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Metacognitive Strategies as a Tool for Improving Teachers' Motivation and Self-Regulated Learning

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Abstract

The study was aimed to explore the role of metacognitive strategies as a tool for improving teacher's motivation and self-regulated learning. Quantitative research approach and survey method were used in the study. The main objective of the study was to examine the effect of metacognitive strategies on teachers' motivation and self-regulated learning at secondary level. The population of the study was all male and female teachers and their students working in government secondary schools of district Bhakkar. Tehsil Kallurkot was selected conveniently. The sample consisted of 180 teachers and 300 students selected from these schools. From each school, five Secondary School Teachers (SSTs) and eight students were selected as respondents. Adapted questionnaire were used as relevant instruments to gather data from respondents. Adapted questionnaire were used as relevant instruments to gather data from respondents. Purposefull sample of students was given bilingual (English-Urdu) questionnaire to assess their motivational levels, self-regulated learning behaviors' and applications of metacognitive strategies. When ANOVA results were significant, Post hoc tests identified specific group differences. Findings revealed that metacognitive strategies significantly enhance teachers' motivation and self-regulated learning, improving their teaching effectiveness. Therefore, teacher education programs should include meta-cognitive instruction and reflective activities to promote motivation, autonomy, and lifelong learning.

Keywords: Meta-cognitive strategies, Teacher's motivation, Self-regulated learning

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Introduction

Each pillar can show a different aspect of the meta-cognitive process, allowing it to be acknowledged as an evolutionary and involved process in stages (Drigas & Mitsea, 2021). All of this makes it clear how important and necessary meta-cognition is, both in education and in our contemporary society, as the ability to enhance study skill and the necessity to facilitate schooling process in order achieving autonomous learning and applying it to various facets of our lives will enhance our ability to deal with challenges more effectively. This becomes a pertinent challenge, particularly in the modern era when it is necessary to have a broad perspective on consciousness and reflection and to move beyond reductionist and simplistic models that aim to focus the problem of knowledge solely on the neurobiological or phenomenological scope (Sattin et al., 2021). The foundation of any academic system is its teachers. Their performance has an observable impression on as to if academic programs succeed or fail. Teachers' choices and actions have the potential to affect a country's prospects and well-being, especially the lives of its upcoming generations (Balogun, 2016).

At the institutional level, where the caliber of both on-site and outside evaluation greatly affects the significance of teachers' performance and their ability to carry it out, teacher governance is most important (Mark, 2015). An analysis of teacher engagement strategies indicates that successful teachers are those who receive some kind of reward. Money is a frequent form of incentive; that is, it could be viewed as a component of a system of rewards intended to reward behaviour and consequently, motivate people to work towards achieving their own and the organization's goals. Whether or whether the organization aims and purpose are recognized is greatly influenced by how employees perceive and react to their work. This attitude governs the output of teachers. Without motivation, teacher performance would be seriously hindered. Teachers' motivation level will affect how they respond to opportunities, responsibilities, and organizational standards.

As a result, it is challenging to separate learner behaviour from meta-cognition. For instance, a learner has chosen to use this cognitive method at the meta level when verifying the results of a calculation. Meta-cognitive methods include, for instance, orienting oneself to determine that mental plan must be used and preparing to use the mental plan of verifying results. The situation is comparable in secondary education, and it is not uncommon to find research confirming that pupils do not develop their self-regulation skills to their full potential (Sáez-Delgado et al., 2021). This becomes complicated because students often find the changeover from school education to college education to be especially challenging. They must be ready to adjust to the autonomous learning setting of higher education.

There do not appear to be strong enough pathway of autonomous skills to support the transition to higher education, despite the fact that it is acknowledged which skill to identify useful training plans is connected with training strategies. that favours study and which it also determines a student's transition from secondary to tertiary education at the start of their career (Blackmore et al., 2021). As a result, part of the aforementioned, various initiatives were created at academic institutions to assist students in creating self-control study techniques (Sáez et al., 2018). Even though these activities have been proved to have significant effects, they are frequently corrective and may be introduced later than planned. Because of this, secondary education is the main focus, and it is crucial to

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investigate the degree of self-control at this level of education (Sáez-Delgado et al., 2022). Towards to accomplish belonging ultimate study aims and raise the standard of education, students in the twenty-first century must become proficient in a wide range of abilities, particularly during the learning process. According to Mustofa et al. (2019), teaching pupils new abilities, including critical thinking, is one method to raise the standard of education. However, teaching and learning activities currently still frequently focus on testing students' recollection of a certain subject, which prevents them from developing pluralist thinking skills (Mustofa & Hidayah, 2020). Teachers today must empower students with a variety of 21st century skills in addition to providing educational resources (Yasir et al., 2020).

Problem Statement

Teachers can help their students develop metacognition in a variety of ways, such by generating difficult assignments, allowing them to make their own decisions, modeling effective techniques, and giving them chances to take charge of and assess their own learning (Perry et al., 2020). When students learn these skills in the context of their regular classroom, metacognitive training works best (Donker et al., 2014; Rimsha, 2024). Some educators, however, struggle to help their pupils develop their metacognitive abilities (Zohar & Ben-Ari, 2022). In order to develop metacognitive knowledge about strategies, they rarely give students information about where, when, why, and how strategies should be applied (Zohar & Lustov, 2018). Keeping in view this fact, the present research was conducted to examine the extent to which metacognitive strategies influence teachers' motivation and self- regulated learning. In order to comprehend the ways in which these tactics support teachers' professional development, classroom efficiency, and habits of lifelong learning. Additionally, the study investigate how metacognitive strategies can improve teachers' capacity to evaluate their own teaching methods, make wise pedagogical choices, and create a more driven and self-controlled learning environment.

Objective

To examine the effect of metacognitive strategies on teachers' motivation and self-regulated learning at secondary level.

Method

To determine the relationship between meta-cognitive strategies, teachers' motivation and self-regulated learning. This chapter contains the information about the design and procedure followed while completing research. It also contains the detailed population and samples for the study; Instrument of data collection, method of data collection and data analysis techniques. Quantitative methods with descriptive research approach were used in the study (Leedy & Ormord, 2001).

Sample

For the data collection about teachers' meta-cognitive strategies teachers' motivation and self-regulated learning; Population of the study consisted of all Government secondary schools of District Bhakkar. The elements of population were:

1) All the male and female teachers of 138 government secondary schools were included in population.

2) The study involved all male and female teachers employed at the 138 government secondary schools throughout District Bhakkar.

In Bhakkar district there are four tehsils i.e. Tehsil Mankera, Tehsil Darya Khan,

Vol. 3 No. 11 (2025)

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Tehsil Bhakkar and Tehsil Kallurkot.

Tehsil kallurkot was selected conveniently among all the tehsils of district Bhakkar. This sampling was carried out according to the following steps:

1) To start, Tehsil kallurkot was chosen as a convenient selection in district Bhakkar.
2) On the basis of selection criteria, 38 secondary schools of Tehsil Kallurkot were selected randomly.
3) Two groups of schools were made on gender basis, i.e. male and female schools.
4) From each secondary school five SST teachers and their eight students were selected by using stratified sampling.

Research Instruments

To collect the data from two types of respondents i.e. teachers and students, two questionnaires were adapted. One tool was created to assess teachers 'motivation and self- regulated learning, while another asked student to review how well their teachers applied metacognitive strategies. Questionnaire for teachers on meta-cognitive strategies to improve the teacher's motivation and self-regulated learning were adapted from (Karlen, 2023). Necessary modification to make it appropriate for the local school level detail of questionnaires is as follows:

Questionnaire for Teachers about Meta-Cognitive Strategies

There were three factors in teacher's metacognitive strategies i.e. planning; 4 statements were included whereas in monitoring, 5 statements were included, in evaluation; 4 statements were included.

1. Questionnaire for teachers about teachers' motivation

There were three factors in teachers' motivation i.e. goal orientation; 3 statements were included whereas intrinsic motivation; 4 statements were included. In extrinsic motivation; 4 statements were included.

2. Questionnaire for teachers about teacher's self- regulated learning

There were three factors in teachers' self-regulated learning i.e. Self-monitoring; 3 statements were included whereas motivational regulation; 4 statements were included and in self-reflection; 4 statements were included.

3. Questionnaire for students about meta-cognitive strategies

There were three factors in student's perspective about teachers' meta-cognitive strategies i.e. planning; 4 statements were included whereas in monitoring, 5 statements were included, in evaluation; 4 statements were included.

4. Questionnaire for students about teachers' motivation

There were three factors in student's perspective about teachers' motivation i.e. goal orientation; 3 statements were included whereas intrinsic motivation; 4 statements were included. In extrinsic motivation; 4 statements were included.

5. Questionnaire for students about teachers 'self-regulated learning

There were three factors in student's perspective about teachers' self-regulated learning i.e. Self-monitoring; 3 statements were included whereas motivational regulation; 4 statements were included and in self-reflection; 4 statements were included.

It was very challenging to gather the data from teachers and also from the students, from both male and female schools. According to them they had used meta-cognitive strategies, for improving teachers' motivation and self- regulated learning. Which they have fulfilled with their very busy and strict schedule. The respondents who had competed Master and M.Phil were highly cooperative. This cooperation showed their

Vol. 3 No. 11 (2025)

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sense of responsibility and sincerity with their profession and importance of higher education.

Data Analysis

The data that were collected through the questionnaire were firstly coded and then was tabulated for analyzing. interpreting and concluding it statistically. All questionnaires contained only positive statements, so reserve coding was not required.

Following scoring was adopted for the teachers' and students' questionnaires on the variables of metacognitive strategies and self- regulated learning. To compare means of metacognitive strategies with respect to teachers' and students 'perspectives ANOVA was used. A Post hoc test was used to analysis examining the perceived impact of teachers 'motivation and self-regulated learning in relation to metacognitive strategies from both teachers 'and students 'perspectives.

Results

This chapter contains information on the analysis and interpretation of the data collected through a scale used as instrument of the study. Firstly, the data were organized in SPSS software. Data were analyzed using SPSS software. In descriptive statistics frequency, mean and standard deviation were measured and inferential statistics was used to measure the effect of metacognitive strategies on teachers' motivation and self-regulated learning. Data collected from the students and teachers categorized on their mean score basis. Each variable was assessed on the given evaluation criteria. One-Way-ANOVA of perceived impact of metacognitive strategies according to teachers' motivation is as follows:

Table 1: ***One-Way ANOVA of teachers' motivation with respect to metacognitive strategies.***

		Sum of Square	Df	Mean Square	F	Sig.
Between Groups	within	1614.42	4	403.607	11.544	.000
Group		6118.21	175	34.961		
Total		7732.644	179			

This table shows that there is no statistically significant difference in the mean score of teachers' motivation with respect to meta-cognitive strategies by and p-value = 0.000>0.05.

Table 2: ***Post Hoc of perceived impact of teachers 'motivation with respect to metacognitive strategies***

Teachers' Motivation	Mean Difference (I-J)	Std.Error	Sig.
Satisfactory	8.407	2.69	0.018
Good	9.407	2.69	0.005
Very Good	6.382	1.305	0.000

This table shows that the metacognitive strategies have significantly impact on teachers 'motivation. The teachers can significantly enhance their professional performance and student outcomes by adopting metacognitive strategies. The trend shows that the teachers 'motivation ranges from poor to excellent performance by using metacognitive strategies to improves instructional quality and create effective learning environment. One-Way-ANOVA of perceived impact of meta-cognitive strategies according to self-regulated learning.

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Table 3: ***One-Way ANOVA of teachers' self-regulated learning with respect to metacognitive strategies.***

	Sum of Square	Df	Mean Square	F	Sig.
Between Groups	463.669	4	115.917	4.033	0.004
within Group	5029.726	175	28.741		
Total	5493.394	179			

This table depicts that there is statistically significant difference in the mean score of teachers' self-regulated learning with respect to meta-cognitive strategies p-value =0.004 < 0.05.

Table 4: ***Post Hoc of perceived impact of self-regulated learning with respect to meta-cognitive strategies.***

Teachers' Motivation	Mean Difference (I-J)	Std.Error	Sig.
Very Good Excellent	3.697	1.183	0.018

This table shows that the metacognitive strategies have significantly impact on self-regulated learning. the teachers can significantly enhance their professional performance and student outcomes by employing metacognitive strategies. The trend shows that the self-regulated learning ranges from poor to excellent performance by using metacognitive strategies to improves instructional quality and create effective learning environment. Through this self-regulatory cycle teacher strengthen their motivation, teaching practices.

Discussion

The study's findings demonstrated that metacognitive techniques had a favorable impact on secondary school teachers' motivation. Higher levels of dedication, and perseverance were indicated by educators who planned, observed, and assessed their instructional strategies. Recent research supports these findings by highlighting how metacognitive awareness and reflective practices give teachers a sense of control over their professional development, hence enhancing intrinsic motivation (Bannert et al., 2020; Panadero, 2022). These findings imply that motivation is not only fueled by outside forces but also by internal control systems that enable educators to maintain their passion for their work.

Furthermore, the results showed that regular application of metacognitive techniques greatly enhances teachers' self-regulated learning. It was discovered that secondary school teachers who consistently set objectives, evaluate their own development, and modify their approaches in response to those goals are more strong and adaptive when it comes to handling difficulties in the classroom. This supports theoretical viewpoints that identify meta-cognition as a key element of learning that is self- regulated (Dignath & Veenman, 2021). According to recent research, instructors who practice self-regulation improve their professional development and instructional delivery (Lau, 2019; Zhao & Qin, 2023). The study thus confirms the substantial correlation between teachers self-regulated learning, motivation, and meta-cognition.

Lastly, these findings have important results for professional development and teacher education. Training courses that focus on metacognitive techniques can give secondary school teachers the tools they need to improve their motivation and self-control. According to recent studies, encouraging teachers to develop reflective practices enhances their professional competence and performance in the classroom over the long run (Yan, 2020; Guo & Zhang, 2024). Additionally, teachers who are self-controlled and

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driven are more likely to act as role models for their students, encouraging them to use comparable study techniques. Therefore, incorporating metacognitive techniques into teacher preparation programs can help develop a workforce of motivated, introspective, and self-reliant educators, which will ultimately improve secondary education as a whole.

Conclusion

The findings of this research revealed that metacognitive strategies play a crucial role in improving teachers' motivation and self-regulated learning at the secondary level. The study concluded that most of the teachers demonstrated an excellent level of skillful use of metacognitive strategies indicating strong awareness, planning, monitoring, and evaluation in their teaching practices. Teachers effectively applied these strategies to improve their instructional performance and students' engagement.

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