2008). Good learning outcomes have been accomplished, but there are still challenges and unrealized potential.

Various models and learning techniques have been designed for entrepreneurship subjects. One of the causes of the students' low scores is the lack of creativity and activity in the learning process. Besides, they feel bored learning because of the monotonous lecture method. Students who did the tasks from teachers feel less motivated to be active in entrepreneurship learning. Most students tend to be silent. Others also tend to be passive and are lazy to ask questions and express their opinions. Some others did useless activities; disturbing friends, chit chat, playing mobile phones, etc. To understand the learning material, it is expected that the teacher can choose a learning model to solve the problems. The teaching and learning process could come from the teacher as well as the students (peer teaching). This system provides opportunities to work together.

The study paradigm needs to be updated if we want to see better learning outcomes. Students should be able to work with their peers on organized projects that promote learning, productivity, and socialization. That way, people can collaborate to aid one another in learning the material and completing the tasks. Cooperative learning is one approach that encourages students to work together. Cooperative Learning Model has several types. The Think-Pair-Share Model is one type of cooperative learning model that can build students' confidence and encourage their participation. These models can give students more time to think, respond and help each other (Anita, 2002). This TPS type consists of 3 stages: thinking, pairing, and sharing, which are used to influence student interaction patterns. Meanwhile, Surayya (2014) mentions that The Think-Pair-Share method is a great way for educators and students to work together to learn.

The instructional design encourages students to collaborate. One strategy to boost student learning outcomes is implementing the TPS Learning Model. The model's applicability in vocational schools stems from the fact that problem-solving in groups is natural to adolescents in that setting. Students benefit from this model because they are more likely to participate in group conversations with their peers, leading to increased productivity and smoother student-student communication (Surayya, 2014). Students in this technique are given time to process questions from the teacher before responding as a group.

Furthermore, it is believed that intellect plays a significant cognitive component. A presumption gives intellect a larger role than it actually plays. Some people wrongly expect that a high IQ test score guarantees a child will do well in school, therefore, when such a child fails to learn, it can lead to a severe backlash in the form of distrust against the offending institution or the person who administered the test. Similarly devastating is the conclusion drawn from a low IQ test score: that the person in question is doomed to a lifetime of underachievement. This can devastate a person's confidence and, by extension, his desire to learn (Sudjana, 2008). It is undeniable that people with low IQs and a high potential for mental retardation have challenges and may be unable to attend formal education that is age-appropriate (Trianto, 2009). On the other hand, many average-IQ people are surpassing high-IQ people and learning at a rapid pace. Therefore, the authors are interested in investigating the impact of the Think-Pair-Share kind of cooperative learning model and students' Intellectual Quotient (IQ) on the outcomes of their entrepreneurship education in Class X at the State Vocational School.

2. METHODS

This research is quasi-experimental research. The population in this study were students of class X State Vocational High School 3 Sungai Penuh, with 103 students. The sample in this study was class X1 as the experimental class, treated with the use of the Think Pair Share learning model and X2 class as the control class, treated by using conventional learning models.

The data collection technique uses two stages: The preparation phase, the preparation of instruments, instrument try out and verification. The instrument used is a test for learning outcomes. The trial of this instrument was conducted on 30 students outside of the sample. The purpose is to

analyze the items that are in the instrument and, at the same time, verify them, especially those related to different power and level of difficulty for the test of learning outcomes. The efforts made in developing this instrument to have good validity are 1) The stage of developing instrument items; 2) testing instruments outside of the sample class. And 3) analyzing the trial data to measure the validity, reliability, power difference and difficulty level. 4) The implementation phase is in the form of data netting through research instruments on student respondents.

3. FINDINGS AND DISCUSSION

3.1 Research Findings

Data was processed using both deductive and descriptive methods for analysis. The goal of describing respondent data is known as descriptive data. Prerequisites and hypotheses are put to the test using inductive analysis. Secondary information on the IQ test results of students in the experimental class and the control class was used to compile this data. Table 1 below compares the frequency distributions of many measures of students' IQ :

Table 1
Frequency Distribution of Student Intelligence Experimental and Control Class

Description	Experiment Class	Control Class
N	22	20
Mean	99,09	99,3
Median	97,5	99
Deviation Standard	7,24	7,40
Variant	52,46	55,8
Minimum Score	90	90
Maximum Score	113	114

Table 1 illustrates an average comparison is 99.09 in the experimental class and 90.3 in the control class. The median value of the experimental class is 97.5, while the control class is 99. It means that the IQ of the experimental class was higher than the control class. In contrast, the highest IQ from both sample classes was the same, which was 90. While the maximum IQ in the experimental class was 113, and the minimum IQ value was 90. In the control class, the maximum IQ was 114, and the minimum value was 90. It means that there was a similar minimum IQ score in the experimental class and the control class, which was at a value of 90. While the maximum IQ in the control class was higher than the experimental class.

Intelligence is a systematic collection of the ability to think and act, direct and process information effectively, to achieve certain goals. For that, students with a high IQ are thought to have higher achievement in learning than students with a normal IQ. In conducting the research, the author sets the Basic Competencies taught in the sample class. The basic Competencies that the writer chooses are business risks and decision-making. In both classes, two different learning models were used. In the experimental class, the Think Pair Share learning model was used, while in the control class, conventional learning models were used. This aims to see the student learning outcomes of both sample classes.

Learning outcome data is taken from the results of the tests carried out after applying the learning model in each sample class. In the experimental class, the Think Pair Share learning model was used, while conventional learning models were used in the control class. From the sample, learning outcomes can be arranged into classes of intervals, frequencies, and values of the mean, median, mode, standard deviation, variation, minimum score and maximum score. The experimental

class's learning outcomes contained 22 students of class X1 SMK N 3 Sungai Penuh. The distribution of learning results is obtained in table 2 below:

Table 2

Distribution of Frequency of Entrepreneurship Learning Outcomes in Experimental Class

No	Interval	Experiment Class		Remarks
		Frequency	Percent	
1	89 – 94	3	13,64	Completed
2	83 – 88	6	27,27	Completed
3	78 – 82	4	18,18	Completed
4	72 – 77	6	27,27	Completed
5	67 – 71	2	9,09	Completed
6	61 – 66	1	4,55	Incomplete
Amount		22	100%	
Mean		79,81		
Median		80		
Mode		86		
Standard Deviation		7,82		
Variance		61,20		
Minimum		93		
Maximum		63		

Table 2 illustrates the number of students who completed the experimental class was 21 students and 1 person was not completed. The mean value (average value) of the experimental class was 79.81, indicating that the experimental class is above the Minimum Graduation Criteria (KKM) of 70. The highest and the lowest value of the experimental class was 93, and the maximum value was 63. In contrast, the standard deviation (the spread of the acquisition of scores against the average score) of the experimental class was 7.82.

To see student learning outcomes in the control class obtained the distribution of learning outcomes in the following table 4:

Table 3

Frequency Distribution of Entrepreneurship learning Achievement of Control Class

No	Interval	Experiment Class		Remarks
		Frequency	%	
1	76 – 81	5	25	Completed
2	71 – 75	4	20	Completed
3	66 – 70	4	20	Completed
4	61 – 65	1	5	Incomplete
5	56 – 60	3	15	Incomplete
6	50 – 55	3	15	Incomplete
Amount		20	100	
Mean		67,2		
Median		70		
Mode		73		

Standard Deviation	7,24
Variance	89,9
Minimum	80
Maximum	50

Source: Primary Data Processing 2015

Table 3 illustrates that the number of students who completed the control class is only 13, and 7 students were not complete. The mean value of the control class was 67.2, indicating that the control class was below the Minimum Graduation Criteria (KKM) value of 70. The control class's highest value (maximum) and lowest value (minimum) were 80, and the maximum value was 50. While the standard deviation (the spread of the acquisition of scores against the average value) of the control class was 7.24.

From the explanation of both tables, it can be concluded that based on the minimum completeness criteria value of 70. There are 20 students in the experimental class who achieve a score equal to or more than the KKM value, whereas in the control class, there are only 11 students whose grades reach the same or more than the KKM value. The data explained that the experimental class with the application of the TPS learning model was better than the control class without the model.

In testing the hypothesis on the two-track variance analysis, the criteria for rejecting or accepting Ho are based on Significance (abbreviated Sig.). If the Value Sign.≤ α, then Ho is rejected, if Sign.> A then Ho is accepted. The following data is the result of a two-way ANOVA calculation:

Table 4. Two-Way ANOVA Estimate

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1806.331[a]	3	602.110	8.011	.000
Intercept	224086.976	1	224086.976	2.981E3	.000
IQ	15.249	1	15.249	.203	.655
Model	1752.668	1	1752.668	23.319	.000
IQ * Model	120.306	1	120.306	1.601	.214
Error	2856.145	38	75.162		
Amount	233472.000	42			
Corrected Amount	4662.476	41			

R Square = 0,387

Based on the two-way ANOVA calculation, the R Squared value was 0.387, which means that the learning model and intellectual intelligence variables explain the learning outcomes by 38.7%. Based on the results: (1) Visible experimental class learning outcomes are higher than the control class, (2) There is no difference in learning outcomes of students who have significantly high intelligence from student learning outcomes that have normal intelligence, and (3) no interaction between learning models and intellectual intelligence.

1.2 Discussion

3.2.1 The students taught by using the Cooperative learning model of Think Pair Share Type significantly have higher Learning Outcomes than those being taught by the Conventional Learning Model

Based on the results of hypothesis testing, student learning outcomes who are learned by the cooperative learning model of TPS type were significantly higher than the learning outcomes of students who were taught by conventional models. This means that student learning outcomes in the

experimental class are better than the student learning outcomes in the control class. Students in the experimental class obtained an average of 79.81 learning outcomes, while students in the control class obtained 67.2.

The success of the TPS model in improving student learning outcomes is because this learning model is a learning activity in which students are grouped in small groups heterogeneously. Student activities during the learning process use the TPS type through three stages. The first is thinking individually and completing a given task. The students in the experimental class are more enthusiastic about learning. In working on the problem, student participation in the experimental class is higher than in the control class.

Based on descriptive analysis, it can be seen that the Student Learning Outcomes in the experimental class are higher than the control class. It was seen from the comparison of the two classes' averages after the posttest. The average of the experimental class was higher than the control class. It means that the given class treatment using the TPS Model is better than the class that is treated by conventional methods. Whereas according to Febrian (2012), to increase student learning activities, learning must be diverted, which was initially teacher-centred into student-centred learning. This can be done by applying a learning model that can improve learning activities and student learning outcomes, such as implementing a TPS-type cooperative learning model.

Based on the opinions stated above and related to this research, it can be concluded that students who are taught with the Think Pair Share type learning model have better learning outcomes than students who are taught by a conventional method.

3.2.2 The Learning Outcomes of Entrepreneurship of The Students Who Have High Intelligence are Better than Those of Students Who Have Low Intelligence.

Based on the testing result, it reveals that there are no differences in learning outcomes of students who have significantly high intelligence the students who have normal intelligence. This shows that the student with the lowest IQ have scores 90 and the students with the highest IQ, has scored 114, so in this case the IQ scores of the students are still in the average high level and normal. From the data obtained by Lewis M. Germany and Merril in 1937, the Stanford Binet test can be classified as a group of IQs as follows: IQ 140-169 is as very superior, IQ 120-139 is as superior, IQ 110-119 high average, IQ 90- 109 normal, IQ 80-89 on average low, IQ 70-79 borderline, subnormal or mentally weak if IQ is below 70 which consists of three gradations namely Moron (IQ 50-70), Imbisil (IQ 25- 50), Idiot (below 25)(Esam, 2018).

Based on the results of the tests held by the school, it was found that the IQ scores of students with one had no difference in IQ scores, namely the lowest IQ score of 90 and the highest IQ score of 114, and in this case, categorized as high and normal. Based on Azwar's opinion, the IQ range of 110-119 is high on average and 90-109 is normal. So based on the testing, there are no differences in learning outcomes of students who have significantly high intelligence than the students who have normal intelligence. This is because the intelligence value between one student and another student is still at the normal level.

Intelligence as a cognitive element is considered to play an important role. Even sometimes, there is an assumption that puts intelligence in a role that exceeds the actual proportion. Some people even assume that the results of a high intelligence test are a guarantee of success in learning so that if there is a case of learning failure in children who have a high IQ will cause an excessive reaction in the form of loss of trust in the institution that frustrates the child or loses trust in the party who has given an IQ diagnosis. Correspondingly, no less dangerous is the assumption that the results of a low IQ test are the final verdict that the individual concerned cannot possibly achieve good performance. According to Azwar (2004), this not only lowers one's self-esteem but can also destroy his motivation to learn, which actually becomes the beginning of all failures.

Meanwhile, Bahtiar (2009) stated that "It must be admitted that those who have low IQs and high potential mental retardation experience difficulties, maybe even unable to attend formal education that should be appropriate for their age. Another fact is that not a few people with high IQs with low achievement. Conversely, there are also people who are achieving high learning and outperforming with high IQs. This shows that IQ cannot always predict a person's learning achievement because the level of intelligence is not the only factor that determines a person's success, because there are other factors that influence it.

3.2.3 Interaction between the Use of Learning Models and Intelligence on Learning Outcomes

Based on the results of hypothesis testing obtained sig values. 0.214 is greater than the value of α = 0.05, so it can be concluded that there is no interaction between the learning model and intelligence in influencing student learning outcomes (Ho is accepted). As Irianto (2009) suggests that if Ho is accepted, it means that the effect of factor A does not depend on factor B, and the effect of factor B also does not depend on factor A this means that each factor (model of learning and intelligence) interdependent or independent of each other in influencing learning outcomes.

Even so, the Think Pair Share type of cooperative learning model can be applied to students who have high intelligence and low intelligence to improve student learning outcomes because intelligence also greatly influences student learning outcomes. Firdaus[12] mentioned that the higher a person's IQ, the more likely it is to succeed as a worker, parent, manager, student, etc. and also emotional intelligence is a driving force that can lead to aspects of energy, strength, endurance and stamina.

So, it can be concluded that the learning model and intelligence of students determine student learning outcomes. But the cooperative learning model, the Think-Pair-Share type in influencing student learning outcomes, is not influenced by intelligence quotient and vice versa. This is because the two factors (learning model and intelligence) have the same influence, supported by Winarti (2017). There is no interaction between the two variables because both variables have a similar effect.

4. CONCLUSION

Think Pair Share type of cooperative learning model is significantly higher than student learning outcomes taught with conventional learning models. It means the TPS type of cooperative learning model can improve student learning outcomes. There are no differences in learning outcomes between students with significantly high intelligence and students with normal intelligence. This shows that there is not much difference between the two samples, namely students with the lowest IQ scores of 90 and students with the highest IQ scores of 114, so in this case, the IQ scores of students are still at the high average level and normal. There is no interaction between the Think Pair Share type and IQ on student learning outcomes, or H_o is accepted. This is because the two factors have a separate positions in influencing learning outcomes. Donations given by a learning model or intelligence quotient occur separately and do not affect learning outcomes. It could be of which intelligence quotient and learning models influence learning outcomes.

On the basis of the findings, it is advised that student learning outcomes in entrepreneurship courses be enhanced. Teachers might implement an engaging learning strategy, such as the Pair Share Think cooperative learning paradigm, to increase student learning results. Then, teachers are able to utilize learning models connected to the material's characteristics and pay attention to the predicted level of student ability in order to improve student learning results. When discussing learning activities, students can cultivate a love of learning and keep their ideas.

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