Effect of Metacognition on Performance in Presentation of Prospective Teachers

By Ghazal Khalid Siddiqui & Dr. Mumtaz Akhtar

University of Education, Pakistan

Abstract- A reflective teacher is who not only have mastery in content area but also have good pedagogical and communication skills. During course work, these skills can be groomed, in prospective teachers, by assigning different tasks relevant to their courses such as presentations. The role of metacognitive skills in students learning is promising. Researches in the field of metacognition had identified that students' academic performance in various fields may be improved when teachers apply these skills in class room. This is why the present research was aimed to assess the effect of metacognitive skills on prospective teachers' presentation skills. An experimental study was conducted on B.Ed. honors students. Two intact groups were taken as a sample. Metacognitive awareness inventory (MAI) by Schraw and Dennison (1994) was used to check the metacognitive skills and check list were used to assess presentation skills of prospective teachers. After treatment performance in presentation of prospective teachers was improved.

Keywords: metacognitive skills, metacognitive awareness, presentation skills, reflective teachers, prospective teachers.

GJHSS-A Classification : FOR Code: 950199

EFFECT OF METACOGNITION ONPERFORMANCEINPRESENTATION OFPROSPECTIVETEACHERS

Strictly as per the compliance and regulations of:

Effect of Metacognition on Performance in Presentation of Prospective Teachers

Ghazal Khalid Siddiqui [α] & Dr. Mumtaz Akhtar [σ]

Abstract- A reflective teacher is who not only have mastery in content area but also have good pedagogical and communication skills. During course work, these skills can be groomed, in prospective teachers, by assigning different tasks relevant to their courses such as presentations. The role of metacognitive skills in students learning is promising. Researches in the field of metacognition had identified that students' academic performance in various fields may be improved when teachers apply these skills in class room. This is why the present research was aimed to assess the effect of metacognitive skills on prospective teachers' presentation skills. An experimental study was conducted on B.Ed. honors students. Two intact groups were taken as a sample. Metacognitive awareness inventory (MAI) by Schraw and Dennison (1994) was used to check the metacognitive skills and check list were used to assess presentation skills of prospective teachers. After treatment performance in presentation of prospective teachers was improved.

Keywords: metacognitive skills, metacognitive awareness, presentation skills, reflective teachers, prospective teachers.

I. Introduction

The reflective teacher is who not only have mastery in content area but also have good pedagogical and communication skills. She is able to handle various problems related to classrooms, hence, have good classroom management skills, so that she can transmit knowledge in an effective way. Development of such skills is the core element of teachers education. During course work, these skills can be groomed, in prospective teachers, by assigning different tasks relevant to their courses such as assignments and presentations.

One of the most essential goal of teachers training is to train students with knowledge and skills that are required to cope with classroom problems, to learn and to transmit the learned lesson to the next generation, and help them to be a reflective teacher. In Pakistan it is commonly observed that prospective teachers often try to solve a problem without thinking. Hence, they are unable to solve classroom situations effectively and the "reflection", which is the core demand of the teaching profession, left in background when they teach in real classroom; even having the essential knowledge and skills necessary to do so. This deficiency may be linked to ineffective   metacognitive

skills. That is they may not properly, plan, monitor themselves, remove errors, and evaluate their actions.

This problem does not start with the instructor but has much deeper roots. The teachers of "today" are the students of "yesterday." What they have learnt and observed during their student life, is now being imparted to the new generations of the students, in the form of rote learning, dictating notes, maintaining strict discipline resulting in passive students. And the prospective teachers are the teachers to be so it's obvious what they will do to the forthcoming generations.

This deficiency may be covered by using metacognitive skills and strategies in classrooms. Metacognitive skills are amongst the burning concept since the couple of decade, when John Flavell first introduced it. This notion is commonly describe as "thinking about thinking". Metacognition is sub divided by many researchers, such as (Brown, 1987; Schraw and Dennison, 1994; Flavell, 1987; Jacob and Paris 1987) into two main components. First: knowledge about cognition and Second: metacognitive skills, i-e., regulation of cognition.

Researchers have proven the dramatic results of these skills on students academic performances in different disciplines. Lefrancois (1988) reported that through these skills we are able to monitor our progress during learning a task. These skills not only help full in assessing our efforts and its effects, but also envisage the likelihood of the ability to remember. Reid (2005) described the importance of metacognition in learning. Because it is directly related to the learner's awareness of thinking.

Kim (2005) examined the effects of metacognitive awareness and reflective thinking on performance. He discovered that students' metacognitive awareness was increased by reflective thinking activities. Results also indicated that higher level of reflective thinking in students leads towards higher regulation of cognition.

Various studies have revealed that if students use metacognitive skills their learning can be enhanced (Baird, 1998; Hacker, 1998; White & Gunstone, 1989 as cited by Conner, 2007). Good learners are metacognitively skilled and slow learners' metacognitive skills are deficient

Rehman (2011) reported that Myers and Paris (1978) focusing on metacognitive knowledge about

Author α σ: University of Education, Bank Road Campus, Lahore, Pakistan. e-mail: ghazalkhalid@ue.edu.pk

reading processes. They found that older children had more knowledge about critical reading parameters as compared to younger children.

92% studies showed that metacognitive knowledge and reading comprehension were related. Significant findings were reported in experimental and non experimental studies (Paris & Winograd, P 1990).

Researches also has proven a direct relationship between metacognition and task performance. The ability to regulate cognition through self monitoring during a task performance is a natural step toward becoming independent, which can only happen when students become change agents and take responsibility for their own actions (Hanson, 1996). The first step in teaching students to regulate themselves is to define a target behavior that is task. The following section discuss the evidences regarding relationship between metacognition a task performance provided by the researchers.

Maqsud (1997) examined the effects of metacognitive skills and nonverbal ability on academic performance of students. He found that metacognitive ability positively associated with academic performance pupils.

Everson; Tobias & Laitusis (1997) examined the correlation among measures of metacognitive knowledge, learning strategies, and academic achievement in the domains of verbal ability and mathematics. It was found that metacognitive knowledge can be generalized to both domains. A positive correlation was also found between the two monitoring and students' confidence estimates. Furthermore, Tobias; Everson; & Laitusis (1999) found that knowledge monitoring was significantly related to the school grades. Reflecting that accurate monitoring is an important variable in academic success.

Phakiti (2003) investigated the relationship between metacognitive strategy used learn English as a Foreign Language and achievement test. Findings of this research revealed that the metacognitive strategies were positively related to the reading test performance. Furthermore, it was also found that high achievers had significantly higher use of metacognitive strategy than the moderate achievers, and moderate achievers had higher use of these strategies than the low achievers.

Research indicates that learners who are more metacognitively aware perform better (Garner and Alexander, 1989; Pressley and Ghatala, 1990; Bransford; Brown; & Cocking, 2000). It is so because that individuals having high metacognitive skills are able to plan, sequence, and monitor their learning. Which leads directly to improve their academic task performance (Schraw and Dennison, 1994).

It is also proved through researches that weaker students get more from such activities as compared to stronger students (White and Frederiksen, 1998). However, through carefully designed instructional activities students are openly encouraged in metacognitive thinking (Bransford, et al., 1999; as pointed out by Gama, 2004). This means that metacognitive skills can be improved through teaching and hence through metacognitive skills a students may be able to perform better in various academic tasks.

Therefore, the purpose of the present research was to assess the metacognitive skills and its relationship with the performance in presentations of the prospective teachers.

II. Limitations

Participants of this study are the students of B.Ed. honors program offered by university of education bank road campus Lahore. Additionally, relations between various measures within this study may be confounded by some variables that were not included such as motivation, students' personal time parental qualification and institutional type etc.

III. Method

a) Participants

Participants of this study are the students of B.Ed. honors program semester V offered by university of education bank road campus Lahore. Two intact groups were selected as sample, one as control group and other as treatment group.

b) Variables of the study

There are two variables in this study one is metacognitive skills which is independent variable other is performance in presentation.

c) Research design

Pre test post test qusai experimental design was used. Two intact groups were taken as experimental and control groups.

d) Instruments

Metacognitive awareness inventory developed by Schraw and Denison (1994) was adopted. This is the best inventory to measure metacognitive development of adults and it was easy to administer. For assessing performance in presentation a check list was developed by the researchers.

e) Training sessions

During intervention phase we used multiple strategies to develop or enhance metacognitive skills in students of experimental group regarding presentation skills. At first we gave direct explanation of metacognitive awareness in which we highlight the significance of this concept. Then we divide the students in experimental group into eight small groups. After that intervention was given to the students. The intervention was based on two aspects one is the lecture in which we used modeling technique to enhance metacognitive awareness in prospective teachers. The second one

was a work sheet which was given to students for their practice related to each metacognitive skills. Total duration of these sessions varies from 10 to 20 minutes depending upon the skill to be practiced and nature of lectures.

IV. Results

Table 1: Difference in presentation of prospective teachers of control and experimental group before treatment

	Control Group N=33		Experimental Group N=37					
	M	SD	M	SD	df	t	p	d
Presentation	5.08	2.50	5.27	2.70	68	-0.30	0.76	0.07

p > 0.05

Table 2 : Difference in presentation of prospective teachers of control and experimental group after treatment

	Control Group N=33		Experimental Group N=37					
	M	SD	M	SD	df	t	p	d
Presentation	5.48	2.43	7.42	2.6	68	-3.21	.002*	0.77

*p <0.01

The above tables revealed that before treatment both groups were same but after training performance in presentations was improved.

V. Conclusion & Discussion

Through literature we come to know that assignments and presentations are the effective sources to develop higher order thinking in students. It can be commonly observed that prospective teachers who do assignments regularly and with keen interest, and try to perform well in presentations, they outperform in teaching practice. Their lesson planning and delivery is better than those who do not take these task i-e., assignments and presentations seriously. The analysis revealed that before treatment both control and experimental groups were same in every aspect of task performance. Effect sizes confirm that these differences were small. After training both groups were different. Experimental group outperformed the control group in presentations. Within group comparisons revealed that performance in presentation was improved. So it may be concluded that metacognitive skills have impact on performance .

These results support many researches such as Coutinho (2006) that students with good metacognition tend to be successful students. These results may also support to the idea of promoting metacognition in classroom by Schraw(1998); King (1991); Kuhn (2000); and Hartman (2001). So, it could be concluded that metacognitive skills could be a predictor of academic performance.

VI. Future Researches

Although, this research confirmed a probable causal relationship, but further confirmation of these results is required through variety of researchers. Furthermore, it is recommended that qualitative researches should also be done for in depth analysis. Cross sectional and longitudinal researches would confirm these results and importance of application of metacognition in real classrooms.

These researches may not only provide a deeper understanding of the concept of metacognition in Pakistani context but also provide a sound proof to include these skills in curriculum policies. In teacher education system, more researches exploring the concept regarding teachers metacognitive skills should be done. Recommendations concerning the application of these findings are necessarily general at this time. Specifically, the education of educators should include training in the use of metacognitive enriching techniques in the classroom.

References Références Referencias

1. Bransford, J. D; Brown, A. L., & Cocking, R. R. (2000). How people learn: Brain, mind, experience and school. (Expanded edition). Washington, DC: National Academic Press.
2. Brown, A. (1987). Metacognition, executive control, self regulation and other more mysterious mechanisms. In F. weinert & R. Kluwe (Eds) Metacognition, Motivation and Understanding. Hillsdale, NY: Erlbaum.
3. Conner, L.N. (2007). Cueing metacognition to imp rove researching and essay Education. Retrieved on January 15,2007, from http://www.ir.centerbury.ac.nz
4. Coutinho, S. A. (2006). A model of metacognition, achievement goal orientation, learning style and self

efficacy. (Unpublished Doctoral dissertation, Department of Psychology, Northern Illinois University).

5. Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. Weinert, & R. Kluwe, (Eds) Metacognition, Motivation and Understanding. Hillsdale, NY: Erlbaum. Pp.21-29.

6. Flavell, J. H.(1987). Assumptions on the concept of metacognition and on the development of metacognition. In F. Weinert & R. Kluwe (Eds) Metacognition, Motivation and Understanding. Hillsdale, NY: Erlbaum.

7. Kuhn, D. (2000). Metacognitive development. Current Directions in Psychological Science, 9, 178–181

8. Everson, H. T; Tobias, S., & Laitusis, V. (1997). Do metacognitive skills andlearning strategies transfer across domains? Paper presented at a Symposium On Assessing Metacognitive Knowledge Monitoring held at the annual convention of the American Educational Research Association, Chicago, March1997.

9. Gama, C. (2001). Metacognition and reflection in its: Increasing awareness toimprove learning. In J.D. Moore et al (Eds) Artificial Intelligence in Education, IOS press (pp492-495).

10. Gama, C. (2001). Metacognitive awareness: A pilot study in a software designcourse. School of Cognitive and Computing Science, University of Sussex, Brighton.

11. Gama, C. (2004). Integrating metacognition instruction into interactive learning environments. (Unpublished Doctoral thesis, University of Sussex). Brighton.

12. Garner, R., & Allexander, P. A. (1989). Metacogniti on: Answered and unanswered questions. Journal of Education Psychology, 24, pp.143-158.

13. Hanson, J. R. (1996). Metacognition: Strategies for four thought. A paper presented at the annual conference and exhibit of the National Middle School Association, 23rd Baltimore, MD, October 31- November 3, 1996.

14. Hartman, H. E. (2001). Metacognition in learning and instruction: Theory, research and practice. Netherland: Kluwer Academic.

15. Jacobs, J. E., & Paris, S. G. (1987). Children's metacognition about reading: issues in definition, measurement and instruction. Journal of Education Psychology, 22, pp.255-278.

16. Kim, Y. (2005). Cultivating reflective thinking: the effects of a reflective thinking context of on-line learning. (Unpublished Doctoral thesis, College of education, University of Pennsylvania).Pennsylvania:

17. Lefrancois, G. R. (1988). Psychology for teaching. (6th ed). USA: Wadsworth.

18. Maqsud, M. (1997). Effects of metacognitive skills and nonverbal ability on academic achievement of high school pupils. Educational Psychology, 17 (4), 387-397.

19. Reid, G. (2005). Dyslexia, metacognition and learning styles. University of Edinburgh, Scotland. Retrieved on August 21, 2006 from http://www. gavinreid.co.uk.

20. Paris, S. G., & Winograd, P. (1990). How metacognition can promote academic learning and instruction. In B. F. Jones & L. Idol (Eds.), Dimensions Of Thinking And Cognitive Instruction (pp. 15-51). Hillsdale, NJ: Erlbaum.

21. Phakiti, A. (2003). A closer look at the relationship of cognitive and metacognitive strategy used to EFL reading achievement test performance. Language Testing, 20, 26-54.

22. Pressley, M., & Ghatala, E. S. (1990). Self regulated learning: Monitoring learning from text. Journal of Education Psychology, 25: pp.19-33.

23. Schraw, G. (1998). Promoting general metacognitive awareness. Instructional science, 26. Netherlands: Kluwer Academic.

24. Tobias, S. & Everson, H. T., & Laitusis, V. (1999). Towards a performance based measure of metacognitive knowledge monitoring: Relationships with self reports and behaviour ratings. A paper presented at the symposium entitled Research On Metacognitive Monitoring held at the American Educational Research Association annual mee tin g. Montreal, Canada: April 1999.

25. White, B., & Frederiksen, J. (2000). Metacognitive facilitation: An approach to making scientific inquiry accessible to all. "In J. Minstrell and E. Van Zee (Eds.), Inquiring into Inquiry Learning and Teaching in Science. (pp. 331-370).