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# Cognitive Anxiety and Habits of Mind: A Study of the Interrelationships with Biology Learning Outcomes

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**abstract**

Biology learning outcomes are related to several factors, namely cognitive anxiety and habits of mind. The purpose of this study is to analyze the relationship between cognitive anxiety, habits of mind, and biology learning outcomes. The method of research applied was correlational research with a stratified random sampling technique. The population of this study is all class XII students at four senior high schools in Bandung with a total sample of 145 students. The instruments used were questionnaires and Biology study results report documents. Habits of mind in this study refer to Costa and Kallick's 16 categories of habits of mind as many as 50 questionnaire coverage. Students' cognitive anxiety was measured through a cognitive anxiety questionnaire which consists of 27 statement items based on Cassady and Johnson's Cognitive Anxiety Test. The learning outcomes were obtained from the scores of grade XII National Exam Practice. The instruments were tested for validity, reliability, and readability. It was found that there was a positive relationship between biology learning outcomes and cognitive anxiety ($r = 0{,}045$, $\alpha < 0.025$) as well as between habits of mind and biology learning outcomes ($r = 0{,}326$, $\alpha < 0.025$). No correlation was observed between habits of mind and cognitive anxiety. It can be summarized that habits of mind and cognitive anxiety have a positive relationship with biology learning outcomes. These findings indicate that biology learning outcomes are closely related to cognitive anxiety and habits of mind. Finally, we discuss the relationship of cognitive anxiety and the habits of mind to biology learning outcomes and provide suggestions for further work.



## 1. Introduction

Student learning experiences become opportunities to apply concepts, construct knowledge, and develop skills in school (Kolb, 2014; Dorph et al., 2016; DeWitt & Archer, 2017; Sha et al., 2015). The learning experience directs students toward effective thinking (Santos, 2017; Sternberg, 2003; Butler, 2020; Sari et al., 2020). Marzano (1993) states that the assessment carried out by the teacher must encourage students to think at a higher level and lead to high reasoning abilities. This can be facilitated through student-centered learning. Meaningful learning is also based on the application of learning strategies that can form effective and efficient thinking habits for students. Besides, problem-based learning can develop habits of mind because the

characteristics of the first are related to that of the latter. The student who has the ability to think intelligently is able to solve problems and make conclusions from the results of thinking about these problems (Lucas & Hanson, 2016; Gloria, 2017; Graesser et al., 2018; Dewulf et al., 2020).

Costa and Kallick (2000) found that the prowess of thinking is not only about thinking that is done when facing performance demands, but also with regard to self-sensitivity to opportunities and the tendency to involve oneself in facing problems with full consideration. This theory underlies the advanced thought that the student learning process is inseparable from how students' habits of thinking when getting through a problem, school assignments or school exams. Perkins et al. (2000) explained that the amount of time students for school work will affect their academic learning. If students want to get used to habits of mind, then they have to recall the material learning of every lesson and teachers should simultaneously instill habits of mind and thinking skills. When thinking skills become a goal in learning process, teachers need to carry out learning activities that stimulate cognitive processes.

Teachers have to encourage students to develop positive attitudes towards meaningful learning so that students' understanding is not merely about memorizing and getting scores. The involvement of students in learning to be a good human being in various situations relies on their thinking skills to possess good habits in the learning process. These are known as habits of mind that encourage students to behave productively to discipline and practice their intelligence. Coll et al. (2009) stated that the scientists' ways of thinking, called scientific mind, can be explored through habits of mind, is the aspects of scientific thinking result in consequential action in scientific practice and general behaviour.

According to Costa and Kallick (2008), the characteristics of someone who possess habits of mind towards good thinkers include (1) values, namely choosing patterns of behavior; (2) inclination, namely the tendency to use patterns of behavior; (3) sensitivity, namely awareness in determining the right time to apply a pattern of behavior; (4) capability, namely skills in behavior; (5) commitment, namely consistency to keep trying to improve performance; and (6) policy, namely deciding to apply a pattern of behavior in decision making.

The habituation of attitudes in thinking has been developed by Costa and Kallick (2008) in habits of mind which consists of 16 categories including persisting, managing impulsivity, striving for accuracy, thinking and communicating with clarity and precision, gathering data through all senses, questioning and posing problems, thinking about thinking (metacognition), listening with understanding and empathy, thinking flexibly, creating, imagining, innovating, finding humor, responding with wonderment and awe, applying past knowledge to new situations, taking a responsible risk, thinking interdependently, and remaining open to continuous learning. The development of these 16 categories is expected to lead students to be the ones who have the habit of smart thinking both in the classroom and in their environment. Habits of mind are necessary for students both in their daily life and at certain times such as final exams. A directed, organized, and appropriate way of learning provides opportunities for students to gain knowledge in a meaningful way.

The examinations at school are an inevitable aspect of academic stress for students. There are non-cognitive factors affecting students' academic success, such as study skills, anxiety, and learning motivation. There is a positive relationship between study habits and learning motivation and a small but significant correlation between anxiety and academic success. Researchers consistently have reported a positive relationship between study habits and academic success (Cerbin, 2011; Ergene, 2011; Cerna & Pavliushchenko, 2015; Rabia et al, 2017; Capuno et al., 2019)

Student responses in dealing with problems, in this case, school exams, can vary in before, during, and after exams. Cassady and Johnson (2002) have developed a questionnaire to measure students' level of cognitive anxiety. It focuses on several things including (1) comparing students' self-performance with other students; (2) considering the consequences of failing the test; (3) a low level of confidence in the implementation of the test; (4) excessive worry in carrying out the test; and (5) feeling unprepared for the test.

Cognitive anxiety is experienced by students as an inability to concentrate when doing exams. The inability of students to maintain difficult situations causes students to experience pressure and tend to be stressed which leads to hampering motivation and effort in doing exams. Students' anxiety affects academic performance, test preparation, and the level of confidence in the success of the test. Small but significant negative correlations were found between the worry on test anxiety and academic success. Test anxiety has been found to be related negatively to academic success (Cassady & Johnson, 2001; Faleye, 2010; Cerbin, 2011; Ergene, 2011; Bedewy and Gabriel, 2013; Németh & Bernáth, 2022). Students who experience cognitive anxiety tend to lose of concentration, excessive worry, and loss of attention (Ma, 2020; Yang et al., 2021).

In contrast to these findings, there are two types of attention control, namely positive attention control and negative attention control. When students experience positive attention control, cognitive anxiety is more flexible in the ability to shift the focus of attention. Negative attention control theory explains the opposite that students who experience cognitive anxiety do not have the flexible ability to shift focus, so cognitive anxiety will hinder students' focus on things that are not related to the exam or the main task (Derakhshan & Eysenck, 2009).

The examination as a stimulus in learning process will naturally be responded to anxiety. The effect of the presence of anxiety can be responded as either a positive or a negative attitude in dealing with these challenges. Habits of mind which is intellectual thinking will also be responded by anxiety. This shows that there is a need for further testing regarding students' cognitive anxiety which can have positive and negative impacts. This theory shows that cognitive anxiety, habits of mind, and learning outcomes are interrelated components. Based on this theory, non-cognitive factors affect the students' academic success. Therefore, this research needs to be conducted to prove the importance of these three variables in supporting students learning success. The researcher conducted this study with the aim of analyzing the relationship between cognitive anxiety, habits of mind, and biology learning outcomes.

## 2. Method

The method applied in this study is correlational research which describes the level of correlation between two or more quantitative variables using a correlation coefficient (Fraenkel et al., 2012). Correlation testing is then calculated by utilizing the Spearman Rank Correlation Test. The population in this study were all class XII students at SMAN Kota Bandung. This research was conducted in four schools based on their passing grade ratings ranging from the highest to the lowest; A, B, C, and D. In this study, stratified random sampling was applied in the selection of the samples. The clustering of the schools was determined based on their passing grade of which every cluster was represented by one school which was selected randomly. The total of the sample is 145 students.

Data collection technique was carried out through several types of instruments to capture data regarding habits of mind, cognitive anxiety, and learning outcomes. Habits of mind in this study are defined as a combination of various skills, attitudes, instructions, past experiences, and tendencies in dealing with a problem. The application of habits of mind in classroom learning will direct students to be able to behave intelligently in order to obtain better learning results.

Habits of mind or thinking habits are measured through a questionnaire consisting of Costa and Kallick's 16 habits of mind. This questionnaire consists of 50 item statements. The data were then categorized into three levels, namely low (50-83), medium (84-117), and high (118-150). It is based on the calculation of the category determination test to obtain the score of the habit of mind.

The level of students' cognitive anxiety in this study is a response to students' inability to face a challenge. Cognitive anxiety will interfere the implementation of the tests carried out by students and has an impact on their learning outcomes. Students' cognitive anxiety was measured through a cognitive anxiety questionnaire which consisted of 27 statement items based on Cassady and Johnson's Cognitive Anxiety Test. The data were then categorized into three tiers; low (27-45), medium (46-63), and high (64-81) based on the calculation of the categorization test to gain the score category of the cognitive anxiety.

Biology learning outcomes in this study are academic information obtained through the learning process. They are obtained from the national examination practice scores held by each school. The input data for learning outcomes are then formed into lower, medium, and upper-ranking categories based on the ranking formula developed by Sudijono (2012) as shown in Figure 7.

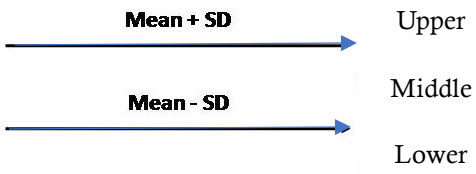


**Figure 1**. The formula to determining ranking of student biology learning outcomes

All the instruments used in this study were assessed and given input by three expert lecturers in the field of biology and educational psychology. The validity, reliability and readability of the instruments were tested to the samples of the research. The validity test was carried out to determine the suitability between the questions and the teaching materials with the goals to be measured or with the grids that were made (Jihad & Haris, 2008). Determining the level of validity of the items was done by correlating the scores attained by students on a question item with the total score obtained. The formula used to test the validity of the items is the product-moment coefficient formula. Instrument reliability is a measure that states the level of constancy or consistency of an instrument. Reliability is calculated by using Cronbach's Alpha Reliability test. Instruments that have been assessed by expert lecturers are then tested for validity and reliability to measure the quality of the instrument quantitatively. The two instrument questionnaires in this study were also required for the readability test. This trial was conducted on class XII students.

## 3. Result and Discussion

### Relationship of habits of mind and learning outcomes

Relevant research related to learning outcomes indicates that teachers and students still focus more on the cognitive domain or in other words that students prioritize mastery of material content only (Faleye, 2010; Sriyati, 2011; Isfiani, 2013) and metacognition (Isfiani & Ekanara, 2022). In contrast, the levels of learning outcomes from the lowest to the highest are content, thinking skills, cognitive tasks that demand skillful thinking, and habits of mind. Based on this theory, it can be seen that material content is placed at the lowest level of learning outcomes.

Habits of mind are the highest learning achievement results compared to material content (Costa & Kallick, 2008),

Student learning outcomes are something complex. Many factors affect learning outcomes, such as internal and external. The first includes environmental and instrumental while the latter includes physiological and psychological. All factors influence each other in students and can be proven quantitatively in the form of a scale of learning outcomes (Trigwell & Prosser,1991; Djamarah, 2002). Acquiring grades as a result of learning can provide quality standards for students within the scope of the class, school, or nation. As is the case with the ranking of schools in the city of Bandung, which uses standards from passing grades, this is also an effort to provide school achievement standards and as a mapping of education quality standards in the city. In this study, the four schools that were used as research locations were representatives of each level in the order of schools that had the highest passing grade to the lowest, namely schools A, B, C, and D. This can also be seen from the learning outcomes in Table 1 that school A has the highest average learning outcomes compared to other schools. Based on the data in Table 1. the attainment of an average score of students' habits of mind yields 115 (77%). The Acquisition of learning outcomes through national examination training is known to have an average value of 61.34.

**Table 1**. Average score of students' learning outcomes and habits of mind

| School | Learning Outcomes | Habits of Mind |
|---|---|---|
| A | 68,33 | 116,52 (78%) |
| B | 67,14 | 117,95 (79%) |
| C | 57,77 | 109,22 (73%) |
| D | 52,12 | 114,97 (77%) |

The sample of this research is class XII students. As explained by Costa and Kallick (2008) that habits of mind appear as habits in thinking and acting that can help students deal with uncertain situations. Thus, class XII students need smart study habits and strategies in order to deal with these challenges to gain the best results. Implementation of the national examination for class XII students will be interpreted differently. Some students were ready to do exams with careful preparation such as developing study strategies and studying diligently, but others prepare the exam without extra efforts. This can be seen from the scores of habits of mind obtained by the students.

Figure 2 provides information that the national exam practice scores range from the lowest (30) to the the highest (80). The distribution of the data does not appear to conform to the normal curve, such as the range of values between 60-65 which has a far greater number of students than the other scores. Other data show that scores in the 53-60 range are obtained by students in a much smaller number than the scores around them.

Likewise, the distribution of scores of habits of mind for class XII students shows a data distribution that does not resemble a normal curve (Figure 3). The range of scores of habits of mind is in the range of scores from 80 (low category) to 142 (high category). The distribution of this score when viewed from the category shows that the level of habits of mind of students spreads from low, medium to high. Even so, the relatively low habits of mind are presented by a relatively small number of students. Most students are in the category of medium and high level habits of mind.

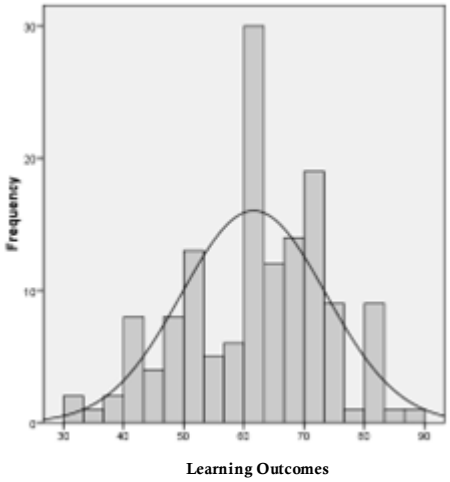


**Figure 2.** Students' biology learning outcomes distribution

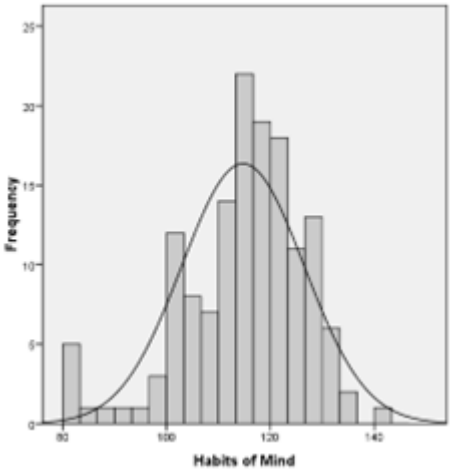


**Figure 3.** Students' habits of mind distribution

Correlation testing is then calculated by using the Spearman Rank Correlation Test and the results are as shown in Table 2. Learning outcomes and habits of mind in class XII students have a relationship of 0.326 with a significance level of 0.000 which indicates that there is a significant relationship ($\alpha < 0.025$) with the direction of positive relationship. The direction of the relationship from the correlation results explains that the higher the students' habits of mind, the higher their learning outcomes. The correlation between the two yields significant results. This means that there is a significant relationship between learning outcomes and habits of mind in class XII students. Several factors are clearly related to learning outcomes and the habituation of habits of mind, including the role of the teacher in carrying out learning (Uiterwijk-Luijk et al., 2019) and the use of digital technology in learning (Blundell et al., 2020).

**Table 2**. Spearman correlation test between biology learning outcomes and habits of mind

| | **Biology Learning Outcomes and Habits of Mind** |
|---|---|
| Correlation coefficient | 0,326 |
| Sig. (2-tailed) | 0,000 |
| N | 145 |

The results of the correlation in class XII students are related to the theories of other researchers. There is a significant relationship between learning outcomes and habits of mind in class XII students. Seeing the characteristics of students and their learning conditions, the demand for evaluation of learning outcomes in class XII students is different from other grade levels, class XII students who preparing for the national examination. Based on the theoretical study and research results above, it can be explained that there are factors that can influence the results of research on learning outcomes with habits of mind, namely learning readiness, learning demands, and learning environment. Students must work in a rich and responsive environment if they want to apply the habits of mind in their life. They need access to a variety of resources that they can manipulate, experience, and observe. The amount of time on task affects attudents' academic learning and also acquire thinking skill (Perkins et al., 2000; Ekanara, 2018). A study of habits of mind in engineering stated that needed to carry out the innovative pedagogies developing engineering habits of mind (EhoM), such as problem based-learning could facilitate students and teachers to develop habits of mind, but it was no need to add more content to the curriculum. Teachers need to build up students' understanding of the relevant habits of mind so that they recognize and apply those habits when students are using them (Lucas & Hanson,

2016). The results of the research show that habits of mind can be developed through experimental activities in the laboratory (Ubaidillah et al., 2022).

Marzano (1997) suggests that students who learn and apply habits of mind will experience an increase in learning the material content more effectively and efficiently. Habits of mind can also be applied with repeated assignments. Habits of mind will be shaped through formative assessments in the form of assignment strategies. Assignments that can form habits of mind in students are repetitive ones. If the assignment is only done once, then the process that occurs in students is only limited to readiness to act which is called an attitude, not leading to a behavior or habit, yet. Through continuous training methods, it can change the attitude to become a habit so that students no longer perceive learning as a burden, but as a necessity. The amount of time on task affects students' academic learning and also acquiring thinking skills (Perkins et al, 2000; Sriyati, 2011; Ekanara, 2018). Those theories suggest that study habits are positively related to learning outcomes (Ergene 2011; Sriyati, 2011; Gloria, 2017).

The assignments given by the teacher in class learning are sometimes responded by students in a hurry. Students are more worried if their assignments are not completed to be collected rather than checking back on the answers given (Sidhartha, 2005). This is also related to one of the categories of habits of mind, namely thinking and communicating with clarity and precision. The category of habits of mind means that students are able to express every idea orally and in writing with understanding and clarity. In learning, students can apply it through discussion so that it can provide space for students to put forward arguments. This is in line with a research conducted by Ekanara (2018) that reasoning ability can make a significant contribution to argumentation skills because when someone forms an argument, he will put forward the reason at the initial stage as a form of reinforcement so that his argument can be accepted by others. Other research also proves that the interaction of student responses in online discussions shows that students apply communication, collaboration, critical thinking, and innovative and creative thinking skills (Perkins et al., 2000; Maryuningsih et al., 2020; Malik & Ubaidillah, 2020).

Experience in the learning process will train students to remember good thinking habits in certain situations so that in the end students are able to apply habits of mind by showing the characteristics of value, inclination, sensitivity, capability, and policy. Additionally, the other research of habits of mind found that scientific habits of mind plays an important role at decision making through informal reasoning via Socio-scientific Issue in context. Socio-scientific issues in daily life can trigger scientific habits of mind and scientiifc literacy levels. Consequently, the improvement in scientific habits of mind and attitudes towards sosio-scientific issue require a longer period (Wiyarsi & Calik, 2019; Calik & Karatas, 2019).

**The relationship between cognitive anxiety and learning outcomes**

Anxiety arises when something becomes an obstacle, a challenge, or something that is considered a difficult problem. Jacofsky et al. (2013) stated that anxiety is shown in varying intensities, namely anxiety is normal at low levels and pathological at high levels. Anxiety develops from conflicts that occur in the personality structure, namely between the id, ego, and superego. Anxiety appears as psychic energy that is present in the id area while the ego will control the anxiety. Furthermore, the superego will assess whether the anxiety includes a negative or positive attitude.

Anxiety is a response from each student to a problem that is specifically related to learning. According to Cassady and Johnson (2002), the type of cognitive anxiety is the one that is most consistently found to be negatively related to student abilities. Cognitive anxiety arises from the occurrence of disturbances in students' minds. Students who experience cognitive anxiety tend to

experience loss of concentration, excessive worry, and impaired attention. Based on the research results, the mean score of cognitive anxiety level in class XII is known to be 56.17 (69%). Table 3. shows research data regarding cognitive anxiety scores broken down by each school. The value of learning outcome ranges from 52 to 68.

**Table 3**. Average score of student' learning outcomes and cognitive anxiety

| School | Learning Outcomes | Cognitive Anxiety |
|---|---|---|
| A | 68,33 | 57,18 (71%) |
| B | 67,14 | 56,43 (70%) |
| C | 57,77 | 56,77 (70%) |
| D | 52,12 | 54,79 (68%) |

The level of the biology learning outcomes category is mostly moderate which is yielded by 101 out of 145 students (69.66%). This result is quite similar to that of cognitive anxiety in which 114 of 145 students recorded moderate category with the proportion of 78.62%. The lowest percentage of learning outcomes is in the high category of 7.58% and cognitive anxiety is in the low category of 7.59%.

**Table 4**. Percentage of learning outcomes and cognitive anxiety categories

| Category | Learning Outcomes | Cognitive Anxiety |
|---|---|---|
| Lower | 22,76% (n=33) | 7,59% (n=11) |
| Middle | 69,66% (n=101) | 78,62% (n=114) |
| Upper | 7,58% (n=11) | 13,79% (n=20) |

Data distribution of cognitive anxiety scores is quite close to the normal curve as shown in Figure 4. The highest frequency of students is at a score of 55-58 with a frequency of up to 30 students. The lowest score on cognitive anxiety is 36 with the highest score being 71. The cognitive anxiety scores in class XII students are spread evenly to resemble a normal curve. When compared with the distribution of learning outcomes (Figure 2) and habits of mind (Figure 3), it can be seen that the distribution of scores on cognitive anxiety is spread almost evenly and resembles a normal curve.

Based on the results of the research on learning outcomes and cognitive anxiety in Table 4., it can be seen that students anxiety for each school is quite aligned with the school's ranking. This means that schools with high ratings show high cognitive anxiety outcomes as well. The correlation test for class XII showed that there was a significant positive relationship between learning outcomes and cognitive anxiety. students of class XII certainly have a problem that preoccupies students' minds, namely going to face the national examination. Students' anxiety in doing exams is included in the type of partial anxiety or state anxiety (Bolger, 1990). This is because the anxiety is temporary and specific.

The factor of implementing exams and passing grade standards in class XII students is creating an external control center for students. In the world of psychology, there is a theory about the internal and the external control center. When someone has a strong desire to get something, for example, good grades, appreciation, or praise from others, this is known as an external control center. These conditions cannot develop their personal which is known as an internal control center. Research has repeatedly shown that children, adolescents, and adults who have strong external control centers are more likely to have anxiety and depression. They become anxious because they have little or no control over their goals, and become depressed when this feeling of helplessness becomes too great (Alexander & Sandahl, 2022).

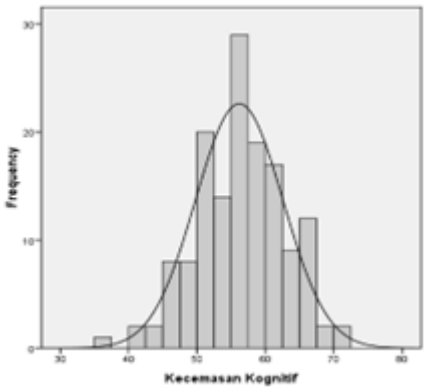


**Figure 4**. Student' cognitive anxiety score distribution

Testing the correlation between the results of the biology national examination exercise and cognitive anxiety levels obtained a correlation result of 0.045 with a positive relationship direction and a significant level of 0.000 ($\alpha < 0.025$) as shown in Table 5. This figure shows that the correlation is in the very weak category and related in a meaningful (significant) way. The relationship between the two has a positive direction, which means that the acquisition of learning outcomes as well as the level of cognitive anxiety is low. The significant results of the correlation test show that there is a significant relationship between learning outcomes and cognitive anxiety in class XII students.

**Table 5**. Spearman's correlation test between biology learning outcomes and cognitive anxiety

| | **Learning Outcomes and Cognitive Anxiety** |
|---|---|
| Correlation coefficient | 0,045 |
| Sig. (2-tailed) | 0,000 |
| N | 145 |

The wide range of biology exam material may be a challenge for students who perceive it as a positive control so that it will have an impact on the efforts in obtaining good results. Cognitive anxiety is like two sides of the same coin. So, the anxiety experienced by students will vary in the form of positive responses or negative responses (Mayer, 2020; Yang et al., 2021). Based on the data of this study, students' cognitive anxiety is-a positive response. These results could be seen from the correlation data between learning outcomes and cognitive anxiety, namely that there is a positive relationship between cognitive anxiety and learning outcomes. This relationship means that high anxiety will have an impact on high learning outcomes or in other words, the better the cognitive anxiety experienced by students, the better the learning outcomes will be. However, the results of this correlation are contrary to the results of existing research that cognitive anxiety is negatively related to learning outcomes (Faleye, 2010; Ergene, 2011; Cerbin, 2011; Bedewy & Gabriel, 2013). Hembree (1988) reported that negative thinking of cognitive is related to examinations. When some students underestimate or overestimate their abilities, it may lead to a failure. This is often accompanied by higher anxiety levels and poor performance.

Every human being experiences anxiety with different intensity, frequency and duration. Anxiety arises when something becomes an obstacle, a challenge, or something that is considered a difficult problem. According to Jacofsky et al. (2013), anxiety is shown in varying intensities, normal at low levels and pathological at high levels. Anxiety develops from conflicts that occur in

the personality structure, namely between the id, ego, and superego. Anxiety appears as psychic energy that is present in the id area while the ego will control the anxiety. Furthermore, the superego will assess whether the anxiety includes a negative or positive attitude.

Another study conducted by Miguel (2012) explained that the focus is not only the effects of anxiety on learning outcomes but also on goal setting. Goals are considered to be an indirect measure of motivation. Students who have high difficulty and clear goals associated with high motivation and good performance on learning process. Besides, the easy and unclear goals associated with low motivation and poor performance. In addition, students' good motivation is present when the task goal is clear and difficult. Students who are motivated by their task or exam because of value for achieving the important goals extrinsically motivated (Husman & Lens, 1999; Eysenck & Derakshan, 2011).

**Table 6**. Average score of student' habits of mind and cognitive anxiety

| School | Habits of Mind | Cognitive Anxiety |
|---|---|---|
| A | 116,52 (78%) | 57,18 (71%) |
| B | 117,95 (79%) | 56,43 (70%) |
| C | 109,22 (73%) | 56,77 (70%) |
| D | 114,97 (77%) | 54,79 (68%) |

Data in Table 6. shows a comparison between habits of mind and cognitive anxiety in class XII students. The lowest average score of school habits of mind is 109.22 (moderate category) and the lowest cognitive anxiety average score is 54.79 (medium category). Table 7 demonstrates the correlation data between habits of mind and cognitive anxiety with a correlation coefficient of -0.115 and a significant level of 0.148 ($\alpha > 0.025$). This can be interpreted that there is no significant relationship between habits of mind and cognitive anxiety.

**Table 7**. Spearman correlation test between habits of mind and cognitive anxiety

| | Habits of Mind and Cognitive Anxiety |
|---|---|
| Correlation coefficient | -0,115 |
| Sig. (2-tailed) | 0,168 |
| N | 145 |

Another theory that is consistent with the correlation data is explained by Derakhshan and Eysenck (2009) that there are two types of attention control, namely positive and negative attention control. When students experience a positive attention control, the cognitive anxiety is more flexible in ability to shift the focus of attention . Negative attention control theory explains the opposite-that students who have cognitive anxiety do not possess the flexible ability to shift focus, so that cognitive anxiety will hinder students' focus on things that are not related to the exam or the main task. This reveals that the anxiety experienced by students will vary in the form of positive response anxiety (eustress) or negative response anxiety (destress). Gurung et al. (2009) explained that high anxiety leads students to abandon their goals rather than fail. Performance anxiety is tripled by the threat of being judged negatively. This dynamic establishes tension between the desire to do what is expected and the fear of being publicly berated by teachers. The struggle between the desire to perform and the need to protect one's ego is often tremendeous.

The lower learning outcomes in students who are anxious when exams are caused by inadequate study habits or lack of test skills. Hembree (1988) explained that the test anxiety does not lead to poor performance, on the contrary, it results in good performance. Awareness of poor past performance actually causes anxiety. Habits of mind which is an intellectual mindset in

facing a challenge will also respond with anxiety. Students who have a good habits of mind can manage a challenge to become a success. In addition, students also need anxiety to foster motivation and effort to go through every challenge.

## 4. Conclusion

To sum up, habits of mind and cognitive anxiety will affect student learning outcomes indirectly. To advance this line of research, we argue that it is important to understand the relevant of habits of mind and cognitive anxiety incorrelation with learning outcome. Applying habits of mind also requires the role of cognitive anxiety to enable students perceive every difficulty as a challenge that must be overcome with good effort so as to get the best results. The findings of this study indicate that the lower the learning outcome, the lower the level of cognitive anxiety. Furthermore, the higher the score of habits of mind, the higher the learning outcomes. Future studies are needed to further explore habits of mind in the classroom by adding some instruments like an observation instrument to support quantitative data.

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