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EXAMINING THE PRACTICES OF SELF-REGULATED LEARNING AT THE HIGHER EDUCATION LEVEL

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Abstract

Self regulated learning (SRL) is a very important competency in higher education as it allows the learner to plan, monitor and evaluate his own learning. This study is based on Zimmerman's (2002) cyclical model and examines SRL practices of university students in Islamabad, Pakistan in the forethought (task analysis, motivational beliefs), performance (self control, self observation) and self reflection (self judgment, self reaction) phases. A quantitative descriptive design was used to collect data from 600 students by the use of a 30 item questionnaire which had been validated. Results showed moderate ability on the task analysis (M = 3.51), self reaction (M = 3.52) but widegap of self observation (M = 3.30) and self judgment (M = 3.39) in metacognitive monitoring and evaluation. This is an indication of the bigger systemic problem of Pakistan's teacher centered education system that is driven by rote memorization rather than reflective practices. Results of the study highlight the determination of incorporating SRL strategies like reflective journals and peer feedback in faculty training and curriculum reforms is necessary for an effective intervention. In blended learning environments, digital tools can also scaffold metacognitive skills. The research is important to global SRL literature because it contributes to developing educational context and offers practical recommendations for helping students develop autonomous strategies. By filling these gaps, Pakistani universities will create 21st-century educational demands for lifelong learning skills.

Keywords: *Self-Regulated Learning, Higher Education, Zimmerman's, Planning, Monitoring, Evaluation.*

Introduction

Self regulated learning (SRL) is now seen as an important competence in higher education where the student can personally take responsibility for his or her learning through systematic planning, monitoring and evaluation (Zimmerman 2002). SRL is grounded on Bandura's (1986) social cognitive theory of the

interplay personal, behavioral and environmental factors in the learning process. As shown by Zimmerman (2002), forethought (planning), performance (execution), and self reflection (evaluation) are three phases in the learning process that will collectively allow learners to develop mental abilities into academic skills. SRL is indispensable in the context of higher education, in particular, and in the context of learning in general, where students are confronted with increasingly complex and self-directed learning tasks (Pintrich, 2004) and individual achievement as well as lifelong learning depend on it. However, despite the fact that SRL has been universally recognized as a crucial component of the learning experience, there has not been much research carried out in developing settings such as Pakistan on how to implement SRL. Given the unique cultural and institutional challenges confronting Pakistani universities, which usually adopt traditional teacher centered approaches (Alvi et al., 2016), it is a serious gap. This research void of how university students in Islamabad practice SRL strategies in Zimmerman's three phases is filled by the current study. This research allows for theoretical understanding and practical applications of SRL in understudied educational settings and contributes by focusing on the Pakistani higher education context.

The theoretical framework of this study is based on Zimmerman (2002) model of SRL, suggesting that successful learning consists of three recursive stages, that is, forethought (task analysis and motivational beliefs), performance (self control and self observation), and self reflection (self judgment and self reaction). Different oriented phases of forethought, performance, and self reflection occur in the learning process: in the forethought phase learners set goals and activate motivational strategies, in the performance phase learners use learning tactics and monitoring progress, and in the self reflection phase learners evaluate results and change future approaches (Zimmerman & Moylan, 2009). Repeated studies consistently demonstrate that students who accomplish these SRL phases are more likely to demonstrate better academic success, show higher motivation and learn more adaptively (Boekaerts & Corno, 2005). Given that academic pressures are rising and resources are scarce in the higher education landscape of Pakistan, developing SRL skills can have a

very meaningful impact on student success and retention (Iqbal et al., 2010). Nevertheless, the studies in the Pakistani context so far have mainly examined the connection between SRL and academic success (Ahmad, 2012) or motivation (Amir & Kamal, 2011) but have mostly overlooked the comprehensive assessment of actual SRL practices. This study closes that gap by offering empirical evidence regarding how Pakistani university students interact with each component of Zimmerman's model and generate insight that can be used to improve targeted pedagogical interventions and create a curriculum for the region.

This study has a broader significance with respect to both theoretical and practical educational improvement in Pakistani higher education. However, as universities worldwide undergo SRL practice transformation towards creating student centered learning paradigms, support systems now have to be sensitive to these SRL practices (Paris & Paris, 2001). Evidence based insights into SRL are what will guide the policy decisions and also teaching methodologies in the case of Pakistan where educational reforms are in progress to make learning quality and accessible (Arshad et al., 2015). In previous research, it is found that Pakistani students have been shown to lack in self directed learning due to cultural and educational system factors like rote memorisation and minimal emphasis on metacognitive skills (Sarwar, 2004). This study systematically examines SRL practices by looking at Zimmerman's phases and suggests specific areas where students excel (e.g., task analysis) and other areas in need of intervention (e.g., self observation). The implications of the findings are for faculty development as they indicate the training of educators in facilitating SRL via scaffolding, feedback, and modeling (Dignath-van Ewijk & van der Werf, 2012). In addition, since the introduction of blended and online learning formats in Pakistani universities accelerated by COVID-19 pandemic, understanding SRL practices become more critical for maintaining the educational quality in evolving delivery modes (Alvi et al., 2016). Therefore, this study offers timely, context specific data for better learning strategies in Pakistan's changing higher education landscape.

Problem Statement

It is widely regarded that self-regulated learning (SRL) significantly increases academic success, but the implementation of SRL in Pakistani universities has received little attention. On the one hand, Western research emphasises the benefits that SRL brings like an improved goal setting and greater adaptability, but on the other hand, Pakistan's education system is not equipped with student engagement data concerning SRL. Formal training in metacognitive skills remains an obstacle as most of the students enter school with little or no experience of planning or evaluating their learning independently. Moreover, the traditional teaching methods of memorizing while impeding critical thinking hinder opportunities for self-directed learning further. Pakistani students particularly find it difficult to track progress (self observation) and to evaluate the performance (self judgment). They are unable to identify the weaknesses and adjust the study methods effectively as a result of these gaps. To make matters worse, universities are not providing much institutional support by means of workshops or teacher training programs. This research analyses the SRL practices in Islamabad's public universities where the sized classes and the lack of resources in this case hinder the personalized learning. It uses a three phase model of planning, performing, reflecting to point out some weaknesses such as poor time management and lack of self evaluation. However, many students set goals but they do not monitor progress and do not learn from mistakes. These findings underscore the importance of interventions like SRL focused coursework and faculty development programs. The fact that teacher centered instruction is the norm in culture also discourages student autonomy in the process of learning. Such addressing of the issues would improve both academic results and essential lifelong learning skills. With more and more digital education after the pandemic, SRL is actually becoming more crucial. This paper provides practical implications on how universities can develop systems for creating independent, reliant learners.

Objective

The primary objective of this study is to:

Examine the practices of self-regulated learning among higher education students, specifically their engagement in:

- Forethought (task analysis, motivational beliefs),

- Performance (self-control, self-observation),
- Self-reflection (self-judgment, self-reaction).

Research Methodology

Design:

This study employed a quantitative research design with a descriptive approach to systematically examine self-regulated learning (SRL) practices among university students. The quantitative methodology was selected as it allows for the numerical measurement and statistical analysis of SRL behaviors across Zimmerman's three-phase model. A descriptive design was particularly appropriate as it enabled the researchers to document and analyze the current state of SRL practices without manipulating variables.

Participants:

The study population comprised 600 students (346 male and 254 female) carefully selected from social sciences departments across various public universities in Islamabad. This gender distribution (approximately 58% male and 42% female) was intentionally maintained to reflect the actual enrollment patterns in Pakistani higher education institutions. Participants were drawn from multiple universities to ensure representation of diverse academic environments and to enhance the generalizability of findings.

Instrument:

For data collection, researchers developed a comprehensive 30-item questionnaire based on Zimmerman's well-established SRL model. The instrument underwent rigorous validation by a panel of five education experts to ensure content validity and relevance to the Pakistani context. Reliability testing yielded an excellent Cronbach's alpha coefficient of 0.979, indicating high internal consistency among the questionnaire items. The instrument was structured to assess all three phases of SRL: forethought (10 items), performance (10 items), and self-reflection (10 items).

Sampling Strategy

The sampling strategy employed was stratified random sampling, which ensured proportional representation of both male and female students across different universities and academic levels. This approach helped maintain the natural composition of the student population while allowing for meaningful gender-based comparisons. Data was collected using a 5-point Likert scale (1 =

Strongly Disagree to 5 = Strongly Agree), which provided nuanced response options and increased the sensitivity of measurement.

Data analysis:

Data analysis focused on descriptive statistics, particularly mean scores, to evaluate students' engagement with various SRL components. The mean scores were calculated separately for each of the six sub-constructs: task analysis, motivational beliefs, self-control, self-observation, self-judgment, and self-reaction. This granular approach allowed for detailed examination of strengths and weaknesses in students' SRL practices. Additional statistical measures, including standard deviations and frequency distributions, were used to understand the variability and patterns in responses.

Several quality control measures were adopted in the research methodology. In a pilot study of 30 students, before the main study, problem/questions were identified and remedied for instrument clarity and design. Strict ethical considerations had been taken to obtain informed consent, maintain anonymity of participants and receive approval of the institution(s). Data collection was performed through both physical questionnaires as well as on online platforms to account to different student preferences in order to have a higher participation rate. This robust methodological methodology ensured the production of reliable and valid data about SRL practices in Pakistani higher education. By featuring a theoretically grounded instrument, along with a carefully selected sample, and a rigorous statistical analysis, the basis was set for meaningful and valid conclusions regarding the state of self regulated learning in the students of University in Islamabad. In particular, the methodology was devised to generate insights that are practical in nature so as to serve to inform institutional policies and teaching practices designed to empower students to be self regulated learners.

Data Analysis

The following tables present the quantitative analysis of students' self-regulated learning practices across Zimmerman's three-phase model. The data reveals important patterns in how university students engage with different components of SRL, highlighting both strengths and areas needing improvement. Mean scores were calculated on a 5-point Likert scale (1 = Strongly Disagree to 5 =

Strongly Agree), with higher scores indicating better mastery of each SRL component.

Forethought Phase Practices

The forethought phase results in the given table 1 show students demonstrate moderately developed skills in both cognitive planning (task analysis) and motivational preparation. While these scores indicate basic competence, they fall short of the strong practice range (3.67-5.00), suggesting room for growth in preparatory learning strategies.

Table 1: Forethought Phase Practices

SRL Component	Mean Score	Practice Level	Interpretation Range
Task Analysis	3.51	Moderate	2.34-3.66
Motivational Beliefs	3.50	Moderate	2.34-3.66

Performance Phase Practices

The performance phase data in the given table 2 reveals a concerning disparity between students' ability to control their learning behaviors (self-control) and their capacity to monitor progress (self-observation). The self-observation score, while still in the moderate range, represents the lowest score across all SRL components measured.

Table 2: Performance Phase Practices

SRL Component	Mean Score	Practice Level	Interpretation Range
Self-Control	3.51	Moderate	2.34-3.66
Self-Observation	3.30	Moderate-Low	2.34-3.66

Self-Reflection Phase Practices

The self-reflection phase in the given table 3 shows the highest overall scores, particularly for self-reaction. However, the relatively lower score for self-judgment indicates students may be making

adjustments to their learning (reaction) without thorough evaluation of their performance (judgment).

Table 3: Self-Reflection Phase Practices

SRL Component	Mean Score	Practice Level	Interpretation Range
Self-Judgment	3.39	Moderate	2.34-3.66
Self-Reaction	3.52	Moderate-High	2.34-3.66

Results and Discussion

Results from this study showed distinct strengths in students' self regulated learning (SRL) practices, specifically in task analysis (M=3.51) and self reaction (M=3.52). These are positive findings which support Zimmerman's (2002) emphasis on goal directed learning as they show that students show reasonable competence in setting learning goals and changing strategies following task completion. Analyzing tasks to indicate that students can break down academic problems into pieces amenable to solution is one indication of the capacity to do so; self reaction is another indication of some ability to learn from experience. Nevertheless, these scores are in the moderate (3.30–3.52 on a 5-point scale) range rather than in the "strong practice" (3.67–5.00) range. By its nature, this is a pattern showing that while there are some foundational skills, generally students don't maximize them to reach for success in the advanced academic performance. The findings notably differ from Western studies, where self reaction often scores high, possibly owing to cultural discrepancies in ways of education that emphasize the teaching lead rather than self directed; a move that predates a majority of Western studies. These "bookend phases' of forethought and self reflection have moderate scores, indicating that students savvy the significance of preplaning and adaptation however may be absent the tools required to hold these arranging systems on an ind impartial manner. This partial competence also reflects the findings of Alvi et al. (2016) of Pakistani universities wherein the development of SRL is largely incidental and not systematically developed.

Self observation (M=3.30) and self judgement (M=3.39) were lowest and critical gaps emerged in metacognitive components along with them. Self observation deficit is especially worrisome

since it suggests students' incapability to monitor phase of learning a critical skill required for timely strategy adjustment during a skill. For one thing, learners may identify tasks to be performed but not realize when they are erring from the path, thus making initial planning useless. In the same way, self judgment that is weak implies superficial assessment of outcomes; students explain failures in terms of external factors and do not calculate personal learning ways. These gaps are consistent with SRL literature at the global level (Boekaerts & Corno, 2005) but these gaps are exaggerated in the Pakistani education system where rote memorization has been predominating over the reflective ones (Sarwar, 2004). At base, this disconnect in stronger planning phase and weaker monitoring and evaluation phase constitutes a 'metacognitive blind spot' where, although possessing goals setting skills, students still repeat ineffective strategy. It explains the reason why Pakistani students face difficulties with the complex assignments that require mid course corrections as was mentioned in previous studies (Ahmad, 2012). Given the fact that the results converged across institution, these findings suggest that any systemic rather than individual limitations should be also addressed first with curricular reforms that embed metacognitive training.

The implication of such is not just limited to academic performance but to the lifelong competencies. Students are not able to use feedback loops to improve their strategies in the course of the task, without the robust selfobservation which would enable them to do so. This is further compounded by weak self judgment that limits resilience from failures, a key aspect of resilience (Dweck, 2006). Suppressed empathy can also contribute to high dropout rates in STEM fields in which iterative problem solving is such an integral part. Nevertheless, the modest scores in self control (M=3.50) and motivational beliefs (M=3.50) give us some hope because students have the disposition towards SRL but do not have a structured way of guidance. In order to make an explicitly metacognitive intervention, you can deploy reflective journals or 'think aloud' protocols on assignments. It is equally important to train faculty, since SRL is by no means followed in current teaching practices (Dignath-van Ewijk & van der Werf, 2012). Reforms, however, must be cultural, e.g., dismantling

stigma, culturally encouraged mistakes that prevent self evaluation. Learning dashboards are digital tools that could scaffold self observation, while peer session might 'normalize' constructive judgement. Addressing these gaps will transform moderate SRL skills into advanced competencies aligned with global standards for 21st century education, while at the same time Pakistan's universities will be able to address the SRL gap in the 21st century.

Conclusion

Although the practices of Pakistani university students in the metacognitive strategies of self observation and self judgment are revealed to be significant in this study, important differences exist in the overall practice of self regulated learning (SRL) among these students. Students are able to perform moderately well in task analysis and self reaction, but are not able to monitor progress effectively enough or evaluate performance effectively enough in order to properly learn. These findings emphasize the necessity of institutional reform that extends beyond the delivery of content to consciously develop SRL skills. Therefore, structured SRL training should be integrated in the curricula in universities through evidence based interventions like guided reflective journals that improve the self judgment and peer feedback system that promote the self observation. In terms of faculty development programs, training educators to demonstrate how to break down complex tasks or thinking aloud during problem solving is a priority and requires training educators to model metacognitive strategies. In the context of teacher centred education culture prevalent in Pakistan, such scaffolding is especially important because students do not witness SRL strategies in action. Overall scores in the moderately high range (3.30–3.52) indicate that students have basic SRL skills and need systematic support to develop it to the advanced level. This kind of gap addressing would improve the academic outcomes and decrease dropout rates significantly in disciplines requiring iterative learning.

Future research is pointed in two directions that this study looks ahead to. Second, discipline specific investigation is required in order to develop SRL interventions that are tailored to the needs of specific fields of discipline, e.g., iterative problem solving logs might be needed in STEM fields, while critical reflection templates might be useful in humanities. Second, the expanded usage of

digital tools in the Pakistani system of higher education lends itself to the inquiry about what would an alternative scaffold for metacognitive skills, as an example, in learning analytics dashboards or in AI driven feedback systems might look like. After the pandemic, blended learning will be increasingly adopted by universities, which would benefit from digital platforms to give real time self monitoring data to compensate for weak self observation. Nevertheless, technological solutions need to be culturally adapted to Pakistan's wide range of digital literacy levels and institutional resources. In the end, the successful implementation of SRL depends on three factors: policy changes that encourage metacognitive trainings, faculty acceptance of the usage of such instruments, and learner-centric tools that illustrate these abstract strategies. Gaps between what is done in Pakistani institutions and global education goals can be bridged to produce passive learners into autonomous, adaptable scholars ready to tackle lifelong challenges.

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