

The Effect of Adversity Quotient and Gender to Learning Outcome of High School Students

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Abstract— *Adversity Quotient is intelligence had by someone in facing difficulties and obstacles in order to overcome. Three type of AQ is quitters, campers, and climbers. The difference between physiology and psychological between male and female students effected to their learning outcome. The research was aimed to know the effect of adversity quotient and gender to learning outcome of high school students on Biodiversity This research was conducted in SMA Negeri 1 Cibinong using 114 students taken by simple random sampling. The method used was ex post facto 3 x 2 factorial design. Data were collected using the instrument of adversity quotient and learning outcome. Data was in a normal distribution and in a homogeneous variance. The results showed that 1) there was a significant difference between the average of student's learning outcome on type quitters, campers, and climbers. Learning outcome of climbers was higher than campers and quitters. 2) There was a significant difference between the average student's learning outcome between male and female students. Learning outcome of female students was higher than male students. 3) There was no interaction between Adversity Quotient and Gender to student's learning outcome on Biodiversity material.*

Index Terms— *Adversity Quotient, gender, learning outcome, students.*

I. INTRODUCTION

Intelligence Quotient or IQ is believed not to be a measure of one's success, then a concept called Emotional Quotient or EQ appears. In this case, EQ is more important than IQ. Many people who have a high IQ but fail, this is because they do not have a good EQ, but not everyone uses the full EQ and potential. Some people have high IQs along with all aspects of emotional intelligence, but a person fails to show their abilities. IQ and EQ are not enough to succeed, the most important factor in achieving success is Adversity Quotient or AQ. Adversity Quotient is the intelligence that a person has in facing difficulties, obstacles and being able to overcome them (1,2).

AQ can play a role in providing a description related to how a person's ability to survive in facing difficulties and being able to overcome them. AQ is very important in the world of education and learning achievement besides IQ and EQ. Intelligence is interrelated and contributes to each other to each other in terms of efforts to achieve

success. This shows that learning does not only require intellectual and emotional intelligence, but it requires intelligence to face obstacles (3,4).

AQ is closely related to the academic value of students (4). AQ that is owned by each student will determine the level of success of learning in one of the biology topics namely Biodiversity. The success of students in the learning process depends on the students in overcoming existing difficulties. In general, strategies to overcome problems will arise when someone has experienced misfortune (5–7).

The development of students currently is quite complex starting from physical, psychological development, both growing from the factors of self, family and social relations. With the level of differences in intelligence, facing obstacles that are owned by each student, of course, there will be competition between students and other students in terms of learning achievement. In the AQ level, there are three types of students facing difficulties and obstacles, namely the type of Quitters who give up when overcoming obstacles, the type of Campers who are satisfied with the results and the type of Climbers who have courage in every effort whatever obstacles they face in achieving success (1,8,9).

The difference in the level of intellectual development had by students is different from other students so that it can influence the process and results of learning. Not only are differences in intelligence facing obstacles, Gender differences have significantly different abilities in responding to difficulties. The results of the study show that Gender will affect Adversity Quotient. When faced with difficulties, female tend to blame themselves and male usually focus on the results of these difficulties (10,11).

Male and female students have different characteristics because of physiological and psychological factors. In addition, psychological factors such as interests, talents, and motivation can affect student learning outcomes (12–14). Based on research there are differences between male and female in biology learning. This is due to various factors that make gender differences in learning (11,15,16). This study aims to determine the effect of Adversity Quotient and Gender on learning outcome of high school students on Biodiversity materials.

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II. METHOD

This study used an ex-post facto method with a 3x2 factorial design. The study population was 114 students in class X of SMA 1 Cibinong. The independent variable in this study was Adversity Quotient and Gender. Dependent variables, namely learning outcomes. The research instrument used the Adversity Quotient instrument and learning outcomes of Biodiversity material. The research data is in the form of quantitative data AQ values and learning outcomes. The prerequisite test analysis used the normality test with the Kolmogorov-Smirnov test and homogeneity test with the Levene test. Data analysis for testing hypotheses using two-way ANOVA with SPSS 16 statistical analysis program Statistical tests were carried out at the 0.05 significance level.

III. RESULT AND DISCUSSION

The results of the study showed that the average value of learning outcomes of students based on the type of AQ and Gender is shown in table 1 below.

Table 1. Average Value of Learning Outcomes of Students Based on Type AQ and Gender

Variable	Category	n	Average Score
Adversity Quotient	Quitters	30	58.87
	Campers	45	68.69
	Climbers	39	79.38
Gender	Male	57	67.89
	Female	57	71.63

From the results of the calculations obtained, the group of Quitter's type students gets an average learning outcome score of 58.87. The group of Campers type students got an average of 68.69 learning outcomes. The Climbers type group got 79.38 learning outcomes. The group of male students got an average learning outcome score of 67.89. The group of female students got an average of learning outcomes of 71.63.

Data analysis was carried out by two-way ANOVA statistical test. Before the data is analyzed, the data normality test and the variance homogeneity test between groups are carried out first. From the calculation obtained that the data is normally distributed and homogeneous. The results of the calculation of data analysis using two-way ANOVA can be seen in table 2.

Table 2. Two-way ANOVA Test Results

Source	F	Sig.
AQ	72,392	,000
Gender	9,153	,003
AQ * Gender	,211	,810

The results of the first hypothesis test show sig <0.05, which is 0,000 <0.05, which means that there are differences in the average learning outcomes of students in the types of Quitters, Campers, and Climbers. Climbers type learning outcomes are higher than Campers and

Quitters. The results of the second hypothesis test show sig <0.05 which is 0.003 <0.05, which means that there are differences in the average learning outcomes of students between male and female students. The learning outcomes of female students are higher than male students. The third hypothesis test showed that there is no interaction between Adversity Quotient and Gender because Sig> 0.05 is 0.810> 0.05 so it rejects Ho, which means there is no interaction between Adversity Quotient and Gender on students' learning outcomes.

The results of the study based on the type of AQ students showed that Climbers type students had higher average learning outcomes than Campers and Quitters. While the average value of Campers type learning outcomes of students is higher than Quitter's type students. The difference in the average value of students' learning outcomes can occur because the influence of the aspects of the AQ of each student is also different. The higher the AQ of the students, the higher the learning outcomes.

The results of this study are in line with research that suggests that students who have high AQ have an important role in facing difficulties or obstacles and will not blame others regardless of the results of their efforts (3,17). Students who have high AQ will be able to face all obstacles and difficulties as responsibilities that must be resolved. Students who have low AQ tend to assume the difficulties and obstacles faced will occur again, so they do not have an optimistic feeling to solve them.

Grouping learning outcomes are also based on Gender because it is one of the factors that influence learning outcomes. This study showed the average value of learning outcomes of male students is lower than female students. This is alleged because there are differences in the learning process of male and female students influenced by information received based on experience and learning process. Learning experiences that have been possessed by students, as well as the ongoing learning process, can encourage students to develop initial perceptions of information (18–21). These first perceptions can then be used in short-term memory and long-term memory to support the learning process that students go through.

Stoltz (2007) argues that the learning process takes place in the front of the brain, the cerebral cortex, which if the information is received repeatedly will move to the brain under the cerebral cortex, the basal ganglia. The more often someone repeats constructive action, the deeper, faster, and automatically goes into long-term memory so that the information received will last long. The ability to remember in female is higher than that of male because of the wider hippocampus in female so that it has better long-term storage memory than male. Therefore female students are easier to learn biology which contains a lot of material that must be understood and memorized (22–25). Education must also develop intelligence, not just memorization, namely by stimulating the brain to think. A



smart brain is able to create something new, find alternatives that people have never thought about, and solve problems completely (26–28).

Differences in male and female learning outcomes are also likely due to psychological differences such as the interest or interest of students in Biodiversity material or biology lessons themselves. Along with research conducted by Noor (2015) that there are differences in the average value of biology learning outcomes of male and female students, namely female students have an average value of biology learning outcomes higher than male students due to psychological differences that can cause differences in interests, and levels intelligence. Female students assume that biology is an important lesson because it relates to everyday life. Information in the form of real problems in the environment around students is also able to make students more interested in taking part in learning activities.

Having an interest in information will give a clue to the brain that the event is an important matter, which must be encoded, and stored so that it can be used again in the future. In addition, the intelligence of each individual is different from one another so that the level of ability to face difficulties and obstacles is also different (30–33). When someone is facing difficulties and obstacles in life, some individuals fail and are unable to survive and others can survive and develop adaptive behavior and those who can deal with difficulties and obstacles better so they can achieve success (34–37).

Learning activities carried out not only transfer knowledge from the teacher to the students but involve various stimuli to produce positive reactions from students. Wathon (2016) argues that passive learning with students only listens to teacher lectures, does not activate the brain of many students so the results are not best. Conversely, active and fun learning such as students are invited to move, a little humor, and actively ask more activating areas of the brain so that a good learning process will affect the learning outcomes. Teachers should be able to determine the proper learning methods, models, and media to support the learning process of students in schools so that students get high learning outcomes both male and female students with the type of AQ Quitters, Campers, or Climbers. The teacher is very important to play a role in developing the AQ of the students because the motivation given by the teacher will increase the self-confidence of the students so that they are able to overcome difficulties and obstacles in the learning process in school (5,39–43).

There is no interaction between Adversity Quotient and Gender because different types of AQ are not influenced by Gender. The hypothesis is rejected because the Adversity Quotient of everyone is different so that the Adversity Quotient of each Gender cannot be a benchmark for determining one's success in receiving lessons and getting high learning outcomes in Biodiversity material. This is in line with research that suggests that there are no differences in the type of AQ between male and female so that both male and female can be categorized in one of three types of AQ, namely Quitters, Campers, and Climbers (9,17,44,45).

IV. CONCLUSION

Based on the results of the study it can be concluded that the Adversity Quotient has an influence on the learning outcomes of students, namely there are differences in the average value of learning outcomes between Quitters, Campers, and Climbers. There is a Gender influence on students' learning outcomes, namely, there is a difference in the average value of learning outcomes between male and female students. But there is no interaction between Adversity Quotient and Gender on the learning outcomes of students. It is recommended for further research to analyze other factors that can influence Adversity Quotient and learning outcomes.

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