

HEADWAY OF COGNITIVE SKILLS: METACOGNITIVE FACILITATION STRATEGY

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Abstract: Disputes on educational application and quality are posed with the budge from teacher as specialist to catalyst. This quasi-experimental design aims to stare into the effects of Metacognitive Facilitation Strategy on the cognitive skills of the students. The profile of the respondents was based on the Dreyfus Model and the Revised Bloom's Taxonomy through pre-test and post test. In bridging the gap between the learning style and the teaching strategy, the use of Metacognitive Facilitation Strategy was focused. It is empowering for both the learners and the teacher and frees the teacher from many of the burdens that having to be 'specialist' necessitate. This study surveyed the influences of teaching strategy on its outcome on students' school academic undertakings. Consequences of the study revealed that there was a significant difference in the academic achievement of the students' pre-test and post test outcome after the exposure to the Metacognitive Facilitation Strategy: thus metacognitive skills are imperative organizers of the teaching-learning tasks. These facilitate planning, setting goals, initiating work, sustaining future-oriented problem solving activities, monitoring and managing progress on undertakings. These pointed out to the conclusion that Metacognitive Facilitation Strategy has a constructive impact on pupils' academic feat.

Keywords: quasi-experimental design, cognitive skills, Metacognitive Facilitation Strategy

INTRODUCTION

The teacher is one of the factors in the educative progression and has influenced the way students think, learn, communicate and act. It is the teacher's task to build up a plan, to attain an aspiration and to lookout against undesirable results. It means that there must be a stratagem in teaching and the knowledge of pedagogy. It is the art of using psychological plan so as to increase the probabilities and constructive consequences of accomplishment and to lessen the chances of disappointment.

The Times Higher Education World University Rankings (2012) powered by Thomson Reuters as a global university performance tables to judge world class universities across all of their core missions - teaching, research, knowledge transfer and international viewpoint. Philippine schools slid further down a world university ranking this year, a poor performance linked by an official of the highest-ranked Filipino school to weak state support. The University of the Philippines lingered the top Filipino school in the record, although slipping to being ranked 338th this year from 332nd in the previous school year. The Philippines appears to be moving at a snail's pace compared with its neighbor in the Association of Southeast Asian Nations (ASEAN). Leading universities in Asia, including those in Hong Kong, Singapore, Korea, Japan and China made it to the top 50 in the list, along with European and American schools.

The Global Competitiveness Report 2011-2012 detailed that the Philippines is faced with the challenges especially in the areas at the foundation of any competitive economy, even at an early stage of development. The quality of the country's public institutions continues to be assessed as poor: the Philippines ranks beyond the 100 mark on each of the 16 related indicators. Issues of corruption and physical security appear particularly acute

(127th and 117th, respectively). Despite an enrolment rate of around 90 percent, primary education is characterized by low-quality standards (110th).

Nowadays a very important goal of suddenly developing modern education is to facilitate students learn how to think more productively, create and assess ideas. Thinking skills become important because the well taught indispensable subjects in education, however, are not adequate to meet the demands of the up to date marketplace. Countries across the world are recognizing that a broad range of competencies are needed to prepare future teachers for an unpredictable future. All these show that teachers and the schools can no longer bond to the traditional way of teaching. If the teachers have to be very effectual, there is a need to espouse the rapid technological changes that affect teaching and learning. Approaches to classroom pedagogy must be changed and instructional materials must be carefully planned to maximize learning.

THE STUDY

Is learning maximized through the employment of metacognitive facilitation strategy? Can the application of metacognitive facilitation strategy in the classroom perk up student achievement and cognitive thinking skills? Is the effort exerted in the preparation of instructional materials worth the course outcomes expected? These are the channel questions of this paper.

Metacognitive Facilitation Strategy is authorizing both the learners and the teacher in the academic quest. It involves not only the facilitator but also the other components in the educational system like the curriculum, teaching strategies, teacher competencies, students thinking skills and finances in providing a productive learning environment. Metacognitive skills are central agenda of all of the tasks which enable planning, setting goals, initiating work, sustaining future-oriented problem solving activities, monitoring and managing progress on undertakings. Certainly, thinking skills are required in teaching activities. Thus, thinking skills are indispensable for well-educated modern teachers. Using thinking skills across the curriculum can be an effective way to boost facilitating the learning process.

A number of studies have been made to widen the broad range of competencies needed to prepare future teachers for an unpredictable future across the world. In Pakistan, Fazalur Rahman et.al. (2011) examined the effects of metacognitively teachers making any distinction in students' metacognition and found out that student of more metacognitively responsive teachers performed better on metacognitive inventory. It was recommended that the teachers and students may be provided awareness about thought process.

Lisa Worrall and Frances Bell (2007) investigated the impact of Metacognition and Lifelong E-learning: a contextual and cyclical process. Metacognition is possibly a chief conceptualization within the area of lifelong e-learning, with many theorists and practitioners claiming that it enhances the learning process. However, the lifelong, cyclical and flexible aspects of before, during and after metacognitions within lifelong e-learning inclusive of whether an input necessarily leads to a completed output seem marginal within current areas of practical and theoretical debate.

Kuhn (2000) discussed on the role of metacognition in cognitive development by focusing on the link between metacognition and the development of higher order thinking skills. It characterized the skills that most consider to be critical thinking skills as being metacognitive rather than cognitive thus: higher order thinking or critical thinking by definition involves reflecting on what is known and how that knowledge can be verified, clearly metacognitive processes.

Kruger and Dunning (1999) demonstrated that college-aged novices possess poorer metacognition than college-aged experts in three different domains of expertise: humor, logical reasoning, and grammar. When learners are incompetent in a domain (as indicated by making poor choices and reaching invalid conclusions), this incompetence robs them even of the ability to recognize their faulty thinking.

Lately, Kelemen, Frost, and Weaver (2000) compared the performance of college students across a number of different metacognitive tasks. Results indicated that personality differences in memory and confidence were stable across both sessions and tasks but the differences in metacognitive accuracy were not. Metacognition is tacit as knowledge of effective learning and cognitive processes that work together to increase knowledge acquisition and sustained learning. Typically, individuals with more sophisticated and advanced metacognitive ability will perform more consistently and with higher achievement in the classroom.

Metacognitive awareness of the students learning processes is as important as their monitoring of their learning of the course content. Metacognition includes goal setting, monitoring, self-assessing, and regulating during thinking and writing processes; that is, when learners are studying and doing homework. An essential component of metacognition is employing study strategies to reach a goal, self-assessing one's effectiveness in reaching that goal, and then self-regulating in response to the self-assessment.

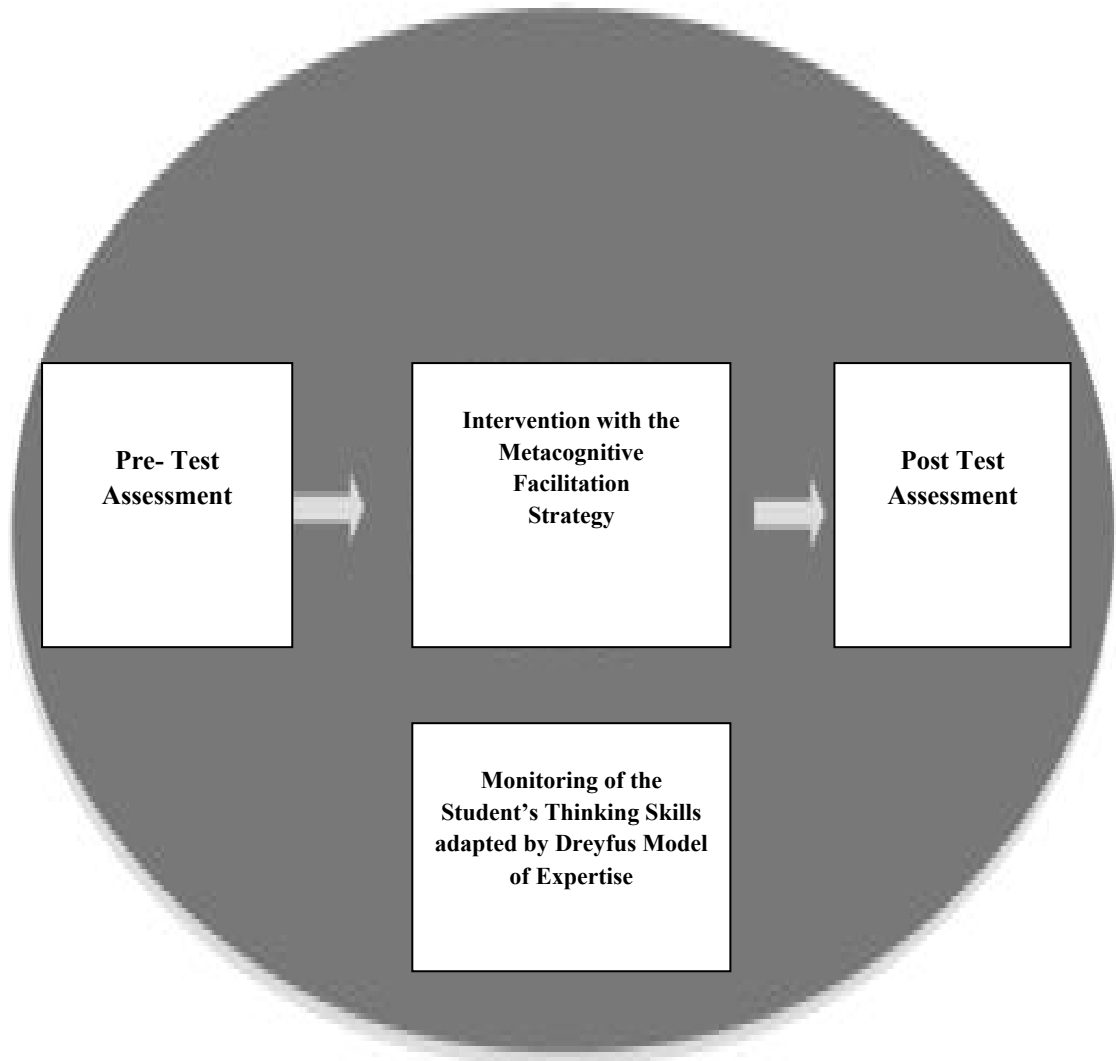


Figure 1. Conceptual Framework of the Study

The study focuses on the learning process maximized through the use of metacognitive facilitation strategy and develop student achievement and thinking skills through the effort exerted in the preparation of instructional materials worth the outcomes expected.

In general, metacognition is thinking about thinking. More specifically, Taylor (1999) defines metacognition as “an appreciation of what one already knows, together with a correct apprehension of the learning task and what knowledge and skills it requires, combined with the ability to make correct inferences about how to apply one’s strategic knowledge to a particular situation, and to do so efficiently and reliably.” The more the students are conscious of their thinking processes as they learn, the more they can control such matters as goals, dispositions, and attention. Self-awareness promotes self-regulation. If the students are aware of how dedicated (or uncommitted) they are to triumph the goals, of how sturdy (or weak) is their disposition to persevere, and of how determined (or wandering) is their attention to the various thinking tasks that can regulate their commitment, disposition, and attention.

The thinking skill of the students is identified through the Adapted Dreyfus Model of Expertise Development in 1982. Stage 1 is *novice*, characterized by limited, inflexible, rule-governed behavior. The Stage 2 is the *advanced beginner*, where, in addition to the set of rules, the learner begins to learn some of the important situational aspects of the task, but may not be able to differentiate the importance of these features. Stage 3 is *competent*, where the learner sees actions in terms of goals and plans, based on the selection of important features of the situation, and which are used to guide action. The *proficient* is the stage 4, where the best plan of action is selected apparently unconsciously, and where situations are summed up quickly and plans selected. Finally the Stage 5 is *expert*, where the performer acts intuitively from a deep understanding of the situation, appears to be unaware of the rules and features, and performance is fluid, flexible, and highly proficient

As learners progress from novice through to expert, they progress from a relatively passive strategy of receiving information to strategies which are increasingly reflective and intuitive. They shift from being 'empty vessels' to be filled with information to develop into constructors of knowledge. Along with that comes a gradual withdrawal of the teacher in the form of coach or mentor, although some learners will always retain these types of people to help them improve, add to or analyze their skills. Where people have become highly expert in a task, they may move to what is known as automaticity, where the task can be carried out automatically. At that level some people may have difficulty communicating how they actually do the task. One of a teacher's most important skills is having the capacity to help others on their journey through these five stages—even if they themselves are already experts. But how do teachers and others facilitate the development of workplace knowledge and expertise? Intervention is the provision to learners of supportive contexts and guidance that enables them to engage with a learning task and receive advice and assistance while they learn it, is one strategy. The metacognitive facilitation strategy intrusion is progressively withdrawn, or changed, as expertise develops. Exercising judgment in the way that a task is carried out has also assumed a greater importance for the learner. With the academic test, they are learning to learn through application of theories instead of merely following learned rules. As a student joins the group at a novice level, they are peripheral to the action. But as they become more proficient they take on a more central role, they move from the periphery to the core.

Bloom's Taxonomy of Educational Objectives is the most renowned description of the levels of cognitive performance. Knowledge represents the lowest level in Bloom's taxonomy. It is low only in the sense that it comes first and it provides the basis for all higher cognitive activity. Only after a learner is able to recall information is it possible to move on to comprehension. The third level is application, which refers to using knowledge or principles in new or real-life situations. The learner at this level solves practical problems by applying information comprehended at the previous level. The fourth level is analysis, breaking down complex information into simpler parts. The simpler parts, of course, were learned at earlier levels of the taxonomy. The fifth level consists of creating something that did not exist before by integrating information that had been learned at lower levels of the hierarchy, is called as synthesis. Finally, evaluation is the highest level of Bloom's hierarchy. It consists of making judgments based on previous levels of learning to compare a product of some kind against a designated standard. The main value of the Taxonomy is twofold: (1) it can stimulate teachers to help students acquire skills at all of these various levels, laying the proper foundation for higher levels by first

assuring mastery of lower-level objectives; and (2) it provides a basis for developing measurement strategies to assess student performance at all these levels of learning.

The salient features of metacognitive study has provided educational psychologists with imminent about the cognitive processes involved in learning and what differentiates successful students from their less successful peers. It also holds several implications for instructional interventions, such as teaching students how to be more aware of their learning processes and products.

RESEARCH METHODOLOGY

The study made use of the pre-test – post test quasi-experimental design on the thinking skill of the student and the student reactions to the Metacognitive Facilitation Strategy employed in the classroom. The respondents were given the validated pre-tests on achievement. After the pre-test, they were exposed to the Metacognitive Facilitation Strategy in the lessons identified for the final term in teaching. Post test was administered after the final term. The researcher made test is used to assess the students' academic achievement. The test consists of sixty items on the Facilitating Learning course and evenly distributed the table of specification to the six levels of the original Bloom's Taxonomy of Educational Objective. Then the students pre-test and post test scores are interpreted to the adapted Dreyfus Model of Expertise Development. The Dreyfus model is used fairly widely to endow with a means of assessing and supporting progress in the development of skills or competencies, and to provide a definition of acceptable level for the assessment of competence or capability. The 'expert' level does not signify that development stops, as expert learners need to evaluate their practice and keep up-to-date with new evidence. The students' thinking skills is categorized into five levels. Those learners obtaining the scores of one to twelve is considered as novice, thirteen to twenty-four is classified as advance beginner, twenty-five to thirty-six is regarded as competent, thirty-seven to forty-eight is noted as proficient and forty-nine to sixty scores tagged as expert learners. One hundred thirteen (113) research respondents were the identified students of the Facilitating Learning. Data were collected through the responses of the validated test and evaluation towards the program conducted to the respondents.

The type of evaluation is a quasi-experimental study which aims to determine whether a program or intervention has the intended effect on a study's participants. A pre-post test design involves the data collected on study participants' level of performance before the intervention took place (pre-), and the same data collected after the intervention took place (post-). This study design only looks at one group of individuals who receive the intervention, which is called the treatment group. The pre-post test design allows making inferences on the effect of metacognitive facilitation intervention by looking at the difference in the pre-test and post-test results. The t-test assesses whether the means of two groups are statistically different from each other. This analysis is suitable to compare the paired means. The respondents post test was directed after the final term and evaluated the effects on the application of Metacognitive Facilitation Strategy. The pre-test and post test scores are used in the statistical data of the products of the study.

RESULTS AND DISCUSSIONS

Based on the students' performance in the pre-test and post test, none of the respondents was identified as novice. These education students were highly selected and had undergone screening for they had to qualify the entry qualification and maintain their grades in the College of Teacher Education. There were seventeen students documented as advance beginner, but after the Metacognitive Facilitation Strategy, they improved their level of thinking. Eighty-three students were categorized as competent in their thinking styles before the scheme

and after the implementation of the program it was reduced in fifty-four. There were thirteen respondents regarded as proficient in their assessment and increased in number after the employed strategy of teaching. Finally, one student stands out as expert in facilitating learning. As to the students' thinking skills using Dreyfus Model of Expertise, stage1, novice learners with 1-12 score, stage2, advance beginner with 13- 24 score, stage3, competent learners with 25-36 score, stage4, proficient learners with 37-48 score and stage5 expert learners with the score of 49-60. Hence, there is a statistically significant difference between the students' pre-test and post test thinking skills, that the differences between condition Means are probably due to the Metacognitive Facilitation strategy. It implies that the result was considerable between pre and post-test scores consequently Metacognitive Facilitation strategy did help a lot in improving the students' post test scores. By means of Metacognitive Facilitation Strategy there is an enhancement in the students' achievement. And also it involves the interactive processes that enables the interface among students and their peers in the Facilitating Learning course and shows the ability to elucidate and enhance the lessons prepared by the professor.

CONCLUSION

Metacognitive facilitation strategy is a great help in the students thinking skill headway. Metacognitive thinking can be taught. According to experts, it ought to be part of an expected curriculum. This research also strongly suggests that metacognitive thinking can be taught along with content, without sacrificing the quality of either. The professional education curriculum seems to be the ideal to carry out metacognitive thinking instruction, as inquiry and the quest for knowledge are the basis of education. This research shows an overall increase of students achievement score in terms of cognitive critical thinking ability. These creative strategies give choices to teachers to help them implement the framework of critical thinking instruction in the classroom. While these are not the only strategies that will be used, they are a good overview of strategies. They should be seen as vehicles for delivering the components of the Educational Objectives by Benjamin Bloom that are called for within in developing the students' thinking skills from novice to perk up to the expert stage in the outlined cognitive prowess by Dreyfus Model of Expertise Development.

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