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PROFILE OF HABITS OF MIND STUDENT OF BIOLOGY EDUCATION PROGRAM ISLAMIC UNIVERSITY of RIAU

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Abstract

Habits of mind are an intelligent behavior associated with actions to be taken when encountering problems and determining the most appropriate solution of the problem. Habits of mind have three aspects: self-regulation, critical thinking and creative thinking. Habits of mind become fundamental for students because when they attend classes and at work, students can find various problems that must be solved. Information about the habits of mind of students in Biology Education Program of Islamic University of Riau so far has never been known. Based on this, this study aims to find out the habits of mind profile of the student. The study was conducted in odd semester 2017/2018 with the number of participants as much as 263 students from 5th and 7th semester. Obtaining habits of mind data using a questionnaire consisting of 3 aspects of self-regulation, critical thinking and creative thinking with the number of 60 item statements. Data analysis is done by counting percentages then interpreted into several categories. Based on the research, it can be concluded that the habit of thinking (habits of mind) of Biology Education Program students in the category is enough with the percentage of 69.85% with the highest percentage in self-regulation category followed by creative thinking and the lowest critical thinking category. While based on student habits of 2015 (semester 5) is better than the habits of the class of 2016 (semester 3) in all categories HoM. In addition, all students have received feedback with an average of 5 times / subject from lecturers and lecturers provide rules using 5 - 10 references in completing the course task.

Keywords: *Habits of mind, students, biological education program*

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1. INTRODUCTION

Development of a nation is in need of human resources who have intelligence in thinking and acting, so as to be able to take the right decision. With the intelligence of thinking and acting, each individual is expected to be able to overcome various complex life problems in all aspects of his life. To achieve this, the learning process is not enough just a memorization. The process of learning is done in the form of analyzing and synthesizing the true meaning of knowledge. When students do not have a deep understanding of the knowledge learned, it can reduce their ability to think and solve complex problems (Rodzalan & Saat, 2015), preparing them with existing facts and solving problems (Cuoco et al, 1996).

Every individual in his life will definitely deal with the problem, both in the school, family and society. Sometimes small problems become big because of errors in addressing a problem. The problem occurs when a person does not know how to respond to a problem. The initial stage in the problem-solving process is thinking about the consequences of the problem being solved (Noreen et al., 2015). This means to solve the problem required intelligent behavior. Intelligent here not only deals with one's knowledge of information relating to the problem but also relates to how to act to solve the problem. This intelligent behavioral ability is called the habits of mind (Costa & Kalick, 2000a).

Some people have developed habits of mind through various studies. Among them are Costa and Kallick (2000b) and Carter et al., (2005) that divide the habits of mind into 16 indicators. Even Costa and Kallick claim the habits of mind as the most characteristic behavior of intelligent thinking to solve problems and is an indicator of success in academic, occupational and social relationships. Habits of mind can be influenced by the learning process experienced by students. One of the factors affecting habits of mind is the provision of feedback. The result of Hidayati & Idris (2017) study found that the feedback in the portfolio assessment affected the habits of mind. Feedback can not only assists students in correcting errors but also play a role in sustaining their knowledge with low confidence (Finn et al., 2017).

Looking closely at previous Costa and Kallick statements, the habits of mind in the students really become the foundation of students in the course of a lesson. Students need to have good thinking habits to be able to respond to any problems that arise in learning. Student thinking habits at the time of learning become fundamental when they get a little problem and they must find the solution. Habit is a behavior that we show well in times of which
appropriate and the behavior is done without consideration because the habit is a continuous repetition (Burgess, 2012).

Habits of mind is formed when responding to answers or questions or problems that the answer is not immediately known, so we can observe not only how students remember a knowledge but rather how students produce a knowledge (Costa & Callick, 2000a). Habits of mind is divided into three categories: self regulation, critical thinking and creative thinking (Marzano, 1993). Science For All Americans in Volkmann & Eichinger (2010) writes integrity, perseverance, justice, curiosity, openness to new ideas, skepticism and imagination as habits of mind that show humanity values in everyday life

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Habits of mind is also very supportive of student performance in everyday life. Habits of mind is a mixture of many skills, attitudes, and experiences of the past. This means that there is a link between one pattern of thinking over another. Therefore, it implies that habits of mind should be used when making choices. This choice includes sensitivity to contextual cues to situations to determine the right pattern of decision making (Teachtaught, 2012)

Someone who is intelligent in thinking will be able and ready to face all the changing times. In college students, the lecture is a period in which an individual experiences a transition from adolescence to adulthood, including psychological development. The student has a duty to learn, but he must also start thinking about how his survival will be. According to ASCD (2009), a good starting point when introducing habits of mind by developing an in-depth understanding and appreciation of their own habits.

Given the urgency of habits of mind in determining the life of a person, it is necessary to know the habits of mind profile of students as stock in undergoing various problems in life. Information about the habit of minds of the students of Biology Education Program of the Islamic University of Riau so far is unknown because no research has examined it. Based on this background, this study aims to find out the habits of mind profile of the students of Biology Education Program of the Islamic University of Riau

2. METHODOLOGY

The research was conducted on Biology Education Study Program of Islamic University of Riau and the data was taken in the odd semester of FY 2017/2018. The population in this study is all students of Biology Education Program of Islamic University of Riau. Sample selection was done by purposive sampling. In this sampling technique, the population is divided into several groups based on the force and GPA. The study was conducted in odd semester 2017/2018 with the number of participants as much as 263 students from 5th and 3rd semester.

The instrument used to obtain student habits of mind data is a questionnaire of habits of mind by Marzano (1993) which has been developed by Sriyati (2011). This questionnaire contains three aspects of habits of mind: self regulation, critical thinking and creative thinking. Clearly, the habits of mind questionnaire grid can be seen in Table 1.

Table 1. Habits of Mind Questionnaire Grille

Aspect	No	Indicator
Self Regulation	1	Realizing his own thoughts
	2	Make plans effectively
	3	Be aware and use the necessary information resources
	4	Sensitive to feedback
	5	Evaluate the effectiveness of the action
Critical Thinking	1	Accurate and look for accuracy
	2	Clear and looking for clarity
	3	Open
	4	Refrain from impulsive nature
	5	Being able to position yourself when there is a guarantee
	6	Sensitive and know the ability of knowledge of his friend

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Aspect	No	Indicator
Creative Thinking	1	Can be involved in the task although the answer and the solution is not immediately apparent
	2	Make efforts to maximize the ability and knowledge
	3	Produce a new way of looking at a situation different from the usual way of prevailing in general

Data on student's habits of mind that have been collected through the next questionnaire are analyzed. For each item the statement on the questionnaire consists of four score options. Data analysis is done by calculating the percentage based on scores that have been selected by students for all items then interpretation into several categories. Very good category (86-100%), good category (76-85%), enough category (60-75%), less category (55-59%) and less category once (≤ 54%) (Purwanto, 2008).

3. RESULT AND DISCUSSION

Based on the research that has been done at the Islamic University of Riau Habit of Mind Students can be seen in Figure 1.

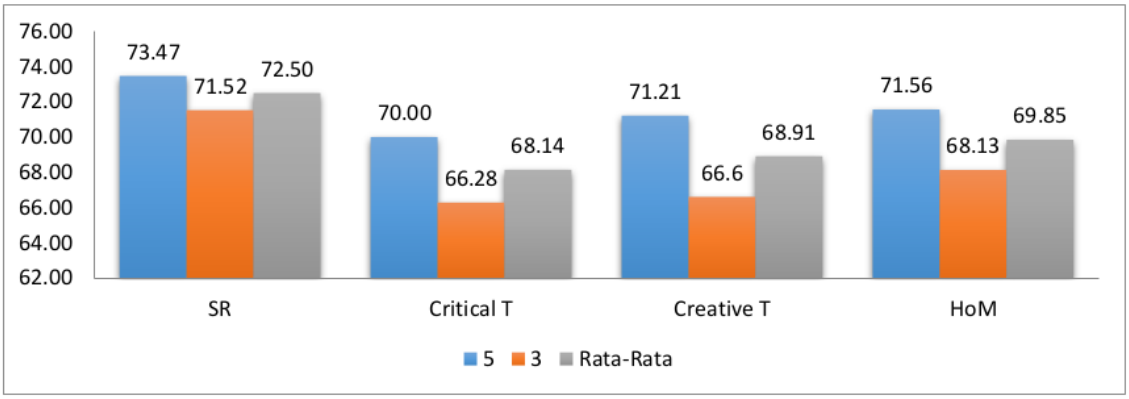

Figure 1. HoM Islamic University of Riau's Biology Education

Habit of Mind students in Islamic University of Riau Biology Education Program are in the sufficient category with a percentage of 69.85%, while for the highest category of self regulation (72.50%) followed by creative thinking (68.91%) and the lowest is the critical thinking category of 68.14%. The data above shows that the higher level (semester) then the better habits of mind, 5th semester students have better habits compared to students of the 3rd semester.

Table 2. Self Regulation Category

Semester	1	2	3	4	5	Total
5th	72,05	73,30	76,23	64,91	80,88	73,47
3rd	69,11	71,02	75,19	64,16	78,12	71,52
Average	**70,58**	**72,16**	**75,71**	**64,54**	**79,50**	**72,50**

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The data above is in line with previous data ie 5th semester students have better habits (self-regulation) compared to the 3rd semester. Students of Biology Education Program of Islamic University of Riau have good habit in evaluating their action (79,50%) and using the necessary resources (75,71%) while to realize self-thinking of 5th semester student better than semester 3 with the most percentage low (70.58%) compared to other indicators.

Table 3. Critical Thinking Category

Semester	1	2	3	4	5	Total
5	74,97	68,84	67,36	66,75	72,07	70,00
3	72,04	63,78	64,02	61,48	70,08	66,26
Average	**73,51**	**66,31**	**65,69**	**64,12**	**71,08**	**68,13**

Critical thinking habits are the lowest category compared with other habits such as self-regulation and creative thinking. Overall the habit of critical thinking is in sufficient category with a percentage of 68.13%. All indicators in this category with the highest percentage in the first indicator that is accurate and look for accuracy followed are sensitive and know the ability of friends.

Table 4. Creative Thinking Category

Semester	1	2	3	Total
5	71,36	69,63	72,67	**71,22**
3	72,04	63,78	64,02	**66,61**
Average	**71,70**	**66,71**	**68,35**	**68,92**

Creative thinking consists of 3 indicators, namely (1) trying to complete the task even though the answer is not yet know (2) doing business maximizing ability and knowledge and (3) generate new way to see situation different from usual way generally. The second indicator is the lowest indicator of the three indicators with a percentage of 66.71% with sufficient category.

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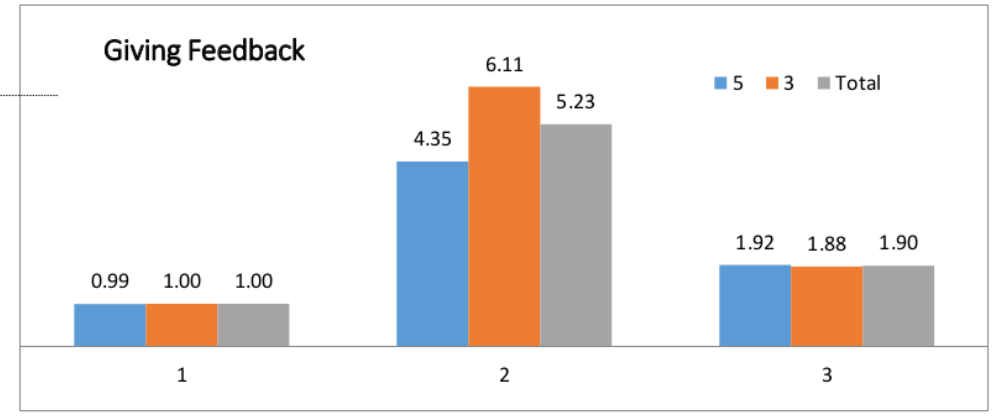

Picture 2. Recapitulation of Feedback on lectures

Based on Figure 2 above shows that all students both in the 3rd and 5th semesters have received feedback from lecturers related to the task he made but have different levels. In the 5th semester the average student get feedback as much as 4 times whereas in semester 3 the average student get feedback from the task of college as much as 6 times. This data indicates that there is an increase of feedback by lecturers from assignments in each semester. This proves that there is a positive trend of lecturers to provide feedback on the task in order to get the process and maximum results in the lecture. In addition, the average student gets the obligation to use at least 5 - 10 kinds of relevant references of the task created.

Habits of mind is a habit of thinking that can help a person in completing tasks and problems that will be in the future. The better a person is in managing himself the better they are in solving problems or tasks in the future. Based on the results of the study showed that students of UIR Biological Education Program Academic year 2017/2018 showed that HoM students in the category enough with a percentage of 69.85%. In addition, higher semesters (5) showed higher habits compared to the lower semester (3) in all HoM categories. An attitude will turn into habits or Habits takes time and a long process is in line with research conducted Idris (2013) shows that to train habits it takes a longer time.

Of the three categories of habits of mind the self-regulation category has the highest percentage compared to other categories such as critical thinking and creative thinking. The results of this study are in line with almost all habits of mind research indicating the highest self-regulation category indicator (Sriyati (2011), Idris (2013), Hidayati and Idris (2015), Sriyati and Bidayati (2014)). Self-organizing habits are able to assist students in completing the tasks and problems they face. The better the student in managing herself the better the values in the lecture. This is in line with the statements of Morosanova and Fomina (2017) which states that self-regulation contributes significantly to student learning outcomes and self-regulation also acts in controlling the emotions, thoughts and actions of a person who will contribute to students' academic ignorance (Magi et al., 2016).

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According to ennis (2011) critical thinking is deciding what to believe and do with reasonable and reflective thinking. Based on Table 3. It shows that overall students' thinking habits in the category are sufficient with the criteria of more senior students having better habits (not significant because they are still in the same category) of junior students is in line with research conducted by Huber and Kuncel (2016) which states that college experiences have a positive impact on the development of critical thinking. Nevertheless, the data indicate that the habits of thinking at both levels of students are still in sufficient category, this indicates that habits are not only influenced by experiential factors but many other influencing factors such as academic achievement, background, gender and ethnicity (Giarcolo & Facione 2001).

The last category in habits of mind is creative thinking. According to Kaufman & Beghetto 2009 and Runco 2008 Creative thinking is the main skill needed in education to prepare a person in the face of future life. In the habits of mind there are 3 indicators of the creative thinking category (1) can involve themselves in the task even though the answer and the solution is not yet visible (2) to do business with the maximum ability and knowledge as well as (3) generate new ways of looking at different situations from the usual way of prevailing in general. Students of biology education program have creative thinking habit in category enough to mean some less lecturing activities provide container and exercise to student creative thinking. Students are more inclined given the task with some rules to be followed so that their creativity is not honed. Providing rules will actually strengthen student self-regulation but on the other hand can hamper student creativity.

4. CONCLUSION

Based on the research, it can be concluded that the habit of thinking (habits of mind) of Biology Education Program students in the category is enough with the percentage of 69.85% with the highest percentage in self-regulation category followed by creative thinking and the lowest critical thinking category. While based on student habits of 2015 (semester 5) is better than the habits of the class of 2016 (semester 3) in all categories HoM. In addition, all students have received feedback with an average of 5 times / subject from lecturers and lecturers provide rules using 5 - 10 references in completing the course task.

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