Profile of Metacognitive Awareness and Motivation of Biological Education Students of Riau Islamic University in Online Learning During the Covid-19 Pandemic

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Abstrak. This study aims to determine the profile of metacognitive awareness and motivation of biology education students at the Islamic University of Riau. This type of research is survey research. The research population is all students of biology education at the Islamic University of Riau as a hypothetical population. The research sample amounted to 83 students. 27 students 2 semester, 15 students 4 semester and 41 students 6 semester. Data collection used a metacognitive awareness scale and an intrinsic motivation scale. The results showed that the metacognitive awareness of Biology Education Study Program students from the survey data showed that most or 49.39% of students were in the Still Very At Risk (MSB) category. There are no more students who fall into the category of underdeveloped metacognitive awareness (BBB). As many as 18.07% of Biology Education students have entered the category of starting to develop (MB). As many as 24.09% have well developed metacognitive abilities so that they are in the Well Developed (OK) category, and 8.43% are in the very well developed (super) category. Student motivation of Biology Education Study Program from survey data shows that a small percentage or 1.20% of student motivation is still in the very poor category. A total of 33.73% are still in the less category. Most or 39.76%. student motivation is still in the sufficient category. A total of 21.69% were in the good category and 3.62% had motivation in the very good category.

Key words: Metacognitive Awareness, Motivation, Online Learning, Biology Education

INTRODUCTION

The COVID-19 pandemic disrupts the learning process, both at the elementary level and at the university level. In December 2019, a new coronavirus (otherwise known as COVID-19) was identified in Wuhan, China, and quickly spread around the world, leading the World Health Organization to declare it a global pandemic. The pandemic has caused major disruptions in many sectors including education. To contain the spread of COVID-19 and to ensure the health conditions of the public, staff members, and students, several measures must be taken such as washing hands, wearing masks, maintaining physical distance and working from home. These measures affect the functioning of educational institutions globally.

Unlike other disasters such as earthquakes and tsunamis where schools were temporarily suspended, the COVID-19 pandemic forced physical school facilities to close, but teachers are expected to continue online remote teaching using technology (Hira, A., & Anderson, E, 2021) This is unique today, the wider use of access to computers and the internet than ever

(Child Trends, 2018), the availability of technology for online teaching and learning (Emmanuel, 2018; Meticulous Research, 2020; Wan, 2019).

According to the UNESCO IESALC (2020) report, most schools and university schools closed their gates causing more than 1.57 billion study students to be affected in 191 countries around the world. Educational institutions are turning to online learning in a very short period of time as an immediate solution to ensure their pedagogical continuity. For students, the most immediate impact is the temporary cessation of their traditional face-to-face teaching at their institutions. These changes affect the well-being, lifestyle, and functioning of students involved in their educational institutions.

Based on the QS (2020) report, it was found that research conducted during the pandemic in many countries showed that students were greatly affected by the spread of COVID-19, especially after the implementation of travel restrictions, physical distancing and isolation. In addition, QS reports that many students, due to their school closures, lack motivation and have negative attitudes towards online learning. Based

on the results of the Killian study (2020), staying at home during the COVID-19 pandemic and school closures are the main reasons for students around the world to feel disconnected from society and their social circle. Seeing the enormous impact of the Covid-19 pandemic on the world of education, high motivation and metacognitive awareness are needed to deal with learning during this Covid-19 pandemic.

Metacognition is awareness about the cognitive possessed and how to use and control it to complete an activity (Flavell, 1979; Odsoy et al., 2009; Lai, 2011). Metacognition consists of two components, namely metacognitive awareness and metacognitive skills. Metacognitive awareness is important because by realizing and being able to process cognitively, students are able to control emotions, attitudes, and even actions that must be taken. In its development, metacognition also requires a process and time because everyone is different to realize and regulate cognitive. Although to get it takes different time, but the process can be done in the same way. Good metacognition can provide good results for one's learning as obtained in Henter's research (2014). In addition to metacognitive awareness, motivation is also needed to deal with learning during this covid-19 pandemic.

Psychologists define motivation as "an internal process that occurs within individuals as a form of encouragement, guiding, and maintaining behavior over time" (Slavin, 2006). In addition, "motivation can be defined as a choice, persistence, intensity, and direction of behavior" (Snowman, Cown, and Biehler, 2012). In line with Slavin and Snowman, Sardiman (2000) states that motivation is "the entire psychic driving force within students that causes learning activities, ensures continuity of learning and provides direction for learning activities in order to achieve goals". In the learning perspective, motivation is the main factor in shaping the learning patterns carried out by students. Motivation can grow in students with the encouragement from outside and the will that comes from within a student. Motivation is closely related to the learning process of a student and affects student learning outcomes. In this study, the intended motivation is the students' intrinsic motivation.

Intrinsic motivation refers to factors from within, implicit in students. Students learn and carry out activities to obtain positive consequences such as knowledge, competence, and independence (Snowman, Mc Cown, & Biehler, 2012). Based on a reference study, there are 7 indicators in measuring intrinsic motivation, namely interest, perceived competence, effort/importance, pressure, perceived choice, value, and relatedness (Deci & Ryan, 2014). Most modern educational theories take intrinsic motivation as the impetus for activities in learning and problem solving.

METHODS

The type of research used in this research is quantitative research with survey methods. Quantitative research is research that uses quantitative data. Data in quantitative research is in the form of numbers or data that is numbered and uses statistical tests to analyze the data (Paidi, 2012). The research was conducted at the Biology Education Study Program, Riau Islamic University, Pekanbaru. The research was conducted in June 2021 in the even semester of the 2020-2021 school year. The research population is all students of biology education at the Islamic University of Riau as a hypothetical population. The research sample amounted to 83 students. 27 semester 2 students, 15 semester 4 students and 41 semester 6 students.

Metacognitive awareness data obtained from a scale sheet made based on the reference Metacognitive Awareness Inventory (MAI) with 30 statement items. Motivation data was obtained from the Intrinsic Motivation Inventory (IMI) scale sheet with 4 sub-variables and 20 statement items. The answer choices for the Metacognitive Awareness Inventory (MAI) item consist of 4 criteria, namely, Always = 4, Often = 3, Rarely = 2, Never = 1. While the answer choices for the Intrinsic Motivation Inventory (IMI) scale consist of 4 criteria. For positive statements, Very True = 4, Quite True = 3, Less True = 2, Not True = 1. For negative statements (R), Very True = 1, Quite True = 2, Less True = 3, Not True = 4.

The scores obtained were then converted into a scale of 0 – 100. The data obtained were analyzed by descriptive statistics. The statistics used include the average, standard deviation with the help of excel. The average of each measurement scale is then used to categorize the level of metacognitive awareness which refers to Green (2002), namely, MSB (Still at Very Risk), BBB (Not So Developed), MB (Starting to Develop), SBB/OK (Already Developing Well). Super (Very Well Developed). Meanwhile, for the categorization of student motivation, five

categories were used, namely very good, good, sufficient, less and very less.
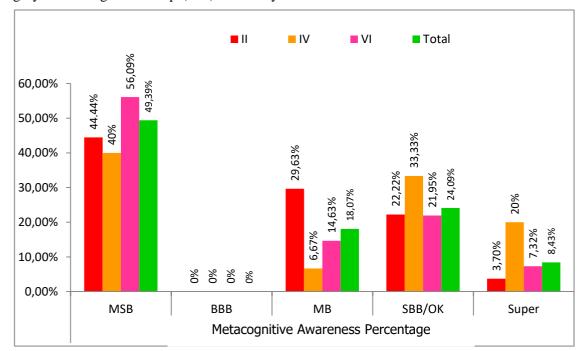
RESULTS AND DISCUSSION

Description of Metacognitive Awareness of Biology Education Students FKIP UIR

The results of the analysis of student entries in the MAI inventory can describe the level of metacognitive awareness of students of the Biology Education Study Program, FKIP UIR Pekanbaru. Data on metacognitive awareness are listed in Table 1.

Table. 1. Percentage of Metacognitive Awareness of Biology Education Students FKIP UIR

Semester	Metacognitive Awareness Percentage				
	MSB	BBB	MB	SBB/OK	Super
II	12 (44.44)	0 (0)	8 (29.63)	6 (22.22)	1 (3.70)
IV	6 (40)	0 (0)	1 (6.67)	5 (33.33)	3 (20)
VI	23 (56.09)	0 (0)	6 (14.63)	9 (21.95)	3 (7.32)
Total	41 (49.39)	0 (0)	15 (18.07)	20 (24.09)	7 (8.43)

The metacognitive awareness of Biology Education Study Program students from survey data shows that most or 49.39% of students who fall into the Still Very At Risk (MSB) category. There are no more students who fall into the category of underdeveloped metacognitive awareness (BBB). As many as 18.07% of Biology Education students have entered the category of starting to develop (MB). As many as 24.09%) have well developed metacognitive abilities so that they are in the Well Developed (OK) category, and 8.43% are in the very well developed (super) category. An explanation of the metacognitive awareness of Biology Education students at the Islamic University of Riau Pekanbaru can also be seen in the following graph.1.

Graph.1 Percentage of Metacognitive Awareness of Biology Education Students FKIP UIR

There are not too many students who have entered the category of the highest metacognitive awareness. Only 8.43% of students entered the super category (developed very well). The results of the researcher's observations show that those who fall into this category are students who are active in the classroom. Based on student data from the student metacognitive awareness questionnaire, it shows that most or 49.39% of students fall into the category of still very at risk (MSB). Based on the categories from Green (2002), most students have not used their metacognition in learning and have not realized that thinking is a

process. There are no more (0.00%) students in the not so developed category (BBB). Green (2002) states that students who fall into the category of not so developed (BBB) have not been able to separate what they think and how they think.

As many as 18.07% of students have entered the category of starting to develop (MB). Students who fall into the MB category can be helped to become aware of their own way of thinking by stimulating and supporting their way of thinking. Lecturers should practice metacognitive strategies so that students will develop their metacognitive awareness. A total of 24.09% have entered the category of already well developed (SBB or OK). Students in this category are aware of their way of thinking and can distinguish the input and output elaboration stages of their thinking process. They have sometimes used these models to regulate their thinking and learning processes.

Only 8.43% of students who entered the super category (BSB) or developed very well were found to be only 8.43%. Students who fall into this category have regularly used metacognitive awareness to regulate their own thinking and learning processes. They already have the awareness and knowledge that there are many different ways of thinking, are able to use them smoothly, and can reflect on their thinking processes (Green, 2002). Based on the researcher's observations, students who fall into the super category are seen as students who have good achievements in their class.

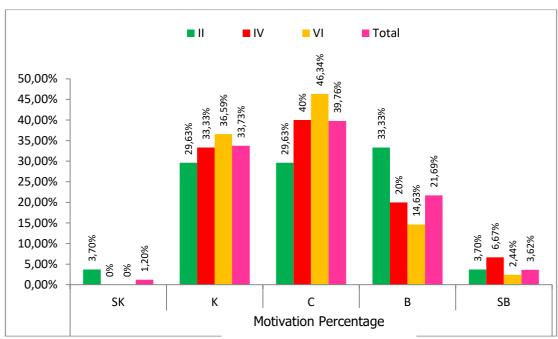**Motivation of Biology Education Students FKIP UIR**

The results of the analysis of student entries in the Intrinsic Motivation Inventory (IMI) can describe the level of metacognitive awareness of Biology Education Study Program students, FKIP UIR Pekanbaru. Data on metacognitive awareness are listed in Table 1.

Table 2. Percentage of Biology Education Student Motivation FKIP UIR

Semester	Motivation Percentage				
	SK	K	C	B	SB
II	1 (3.70)	8 (29.63)	8 (29.63)	9 (33.33)	1 (3.70)
IV	0 (0)	5 (33.33)	6 (40)	3 (20)	1 (6.67)
VI	0 (0)	15 (36.59)	19 (46.34)	6 (14.63)	1 (2.44)
Total	1 (1.20)	28 (33.73)	33 (39.76)	18 (21.69)	3 (3.62)

Student motivation of Biology Education Study Program from survey data shows that a small percentage or 1.20% of student motivation is still in the very poor category. A total of 33.73% are still in the less category. Most or 39.76%. student motivation is still in the sufficient category. A total of 21.69% were in the good category and 3.62% had motivation in the very good category. An explanation of the motivation of students of Biology Education, Riau Islamic University, Pekanbaru can also be seen in the graph. the following 2

Graph.2 Percentage of Metacognitive Awareness of Biology Education Students FKIP UIR

There are not too many students who have entered the high motivation category. Only 3.62% of students are in the very good category and 21.69% are in the good category. Students who get high scores are students who have high self-confidence. Students who have high self-confidence/high self-desire to learn will have more learning goals than students who have low self-confidence (Snowman, Mc Cown & Biehler, 2012).

Most of the students' motivation is still in the sufficient category, which is 39.76%. Students who fall into this category do not yet fully have the driving force in themselves to ensure the continuity of the learning process. Sardiman (2000) states that motivation is "the entire psychic driving force in students that causes learning activities, ensures continuity of learning and provides direction for learning activities in order to achieve goals". Meanwhile, Santrock (2011) also states that motivation is "a process that gives enthusiasm, direction, and persistence of behavior".

Students who have low motivation as many as 33.73% are in the less category and 1.20% are in the very poor category. Students who fall into this category really need to be improved again. Students need to increase their confidence and trust in the learning process. Snowman (2012) states that social cognitive theory sees motivation as a result of goals and expectations. Motivation depends on the belief that a person will achieve the desired results from the behavior shown and the belief that the person is able to demonstrate or learn to demonstrate the behavior.

CONCLUSION

Most of the metacognitive awareness of Biology Education students at the Islamic University of Riau Pekanbaru or 49.39% of students fall into the category of still very at risk (MSB). Most of the students have not used their metacognition in learning and have not realized that thinking is a process. While students who have entered the category of the highest metacognitive awareness are not too many in number. Only 8.43% of students entered the super category (developed very well). During online learning during the Covid-19 pandemic, students' motivation was also not very good. Most or 39.76%. student motivation is still in the sufficient category. There are not too many students who have entered the high motivation category. Only 3.62% of students are in the very good category and 21.69% are in the good category

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