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The Correlation of Student Metacognitive Awareness with Academic Procrastination in Biology Learning

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ABSTRACT

This study aims to measure student metacognitive awareness, student academic procrastination and in correlation in biology learning at State Senior High School 1 Nalumsari. This research method use quantitative approach of correlational research using a questionnaire. Data acquisition was taken using a research instrument, Metacognitive Awareness Inventory (MAI) and Procrastination Academic Scale Student (Pass). Research data analysis using the Pearson Product Moment correlation test technique. The results of the study revealed the level of student metacognitive awareness in biology learning categorized as a proportion of lack with a scores between 52-91 for 1%, enough with scores between 92-131 for 4%, medium with scores between 132-171 for 62%, and 33% high score. The level of student academic procrastination is found 11% as sufficient with scores between 78-111, 70% moderate with scores between 112-145 and 19% high with scores between 146-176. The correlation between students' metacognitive awareness and academic procrastination students obtains Pearson Correlation -0.211 < R-table 0.19 (Sig.0.05) and Significance Value (2-tailed) 0.029 < Sig. 0.05. It was concluded that the two variables correlated significantly in the negative direction. So, if the amount of student metacognitive awareness increases will be followed by a decrease in academic procrastination behavior, and vice versa.

Keywords: metacognitive awareness, academic procrastination, biology learning.

INTRODUCTION

Adaptation to changes in pursuit after the decline in the Covid-19 case in the world of education does not always run smoothly with a short time, Therefore, in the implementation of changes in online learning patterns (in the network) and offline learning (outside the network) various problems arise related to student learning activities.Good time settings and appropriate learning strategies are needed to avoid the patterns of bad habits that arise when a student completes his academic work, such as a procrastination that results in inhibiting success in learning (Nunuk Puji Astuti, 2019).

This opinion is supported by research data conducted by Schouwenburg that 70% of school -age students do the procrastination. In addition, in research data on academic procrastination behavior conducted by Solomon & Rothblum revealed that 50% of school students perform procrastination of assignments at least half of their work -working time and

38% of school students perform academic procrastination with a rare period(Rothblum, 1986). Research conducted by Ghufron also revealed data that 20% - 70% of school -age students made a delay or procrastination of their academic assignments. The data that has been stuck into researcher support data to examine variables about academic procrastination behavior in high school students and its relation to student metacognitive awareness as an aspect of supporting cognitive processes in learning, especially scientific learning based on science and has a process and product dimensions (Çıkrıkcı, 2016).

Pre-riset conducted, researchers get an overview of the problems that exist in the research locus that students often do the procrastination of the assignments until the final time limit of collecting tasks so that the tasks in the material sub-chapter are piled up due to the delay in doing the task of the previous material sub-chapter in biology. Based on the problems found, in some high school students, procrastination behavior more often appears that are reflected in behavior such as difficult to understand the material delivered . This happened because of changing student learning activities, that also happened to students at State Senior High School 1 Nalumsari.

Student learning activities are oriented towards objectives to gain success in learning. Success in learning, especially in the 21st century, one of which is related to the cognitive achievement of good students. There are 4 categories regarding the ability of students as outputs of education oriented to the ability of the 21st century, including *skills for living in the world, way of working, tools for working dan way of thingking* yang meliputi *creativity, inovation, problem solving, critical thingking, decision making,* dan *metacognition skill.* Cognitive achievement is supported by self -awareness to regulate his ability to think called metacognitive awareness.

Metacognitive awareness is a condition where a student is aware of his ability to make arrangements on his own way of thinking, including time settings and strategies for learning effectively. The metacognitive aspect is one of the factors that must be considered from students to support various good learning activities. Achievement of good learning activities becomes an indicator of success in the learning process including in biology subjects. Biology lessons according to K-13 (2013 Curriculum) are currently more demanding students in understanding the concept of biology that is supported by regular thinking skills and problem solving skills. Good metacognitive abilities are related to regular thinking skills and problems solving problems.

Based on the results of research on students' metacognitive awareness conducted by Eni Yunanti stated that students who can minimize disturbances and have effective learning strategies or good metacognitive abilities will achieve success in learning. Success in learning is related to good learning activities, such as avoiding academic procrastination behavior (Eni Yunanti, n.d.).

Research Gaps In the study of özkan Çıkrıkcı who sees the relationship between the procrastination variable with metacognitive awareness in the general learning process, while this research is in the learning of biology holistically. Likewise in the study of Nelia Afriyeni

who examined the relationship of self -efficacy with the procrastination with the scope of learning in general not the relationship between student metacognitive awareness. In addition, the results of Nunuk Puji Astuti's research which revealed that the ability of metacognition in biology learning needs to be increased to have a gap in research in this study which lies in the independent variables related to the academic procrastination of students where the variable is examined in relation to more metacognitive awareness not only in the results Student learning.

In addition, the research gap from Rizky Sandy's research is found in the academic procrastination variable that is not examined. Whereas Valeria de Palo's research has the same variable as this research with the existing research gap in the research concept where the two variables are associated with holistic student learning strategies and research subjects in the form of non -high school students. Novelty of this research is found at the gap research. Research like this mostly chose the subject of students but still rarely examined high school students, especially in science -based subjects such as biology, in addition, the novelty of research also lies the two variables studied where photographing students' development in accordance with the dynamics of the changing times at this time and research This kind of has never been done on the research locus.

METHOD

This research uses a quantitative approach with the type of research is correlational research. The study time was conducted in the even semester with biology learning materials that are being taught in class X MIPA is a plantae chapter in seed plants, nail plants, moss plants and plants. In class XI MIPA biological material taught is the chapter of the section with the sub -chapter of the respiration organs, the respiration process and the respiratory system disorder. Whereas in class XII MIPA Biology material being taught is the genetic chapter and inheritance of the nature of the Mendel Legal Lesson Sub -Chapter, Mendel Legal Deviations, Mutations and Genetic Disorders. The research location is State Senior High School 1 Nalumsari, Jepara Regency with a research population of all students majoring in Mathematics and Natural Sciences (MIPA) State Senior High School 1 Nalumsari Academic Year 2021/2022 totaling 323 students, while the research sample was taken by cluster random sampling totaling 108 students from 3 levels clusters taken randomly.

Research data collection using 2 instruments that have passed the readability test or pre-testing in 34 students outside the research sample and the validation of the instrument by the expert. The instrument, namely Metacognitive Awareness Inventory (MAI), is adapted from Schraw & Dennison and Procrastination Academic Scale Student (Pass) Solomon & Rothblum(Rothblum, 1986).Research data analysis using the Pearson Product Moment correlation test technique, with the research prerequisite test is the normality test and linearity test to answer the formulation of the research problem, whether there is a correlation between student metacognitive awareness and academic procrastination in biology learning at the locus research. And the result of the research write down in 4 scoring categories for the

Metacognition and academic procrastination, lack, enough, medium and high categories (Nunuk Puji Astuti, 2019).

With the Null Hypothesis (H_0) is there is no significant correlation between student metacognitive awareness and academic procrastination in biology learning in State Senior High School 1 Nalumsari and the main hypothesis (H_1) is a significant correlation between student metacognitive awareness and academic procrastination in biology learning in high school Negeri 1 Nalumsari.

RESULT AND DISCUSSION

There are 2 aspects on the MAI scale that make up 8 indicator components. These aspects are the knowledge of cognition, declarative knowledge, procedural knowledge and conditional knowledge, while aspects of regulation of cognition include the ability in planning, regulating information, monitoring, identifying problems and evaluations (McCloskey, n.d.). The highest student achievement is in the aspect of cognition settings, namely the indicator of information settings with a percentage of 60% which indicates that the ability of students to manage, summarize, elaborate and set focus when learning.

Table 1. Proportion of metacognitive awareness level

Category	Range	F	Precentage%
Lack	52 – 91	1	1%
Enough	92 – 131	4	4%
Medium	132 – 171	67	62%
High	172 – 208	36	33%
Average		163,4 (Medium)	

The following is a graph of the acquisition of each indicator contained in the MAI instrument in this study.

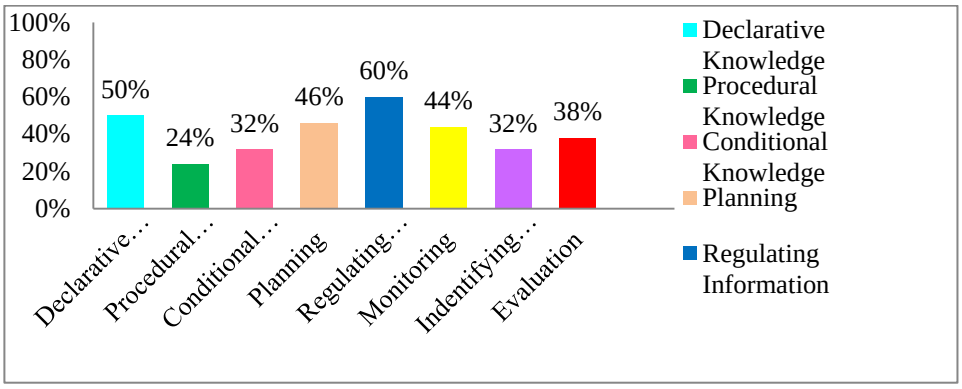

Figure 1. Percentage of respondent respondents metacognitive awareness variables

The level of academic procrastination behavior of students measured through the most instrument of PASS included in the medium category with a percentage of academic

procratization behavior by 70%, followed by the percentage of academic procrastination behavior in the height of 19%and the rest included in academic procrastination with a sufficient level of 11%.

Table 2. Proportion of academic procrastination level

Category	Range	f	Precentage %
Lack	44 – 77	0	0%
Enough	78 – 111	11	11%
Medium	112 – 145	76	70%
High	146 – 176	21	19%
Average		123,2 (Medium)	

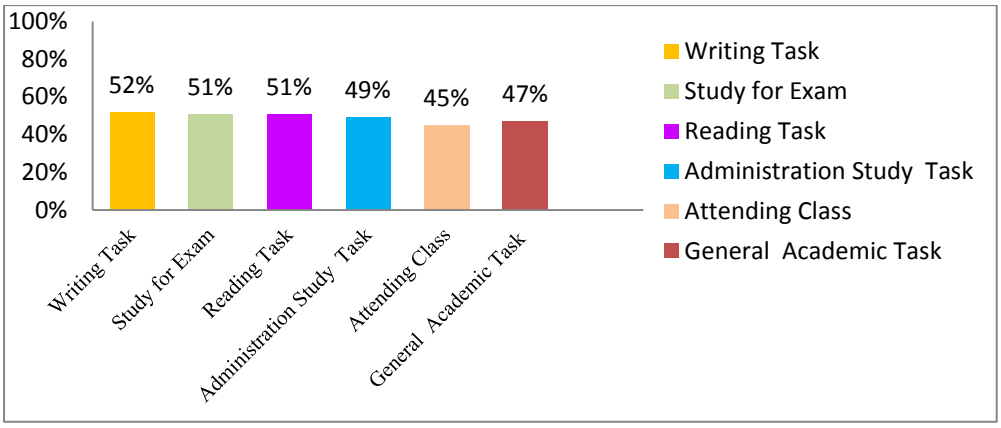

Figure 2. Presentation of respondent respondents academic procrastination variables

Level of Academic Procrastination Behavior Students of State Senior High School 1 Nalumsari, based on data obtained from the field stated that student procrastination behavior is mostly carried out in writing tasks such as making a summary, chart or map of the concept of biology material with a percentage of 52%. Whereas in other assignments such as learning assignments for exams, students do the procastation with a proportion of 51%. Students do the procrastination to learn by buying time until the last second before the exam or test is carried out. The task of reading material, the task of completing learning administration, attending classes and academic assignments in general has a percentage of 51%, 49%, 45%, and 47% respectively.

Meanwhile, in part 2 of the instrument pass measures the reasons for academic procrastination behavior obtained data with the largest percentage, namely the feeling of rebellion or violating the rules of 31%, then the reason is due to a feeling of laziness with a percentage of 29%, the reason for taking 25%risk and easily stressed because Biological tasks with a percentage of 25%. While the reasons for perfectionism 23%, lack of confidence 20%, fear to succeed 22%and overwhelmed by regulating a time of 21%. The reason always depends on assistance of 20%, the reasons for the influence of peers 19%, anxiety on the 13%evaluation

and the reasons for difficulty taking 11%and low self -regulation or indecisive feelings in yourself with a percentage of 11%.

Table 3. SPSS output Pearson Product Moment Correlation Test

		Metacognitive Awareness	**Academic Procrastination**
Metacognitive Awareness	Pearson Correlation	1	-0.211(*)
	Sig. (2-tailed)		0.029
	N	108	108
Academic Procrastination	Pearson Correlation	-0.211(*)	1
	Sig. (2-tailed)	0.029	
	N	108	108

* Correlation is significant at the 0.05 level (2-tailed).

The Pearson Product Moment Correlation Test Output can be interpreted that the correlation test of students' metacognitive awareness variables with the academic behavior variables of the academic procrastination of students of State Senior High School 1 Nalumsari correlates significantly with negative grades. In Pearson Correlation, the R Coper value is obtained (Pearson Correlation) -0.211 < R table 0.19 (Sig. 5%) and Significance Value (2-tailed) 0.029 < 0.05. The value of Pearson Correlation or Rcount is negative, meaning the correlation or relationship between the two variables is contrary to each other.

Correlation between students' metacognitive awareness variables with the opposite academic procrastination shows that if the level of student metacognitive awareness is low, the level of academic procrastination is increasing and vice versa. These results are in accordance with the theory that states a good metacognitive awareness of a student, can be influenced or related to student behavior in academic activities, one of which is the behavior of delays or academic procrastination.

Another aspect of cognitive regulation includes indicators of planning, monitoring, strategy, and evaluation abilities. Cognitive regulation in students describes how well they can organize, plan, monitor, and identify problems in their learning. A student's metacognitive awareness in the aspect of cognitive regulation meets good criteria if they demonstrate increasing understanding and progress in learning. This aspect of metacognitive awareness is more related to the learning process or the understanding students gain rather than the final learning outcomes.

Another aspect of metacognitive awareness is the student's cognitive knowledge, which consists of declarative knowledge (50%), procedural knowledge (24%), and conditional knowledge (32%). These percentages indicate that students' abilities measured in procedural knowledge indicators have the smallest percentage compared to other indicators. The declarative knowledge component reflects the level of knowledge among students at SMA

Negeri 1 Nalumsari regarding their own abilities and factual knowledge of Biology subject matter. The procedural knowledge component describes students' understanding of how each stage of learning activities is carried out, while conditional knowledge represents their awareness of when and why a particular learning strategy is used.

The post-Covid-19 learning adaptation period, which left students uncertain about their learning patterns for nearly two semesters, was particularly challenging since students' achievement motivation is crucial in supporting their initiative, perseverance, effort, discipline, and creativity in learning. In other words, achievement motivation directly influences students' metacognitive awareness. Metacognitive awareness, influenced by achievement motivation, can be linked to the theory in Masrura's research, which states that several factors underlie a student's level of metacognitive awareness, such as their participation in learning activities, opportunities to express their thoughts, and internal factors like memory retention, the ability to find effective learning strategies, and psychological aspects such as achievement motivation.

Apart from internal factors like declining achievement motivation, the metacognitive awareness of students at SMA Negeri 1 Nalumsari is also influenced by external factors such as family support and peer influence. During online learning, family support was essential in several aspects, including providing a conducive learning environment, parental emotional support to prevent academic stress, and ensuring access to proper learning facilities. Additionally, peer influence on achievement motivation, which relates to supporting metacognitive awareness, can also be a contributing factor to low metacognitive awareness levels. High school students in their late adolescence are highly influenced by their environment, especially peers, as they are still unstable in discovering their identity. Peer influence can easily impact them, whether positively or negatively including their self-control in thinking activities for academic success. Several underlying factors contribute to the level of academic procrastination among students such as fear of making mistakes, Laziness, Misconceptions, and Lack of self-acceptance, peer influence and family.

Students with good metacognitive awareness will have more ability to plan, arrangement, assessment, self -monitoring when the cognitive process runs to achieve quality understanding of the learning process. Student procrastination behavior that tends to have a bad impact related to the behavior of students themselves. Like some of the reasons contained in the pass to measure the academic procrastination of students apparently prove that students do the procrastination due to laziness and the desire to violate the rules made, such as the deadline for gathering tasks. These factors are part of the internal factors of students that affect the behavior of their academic procrastination. The reasons for academic procrastination behavior are also related to academic stress that students may experience when they find difficult biological material such as cell material or genetics. The results of the study are in line with the study conducted by Schraw which states that academic stress due to the task can bring students' habits to do the procrastination.

Other causes behind the level of student procrastination are the factors of students' psychological conditions such as anxiety, feelings of boredom when learning, motivation to

achieve and lack of self acceptance. In addition, other factors that influence student procrastination behavior are found in external factors such as the influence of friends, patterns of parenting and family support for learning success and inadequate learning facilities so that it triggers a sense of laziness or even the concept of understanding of the material. The factors that determine the level of prokrstination behavior are in accordance with the theory conveyed by Ghufron, namely, the two main categories of academic procrastination factors are internal factors, which are included in the personal conditions of students and external or external factors of students such as the environment and the influence of others.

Awareness of good metacognitive students will bring good quality learning, which is very necessary in learning biology to fulfill process and product skills. A student with good metacognitive awareness will certainly have knowledge and arrangements for his cognitive processes, which helps these students avoid bad behavior such as academic delay or academic procrastination that is detrimental. These results are in harmony with the research conducted by Ozkan regarding the pattern of relationships between academic procrastination with metacognitive awareness and student academic stress. Where the results of the study revealed that there was a negative correlation between academic procrastination with metacognitive awareness and there was a positive correlation between academic procratization and academic stress experienced by students.

Based on the description shows that students' metacognitive awareness correlates negatively or contrary to academic procrastination behavior. In other words the better the metacognitive awareness of students has, the more reduced behavior of academic procrastination that is detrimental.

CONCLUSION

The conclusion of this article has 3 objectives, the first level of student metacognitive awareness in biology learning categorized of lack category score was held by 1 student with a scores between 52-91 accounting for 1%, enough category score was held by 4 student with scores between 92-131 accounting for 4%, medium category score was held by 67 student with scores between 132-171 accounting for 62%, and 33% high category score was held by 36 student. Second, the level of student academic procrastination is found 11% categorized as sufficient was held by 11 student with scores between 78-111, 70% moderate category scores was held by 75 student with scores between 112-145 and 19% high category score was held by 21 student with scores between 146-176. Third, the correlation between students' metacognitive awareness and academic procrastination students obtains Pearson Correlation -0.211 < R-table 0.19 (Sig. 0.05) and Significance Value (2-tailed) 0.029 < Sig. 0.05. It is concluded that the two variables are significantly correlated with a negative direction. So, if the amount of student metacognitive awareness increases will be followed by a decrease in academic procrastination behavior, and vice versa.

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