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Metacognition Toward Academic Self-Efficacy Among Indonesian Private University Scholarship Students

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Abstract

Metacognition and self-efficacy were considered as an academic performance’s predictors. Based on self-regulation concept, metacognition is one of its component and use as a coping strategy in academic environment. This study were conducted to examine the metacognition awareness and its correlation and contribution towards academic self-efficacy, as well as examining the academic self-efficacy itself among scholarship students in Indonesian private university. Using simple random sampling, the primary data collected from 84 students, who’s enroll as a scholarship students at Gunadarma University, by answering questionnaire consisted of a brief demographic questionnaire, 15 items of Academic Self-Efficacy Scale and 52 items of a modified Metacognition Awareness Inventory. Thus, the data were analyzed using descriptive statistics and linear regression. From descriptive analyzed, by comparing empirical mean in hypothetical normal curve, showing students stated at a high level of both metacognition awareness (mean : 210.15) and academic self-efficacy (mean: 55.17). Based on bivariate correlation and linear regression analyze, showed that coefficient of correlation $r : 0.580$ with a significance of $0.000$ ($p < 0.01$) whereas $r$ square : $0.336$. The results of simple correlation showed that positive relationships exists between metacognition awareness and academic self-efficacy.

Keywords: Metacognition Awareness; Self-Efficacy; Scholarship Studentsa

1. Introduction

Based on its requirement, a great number of scholarship require a high level of academic achievement whether
in previous study’s stage as well as at present stage. The scholarship students need to stay in performs and maintains their academic achievement otherwise some penalty will be given by the scholarship provider in order to keep student’s performance. However, for some cases students will perceived those as a threat that will gradually decreased student’s performances. As a Bandura (1997) stated that Student's beliefs about their efficacy to manage academic task demands influence emotional states, such as stress, anxiety, and depression, as well as motivation and academic achievement. Nevertheless, according to Zimmerman (in Bandura, 1997) claimed that there is evidence that students' performance in academically threatening situations depends more on efficacy beliefs than on anxiety arousal.

Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations. Efficacy beliefs influence how people think, feel, motivate themselves, and act. (Bandura, 1997) With regards to self-efficacy, Schunk (in Bandura, 1997) refers Academic self-efficacy to an individual’s belief in their ability to perform certain academic tasks at particular levels (Schunk, 1991). Furthermore, Zimmerman (in Bandura, 1997) synthesized and defined perceived academic self-efficacy as personal judgments of one's capabilities to organize and execute courses of action to attain designated types of educational performances.

The concept of academic self-efficacy is important in relation to academic performance as students with a high sense of academic self-efficacy perform better on academic measures than students with a low sense of academic self-efficacy (Schunk in Bandura, 1997). There are three key ways in which efficacious beliefs contribute to the development of cognitive abilities that affect academic performance, namely: students’ self-efficacy beliefs in an academic subject, lecturers’ self-efficacy beliefs to motivate students to learn, and the collective efficacy that the subject can foster academic achievement (Bandura, 1997). In investigations by Schunk and colleagues as well as by others, three indices of academic achievement have been studied in relation to students' efficacy beliefs. These include basic cognitive skills, performance in academic course work, and standardized achievement tests. Efficacy beliefs have been shown to affect all three forms of academic performance (Zimmerman in Bandura, 1997).

Bandura (1977, 1986) developed scales to measure perceived academic efficacy as part of a microanalysis procedure to assess its level, generality, and strength across activities and contexts. In terms of academic functioning, self-efficacy level refers to variations across different levels of tasks, such as increasingly complex math problems; generality pertains to the transfer of self-efficacy beliefs across activities, such as different academic subject matters; strength of perceived efficacy is measured by degrees of certainty that one can perform given tasks (Zimmerman in Bandura, 1997).

Efficacy beliefs regulate human functioning through four major processes include cognitive, motivational, affective, and selection processes. These different processes usually operate in concert, rather than in isolation, in the on going regulation of human functioning. In regards with cognitive process there are variety form of efficacy belief’s effects. Much human behavior, being purposive, is regulated by forethought embodying valued goals. Personal goal setting is influenced by self-appraisal of capabilities. The stronger the perceived self-efficacy, the higher the goal challenges people set for themselves and the firmer is their commitment to them (Locke & Latham in Bandura, 1997).

A major function of thought is to enable people to predict events and to develop ways to control those that affect their lives. Such problem-solving skills require effective cognitive processing of information that contains many complexities, ambiguities, and uncertainties as well as in academic environment such as learning. In learning predictive and regulative rules people must draw on their knowledge to construct options, to weight and integrate predictive factors, to test and revise their judgments against the immediate and distal results of their actions, and to remember which factors they have tested and how well they have worked. Furthermore those functions are similarly related with metacognition as Young & Fry (2013) stated that metacognition is generally distinguished as the activity of monitoring and controlling own cognition.

Flavell (1976), whose the notion of metacognition was came from, described metacognition as being the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in the service of some concrete goal or objective. As the notion of metacognition was originated in the context of information processing studies in the 1970s, metacognition is concerned with an individual’s knowledge and control process about their own cognitive processing system (Flavell, 1976; Schraw & Dennison, 1994). Drawn out over those, metacognitive can barely stated as a thinking of thinking. Metacognition can therefore be seen as knowledge about one’s cognition and the monitoring of that cognition. Metacognition is
thus a complex construct as it consists of both metacognitive skills and metacognitive awareness.

Schraw and Dennison (1994) defined metacognitive awareness as referring the ability to reflect upon, understand, and control one’s learning. In some extent, metacognitive awareness can be defined as people’s self understand or awareness of their metacognitive process, it reflects people’s awareness of their own ability examines. Furthermore, measuring two major component of metacognition as refers to knowledge about cognition and regulation of cognition can be assessed with metacognitive awareness.

*The knowledge of cognition*, as first component refers to what people knows about themselves in term of learning, understanding their own strong and weakness, including strategies as well as the condition under which strategies are most effective. Knowledge of cognition consists of declarative, procedural and conditional knowledge (Schraw & Dennison, 1994). Declarative knowledge includes knowing about the self and about strategies or factors that influence performance, and is therefore a more factual type of knowledge. Procedural knowledge includes knowing how to use these strategies. Conditional knowledge includes knowing when, how, and why to implement these strategies. These three types of knowledge are believed to assist the reflective aspect of metacognition (Schraw & Dennison, 1994).

The second component of metacognitive awareness is the *regulation of cognition*, that reflect people own perception about the way they plan and strategy they choose as well as monitoring and correcting comprehension and evaluate it. This component is further subdivided into five subcomponents, which include: planning, information management strategies, comprehension monitoring, debugging strategies, and evaluation (Schraw & Dennison, 1994). Planning is refers to setting goals and selecting strategies or resources, and it usually used in learning. Information management strategies refer to the structure of skills and strategies which are used to effectively process information such as organizing, summarizing, elaborating. Comprehension monitoring refers to the assessment of learning or strategy use; debugging strategies refer to the strategies that are used to correct errors in comprehension and performance. Evaluation refers to the evaluation of performance and the effectiveness of the strategy used after learning has occurred. These subcomponents are believed to assist in the control of learning (Schraw & Dennison, 1994).

The population within this study is a 1st year full scholarship college student. As a scholarship’s grant requires student academic achievement in the previous study (high school) level, therefore the participants in this study were considered possessing a reliable academic performance. However, during the 1st year in University, enormous process regarding to academic adaptation are expected to ensue as well as a student encounter some circumstances that requires some specific traits in order to maintain student’s academic performances. Nevertheless, still necessary to know how high the academic self efficacy within the subject, how student’s metacognitive awareness level as well as how further metacognitive awareness determines student’s academic self efficacy.

2. Methods

2.1 Participants

The target samples of this research was consisted of 84 of 1st year undergraduates whose enrolled as a full academic scholarship students at private University in Jakarta. The age of all participants was varied in range between 17 – 19 years old.

2.2 Measures

As a quantitative study, self report questionnaire was used to gather primary data. The questionnaire was based on relevant studies done previously, consists of two psychometric instruments including the measurement of metacognitive awareness and academic self efficacy.

**Metacognitive Awareness Inventory (MAI)**. The MAI (Schraw and Dennison, 1994) that was used to measure metacognitive awareness in several previous study about metacognition. In this researches the MAI was modified into Indonesian version, translated into bahasa Indonesia. The MAI consists of 52 items which provides alternative responses as five grades likert scale as being false and true, while in modified version, alternatives responses was presented as six degrees of likert scale. Within the scale, aforementioned two metacognitive components, the
knowledge of cognition factor as well as the regulation of cognition factors were assessed.

**Academic Self Efficacy** scale is an Indonesian version instrument that intended to asses the level of students efficacy in regards with academic environment. Consists of 15 items this scale was developed by Rahardjo (2012) based on self-efficacy dimensions from Bandura, which reflect one’s person Magnitude, Strength and Generality as a student. An adjusted scale was intended to academic environment. The responses alternatives were presented of six grades scale that extended from strongly agree into strongly disagree

3. Results

From validity and reliability test on modified metacognition awareness inventory and academic self efficacy scale, there are 45 valid items out of 52 of total items in modified MAI and 11 valid item out of 15 of total items in academic self efficacy scale. The left invalids items were disqualified from further analyze. The modified MAI Item has a valid correlation values between 0.317 to 0.596, thus alpha cronbach were used to test the reliability and obtained with the alpha value of 0.930. Along with modified MAI, the academic self efficacy scale was tested on its reliability by using alpha cronbach and obtained 0.731 as the alpha value while the valid correlations values ranging between 0.344 to 0.671

Thus, from descriptive analyzed by comparing empirical mean and hypothetical mean in normal curve, shows that students were stated at a high level of both metacognition awareness (mean : 210.15) and academic self-efficacy (mean: 55.17).

Furthermore, Bivariate correlation and linear regression analyze were used to test the hypothesis and see the correlation between metacognitive awareness and academic self efficacy. As a results shows that the coefficient of correlation r : 0.580 with a significance of 0.000 (p <0.01) whereas r square : 0.336.

4. Discussion

From the study, provides the data that shows a significant positive correlation between metacognitive awareness and academic self efficacy, predictors of reflective thinking in the creation of metacognitive awareness. While students are developing metacognitive awareness skills, their academic self efficacy would developed as well, though there are another factor that predicts academic self efficacy.

As aforementioned results shows there is a significance correlation between metacognitive awareness and academic self efficacy. Regarding to this results, the first researches that was conducted by Bandura and Wood (1989) showed that self-efficacy influenced performance directly and indirectly through its effects on analytical strategies, which suggests a mediating effect of metacognition in the relationship between self-efficacy and performance. Another researches conducted by Landine and Stewart (1998) showed that positive relation was existed between both variable, academic self efficacy and metacognitive awareness as well as motivation. Furthermore A study conducted on metacognition, self-efficacy, and academic performance by Coutinho (2007) found that self-efficacy fully mediated the relationship between metacognition and performance. The author suggested that students who have effective metacognitive use also have high self-efficacy in their abilities, which leads to successful performance (Coutinho, 2007).

Moreover, Ghonsooly et al. (2014), using path analysis found that self-efficacy and metacognition are positively and significantly related to each other. It is consistent with previous research conducted by Kanfer and Ackerman (in Ghonsooly, 2014) found a positive relation also between metacognition and self efficacy. Therefore, from this study shows that the higher student’s metacognitive awareness the higher student’s academic self efficacy and vice versa. Similarly, Downing (2009) found that metacognition was used as a coping strategy and that when an individual failed in their coping it led to decreased self-efficacy, which ultimately had a negative effect on learning. Bandura (1997) indirectly accounts for this observed relationship between metacognition and self-efficacy through his concept of self-regulation. Self-regulation is necessary in academic domain as it is essential for students to regulate their own learning (Bandura, 1997). Metacognition is a component of self-regulation as metacognition is used when individuals select appropriate strategies, correct their deficits, and reflect on their way of thinking (Bandura, 1997). These individuals however need a sense of self-efficacy in order to apply their knowledge and
skills persistently and effectively, in order to successfully achieve - this can be gained through metacognitive processes (Bandura, 1997).

According to Kanfer and Ackerman (in Ghonsooly, 2014), people with strong self-efficacy were more likely to use metacognitive strategies working on their task and increased the quality of their performance whose better than those with low level of self efficacy. In a study conducted by Coutinho (2007), relationships among self-efficacy, metacognition and performance were examined and it was found that metacognition is a predictor of self-efficacy, and further self-efficacy is a predictor of performance.

5. Conclusion

The results of simple correlation showed that positive relationships exist between metacognition awareness and academic self-efficacy. This means students who have effective awareness would also have high level of academic self-efficacy. Despite, from regression analyzed metacognition awareness didn’t shows an enormous contribution toward academic self-efficacy but still have a significant contribution to determine academic self-efficacy among scholarship students.

References


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