EFFECT OF METACOGNITIVE SKILLS ON PROSPECTIVE TEACHERS' ORAL TASK PERFORMANCE

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Original Article

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Abstract

The current quantitative study was conducted for investigating the effect of the Metacognitive skills on pupil teachers' oral task performance. The independent variable for this study was "Metacognitive skills" whereas the dependent variable was prospective teachers' "oral task performance". The study was conducted while using the Quasi-Experimental nonequivalent pre-test-post-test control group design. The two sections of B.Ed (Honors) Semester-I (each consisting of 30 students) were selected conveniently for this study. These groups were taken from a public sector university based in Lahore. Before the intervention, both of the selected groups have been pretested and there was no statistical difference found among them concerning their Metacognitive Skills. The intervention (Cooperative Learning approach) was given to the experimental group whereas the controlled group was given the conventional treatment. The intervention duration consisted of one semester only. The researcher used a performance test named "Metacognitive Skills Assessment Tool" (MSAT) adapted from (Ali, Siddiqui, & Tatlah, 2020) comprising 14 items (representing Metacognitive skills) to measure the prospective teachers' skills. Furthermore, the Rubrics for Metacognitive Skills Assessment Tool (RMSAT) were used to rate the prospective teachers' performance taken on MSAT. These were also adopted from (Ali, Siddiqui, & Tatlah, 2020). On the other hand, the prospective teachers' oral task performance (oral presentation) was assessed by the "Oral Presentation Assessment Sheet (OPAS)" developed by (Siddiqui, 2016).Base on the results, it has been concluded that the Metacognitive skills have a statistically significantly high effect on prospective teachers' oral task performance. Based on the results, it is recommended that the teacher educators should use Metacognitive development strategies to develop these skills in prospective teachers so that their oral task performance could be enhanced.

Keywords: Metacognition; Metacognitive skills, Prospective teachers; Oraltask performance

Introduction

The term "Cognition" means to know something or think about something. Cognition is a process by which one attains information by using one's senses. Then the information is stored, retrieved, and transformed followed by its manipulation (Ashman & Conway, 2002). It is also said to be the function of the brain in which one attains knowledge. One thinks about things, knows them, also remembers and judges them for their worth. It also encompasses one's imaginations and perceptions. The things are also planned during the process of cognition (Cherry, 2020).

Cognition means the process of knowing something or any phenomenon. It enables one to comprehend things while letting one acquire, store, retrieve, and process the concerned information. By concluding all the above mentioned, it can be said that Cognition is a process being conducted by one's brain which enables one to perceive, understand, and judge the information taken through the senses (Bayne, 2019).

Metacognition is concerned with one's information and cognitive process. It has concerned with the knowledge of an individual's thinking as well as the organization of own cognitive structures (Akturk & Sahin, 2011). Metacognition is referred to be a process by which one endeavors to instruct oneself to think over-thinking and perform a task (Ozturk, 2015). Similarly, it is stated to be constructive as one endeavors to think over own thinking. It is a process by which one engages oneself to monitor one's own thinking and behavior (Adnan & Bahri, 2018).

The roots of Metacognition can be found in Aristotle's "On the Soul" and the "ParvaNaturalia" where he discussed the "higher level of thinking". However, Flavell (1976) gave this the name "Metacognition". Flavell stated it as "knowledge about and control of own cognition" (Akturk & Sahin, 2011).

Flavell was not alone who studied and researched the concept of Metacognition. Rather Brown also researched in 1978 on the thinking process and one's awareness to own thinking process. Similarly, Wellman defined Metacognition in 1985 as an individuals' cognition about own cognition (Amzil et al., 2013). On the other hand, Schraw and Dennison proposed the concept of Metacognition in 1994 as a process in which one gets self-awareness regarding own learning. For this purpose, one involves oneself in activities like planning, information management followed by monitoring, debugging and evaluation, etc (Siddiqui, 2016).

Although, different researchers and psychologists have defined "Metacognition" differently. But if we see for its main theme or origin, it would come to known that "higher thinking or thinking over-thinking" is found in all of the definitions since 4th century BC up to the day. Even being such an older concept, Metacognition is still an underdeveloped concept that is being researched until now.

Metacognition helps us in evaluating the circumstances, using the relevant knowledge for the solution of a problem and then evaluating for the purpose of improvement. The learners are helped by Metacognition regarding the selection of appropriate strategies for improving learning (Gama, 2004). It is considered to be an instrument that students can get help from. The help is taken to get the awareness of one's self along with the regulation of one's learning. One is enabled by Metacognitive skills in controlling one's learning as well as improving performance. The more Metacognitive skills are improved, the more learning and performance are improved (Schraw & Dennison, 1994).

The students' learning is appraised with the help of Metacognitive skills development. The more one's Metacognitive skills are developed, the more one's learning would be in control. Efficient problem solving also depends upon the level of Metacognitive skills (Chatzipantelia et al., 2013). Metacognitive skills help one in the assessment of one's learning along with the performance. On the other hand, these are the absolute goal for which one is instructed as the purpose of education is not to memorize the given knowledge but also to use that in a real-life situation which requires Metacognitive thinking (Shen & Liu, 2011).

Likewise to Metacognition, Metacognitive skills also have been studied by several researchers. After the literature review, the researcher came to know that the aforementioned skills are studied by the researchers while labeling them with a variety of names. In order to eliminate the confusion, the researcher has stated their used terminology along with the actual skill(s) under which the used terminology falls. The review of related literature showed that *"Goal*

Setting" has been used by Azizah & Nasrudin (2018), *"Self-Plan"* has been used by Shen & Liu (2011) and *"Task Analysis and Planning"* has been used by (Priya, 2012). All these are the representatives of *"Planning"*. Whereas "*Information managemen*t" is only cited by Siddiqui (2016) who opted for Metacognitive Skills from (Schraw & Dennison, 1994) MAI. On the other hand, the "*Self-Monitor"* has been used by Shen & Liu (2011) and "*Monitoring and Reflection"* have been used by (Priya, 2012). Both of these come under "Monitoring" which has been used by (Rahman, Yasin, &Hayati, 2010; Cooper & Sandi-Urena, 2009). Similarly, "*Recapitulation"* has been used byVeenman (2010) and "*Self-Modify"* has been used by (Shen & Liu, 2011). Both of these come under "Debugging". Whereas most of the researchers have used the "Evaluation" Hacker, Dunlosky, & Graesser, 2009; Woolfolk, 2009; Ashman & Conway, 2002).

In the whole world, different researches have been done related to Metacognition and Metacognitive skills however, there is a lack of the related researches in Pakistan. Therefore, the current research has been conducted to fill in the gap and to address the grey area.

Conceptual Framework

This was a quantitative study in which Metacognitive skills were developed in prospective teachers. Then the effect of prospective teachers' Metacognitive skills was examined on their oral task performance. So, the prospective teachers' Metacognitive skills were the independent variable whereas their oral task performance was the dependent variable.

The Model of Metacognitive skills by (Schraw & Dennison, 1994, as cited in Siddiqui, 2016) was followed by the researcher for the conduction of this study. According to this model, Metacognition has two basic components. One of them is Metacognitive knowledge whereas the other is Metacognition regulation. Metacognitive knowledge is further divided into three factors. One of them is Declarative whereas the second of them is Procedural and the third is Conditional knowledge. The second component of Metacognition is Metacognition regulation which is actually comprised of Metacognitive skills. There are 5 Metacognitive skills. One of those is Planning, the second is Information Management, the third is Monitoring and the fourth is Debugging whereas the fifth is Evaluation (Amzil & Stine-Morrow, 2013; Rahman, 2011). The same is presented in the given below figure.

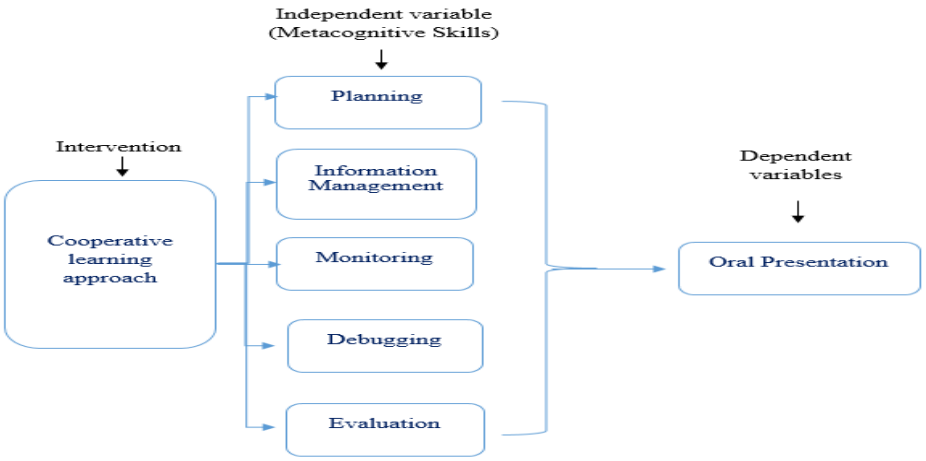

*Figure 1.*Conceptual Framework

Methodology

The current study was conducted for investigating the effect of the Metacognitive skills on pupil teachers' oral task performance. The quantitative research was conducted under the Positivist paradigm. The independent variable for this study was "Metacognitive skills" whereas the dependent variable was prospective teachers' "oral task performance". The study was conducted while using the Quasi-Experimental nonequivalent pretest-posttest control group design. The two sections of B.Ed (Honors) Semester-I (each consisting of 30 students) were selected conveniently for this study. One of them was considered as an experimental group whereas the other wasa controlled group. These groups were taken from a public sector university based in Lahore. Before the intervention, both of the selected groups have been pretested and there was no statistical difference found among them concerning their Metacognitive Skills. The intervention (Cooperative Learning approach) was given to the experimental group whereas the controlled group was given the conventional treatment. The intervention duration consisted of one semester only. There were five Metacognitive skills that the researcher intended to develop. The "Planning" and "Information Management" skills were focused during the first two weeks of each month whereas the rest of the skills "Monitoring, "Debugging" and "Evaluation" were focused during the last two weeks. While studying the given topic(s) with Metacognitive skills development strategy (Self-Assessment), the prospective teachers used to complete the given worksheet reflecting indicators of the above-mentioned skills so that their progress regarding skills development could be checked right after each session. These worksheets were assessed with the Worksheet Assessment Rubrics (WAR) developed by the researcher. The researcher used a performance test named "Metacognitive Skills Assessment Tool" (MSAT) adapted from (Ali, Siddiqui, & Tatlah, 2020) comprising 14 items (representing Metacognitive skills) to measure the prospective teachers' skills. Furthermore, the Rubrics for Metacognitive Skills Assessment Tool (RMSAT) were used to rate the prospective teachers' performance taken on MSAT. These were also adopted from (Ali, Siddiqui, & Tatlah, 2020). On the other hand, the prospective teachers' oral task performance (oral presentations) was assessed by the *"Oral Presentation Assessment Sheet (OPAS)"* developed by (Siddiqui, 2016). It consists of six indicators to measure the prospective teachers' oral task performance. As the OPAS was adopted by the researcher and it had already been validated while taking the experts' opinion by the developer. Similarly, the concerning instrument has been used in the same native context. So there was no need for its re-validation at all.

Results

Descriptive Statistics (Mean Scores) and Inferential Statistics (Pearson's r and Linear Regression analysis) were applied to the collected data.The descriptive statistics were used to measure the Central tendency followed by the dispersion of the concerning data. The normality of the data has been found out while applying the skewness and kurtosis tests on the data. The acceptable range for the aforementioned is +2 to -2 (George & Mallery, 2016). The detail is as under:

Table 1 *Descriptive Statistics of Oral Task Performance Scores*

	M	*SD*	Skewness	Kurtosis
Content Clarity	27.98	7.23	-.04	-1.28
Language	6.55	1.64	-.33	-.68
Delivery	10.56	3.06	.13	-1.14
Body Language	8.68	2.27	-.16	-1.24
Engage Audience	21.48	5.58	-.06	-1.21
Question Answer	6.33	1.97	.14	-1.37
Total Oral Task Performance	81.60	21.06	-.02	-1.23

Note. N = 60

Table 1 represents the mean, standard deviation, Skewness and Kurtosis of the Oral Task Performance and its factors. Based on the results, it is revealed that the data is normally distributed as the skewness and kurtosis values of the Overall Oral Task Performance scores as well as factors are within the acceptable range (±2).

Ho: There is no significant effect of Metacognitive Skills on prospective teachers' oral task performance.

The Independent Sample *t*-test, Pearson's r correlation and Linear regression analysis have been used to address the abovementioned null hypothesis. The Independent Sample *t*-test was used to find out the difference concerning mean scores between the Experimental and Controlled groups whereas Pearson's r was used as an initial step towards the Regression analysis. Although the Independent Sample *t*-test was sufficient to determine the difference of mean scores attained by both of the Experimental and Controlled groups. However, the Linear Regression was used to determine/ anticipate the effect of the Metacognitive Skills development training (intervention) on the prospective teachers' Oral Task Performance scores. The results are as under:

Table 2 *Comparison of Oral Task Performance Scores obtained by Controlled & Experimental Group*

	Control Group N=30		Experimental Group N=30						
	M	SD	M	SD	*df*	MD	*t*	*p*	*d*
Content Clarity	22.13	4.24	33.83	4.18	58	11.70	10.74	.000	2.77
Language	5.33	1.21	7.76	0.97	58	2.43	8.57	.000	2.21
Delivery	8.26	1.79	12.86	2.20	58	4.60	8.84	.000	2.29
Body Language	6.93	1.61	10.43	1.25	58	3.50	9.37	.000	2.42
Engage Audience	16.86	3.17	26.10	3.04	58	9.23	11.50	.000	2.97
Question Answer	4.93	1.01	7.73	1.68	58	2.80	7.81	.000	2.02
Total Oral Task Performance Scores	64.46	12.01	98.73	12.29	58	34.26	10.91	.000	2.82

Table2 shows that the Controlled group participants attained M=22.13, SD= 4.24 against "Content Clarity" which is statistically significantly lower than M=33.83, SD= 4.18 attained by the Experimental group as *t*= 10.74, *p*=.000 and d=2.77 (Small Effect Size). Similarly, the Controlled group participants attained M=5.33, SD= 1.21 against "Language" which is statistically significantly lower than M=7.76, SD= 0.97 attained by the Experimental group as *t*= 8.57, *p*=.000 and d=2.21

(Small Effect Size). On the same pattern, the Controlled group participants attained M=8.26, SD= 1.79 against "Delivery" which is statistically significantly lower than M=12.86, SD= 2.20 obtained by the Experimental group participants as *t*= 8.84, *p*=.000 and d=2.29 (Small Effect Size). Similarly, the Controlled group participants attained M=6.93, SD= 1.61 against "Body Language" which is statistically significantly lower than M=10.43, SD= 1.25 attained by the Experimental Group as *t*= 9.37, *p*=.000 and d=2.42 (Small Effect Size). On the same pattern, the Controlled group participants attained M=16.86, SD= 3.17 against "Engage Audience" which is statistically significantly lower than M=26.10, SD= 3.04 attained b y the Experimental group participants as *t*= 11.50, *p*=.000 and d=2.97 (Small Effect Size). Similar to as above mentioned, the Controlled group participants attained M=4.93, SD= 1.01 against "Question-Answer" which is statistically significantly lower than M=7.73, SD= 1.68 attained by the Experimental group as *t*=7.81, *p*=.000 and d=2.02 (Small Effect Size). On the same pattern, the Controlled group participants attained M=64.46, SD= 12.01 against "Total Oral Task Performance Scores" which is statistically significantly lower than M=98.73, SD= 12.29 attained by the Experimental group as *t*=10.91, *p*=.000 and d=2.82 (Small Effect Size). Therefore the "Ho: there is no significant effect of the intervention on prospective teachers' oral Task Performance." is rejected.

Table 3 *Correlation of MSAT Scores with Oral Task Performance Scores*

	MSAT Scores	Oral Presentation Scores
MSAT Scores	1	.74
Oral Task PerformanceScores		1

Note: N=60; *p*< 0.05; Correlation is significant at the 0.01 level (2-tailed)

The results taken from Table 3 show that there is a positive, high and significant correlation between the prospective teachers' Scores on MSAT and Oral Task Performance as r= .74 along with the *p*<0.05.

Table 4 Regression Analysis Model Summary

R	**R Square**	**Adjusted R Square**	***df***	**F**	**Sig**
.749	.562	.554	1	74.31	.000

Based on the results of Table 4, the Linear regression analysis was conducted to further investigate the effect of the intervention on Oral Task Performance scores. The results depict that there is 56% variance in the prospective teachers' Oral Task Performance scores with reference to the calculated variation in MSAT Scores. Whereas F= 74.31 and *p*<0.05 (*p*=.000) which is the evident of the fitness of the model.

Table 5 *Coefficient Regression Analysis*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	37.06	5.47		6.76	.000
MSAT Scores	1.67	.19	.74	8.62	.000

The values for the Oral Task Performance (Independent variable) and MSAT Scores (Dependent variable) have been depicted in Table 5. The Beta value β^=.74 and *p*<0.05 (*p*=.000)

which shows that the intervention (MSAT Scores) has a high positive effect on the prospective teachers' Oral Task Performance. So the aforementioned results confirm the rejection of "Ho: there is no significant effect of the intervention on prospective teachers' Oral Task Performance."

The Histogram as well as the P-P plot (given below) have been used to represent the normal distribution followed by its linear relationship of the concerned data.

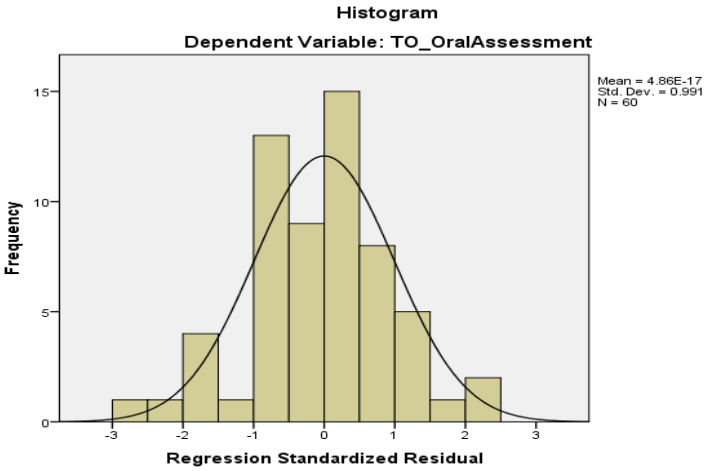

Figure 2. Histogram of Oral Task PerformanceScores

As per the results portrayed by the Histogram, it is has come to known that the data was normally distributed.

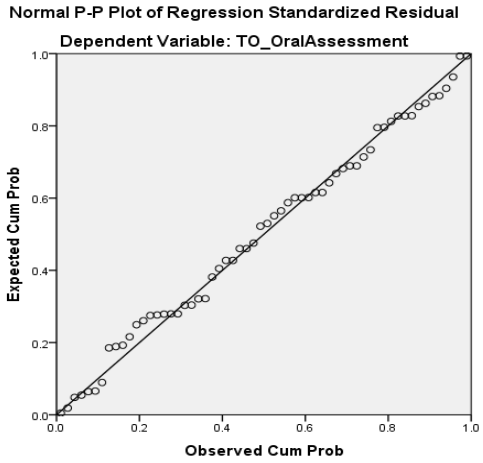

Figure 3. P-P plot of Regression Standard Residual

Based on the results taken from the P-P plot, it is revealed that there was a linear relationship between the variables.

Conclusion

The current study was conducted to investigate the effect of the "Metacognitive Skills on the pupil teachers' oraltask performance". The study was conducted while using the Quasi-Experimental nonequivalent pretest-posttest control group design. Base on the results, it has been concluded that the Metacognitive skills have a statistically significantly high effect on prospective teachers' oral task performance.

Discussion

Based on the findings, it has been depicted that Metacognitive skills development training was found to be effective and developed Metacognitive skills in the prospective teachers. These results have supported (Chatzipanteli et al., 2013) who concluded that metacognitive skills can be developed as well as improved while teaching the students with the self-check strategies of learning. The same has been concluded by the current study that Metacognitive skills can be developed while teaching with Self-Assessment strategy. Similarly, Ellis et al., (2012) also concluded that metacognitive skills can be developed in the students as well as the teachers. They also referred that the success of the instruction lies in a phenomenon that the teachers should become active learners. They would be able to teach effectively only if they learn themselves that how to learn which is possible through learning and using Metacognitive skills.

This study also concluded that Metacognitive skills highly and positively affect the prospective teachers' academic performance. These results have been supported by the (ALshammari, 2015) who conducted a similar study. However, only academic achievement has been focused on by the aforementioned whereas academic achievement is one of the dependent variables that has been studied under the current research study. The aforementioned findings also have supported the results by Rizk, Attia, & Al-Jundi (2017) who also experimented. Their findings were similar to the current study that Metacognitive skills affected the mathematics results positively. The findings of the current study also have supported Amzil & Stine-Morrow (2013) who concluded that academic performance is positively affected by Metacognitive skills. Azizah & Nasrudin (2018) also concluded similar to the current study that the prospective teachers with higher Metacognitive skills performed better in academics as compared to those with low Metacognitive skills.Coutinho (2007) concluded that academic performance is affected by Metacognition positively. These results also have been supported by the results from the current study. The current study has supported the findings from (Ali et al., 2020; Eskandari et al., 2020; Evangeline, 2016; Gama, 2004; Hassan & Ahmed, 2015; Jabeili, 2012; Mallow et al., 2015; Rahman, 2011) all concluded that academic performance is effected positively by Metacognitive skills.

Recommendations

Based on the results, it is recommended that the teacher educators should use Metacognitive development strategies to develop these skills in prospective teachers so that their oral task performance could be enhanced.

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