Description Metacognition Skills in Academic Ability inHigh and Low Academic College Biology Education

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ABSTRACT

Metacognition is a high-level thinking skill of thinking as to which should be thinking in order to develop a strategy to solve the problem. In the end, a college has different learning styles, causing differences in metacognition skills in each college, including solving a problem in learning. The purpose of this study is to describe differences in metacognition skills in the 6th-semester college at different academic abilities. Type of. Research that used in this research is descriptive qualitative. Subject's research is students of Biology Education in 6th semesters. This study uses inventory with Metacognitive Awareness Inventory (MAI), which was adapted from Schraw, G & Dennison, R.S. Results of research showed a variation on metacognition skills in the 6th-semester college of biology education at different levels of academic ability

INTRODUCTION

Learning that can empower the potential of learners such as thinking empowerment has not been implemented optimally so that the learning process becomes less (Danial, 2010). Nowadays, there is still quite a lot of learning found to be more emphasized on short-term goals, so the material is less grounded, more focused on procedural capability, one-way communication, and low order thinking skills (Sadiq, 2007; 3 in Anggo, 2017). In line with Sumampouw (2011) statement, the quality of education is determined by the

quality of graduates from one educational institution. The quality of graduates is determined by how much knowledge and skills acquired in educational institutions that are useful for him to face life and win the competition in the era of globalization. In order to win the competition, one must have high-order thinking skills. To be able to improve the quality of education then the learning applied in the institution should be a learning that develops metacognitive skills which in turn will have high-level thinking skills.

Based on the problems presented above, it can be said that metacognitive skills have an important role in regulating and controlling the cognitive processes of a person in learning and thinking. So the researchers took the theme of Metacognition Skills Description on High Academic Ability and Low Academic in Biology Education Students. The purpose of this research is to describe the differences of metacognition skills in the sixth semester students on different academic abilities. So the hope is to learn and think that is done by someone to be more effective and efficient.

METHODS

The type of research used in this research is descriptive qualitative. Descriptive qualitative research is qualitative descriptive research is a research that is included in the type of qualitative research. The purpose of this type of qualitative descriptive research is to reveal facts, circumstances, phenomena, variables and circumstances. Qualitative descriptive research interprets and relates data pertinent to the current situation. The sampling of the research using cluster random sample method. Research subjects are biology students of semester 6 with a student population of 74 students. The student is a generation of 2014 in biology education. The collected data was analyzed by using quantitative descriptive analysis in average form using Microsoft Excel.

Researchers will describe metacognition skills that have been filled by respondents through Metacognition Awareness Inventory (MAI). Metacognition skills measured by metacognition skills inventory Metacognition Awareness Inventory (MAI) developed by Schraw&Sperling-Denisson (1994) focused on regulation of cognition that includes planning (7 items), information management strategies (10 items), comprehension Monitoring (7 items), debugging strategies (5 items), and evaluation (6 items) This inventory is considered suitable for adult students (Panaoura&Philippou, tth. Imel, 2002). Inventory used in the study 35 questions with 4 alternative choices that is not true (STB) score 1, not true (TB) score 2, true (B) score 3 and very true (SB) score 4. Inventory weighting by Panaoura&Philippou (Tth). The scores obtained are converted to a scale of 0100. The categorization of metacognition skill level with scale rating from Green (2002) consists of super (85100), ok (68-84), development (51-67), can not really (34-50), risk (17-33) And not yet (0-16).

RESULTS AND DISCUSSION

The research was conducted from April 28 until April 29, 2017 in Biology Education Study Program of Jember University. The description of the research results will be described in a row (1) academic ability; (2) decryption of students' metacognitive skills qualification. Academic ability is shown by the value of GPA (cumulative achievement index) which is divided into two namely the academic ability of (AA) and lower academic ability (AB). Students with upper academic ability are those who have academic ability above other students who are ranked based on IPK score (cumulative achievement index),

then taken 33.3% upper group. Undergraduate academic students are those who have academic ability under other students who are ranked based on IP score (cumulative grade index), then taken 33.3% lower group. The result of grouping of academic ability can be seen in Table 1.1.

Table 1.1 Academic Ability based on GPA (Cumulative Achievement

No.	Academic Ability	GPA (Cumulative Index)		Average Number of Student	
		Terendah	Tertinggi		
1.	Top Academic (TA)	3,49	3,86	3,61	24
2.	Academic Medium (AM)	3,33	3,48	3,39	26
3.	Academic (AD)	2,98	3,33	3,18	24

(Source: author)

Description of metacognitive skills was performed using an inventory questionnaire of metacognitive skills. Questionnaires were distributed to the learning process. The number of students used as sample is 74 students. The data of the questionnaires were analyzed descriptively quantitatively with the aim of obtaining a general overview of students' metacognitive skills. The percentage of metacognitive skills in general can be seen in Figure 1.1
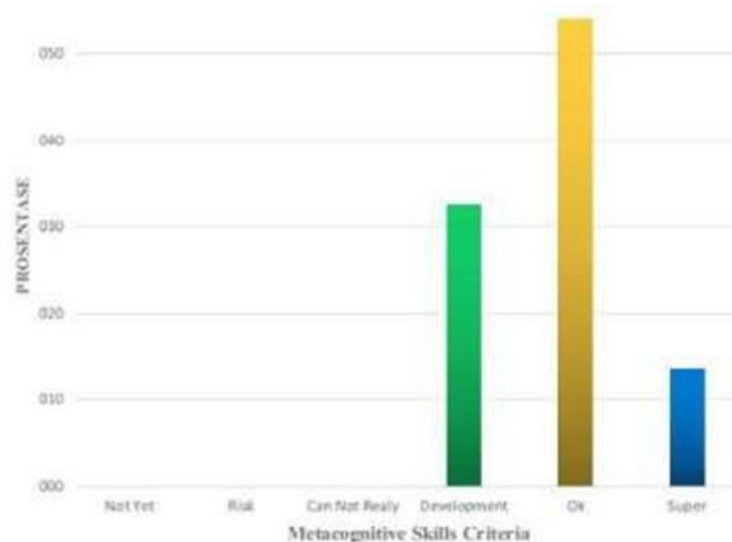

Figure 1.1 Percentage of Student Metacognitive Skills (Source: author)

Figure 1.1 shows that overall metacognitive skills are dominated by low criteria and the fewest categories at very low criteria. Percentage of metacognitive skills based on academic ability can be seen in Table 1.2.

Table 1.2 Metacognitive Skills based on Academic Ability

No.	Academic Ability	Category (%)							Average Category
		Not yet	Risk	Can Not Realy	Development	Ok	Super		
1.	Top Academic (TA)	0	0	0	8,33	58,3	33,33	80	Ok
3.	Academic Down	0	0	0	66,67	29,17	4,17	63,87	Development

(Source: author)

Table 1.2 shows information that the metacognitive skills of the top academic ability are dominated by the Ok category, but there is still the Development category of 8.33%. In the lower academic ability is dominated by 66.67% Development category as much and there is also Super category that is 4.17% but fewer than the top ability.

The results obtained in this study prove that there are differences in results on metacognitive skills based on academic ability. Seen in the data are students who have academic ability over, the average of his 80 with Ok category. While students who have below average academic ability 63.87 with the category Development. According to Schraw, G. & Dennison, R.S. (1994), the Ok category is conscious of self-thinking and can differentiate the input-elaboration-output stages of the mind itself, sometimes using models to organize its own thinking and learning. While the category of Development that can help lead to awareness of own thinking if pushed and supported.

Differences in metacognitive skills based on student academic ability show that academic ability is one of the factors that influence one's thinking process. Students with top academic ability, have been aware of their own thinking and can plan, choose the strategy in carrying out the task, and able to evaluate what he has done than under academic students. According to Nasution (2006) explained that learners with different academic ability if given the same learning, then the results of learning is also different. Differences in cognitive learning outcomes between students with high academic ability and lower academic ability are related to intelligence factor. Although, the treatment of learning strategies is the same, but the results of cognitive learning are different. In line with the statement of Princess (2013) states that the lower metacognitive skills possessed by a person, it means the lower awareness to monitor its cognitive ability, which means it will not be able to develop cognitive abilities.

Metacognition skills can be used to predict students' academic success. Students with high metacognition skills are potentially more academically successful than students with low metacognition skills (Isaacson and Fujita, 2006). The existence of the influence of academic ability on metacognitive skills gives information that in teaching and learning process need to pay attention to different academic ability, specially in order to align the ability of academic down with top academic ability. Strategy or model of learning becomes important to be able to accommodate the gap between academic ability up and academic bottom. According Prayitno (2015) states that appropriate learning model is needed to lift the metacognition skills of Undergraduate Academic students in order to achieve the mastery level as students of Top Academic.

Enterprises in minimizing the metacognition skills gap between upper and lower academic students can be overcome by using cooperative learning model (Prayitno, 2015). As for other ways that should be done through the activities of social interaction in the learning process so that there is an effort to membelajarkan each other that later low academic students are able to parallel the top academic students. According to Alwi (tt) this method is done by empowering the ability of students who have a high absorption, students are teaching material / practice to friends who have not understood. This method is a lot of benefits both from the side of the students who act as tutors and for students who are mentored (tutee).

CONCLUSION

There are variations on metacognition skills in biology semester 6 college at different levels of academic ability. Differences in cognitive learning outcomes between students with high academic ability and lower academic ability are related to intelligence factor. Enterprises in minimizing the metacognition skills gap between upper and lower academic students can be overcome by using cooperative learning model.

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