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A Comparative Study on the Effect of Metacognitive Regularities on the Work Efficiency of University Teachers across Public and Private Universities

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ABSTRACT

This study, a sub-part of a larger project on the effect of metacognitive regularities on university teachers' work efficiency, compares public and private universities in Pakistan. It aims to enhance understanding of academic environments and support Pakistan's 2030 educational goals. Quantitative data from 164 university teachers, collected via campus visits and online forms, revealed significant differences between the two sectors. Public university teachers scored higher in metacognitive regularities and work efficiency, demonstrating stronger planning, monitoring, and evaluation skills. The findings suggest that greater metacognitive regulation contributes to higher efficiency among public university teachers. The study recommends regular training, workshops, reflective journals, and peer review sessions to enhance teachers' metacognitive regularities and pedagogical practices. Future research should investigate the factors behind public university teachers' stronger metacognitive regularities and how university policies, training programs, and work environments effects metacognitive regularities and work efficiency.

Introduction

This article is a sub-study of a larger study: the effect of metacognitive regularities on work efficiency of university teachers. Teachers' commitment is central to shaping the future of educational development for 2030. Empowering university teachers to reach their full potential is essential for preparing highly skilled specialists. To achieve this, it is important to identify the key factors influencing educators' work efficiency. Sustainable staff development initiatives are therefore vital for maintaining universities' competitiveness. Education fundamentally relies on the intergenerational transmission of knowledge, ensuring that experience is passed from one generation to the next. This study explores the impact of metacognitive regularities on the work

efficiency of university teachers across public and private universities. In the twenty-first century, higher education serves as a driver of innovation, social mobility, and national development. University teachers now fulfill multidimensional roles as both teacher and administrators, requiring intellectual precision. Work efficiency encompasses not only productivity but also quality and professional sustainability. Efficient teachers help universities achieve their goals, maintain work efficiency, and enhance student outcomes.

Conversely, inefficiency can lead to burnout, reduced teaching quality, and lower university performance. The degree of cultural relationship-building among lecturers and students affects the number of competencies that teachers acquire within the university system (Sergey, Arkhipov, Vanchikova, Zolotareva, Yantranov & Budaeva, 2019). As global demands deepen, enhancing teacher efficiency through cognitive and metacognitive development remains a key priority for modern universities. Public and private universities create distinct environments that shape teachers' approaches. Public universities often deal with large class sizes and limited resources, while private universities emphasize competition, accountability, and innovation. Studying how metacognitive regularity affect teacher wok efficiencies in these settings can help improve professional development. John (1979) states that all consciously aware metacognitive regularities such as planning, evaluating, and monitoring are relevant to any intellectual struggle and are referred to as metacognitive experiences. Therefore, teachers who plan effectively tend to be clearer, more student-focused, and provide better feedback. Effective teaching requires a comprehensive awareness of both university and pedagogical needs. Metacognitive regularities plays a key role in this process by helping teachers monitor and adjust their cognition to manage tasks and improve their effectiveness. Valerie, Robert, and Julia (1991) state that teaching involves managing the classroom environment, choosing resources, setting work schedules, and enforcing classroom rules, all of which reflect teachers' goals focused on pedagogical excellence. The importance of cognitive and metacognitive regularities in work efficiency cannot be overstated. While metacognitive regularities involve acquiring and applying knowledge, metacognition entails reflecting on and regulating teacher's own practices.

Teaching competencies continue to evolve as education shifts from teacher-centered to student-centered approaches. Assessing teacher effectiveness extends beyond student performance or perceptions, as teaching is both a profession and a craft requiring complex cognitive and social abilities. Teachers and administrators must therefore evaluate teaching as complex work that demands adaptability to address pedagogical and university challenges. As higher education drives innovation and national development, teachers' efficiency becomes vital for achieving university goals, improving teaching effectiveness, ensuring professional growth, and maintaining universities' competitiveness in the twenty-first century.

Rationale

Proficiency in teaching involves the ability to apply, regulate, and adapt one's thinking to meet professional challenges effectively. Metacognitive regularities such as planning, monitoring, and evaluating one's own cognitive processes play an important role in improving teachers' work efficiency and professional growth. In the context of higher education, these regulatory skills are essential for maintaining teaching quality, achieving university goals, and ensuring continuous improvement in learning outcomes. University teachers must develop strong metacognitive awareness to manage their tasks efficiently and enhance their instructional practices. However, previous studies have mainly focused on metacognitive knowledge rather than on metacognitive regularities, leaving a gap in understanding how these self-regulatory practices influence teachers' work efficiency.

Additionally, differences between public and private university environments may affect how teachers apply these metacognitive regularities in their university work. This study aims to examine and compare the impact of metacognitive regularities on the work efficiency of university teachers across public and private university. By exploring how teachers plan, monitor, and evaluate their work in different universities, the research seeks to highlight the role of metacognitive regularity in improving university effectiveness. The study will contribute to a deeper understanding of advanced academic environments.

Theoretical Measures

A quantitative research approach was used in the study. The theoretical base of the study is grounded in prior frameworks of metacognition, particularly Schraw and Moshman (1995) and Nelson and Narens (1990) (as cited in Julie et al., 2021). Metacognition is divided into two components: metacognitive knowledge and metacognitive regulation. The latter involves three processes: planning (deciding which strategies to use), monitoring (assessing understanding and work efficiency), and evaluation (judging the effectiveness of strategies). These processes enable teachers to regulate their thinking and adjust their work, reflecting expert-like cognition.

Harris and Rutledge (2007, as cited in Siti et al., 2012) proposed the Teacher Work Efficiency Model, which evaluates teacher quality based on their practices. Brown (2004) emphasized that effective classroom management requires addressing students' emotional, social, cultural, and cognitive needs. The model highlights four dimensions of teacher effectiveness, emphasizing cognition, personality, and classroom management. Thus, cognitive and personal attributes must complement each other for overall teacher effectiveness. Beyond student outcomes, the model provides a valuable framework for universities to assess teacher efficiency. Commitment and responsibility, reflecting teachers' dedication to professional duties, also influence work efficiency. Piaget's (1936) cognitive development theory identifies four stages sensorimotor, preoperational, concrete operational, and formal operational each representing growing awareness and complexity. In contrast, Vygotsky's (1934) sociocultural theory stresses the role of social interactions and cultural context in learning. While differing, both theories inform the current study. Moreover, the use of metacognitive strategies allows individuals to allocate cognitive resources efficiently, enhancing performance in both classrooms and workplaces.

This study explains the Comparative Study on the Effect of Metacognitive Regularities on the Work Efficiency of University Teachers across Public and Private Universities. Metacognitive regularities, first introduced by Flavell (1971) as "metacognition," refer to individuals' awareness and understanding of their own thinking processes an essential factor in learning and cognitive growth. Building on this, Sweller's (1988) Cognitive Load Theory emphasizes that since working memory is limited, strategies that reduce unnecessary cognitive burden can enhance efficiency in task performance.

Regulation learning is characterized by interconnected motivational processes, teachers' use of regulation practices, and their response to self-oriented feedback on work efficacy. Engaging in metacognitive practices enhances teachers' efficiency, highlighting the role of metacognitive regularities in continuous improvement and effective teaching.

Conceptual Framework of the Study

This study's conceptual framework examines teacher work efficiency in relation to the metacognitive regularities embedded in their professional practices. Although previous research has investigated these constructs independently and in varied contexts, limited attention has been directed toward university teachers. By exploring how metacognitive regularities shape work

efficiency, this study provides novel contributions to the existing literature. The framework is conceptualized by models of metacognitive regularities (Julie et al., 2021) and work efficiency (Siti et al., 2012).

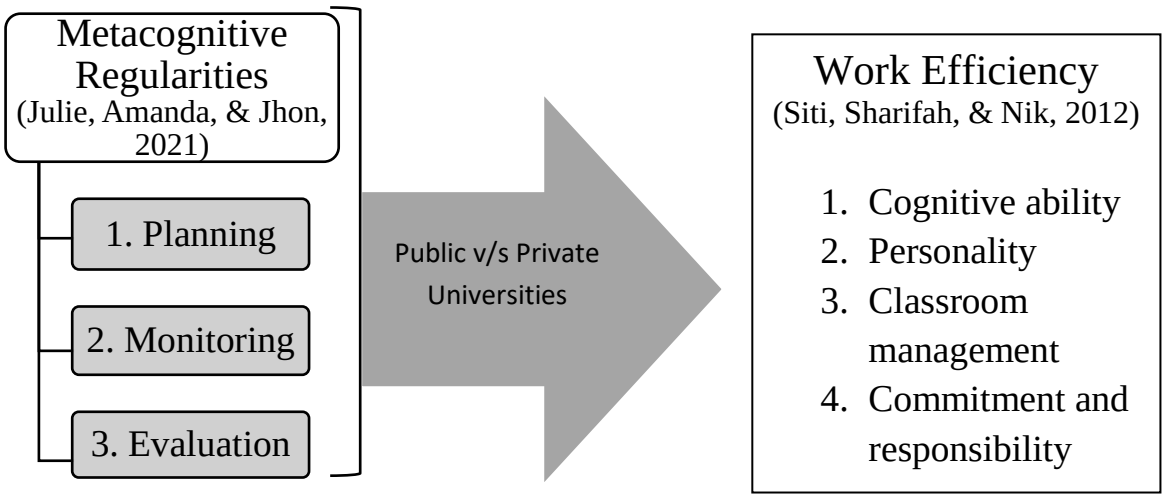

Figure. **Conceptual Framework of the Study**

Research Objectives

1. Compare levels of metacognitive regularities between public and private university teachers.
2. To investigate whether differences between public and private universities contribute to variations in the effect of metacognitive practices on enhancing work efficiency.

Null Hypotheses

(H_o1): There is no significant difference in the levels of metacognitive regularities between public and private university teachers. (T-test)

(H_o2): The effect of metacognitive regularities practices on enhancing work efficiency differs significantly between teachers in public and private universities. (ANOVA)

Sub-Hypotheses

Ho2a: Planning is enhance work efficiency differs significantly between teachers in public and private universities.

Ho2b: Monitoring is enhancing work efficiency differs significantly between teachers in public and private universities.

Ho2c: Evaluation is enhancing work efficiency differs significantly between teachers in public and private universities.

Significance of the Study

This study embraces major academic and practical significance as it investigates the influence of metacognitive regulation on teachers' professional actions and work efficiency. The study advances hypothetical understanding and contributes to the development of metacognitive regulation in teaching practices. University teachers who effectively employ metacognitive

strategies are better able to enhance their pedagogical performance and manage their work efficiently. Therefore, these improvements not only elevate individual professional competence but also contribute to the overall quality of pedagogy and university development. Additionally, from a university perspective, the study provides valuable implications for both public and private university. The public and private universities may utilize the study's support mechanisms that address resource limitations and work quality challenges. They can also adopt policies to improve burdens related with performance expectations and competitiveness. By promoting metacognitive regulation among teachers, universities can strengthen organizational efficiency, enhance collaborative engagement among stakeholders, and ensure the delivery of high-quality education. Ultimately, this study emphasizes that fostering metacognitively regulated educators not only advances university performance but also contributes to sustainable university growth.

Problem of the Study

University teachers play a vital role in shaping educational quality through effective working and pedagogy. To perform these responsibilities efficiently, they need to employ metacognitive regularities that promote professional activities. However, many faculty members struggle to maintain balance among their pedagogy and administrative tasks, leading to decreased productivity and delayed university growth. This study aims to compare the effects of metacognitive regularities on the work efficiency of university teachers in public and private universities. By identifying differences between these sectors, the study seeks to contribute to improved professional practices and support Pakistan's efforts toward achieving its 2030 educational goals.

Literature Review

Over view of the Study

Across educational research, metacognition is situated within broader frameworks of learning, pedagogy, and work efficiency. It encompasses deliberate goal setting, ongoing monitoring, and systematic evaluation processes that enhance efficiency by minimizing wasted effort and fostering institutional growth. In higher education, academic quality largely depends on university teachers' performance, emphasizing the need to develop skilled teachers who contribute to global competitiveness. Workplace efficiency further influences both individual productivity and university sustainability, supported by specific (discipline-based) and generalist (transferable) competencies. While most metacognition research has centered on students, recent studies increasingly view teachers as self-regulated professionals. Cultivating pedagogical metacognition enhances teachers' abilities to plan, monitor, evaluate, and adapt their teaching closely linked to efficient work practices. Faculty learning communities and structured reflection have proven effective in strengthening these skills. Thus, integrating metacognitive regularities into professional practice offers a promising pathway to improving the work efficiency and overall effectiveness of university teachers in both public and private universities. The character traits that each teacher of a universities must have are referred to as broad expertise (Sharul, Ruhanita Amizawati and Nor, 2015). According to Ana and Mihaela (2018) stated that the institution's goal is to support every university teacher in becoming a contributing member of the university and to continuously enhance the delivery of education in a manner that consistent with regulatory requirements. Moreover, Siti et al. (2012), effective classroom management requires teachers to maintain order in the classroom and student.

Metacognitive Regulation to Work Efficiency

Efficiency refers to the evaluation of inputs relative to corresponding outcomes. For a given set of input resources, a more efficient system produces greater outputs. In education, effective use of resources ensures that the broad cultural and institutional goals are achieved. Educational efficiency is realized when intended learning outcomes are produced with minimal use of resources (Jill, Maria, and Emmanuel, 2017). Within higher education, work efficiency can be viewed as the relationship between outputs such as teaching quality. University teachers often develop strong connections with their universities, students, and disciplines, which can enhance their overall productivity (Di, 2021). Metacognitive regulation contributes to this efficiency by fostering planning, monitoring, and evaluation processes improve task completion. Thenmozhi (2019) highlighted that the integration of metacognitive regularities with teachers' work efficiency helps them determine which strategies are most effective, the tasks they best support, their applicability, advantages, effort requirements, and level of challenge or engagement. Consequently, metacognitively regulated teachers are better equipped to manage their workload, sustain performance, and achieve higher efficiency across both public and private university contexts.

Universities

The work efficiency through mechanisms of planning, monitoring, and evaluation that reflect metacognitive regulation. According to Nasrullah, Israr, and Hanan (2025) stated that Comparative studies have notable differences between public and private universities. Public institutions often face heavier procedural demands and resource constraints, whereas private universities typically offer greater autonomy and institutional support. These conditions shape how effectively teachers engage in reflective planning and monitoring. Evidence from Pakistan and other emerging economies indicates that such sectoral disparities in satisfaction and working conditions affect teachers' efficiency and professional self-achievement. Understanding how organizational contexts influence metacognitive regularities is therefore essential for enhancing the productivity and effectiveness of university teachers across public and private sectors.

Metacognitive Regularities

The concept of metacognition, first introduced by John Flavell (1979)**,** has become an important idea in educational psychology. Metacognition is often described as *"thinking about thinking"* or being aware of and able to control one's own thinking processes. Researchers usually divide metacognition into two main parts: metacognitive knowledge and metacognitive regulation (Flavell, 1979). Metacognitive regulation is about using that knowledge to plan, monitor, and evaluate one's actions to reach a goal. Together, these help people think more effectively and learn more efficiently. The second component of metacognition is metacognitive regulation, which involves three key processes: setting goals and planning**,** monitoring and controlling one's learning, and evaluating the effectiveness of one's regulation. Planning involves deciding what needs to be done and determining how to achieve it. It helps organize outcomes, align all areas with the institution's shared goals, and implement appropriate strategies. Monitoring, An ongoing evaluation of your achievements, areas where knowledge is still lacking, and the effectiveness of current work methods in helping you complete tasks efficiently. Evaluation, control tactics involve analyzing how effectively you achieved instructional objectives or gathered feedback once a task is completed. Furthermore, Xiaoyu, Weijian, and Liiren (2019) stated that the higher cognitive cue of processing fluency can be used to suggest metacognitive regularities. Using metacognition to keep track of other processes, the creative thought process "self-monitored" itself. The interaction of systematic review and element information. The metacognitive regularities builds on this foundation. It refers to the consistent habits of awareness and regulation that people use in their

regular professional lives. The teachers who face unpredictable tasks and must multitask every day metacognitive regularities can help them cope better, stay productive, and work efficiently. Despite the fact that making decisions is a fundamental teaching ability and a component of any component of instructor's work career (Tina and Mark, 2012). Therefore, studying how metacognitive regularities affect the work efficiency of university teachers**,** especially when comparing public and private universities, is an important and valuable area of research.

Work Efficiency of University Teachers

Work efficiency in the academic profession is a multi-dimensional construct encompassing teaching performance, research productivity, institutional and community service, and the ability to maintain personal well-being amidst demanding workloads. According to Gao, Akram, Ul Hassan, Shahzad, and Ahmad (2025) stated that teaching performance involves the preparation, delivery, and assessment of instruction, as well as the capacity to foster student engagement and positive learning outcomes. Administrative responsibilities ranging from committee work to departmental leadership also require substantial time and effort, often stretching the limits of faculty capacity. Work efficiency is saving time and money at work is made possible through efficiency. To be effective, one must plan carefully and understand what needs to be done. Cognitive ability refers to how well a person can organize, recall, and gather information from their environment and it is a key factor that contributes to a person's ability to complete tasks effectively. Personality, individuality is a unique way of experiencing, understanding, and acting. In interactions with others, personality is most clearly expressed and encompasses views, and opinions. It consists of both innate and developed personality patterns that distinguish one person from another. Classroom, implementation of strategies to ensure that pupils learn effectively in a pleasant classroom setting is referred to as classroom management. Commitment refers to the extent to which an employee demonstrates interest and dedication toward the responsibilities assigned to them in the workplace. Responsibilities encompass the tasks and duties that an individual or department regularly performs. Teachers are expected to be accountable for the effective execution of these responsibilities. A teacher's efficiency is influenced by various factors, including institutional support, resource availability, personal motivation, and the use of cognitive and metacognitive strategies. Moreover, Nargis, Aqsa, Mehwish, and Dur-e-Shahwar (2025) stated that while external reasons such as infrastructure and workload distribution are often beyond individual control and own regularities play a crucial role in enhancing work efficiency.

Metacognitive regulation plays a pivotal role in enhancing the work efficiency of university teachers by fostering deliberate planning, monitoring, and evaluation of pedagogical practices. Through these processes, educators can optimize their teaching strategies, manage time effectively, and adapt to diverse university contexts. The integration of metacognitive regularities not only strengthens individual productivity and self-regulation but also contributes to university growth and educational quality. Understanding these dynamics across public and private universities is essential for developing sustainable frameworks that support reflective, efficient, and high-performing academic professionals.

Methods

This comparative study examined two or more variables specifically demographic factors (public and private) to investigate their association with levels of metacognitive regularities through both quantitative analyses. Guided by a positivism paradigm, the research integrated epistemological and ontological perspectives. Metacognition, conceptualized as a higher-order cognitive process, encompasses awareness of one's Metacognitive regularities as well as the application of epistemological strategies in practice. The study focused on university teachers' work efficiency in

relation to their metacognitive regularities. As noted by Alejandro (2015), Papaleontiou-Louca classified metacognition as a second-order thinking process. Employing a quantitative design, the study integrated quantitative data to complement deepen the interpretation and findings.

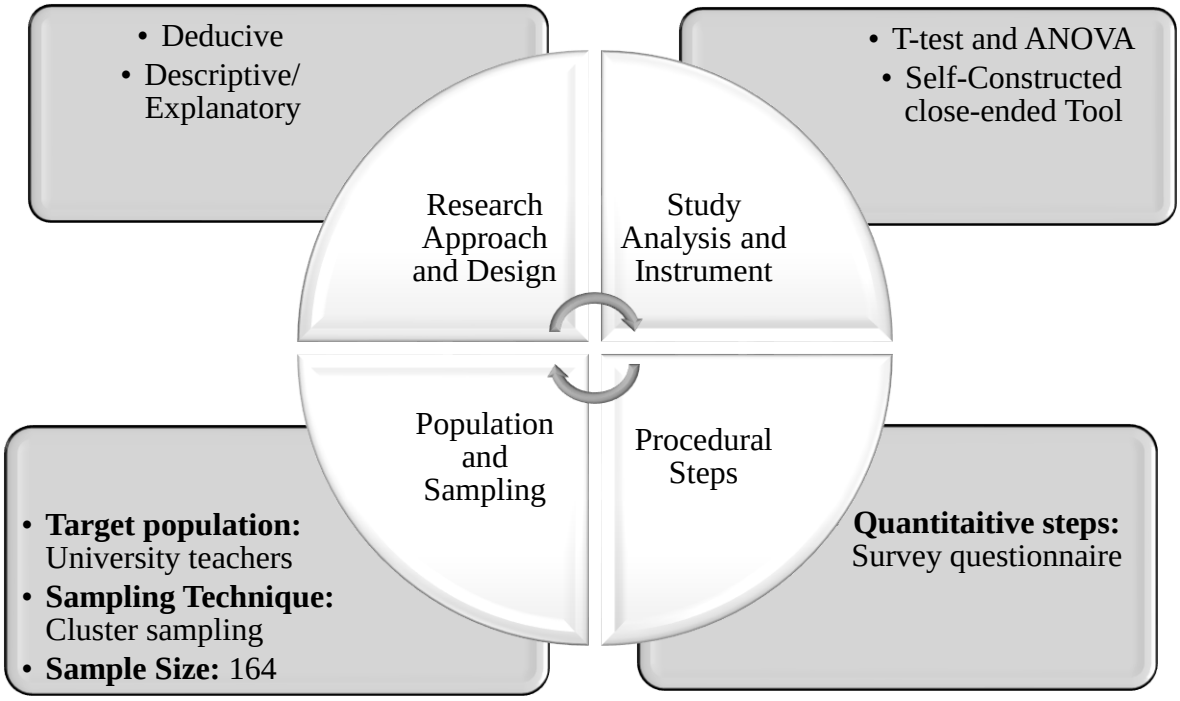

Figure. Summary of research methodology

Ethical Considerations

The study ensured that all participants were fully informed about its goals, methods, and benefits before giving consent. Participation was completely voluntary, and university teachers had the right to withdraw or refuse to respond at any time without consequence. Privacy were maintained by keeping personal information confidential and omitting identifying details. Ethical standards and respect for teachers were upheld throughout the process. Data collection methods, including email procedures, complied with university ethical guidelines, and safeguards were implemented to prevent unauthorized access or misuse of information.

Population and Sample

The heterogeneous population was stratified into two clusters based on the classification of universities as either private or public, with each cluster comprising seven universities located in Islamabad. According to Cohen, Manion, and Morrison (2013), the total teacher population was 272. Using rules of thumb for determining sample size and applying a 95% confidence level for a population of N = 272, the required sample size was n = 164. This sample was proportionally divided between the two clusters, yielding 82 participants per cluster. Within each cluster, five universities contributed 12 teachers each, while two universities contributed 11 teachers each.

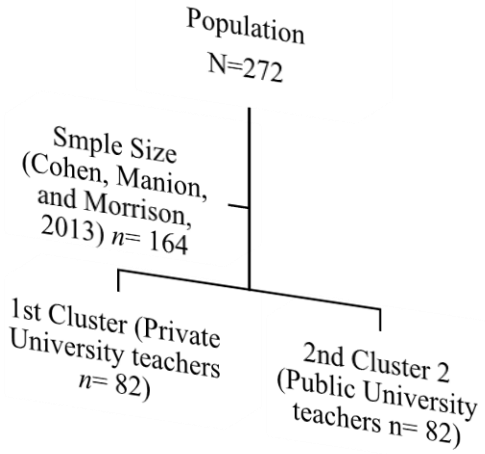

Figure. Population and Sampling

Data Collection

Data were collected from faculty members of public and private universities in Islamabad. The process commenced following the necessary approvals from the respective universities. Steve (2020) emphasized that parametric tests are based on the assumption that data are normally distributed across the population. Quantitative data were obtained through on-campus visits and a Google Form disseminated via email.

Description of Research Instruments

This study explored and compared the metacognitive regularities in the practices of public and private university teachers through the use of a self-developed instrument. The quantitative questionnaire was constructed on two scales: the metacognitive regulatory assessment scale and the work efficiency assessment scale.

Validation and Reliability of Research Instruments

Validity refers to the extent to which a questionnaire measures what it is designed to measure (Roberta and Alison, 2015). In this study, the Metacognitive Regularities Scale and Work Efficiency Scale were combined into one questionnaire. An educationist reviewed and validated the tool before data collection, offering suggestions to improve its reliability. These revisions ensured that the questionnaire matched the study's objectives, title, and conceptual framework.

A pilot study was conducted to evaluate the reliability of the quantitative instrument. Reliability, as defined by Roberta and Alison (2015), refers to the capacity of a tool to consistently generate similar results. Data from the test phase were analyzed to assess the effectiveness of the scales and to refine the items for the final version. Reliability was examined using item total correlation, inter-section correlation, and Cronbach's alpha. The Teacher Metacognitive Regularities Scale (MRS) demonstrated excellent internal consistency, with an overall Cronbach's alpha of 0.959. Likewise, the Teacher Work Efficiency Scale exhibited excellent reliability, with an overall Cronbach's alpha of 0.983.

Data Analysis

Data analysis is a quantitative process that necessitates careful consideration of the methodological approaches available (Creswell, 2018). Data analysis conducted through the T-test and ANOVA. It entails the systematic organization of raw data and close-ended responses collected by the researcher involves deriving insights from these findings and situating them within the context of the reviewed literature, thereby contributing to the advancement of existing concepts and addressing identified research problems (Mayring, 2014).

Results

Although the main thesis centers on the effects of metacognitive regulation, this article contributes by offering detailed comparative insights of public versus private university teachers. First objective was to compare levels of metacognitive regularities between public and private university teachers.

Table No. 1: Mean Difference and t-value of Teachers' Metacognitive Regularities Regarding Private and Public Universities

	Mean of Private University	**Mean of Public University**	***df***	***t***	***Sig***
Metacognitive Regularities	122.26	129.77	162	2.882	7.512
SD	20.185	12.236			

Table 1 compares teachers' metacognitive regularities between private and public universities. Teachers from public universities (M = 129.77, SD = 12.236) scored higher than those from private universities (M = 122.26, SD = 20.185), indicating a higher level of metacognitive regularities. The computed t-value (t = 2.882, df = 162) shows a measurable difference between the two groups. Although the reported significance value (Sig = 7.512) is likely a typographical error, if the intended value is p = 0.0075, the result is statistically significant at the 0.05 level, confirming a significant difference between the groups. Second objective was to investigate whether differences between public and private universities contribute to variations in the effect of metacognitive practices on enhancing work efficiency.

Table No. 2: ANOVA for Public and Private University Teachers' Metacognitive Regularities and Sub-Variables Regarding their Work Efficiency

	Mean of Private University	***SD***	**Mean of Public University**	***SD***	***Mean square***	***F***	***Sig***
Metacognitive Regularities	122.26	20.185	129.77	12.236	2313.756	8.306	0.004
Teachers Work Efficiency	165.72	26.467	172.68	14.877	1988.055	4.313	0.039
Planning	48.5976	7.96421	50.9390	5.19104	224.780	4.974	0.027
Monitoring	39.4390	6.63343	4.62740	4.62740	201.976	6.175	0.014
Evaluation	34.22	6.620	37.17	3.978	357.098	11.973	0.001

Table No. 2. An ANOVA was conducted to compare the metacognitive regularities and work efficiency of teachers from public and private universities. Results revealed significant differences

across all variables. Public university teachers reported higher metacognitive regularities (M = 129.77, SD = 12.24) than private university teachers (M = 122.26, SD = 20.19), F (1, N) = 8.31, p = .004. Similarly, work efficiency was higher among public university teachers (M = 172.68, SD = 14.88) than their private counterparts (M = 165.72, SD = 26.47), F (1, N) = 4.31, p = 0.039. Significant differences were also observed across metacognitive subcomponents. Public university teachers scored higher in planning (M = 50.94, SD = 5.19 vs. M = 48.60, SD = 7.96), F(1, N) = 4.97, p = .027; monitoring (M = 44.63, SD = 4.63 vs. M = 39.44, SD = 6.63), F(1, N) = 6.18, p = .014; and evaluation (M = 37.17, SD = 3.98 vs. M = 34.22, SD = 6.62), F(1, N) = 11.97, p = 0.001.

Findings

The finding of the study revealed a significant difference in teachers' metacognitive regularities between public and private universities. Teachers from public universities (M = 129.77, SD = 12.24) demonstrated higher metacognitive regularities than those from private universities (M = 122.26, SD = 20.19), t (162) = 2.88, p = .0075. This indicates that public university teachers exhibit more consistent metacognitive regularities, which may contribute to variations in how such practices enhance work efficiency.

The study found significant differences between public and private university teachers in metacognitive regularities and work efficiency. Public university teachers showed higher metacognitive regularities than private university teachers, they also demonstrated greater work efficiency (M = 172.68, SD = 14.88) compared to private university teachers (M = 165.72, SD = 26.47), F (1, N) = 4.31, p = .039. In terms of metacognitive regularities, public university teachers scored higher in planning, monitoring, and evaluation, indicating stronger metacognitive regularities overall.

Study Suggestions

In light of the study's findings, several recommendations are suggested to improve practice. Teachers can use self-assessment checklists or reflective journals to monitor their pedagogies and work efficiency.

Universities, particularly private university, should organize regular training and workshops that focus on developing teachers' metacognitive regularities such as planning, monitoring, and evaluation. These programs can help teachers become more aware of their metacognitive regularities and improve their pedagogies and universities can encourage teachers to keep reflective journals or participate in peer review sessions to reflect on their pedagogies. This can strengthen their ability to assess and adjust their university approaches, leading to better pedagogical outcomes.

Future researchers may explore the factors contributing to the higher metacognitive regularities and work efficiency among public university teachers. They can also examine how university policies, training programs, and work environments effect teachers' metacognitive regularities.

Limitation

The study is restricted to university teachers from HEC-recognized universities located only in Islamabad, which limits the generalizability of the findings to other regions or educational contexts. The study is confined to the concept of metacognitive regularity derived from the main theory of metacognition, excluding other potential dimensions or related constructs that could have provided a more comprehensive understanding. The data were collected solely through a

questionnaire, which may not fully capture the depth of participants' metacognitive regularities experiences and could be subject to self-report biases.

Discussion

The present article narrows its focus by providing an in-depth comparative study of teachers from public and private universities, while the broader thesis explain the effect of metacognitive regularities. This study reveal significant differences in metacognitive regularities and work efficiency between public and private university teachers. Teachers from public universities exhibited stronger metacognitive practices particularly in planning, monitoring, and evaluation than their private university counterparts. This higher level of metacognitive regulation appears to contribute to greater work efficiency, aligning with prior literature emphasizing the role of metacognitive regulation in professional effectiveness. Significance of the study: identifies metacognitive regularities that enhance teacher work efficiency. These results highlight the importance of fostering metacognitive regularity awareness among university teachers. Regular training, reflective practice, and university support can strengthen teachers' ability to plan, monitor, and evaluate their work efficiency effectively. Enhancing these skills can lead to improved university progress.

Conclusion

This study highlights the vital role of metacognitive regulation in improving teachers' work efficiency. Public university teachers showed stronger metacognitive practices in planning, monitoring, and evaluation compared to those in private universities, leading to higher work efficiency. Significance of the study contributes to higher-quality teaching, research, and university engagement, ultimately benefiting students, university, and society. The findings of this study will serve as a foundation for faculty development programs that cultivate metacognitive regularities awareness and foster continuous professional growth among university teachers through regular training, reflection, and university support, which can enhance work efficiency, productivity, and overall university performance.

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