

Metacognitive Strategy Training and Teacher Attitude and Performance

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ABSTRACT

This study aimed to determine the effects of an in-service training on the metacognitive strategies of public secondary teachers in English in the District of Talacogon, Agusan del Sur, CARAGA Region XIII. Specifically, it sought to answer the questions: (1) What is the teachers' attitude towards the use of metacognitive strategies before and after the in-service training on metacognitive strategies? and (2) Is there a significant difference between the participants' teaching performance before and after the in-service training on metacognitive strategies? A two-day in-service training on metacognitive strategies for sixteen (16) English teacher-participants was developed and implemented. Using the instruments, *Teachers Attitude Scale towards Metacognitive Strategies*, and the *Observation Checklist on the Use of Metacognitive Strategies*, the study yielded results indicating that the in-service training on metacognitive strategies significantly affected the teacher-participants' attitude towards the use of metacognitive strategies and their performance in teaching Reading.

Keywords: *metacognitive strategies, in-service training*

Good learning depends on good teaching. The teachers cannot give to the students what they do not have especially in the field of teaching the knowledge that the students are searching for. According to Johnson (1990), good teaching is a creative process that demands constant injection of new information, new perspective, and new psychic of energy. Over time, teachers who lack opportunities for learning and professional growth become intellectually depleted and their classes become intellectually barren (Johnson, 1990).

Schumacher (in Macabenta, 2005) noted the alarming deterioration of Filipino students' competencies in English. He said twenty-five (25) years ago, the Philippines was an English-speaking country; however, today, it has basically lost its competitive advantage. As a proof, he mentioned the dismal results of two National Proficiency Tests such as the High School Readiness Test (HSRT) for elementary graduates, and the National Achievement Test (NAT) for the high school graduates which both point to serious deficiencies in Science, Math, and English among graduates of the public school system. He further added that one of the Department of Education's (DepEd) recent diagnostic examinations for public school showed that Grade Four pupils had a national average of 42% in English, and for High School students, the average was 30%.

One of the underlying causes of this deterioration in English language proficiency can be attributed to the classroom methodology in which the teacher plays the role of an authority rather than a facilitator. The teacher-student interaction is characterized by a one-way flow wherein the teacher is expected to deliver the subject matter, and very little opportunities are provided for students to explore and discuss

knowledge. Because of the restrictive pedagogical style of many teachers, the critical thinking skills of the learners are not developed (DepEd, 2004). This situation means that some English teachers still subscribe to traditional teaching practice in spite of teacher training programs on communicative teaching.

With the perennial problems faced by the educational system, which have been attributed to a lot of factors including the poor quality of teaching, Brown (2002), says that one response to the problem in the teaching-learning process is to promote teachers' professional development through training, action research, and reflective teaching.

Hangreaves and Fullan (1991) state that one way of providing teachers opportunities to teach effectively is to equip them through trainings with the knowledge and competencies that may have measurable impact on students' learning and achievement level.

In-service training is one of the best venues for the continuous growth and development of teachers. According to Bradeson (1995) the expanded role of teachers requires enhanced professional skills. He stresses that subject matter expertise and specific teaching and learning strategies for effective instruction are crucial components of any teacher preparation program. With intervention focused on specific outcome to be achieved through sequence of steps through mastery of discrete skills, teachers will be effective in their classroom instruction activities.

Effective in-service training does not only deal with theories and assumptions. It is more effective if teachers are given opportunities and support to put into practice what they have gained from the training. Operational teacher training implies a response to the specific needs of

a particular situation and is directly tied to bring about positive changes in such instructional practice (UNESCO, 1986). It needs to be systematic and focused on equipping teachers with functional skills so that teachers will be able to put into practice what have been introduced in the training that are presumed to be relevant in upgrading their students' academic performance.

As learners need to learn how to learn, the teachers also need to learn how to facilitate the learning process of their learners. Although learning is certainly part of the human condition, conscious skill in self-directed learning and in strategy use must be sharpened through training. Language learning requires active self-direction on the part of the learners. They cannot be spoon-fed if they desire and expect to reach an acceptable level of communicative competence.

Strategy training not only teaches language learning strategies but also deals with feelings and beliefs about taking on more responsibility and about the change implied by the use of language learning, such as the kinds of language functions used inside and outside the classroom. According to Rubin (1975) foremost of the concerns is the need for the training to be attuned to the needs of the teachers in whatever form their training should take. He says that good language learners are willing and accurate guessers; have a strong drive to communicate; are often uninhibited; are willing to make mistakes and learn from it; have focus on form by looking for patterns and analyzing; take advantage of all practice opportunities; monitor their speech as well as that of others; and pay attention to meaning of words and vocabularies.

Chamot and O' Malley (1990) and Oxford (1990) found out through research that the use of learning strategies in classroom instruction is fundamental to

successful learning. Supporting their findings, Oxford, et al. (1990) found that strategy training can enhance both the process of language learning (the strategies of behaviors learners use and the effective elements involved) and the product of language learning (change in students' language performance). They also claimed that strategy training has some positive effects on the teacher. Teachers who use strategy training often become enthusiastic about their roles as facilitators in classroom learning. Strategy training makes them more learner-oriented and more aware of their students' needs. This also enables teachers to scrutinize how their teaching techniques relate or fail to relate to their students' learning strategies, which sometimes lead them to alter their instructional patterns as a result of such scrutiny. McGregor (2003) requires teachers to be metacognitively aware to support effective reflections, to elucidate cognitive processes and outcomes. Furthermore, Fuerstein (1980) believes that interventional teaching mediation techniques can be used to improve students' cognitive resources, including flexible thinking to become more socially adaptable and subsequently become better life problem solvers. Fisher (2001) also highlights how teachers may develop learners' thinking skills through teaching their subject content explicitly and directly so that the thinking skills become transferable to other subjects and contents. This is supported by Carl McGuinness (1999, p. 3) who argues that students being supported in "learning how to think" and being able to independently "think how to learn" are important; that to become better thinkers they may have to learn meaningfully, think flexibly and make reasoned judgments. Thus, McGuinness (2000) believes that students should develop a thinking disposition and actively create

their own knowledge through challenging activities that involve metacognitive reflections. As Anderson (2002) stressed, we must have metacognitively aware teachers in order to have metacognitively aware learners.

Metacognition simply means beyond cognition. It is the knowledge about one's own thinking in the knowledge of one's own thought and the factors that influence thinking (Flavell, 1976). This refers to both students' knowledge about their own cognitive processes and their ability to control these processes. It literally means thinking critically about thinking.

Swartz et al. (1990) define metacognition as the internal managing processes that will be used to take charge of and direct one's own thinking that is no longer determined by impulse and association by what one should do as skillful thinkers. It is an active, persistent, and careful consideration of a belief or supposed form of knowledge in the light of grounds that support it and the further conclusions to which it tends (Dewey, 1990).

In the field of reading, metacognition refers to two important concepts related to reading comprehension: (a) a reader's knowledge of the status of his/her own thinking and the appropriate strategies to facilitate ongoing comprehension; (b) and the reader's knowledge to execute control over one's own thinking, including the use of comprehension strategies to facilitate or repair failing comprehension as he/she reads.

For many readers, problems in comprehension result from failures related to one or both of these two important concepts. Chamot and O'Malley (1990) reinforce these by concluding that students without metacognitive approaches are essentially learners without direction. They don't

have the opportunity to plan their learning, monitor their progress, or review their accomplishments and failures. Cunningham (1994) adds that some students do not think when they read, not because they do not know how, but because they do not know that they should. Since teachers are accountable of the students learning, they should have first the knowledge on how to use metacognitive strategies effectively before demanding it from the learners themselves.

Metacognitive approach teaches students to be aware of their comprehension strategies, and it teaches them that comprehension is a set of strategies they can consciously choose to use in meaningful situations. This procedure encourages the students to take control of their own comprehension processes and to make their own decisions. In addition, metacognitive strategies aim to strengthen students' awareness of what make their language learning successful. It is however important for the reading teacher to understand how to use such strategies in order to provide sufficient opportunities for students to be actively and deliberately involved in the learning process. This refers to the learning processes that enable students to anticipate or plan for a task, determine how successful the plan being executed is, and then evaluate the success of the learning and the plan after learning the assigned activities (Chamot and O'Malley, 1994).

RESEARCH AIMS

The idea of developing metacognitive awareness and explaining its positive effects on the teaching-learning process particularly in teaching reading was the primary goal of this study during the conduct of an in-service training on

metacognitive strategies to the English teachers of the District of Talacogon, Division of Agusan del Sur.

This study sought to identify the effects of the in-service training on metacognitive strategies on the teacher-participants' attitude towards the use of metacognitive strategies and on their teaching performance in teaching Reading.

Since metacognition aims to develop students to become more active and independent learners, the following metacognitive strategies were introduced to the teacher-participants during the training with the idea of developing their awareness about metacognitive strategies. They were expected to utilize the following strategies to develop autonomous and independent learners:

- Schema Theory (Activating Prior Knowledge)
- Think Aloud
- KWLA (What I Already Know; What I Want to Know; What I Learned; and the Affect of the Story)
- InQuest (Inquisitive Questioning)
- QAR (Question-Answer Relationships)
- Visual Imaging/ Induced Imagery
- SQ3R (Survey, Question, Read, Recite, and Review)
- DRTA (Directed Reading-Thinking Activity)
- ReQuest (Reciprocal Questioning)
- Graphic Organizers.

METHODOLOGY

The study used a pre-test/ posttest design to find out how the in-service training on metacognitive strategies affected the teacher-participants' attitude towards the use of metacognitive strategies, and to determine the significant difference in their performance in teaching Reading. Data were gathered

through the conduct of a pre-test and posttest focusing on the teachers' attitude towards metacognitive strategies, and the pre-observations and post-observations of teachers' performance in a Reading class.

Sample

The participants of this study were sixteen (16) English teachers from the District of Talacogon, Division of Agusan del Sur, CARAGA Region XIII, namely: Del Monte NHS, Talacogon NHS, Zillovia NHS, and Lucena NHS. Each school had four teacher-participants to represent each year level.

Instruments

The following instruments used in the study were validated by experts in the field who made some modifications, revisions, and suggestions for improving them:

Teachers' Attitude Scale Towards Metacognitive Strategies. This instrument contained fifteen (15) attitude scale indicators about metacognitive strategies. It determined the teachers' attitudes towards metacognitive strategies as indicated by the teachers during the pre-test and posttest, before and after the conduct of the training on metacognitive strategies.

Observation Checklist on the Use of Metacognitive Strategies. This checklist contained twenty-five (25) statements of tasks on the effective use of metacognitive strategies in teaching Reading. This instrument was used by the researcher during the pre and post- observations of reading classes to determine the effect of the in-service training on metacognitive strategies on the teachers' performance in teaching Reading.

Data Gathering

Right after identifying and meeting with the teacher-participants in the training, the researcher started the pre-

training observation. The researcher used the Observation Checklist on the Use of Metacognitive Strategies to determine the participants' teaching performance before the in-service training on metacognitive strategies.

The actual in-service training on metacognitive strategies was conducted on July 16-17, 2009 at Del Monte National High School Computer Laboratory. All the teacher-participants attended and participated in the two-day activity. The pre-test and posttest were conducted using the Teachers' Attitude Scale towards the Use of Metacognitive Strategies to determine the participants' attitude towards the use of metacognitive strategies.

During the actual training the teacher-participants were expected to learn the basic principles of metacognition, and the importance of metacognitive strategies in teaching Reading. Thus, the ten (10) metacognitive strategies were introduced during the training for the participants to use in their teaching in order to develop self-directed, independent, and effective learners.

The post-training observation was considered a continuation of the two-day training. The teacher-participants were observed during their class activities to determine whether the introduced metacognitive strategies were used and applied during their actual teaching. In the post-training observation the researcher used the same instrument utilized during the pre-training observation period.

Data Analysis

The data that were collected in the study were subjected to the following statistical tests and/or procedures:

1. The Mean computed and used as the basis for comparing characteristics of

teachers (i.e. attitudes, performance) before and after the introduction of the experimental variable (training on the use of metacognitive strategies). The following means were computed as prerequisites of testing their significant differences:

- a. Attitude pre-test mean (i.e. mean of attitudes of the 16 teachers prior to the in-service training on metacognitive strategies).
- b. Attitude posttest mean (i.e. mean of attitudes of 16 teachers after the in-service training on metacognitive strategies).
- c. Performance pre-test mean (i.e. mean of teaching performance of 16 teachers before the in-service training).
- d. Performance posttest mean (i.e. mean of teaching performance of 16 teachers after the in-service training).

2. The F-Test Analysis of Variance (ANOVA) was used to determine whether or not there was a significant difference between (a) the attitude pre-test mean and the attitude posttest mean, and between (b) the performance pre-test mean and the performance posttest mean.

3. The Scheffe Multiple Comparison Test was used as a post hoc analysis (i.e. follow-up analysis). It was used after the F-test ANOVA reported a "significant difference" result. Scheffe's test provides a detailed result as it conducts a pair wise comparison between the means of two groups.

RESULTS AND DISCUSSION

Teachers' Attitude Towards the Use of Metacognitive Strategies

This part answers the first question of the study, which aimed to find out the teachers' attitude towards the use of metacognitive strategies before and after the in-service training on metacognitive strategies.

The results of the teachers' responses in the pre- test and posttest were gathered and computed. The f-test Analysis of Variance (ANOVA) was used to determine the significant effect of the training on the teachers' attitude towards metacognitive strategies.

Table 2 shows the mean results of the teachers' attitude towards metacognitive strategies. As gleaned from the table, the training affected more than half of the teacher-participants. The attitude towards metacognitive strategies of eleven (11) teacher-participants was significantly

affected by the training while that of the other five (5) was not.

This observation implies that the training had a positive effect on the teachers' attitude towards the use of metacognitive strategies. The "no significant difference" result registered by five teachers may be due to the "ceiling effect" brought in by the high scores in the pre- test. As suggested by their high pre-test scores, the teachers already had a high positive attitude towards metacognitive strategies even before the training program was conducted. Consider for example Teacher 1 whose pre- test mean score was 4.53. This rating indicates that Teacher 1 had a high positive attitude towards the use of metacognitive strategies. Her posttest score of 4.73 also shows a high positive attitude towards the use of metacognitive strategies. The difference of her pre-test and posttest scores ($4.73 - 4.53 = 0.20$) was not significant due to the fact that the pretest score of 4.53 is already near the

Table 1
Mean Attitude of 16 Teacher-Participants Towards Metacognitive Strategies Before and After In-Service Training

Teacher	Mean		F test	P value	F Critical
	Before	After			
1	4.53	4.73	0.341	0.564189	4.196
2	4.40	4.87	8.575	0.006702	4.196
3	4.07	5.00	62.364	1.33E-08	4.196
4	4.73	5.00	5.091	0.032	4.196
5	4.87	4.93	0.350	0.559	4.196
6	3.47	4.60	23.800	3.87E-05	4.196
7	3.93	4.27	2.966	0.096	4.196
8	3.60	4.33	12.642	0.0014	4.196
9	4.07	5.00	62.364	1.33E-08	4.196
10	4.67	5.00	7.000	0.013	4.196
11	4.67	5.00	7.000	0.013	4.196
12	4.47	4.87	2.930	0.098	4.196
13	4.40	4.87	8.575	0.006702	4.196
14	4.73	5.00	5.091	0.032	4.196
15	4.07	5.00	62.364	1.33E-08	4.196
16	4.20	4.47	2.435	0.130	4.196

Level of Significance $\alpha = 0.05$

ceiling of 5 (note that the scoring is from 1 to 5). A similar observation was noted in Teacher 5 and the others who registered very high pre-test scores hardly leaving any room for improvement as these values are near the perfect value of 5 (i.e. ceiling effect). Thus, it can be safely deduced that the training had a positive effect on all the participants, as evidenced

by the increase in their respective posttest scores.

The instrument used to measure the teachers' attitude towards metacognitive strategies contained fifteen (15) attitude indicators about metacognitive strategies. Table 2 presents the attitudes of the teacher-participants classified according to the fifteen (15) attitude indicators.

Table 2
Teacher Attitude Scale Indicator Toward Metacognitive Strategies

Attitude Indicators	Mean		F Test	P Value
	Before	After		
1. Metacognitive strategies help students become independent learners.	4.63	4.88	2.00	0.168
2. Metacognition is a strategy for self-directed learning that assists learners in internalizing, understanding and recalling the content to be learned.	4.50	5.00	15.00	0.001
3. Metacognition should not be regarded as final objective for learning or instruction.	4.38	4.88	8.000	0.008
4. Metacognition sets goals and objectives in learning.	4.38	4.81	5.611	0.024
5. Metacognition processes are presumed to provide individuals with control over various cognitive routines related to problem solving.	4.06	4.63	7.105	0.012
6. Metacognition provides students the opportunity to restructure content in terms of their own ways of thinking and prior understanding.	4.31	4.94	14.706	0.001
7. Metacognitive strategies help students think about thinking and reflect on what they know about knowing.	4.19	4.88	13.855	0.001
8. Metacognitive strategies are orchestrated sets of procedure for completing a task.	4.06	4.69	11.194	0.002
9. Metacognitive strategies are useful in the teaching-learning process.	4.63	4.88	1.579	0.219
10. Metacognitive strategies ignite one's thinking that can lead to higher learning and better performance.	4.56	4.94	3.803	0.061
11. Metacognition increases awareness of thinking process.	4.56	4.69	0.508	0.481
12. Metacognition helps learners what to do when they don't know what to do.	4.06	4.69	11.194	0.002
13. The use of metacognitive strategies develops a healthy evaluative manner of thinking.	4.31	4.94	14.706	0.001
14. Metacognitive strategies implementation in teaching makes the teaching-learning process slow and boring.	3.94	4.25	0.652	0.426
15. Metacognitive strategies motivate students to think and challenge them to learn.	4.38	4.88	8.000	0.008

As shown in Table 2, all the fifteen (15) attitude indicators received high ratings even before the training on the use of metacognitive strategies was conducted. Note that item 14, the lowest, received a rating of 3.94 which is still a very satisfactory rating, while the rest of the items received ratings higher than 4.00. This implies that the sixteen (16) teachers had a high positive attitude towards the use of metacognitive strategies. In other words, they were receptive to the idea of using metacognitive strategies.

Table 2 also shows that the teachers' level of acceptance towards the use of metacognitive strategies was intensified after the training. This was shown by the posttest results where a corresponding increase in the ratings given by the teacher was noted in every item of the attitude scale on metacognitive strategies. Thus, although significant changes (or increases) were noted only in items 2, 3, 4, 5, 6, 7, 8, 12, 13 and 15, it can still be safely concluded that the training had a positive impact on all the attitude indicators of the teacher-participants as indicated by the fact that the posttest results were always higher than the pre-test results. The "no significant" results in items 1, 9, 10, 11 and 14 were likely due to the "ceiling effect" brought about by the high ratings obtained in the pre-test.

Teaching Performance Before and After the Training on Metacognitive Strategies

This part focuses on the participants' performance in teaching Reading before and after the implementation of the in-service training on metacognitive strategies.

To determine if there was a significant difference in the teachers' performance in teaching Reading before and after the in-service training on metacognitive strategies, the researcher conducted two

(2) pre-training observations and four (4) post-training observations of the sixteen (16) teacher-participants. The researcher used the observation checklist on the use of metacognitive strategies.

The average performance of the teacher-participants in the pre- training observations and post-training observations was computed. F-test ANOVA was then utilized to determine if there was a significant improvement in the teaching performance of the teacher-participants after the training on the use of metacognitive strategies. Results of these computations are shown in Table 3.

Table 3 shows that Teacher 1 obtained an average rating of 2.44 in the pre-training observation; while Teacher 2 obtained a similar rating of 2.30. Similar observations were noted for Teachers 3 to 16 where each of them obtained a rating slightly higher than 2 (i.e. between 2.08 to 2.60) in the pre-training observation. On the other hand, Table 3 shows that these sixteen (16) teachers obtained high ratings in the post-training observation ranging from 3.54 for Teacher 6 to 4.38 for Teacher 10. The F-test ANOVA results point to a significant difference in the teaching performance of the participants before and after the in-service training on metacognitive strategies. Specifically, the post- training performance of each teacher was significantly higher than their respective pre-training performance. This implies that the training on metacognitive strategies may have played a role in the improved teaching performance of the teacher-participants.

This result is supported by Tharp and Gallimore (1988) who believed that in scaffolding there is an identified progression of performance. The scaffolding in this sense is flexible and characterized by the teachers' responsiveness in implementing what they have learned during the training.

Table 3
Teachers' Performance Before and After the In-Service Training on
Metacognitive Strategies

Teacher	Mean of Effectiveness		F test	P value	F Critical
	Before	After			
1	2.44	4.07	337.558	5.14E-40	3.905
2	2.30	4.20	339.2254	3.99E-40	3.905
3	2.36	4.21	336.9454	5.65E-40	3.905
4	2.60	3.83	133.018	2.34E-22	3.905
5	2.10	3.69	391.0931	2.19E-43	3.905
6	2.38	3.54	142.3915	2.02E-23	3.905
7	2.20	4.05	394.9552	1.29E-43	3.905
8	2.42	4.04	281.3351	4.77E-36	3.905
9	2.26	4.16	413.5934	1.06E-44	3.905
10	2.16	4.38	670.161	8.09E-57	3.905
11	2.12	4.32	644.6364	8.48E-56	3.905
12	2.20	4.32	698.1226	6.71E-58	3.905
13	2.08	4.02	359.5487	1.92E-41	3.905
14	2.32	3.60	231.7309	4.36E-32	3.905
15	2.12	3.93	741.7207	1.62E-59	3.905
16	2.12	4.10	638.7266	1.48E-55	3.905

Level of Significance $\alpha=0.0$

It was observed further that out of the ten (10) metacognitive strategies introduced to the teacher-participants during the training, the commonly used strategies during their class presentation were the integration of schema activation, think aloud, visual imaging, and the use of graphic organizers. Seldom used were the InQuest and Request, because according to them these two strategies were implicitly a part of the other metacognitive strategies.

Based on Table 3, all teacher-participants improved their teaching performance by almost fifty percent (50%) in comparison with their pre-training observation teaching performance. This highlights the view of Chamot and O' Malley (1994) who said that it is really important for Reading teachers to understand how to use metacognitive strategies in order to provide sufficient opportunities for students to be actively and deliberately involved in the learning process.

Furthermore, the findings showed that the training on metacognitive strategies had a positive effect on the teachers' performance in teaching Reading based on the computed results of the pre-training observation and the post-training observation of their teaching performance.

The observation checklist on the use of metacognitive strategies utilized in the pre- and post-training observations contained twenty-five (25) statements of tasks on the effective use of metacognitive strategies. Table 4 shows the teacher-participants' performance classified according to the twenty-five tasks.

As shown in Table 4, the average performance of the sixteen teacher-participants in Task 1 (effectively designs lessons using metacognitive strategies) is 4.19. This rating implies a very satisfactory performance. It can be easily noted that the teachers' average performance in all the twenty-five tasks was generally high. There were tasks

Table 5
Teachers' Performance Classified According to Tasks

Task	Task Description	Mean
1	Effectively designs lessons using metacognitive strategies	4.19
2	Effectively creates innovative teaching aids to supplement teaching-learning processes	4.14
3	Effectively designs lessons appropriate to the ability and capacity of the learners	4.38
4	Effectively uses metacognitive strategies and motivational techniques that elicit student interest	4.08
5	Effectively motivates students to express ideas or ask questions	4.19
6	Effectively allows students to ask advance queries before doing some engagement activities about the selection	4.03
7	Effectively provides "thinking time" for students to organize thoughts and plans on what they are going to say or do	4.17
8	Effectively challenges students to do their best and use their thinking skills in doing a task/ activity	4.27
9	Effectively facilitates students' reflective thinking	3.81
10	Effectively motivates students to share what they know, express what they expect to know and say what they have known about the selection	4.25
11	Effectively develops students' inquisitive mind in understanding and evaluating new ideas and concepts	3.67
12	Effectively elicits questions carefully and efficiently	4.12
13	Effectively elicits students' responses and queries	4.05
14	Effectively elicits questions requiring higher order thinking skills	3.53
15	Effectively rephrases questions for clarifications	4.28
16	Effectively uses the art of questioning to stimulate students' thought and elicits good responses from them	3.89
17	Effectively motivates students' creative mind to picture situations, and infer or predict events that will possibly happen next	3.89
18	Effectively triggers students' prior knowledge about the topic/s to be discussed	4.30
19	Effectively brings students' creative minds into actual scene and atmosphere of the reading selection	3.80
20	Effectively gives examples and illustrations about the lesson	3.87
21	Effectively provides reading and re-reading activities to check and repair students' comprehension of the text	4.00
22	Effectively adjusts to situations but still well-organized and conscientious in meeting the lessons' objectives	3.72
23	Effectively monitors students' thinking while reading a text by asking questions about what they are reading	4.03
24	Effectively gives clear predictions, inferences and other thinking skills as reflective patterns in doing students' tasks and activities	3.81
25	Effectively integrates three or more metacognitive strategies	4.28
Total		4.03

however, where the teachers scored low. These are Task 11 (effectively develops students' inquisitive mind in understanding and evaluating new ideas and concepts), Task 14 (effectively elicits questions requiring higher order thinking skills), and Task 22 (effectively adjusts to situations but still well- organized and conscientious in meeting the lesson's objectives) where the ratings were quite low. It is important to take note of the tasks where the teachers performed low in order to formulate better approaches in training teachers on the use of metacognitive strategies.

To identify the tasks that were significantly less mastered by the participants, Scheffe's Multiple Comparison Test was conducted to rank in detail the twenty-five (tasks. A simplified result of the Scheffe's test (see Table 5).

As shown in Table 5, Task 3 (effectively designs lessons appropriate to the ability and capacity of the learners) and Task 18 (effectively triggers students' prior knowledge about the topic/s to be discussed) got the highest rank. On the other hand, the following tasks got the lowest ranks: Task 14 (effectively elicits questions requiring higher order thinking skills), Task 11 (effectively develops students' inquisitive mind in understanding and evaluating new ideas and concepts), and Task 22 (effectively

adjusts to situations but still well-organized and conscientious in meeting the lessons' objectives).

In other words, teachers were found effective in designing lessons appropriate to the ability and capacity of the learners, and in motivating students' prior knowledge or schema about the topic/s to be discussed. However, they were not as good in performing tasks like eliciting questions requiring higher order thinking skills; developing students' inquisitive minds, understanding and evaluating new ideas and concepts; and in adjusting to situations. However, results reveal that the participants were still well-organized and conscientious in meeting the lessons' objectives.

Based on some studies, developing effective thinking skill needs more motivating and challenging questions that would enhance students' reflective and critical minds. Fuerstein (1980) views thinking skills as transferable and usable in all areas in life. He posits that learners with tasks that are designed to improve these particular thinking skills will improve their cognitive performance. He also believes that interventional mediation techniques can be used to improve students' cognitive resources, including flexible thinking and finally becoming more socially adaptable and subsequently better life problem solvers.

In actual teaching-learning activities,

Table 5
Ranking of Tasks According to Teachers' Performance

Tasks of Effectiveness	Ranking	Mean
3 and 18	1	4.34
15, 25, 8, 10, 1, 5, 7	2	4.23
2, 12, 4, 13, 6, 23, 21, 17, 20, 16, 24, 9, 19	3	3.96
14, 11, 22	4	3.64

higher order thinking questions are usually found difficult by both teachers and students. On the part of the teachers, they need to consider the thinking abilities and capabilities of their learners. Sometimes, teachers have apprehensions that their learners cannot answer the higher order thinking questions, so they tend to ask lower level questions. This could have been one of the reasons for the ineffective teaching performance in this particular task by the teachers in this study.

The findings further imply that the identified tasks where the teachers performed poorly need to be given attention for them to develop and achieve effectiveness in teaching performance. According to McGregor (2003) educators should think more critically about ways of developing the thinking capability of the students and become more strategic in their approaches.

Based on the findings of the study, metacognitive strategies caused a positive effect on teachers' teaching performance. The findings further proved the need for language teachers to know more about metacognitive strategies and to utilize them in teaching in order to provide sufficient opportunities for students to be actively and deliberately involved in their own learning process. As learners need to learn how to learn, teachers need to learn how to teach and to facilitate the learning process. Although learning is certainly part of human experiences, conscious effort to develop skills in self-directed learning and in strategy use must be sharpened through the use of metacognitive strategies.

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions are drawn from the findings of the study:

1. The participants' attitude towards the use of metacognitive strategies was significantly affected by the training on metacognitive strategies. The "no significant difference" result was due to the "ceiling effect" brought in by the high scores obtained by the teacher-participants in the pre-test. It is important to note that the level of acceptance of teachers' attitude towards metacognitive strategies was intensified after the training as shown by the increased ratings in their posttest. With this, it was concluded that the training on metacognitive strategies had a positive impact on the teachers' attitude towards the metacognitive strategies.
2. An in-service training program on metacognitive strategies can cause a positive impact on teaching performance. The implementation of metacognitive strategies in the teaching of the teacher-participants showed a significant improvement in the after the training. The concept of metacognitive strategies in teaching Reading was also accepted by the teacher-participants.

In the light of the findings and conclusions herein presented, the following recommendations are specifically addressed to the following:

1. Language teachers may make use of metacognitive strategies instruction particularly in teaching Reading to help learners develop conscious planning, monitoring, and evaluating their own learning.
2. All content area teachers, not only those handling English subjects, may implement and use metacognitive strategies in their classroom instruction for it may have a significant impact on their students'

automaticity and independent learning process particularly in the comprehension of texts used in their respective subject areas.

3. In-service training on metacognitive strategies may be conducted to enhance teachers' knowledge and insights about metacognitive strategies. This may provide teachers awareness on the use of metacognitive strategies as means of facilitating a more effective teaching and learning process.
4. School administrators, cognizant of the importance of metacognitive strategies to facilitate learning and develop students' reflective thinking skills, may organize more seminars and trainings similar to the one implemented in this research to improve the classroom performance of teachers and students.
5. A set of lesson plans employing metacognitive strategies may be provided by the experts in the field of teaching for the teachers' continuous implementation of metacognitive strategies.

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