

SELF-REGULATED LEARNING STRATEGIES: THE THRIVING CONSTRUCT TOWARDS HIGH AND LOW ACHIEVEMENTS AT HIGHER EDUCATION

ASMA KHIZAR¹, GHULAM ZAINAB², MUHAMMAD NADEEM ANWAR^{3*}

^{1,2,3} Department of Education, University of Sargodha, Pakistan

asma.khizar@uos.edu.pk (Asma Khizar)

ghulam.zainab@uos.edu.pk (Ghulam Zainab)

nadeem.anwar@uos.edu.pk (Muhammad Nadeem Anwar)

*Corresponding author

Abstract—In higher education, Self Regulated Learning (SRL) is highly critical because one of the purposes of higher education is to make students independent learners. SRL strategies emphasize self-management of learning tasks, which are the gateway towards autonomy in learning and achievement. This study aimed to determine the relationship between SRL strategies and academic achievement and further investigate whether high-achievers demonstrate more effective and consistent use of SRL strategies compared to low-achiever undergraduate students. A sample of 322 undergraduate students (161 high achievers, 161 low achievers) belonging to social science disciplines of six randomly selected universities was taken to attain the stated aim. The study was descriptive cum correlational in nature and a questionnaire was used for data collection which was constructed after review of related literature. Results of data analysis revealed a significant relationship between SRL strategies and academic achievements and significant differences were also found between high and low achievers undergraduate students in their SRL strategies. High achievers were good in their SRL strategies than their counterparts, moreover male and female high achievers also found good in SRL strategies. It is safely concluded that SRL strategies are a thriving construct because a substantial proportion of learning activities can be categorized as SRL strategies therefore teachers at higher education levels may develop SRL strategies through reflective practices and encourage low achievers to teach at least one class and organize a seminar.

Keywords: Academic achievement, higher education, Self regulated learning strategies

INTRODUCTION

Education helps in facilitating learning and equips learners with desired skills and attitudes which lead them to success in the future. In today's information and technological world, it's not enough for students to have studied subject material but the challenging students are anticipated to become masters of their own learning (Kim, 2010). Zimmerman (2008) was of the view that learning is said to be the capability to plan, learn, and maintain one's own learning through time and information management. He connected the concept of own learning to self-learning in which students monitor and organize their learning tactics.

Pintrich (2000) argued that self-learning consists of learning by means of the individual search of information and the individual realization of practices or experiments. It helps in building independence and develops an ability to learn without a teacher. It leads learners in the transformation of their cognitive capacities into task-oriented skills and Zimmerman (2000) named it self-regulation. Self-regulation (SR) is a process through which learners manage and organize their cognitive thoughts and convert them to the skills helpful for learning (Labuhn et al., 2010). Initially, the construct "self-regulation" revolved around emotional and behavioral aspects of personality (Dinsmore et al., 2008), but Zimmerman (2013) used self-regulation as self-regulated learning, wherein learning is to be considered as a motivational factor that underlies students' assumption of personal responsibility to learn, which may or may not involve an instructor.

To increase students' learning skills, it is necessary to lay the groundwork for self-study and build effective learning practices. In the field of educational psychology, Zimmerman was the first to suggest the establishment of self-regulatory training. In terms of meta-cognition, motivation, and



behavior, he argues that independent learning is a process in which students are energetic applicants in the learning process. Zimmerman (2013), emphasized that teachers should counsel children on self-esteem, goal setting, learning strategies, motivation, and monitoring since self-regulatory learning is a diverse activity that encompasses a cognitive, emotional, behavioral, and individual environment. Independent learning is a type of learning in which pupils obtain knowledge using self-regulation techniques such as self-esteem, self-control, and adaptation (Zumbrunn, Tadlock, & Roberts, 2011).

Self-regulated learning (SRL) is used to offer students a positive experience that inspires them and helps them in the development of self-control over their own learning (Boekaerts, Pintrich & Zeidner, 2000). Self-regulated learning is a dynamic, practical process whereby student sets their goals for their own learning and endeavor to check and regulate their cognition, motivation, and behavior (Pintrich, 2000; Perry, 2005). SRL strategies are widely used by learners in order to meet their tasks effectively and efficiently. There are many diverse viewpoints on self-regulated learning, and researchers with various foci try to understand how cognitive, metacognitive, motivational, and environmental aspects influence the learning process (Schunk & Zimmerman, 2007).

Factors Of Srl Strategies

Plethora of literature explicated various factors of SRL strategies (Nota, et al., 2004; Perry, 2005; Pintrich, 2000, Schunk, & Zimmerman, 2007). These sub-factors include:

Goal setting: Setting goals includes coming up with clear, demanding, and doable objectives for learning tasks. According to research, students who have clear goals tend to be more motivated and engaged as well as having a more defined path for their learning. Students who set academic goals can concentrate their time and energy on obtaining them, which contributes to higher achievement.

Strategy choice: Academic achievement depends on having the capacity to choose and apply efficient learning strategies. Therefore, the students' ability to select the best techniques for various learning activities are more likely to participate in deep processing and efficient information processing, improving understanding and knowledge acquisition.

Intrinsic motivation: A person who is motivated by their inner enjoyment, interest, or fulfilment is said to be motivated intrinsically. Students are more likely to be actively engaged, persistent, and invested in their learning when they are genuinely motivated. A higher degree of success and a deeper level of comprehension can result from this drive.

Self-recording: Self-recording involves monitoring and keeping track of one's progress, actions, or behaviors. By regularly recording their performance or study habits, students gain insight into their strengths and weaknesses, enabling them to make adjustments and improvements in their learning strategies and study routines. This self-reflective process can contribute to enhanced academic achievement.

Self-evaluation: Self-recording entails maintaining tabs on one's actions, behaviours, and progress. Students can acquire insight into their strengths and shortcomings and enhance their learning tactics and study habits by routinely keeping track of their performance or study habits. This process of self-reflection can lead to improved academic performance.

Time management: Time management is essential for academic achievement. Students who can effectively manage their time and priorities their responsibilities are more likely to have focused and effective study sessions. Effective time management helps students' complete assignments, get ready for tests, and learn more generally, which eventually results in higher accomplishment.

Help-seeking: An essential component of self-regulated learning is knowing when and how to ask for assistance. When faced with difficulties or in need of explanation, students who feel at ease asking for help from teachers, peers, or academic support services are more likely to succeed academically.

Self-efficacy: An individual's self-efficacy relates to their confidence in their capacity to succeed in particular tasks or domains. Students who have high levels of self-efficacy in their academic



abilities are more likely to set demanding goals, keep going in the face of obstacles, and apply efficient learning techniques. They are more inclined to approach projects with assurance and diligence, which boosts academic performance.

Students who are able to participate in self-regulation learning have a good understanding of how and why they should employ a certain self-regulation method. Investigate meta-cognitive behavior, motivation, and control in depth. As a result, individuals alter their learning tactics or confidence. Students must design learning goals, create a curriculum, determine learning strategies, monitor learning processes, evaluate learning outcomes, and limit intervention as part of the process of organizing independent learning (Lee et al., 2010). In addition, a self-regulating learning model is recommended to show how students actively use certain strategies in the classroom to achieve course goals based on their needs, motivations, and content knowledge. A plethora of literature indicates that self-regulatory learning has a huge impact on individual learning outcomes because the stress on inactive memorization and repetition of relevant information in an educational context is no longer considered in its place. So the emphasis has moved to prepare students for self-control throughout their lives (Cohen, 2012; Luftenegger et al., 2012; Winne, 2013).

Growing literature indicated that the academic success of students has a crucial concern for any high education institution and a paramount factor that is affecting the performance of institution and academic performance also considered quality indicator (Lawrence, 2014). Conversely, academic performance is affected by various constructs and one of them is the use of SRS in learning. SRL strategies enabled higher education students to have better academic performance and Nota et al. (2004) reported that SRL strategies have significant positive correlations with academic achievement.

Stress on mere memorization of facts has no more accepted and focus has been shifted to equipping learners to become self-regulated learners (Smith, 2001). So, the use of SRL strategies is helpful in engaging learners actively in completing their academic tasks and it has an impact then on their academic performance. For example, Ejubović & Puška (2019) in their research investigated the influence of SRL strategies on academic performance on the sample of Bosnia and Herzegovina students. After thirty years of research on SRL strategies among students with different learning abilities, Reid et al. (2012) established the fact that SRL interventions have been appeared significant indicator in impacting students' learning and behavior. The use of SRL strategies can increase motivation level, change the way of learning and study, resultantly enhance the achievement level. In fact, SRL is the gateway to achievement, and individual to individual it varies. Many studies have concentrated on improving SRL strategies through classroom intervention (Pintrich & De Groot, 1990; Zimmerman, 2008).

The above commentary can be summarized that the construct Self-regulated learning (SRL) seems to be crucial for academic success and beyond (Boekaerts & Corno, 2005) because in the education setting it plays important role in intrinsic motivation, problem-solving, academic achievement task interest (Pintrich, 2000; Zimmerman, 2008). Other thinkers like Martinez-pons (2002) and Bandura (2006) argued that SRL has a significant impact on educational attainment and Martin (2004) added that SRL strategies develop students with life-long learning skills and also equip them with skills to manage their social behavior the development of lifelong learning skills.

Hence, research on SRL strategies does matter due to its major contributions in the field of education research because of its broader nature that offers an edge in understanding various types of variables that impact students' performance under various phenomena (Mushtaq & Khan, 2012; Junio & Liwag, 2016). Literature is indicating that most of the research studies were on analyzing the different elements of SRL strategies in the school settings and comparatively a small number have kept focus to examine the difference in terms of SRL strategies between high and low achieving students, particularly in higher education.

The context and rationale for studying self-regulated learning (SRL) strategies lie in the pursuit of enhancing educational practices and student outcomes. At the higher education level, academic demands and expectations undergo a shift, requiring learners to become more autonomous and



take control of their own learning process (Dillon and Greene, 2003). Moreover, students must navigate "high stakes" tasks such as tests, interviews, and job preparation. This necessitates the development of specific self-regulated learning (SRL) skills to effectively manage learning behaviors, motivation, and emotions (Shnaubert and Herold, 2020). In this context, SRL strategies become crucial for higher education students to meet the increased responsibilities and challenges they encounter in their academic journey. Furthermore, there is a limited body of research examining self-regulated learning (SRL) strategies specifically within the context of higher education. It is important to note that findings from studies conducted in lower education levels may not directly apply to the unique demands and dynamics of higher education. Therefore, further investigation is needed to specifically explore and understand the role and effectiveness of SRL strategies in the context of higher education. This will provide valuable insights and guidance for educators and students in fostering effective SRL practices at the higher education level (Edisherashvili, et al., 2022).

Notwithstanding, in the high education context, a substantial proportion of teaching-learning activities can be categorized as SRL strategies, because the role of students in higher education institutions is more active and they have to manage their learning tasks and study habits effectively in different ways. Consequently, the construct "self-regulated learning (SRL)" due to its distinctive placement is getting consideration in teaching-learning and academic achievement in higher education, therefore, this study was aimed at comparing the SRL strategies of high and low achievers undergraduate students. Objectives of this study were to

- Find out the relationship of self-regulated learning strategies with academic achievement
- Investigate the self-regulated learning strategies among high and low achiever undergraduate students.

METHODOLOGY

The research design refers to the structure and design of a study that is used to gather information to answer a research question (Abbott & McKinney, 2013). It specifies the steps for regulating research, such as which information will be gathered from when it will be obtained, and under what conditions. This study was descriptive cum correlational and a cross-sectional design was used.

Participants

The participants of this study were undergraduate students of the final semester of the social sciences discipline. A sample is a collection of some elements from the population being examined that represent the entire population (Best & Khan, 2009). Based on self constructed criteria for high and low academic achievement criteria i-e undergraduate students having CGPA>3 (declared high archiver) and CGPA<3 (declared low achiever), a sampling frame was prepared and through proportionate sampling technique, 161 higher achiever and 161 low achiever ungraduated students have participated in this study (N=322). Multi-stage sampling technique was employed to ensure a diverse and representative sample which can enhance the generalizability and validity of the research findings for higher education institutions. So that at first, six universities were randomly selected as the overall sample named as the University of Punjab, Islamia University of Bahawalpur, University of Education, University of Gujrat, university of Okara, and GC University Faisalabad and the next stage, one department from the social sciences faculty was selected randomly from each university i-e economics, applied psychology, education, political science & international relation, sociology, and business school respectively. At the final stage, ungraduated students within each chosen department were taken based on criteria including factors like final semester and academic performance (high-achievers vs. low-achievers) using proportionate sampling technique. The proportional sampling technique is used to ensure that each subgroup in the population is represented in the sample proportionally to their size or importance in the overall population (Qayyum, & Jamil, 2019).

Measuring Instrument

A self-developed questionnaire called Self-regulated Learning Strategies (SRLS) was used as a measuring instrument which consisted of two parts. Part one was based on participant information such as gender, department, current semester, and the cumulative grade point averages (GPAs) of the previous six semesters. Part two of the SRLS consisted of items related to SRL strategies developed after an extensive review of related literature and research (Zimmerman and Schunk, 2001; Thomas, 2009; Abbasnasab et al. 2012; Lee and Recker, 2017). The content validity of the questionnaire was determined through a panel of 6 experts. Initially, the questionnaire was comprised of 67 statements, and a panel of experts was requested to assess the clarity, relevance, and fluency of each statement. Their suggestions were incorporated and the final version carried 47 items was used for data collection. The term "reliability" refers to how consistent the outcomes of an administered tool are when comparing one set of items to another set of things, and one individual to another human (Singh, 2017). Therefore, in order to examine the reliability of the questionnaire, the test-retest method of reliability was used. Ehizele & Azodo (2013) argued that to determine the reliability test-retest method is appropriate to estimate fluctuation and chance factors. For this purpose, 30 students were asked to complete the questionnaire 2-week later the same students were directed to fill in the questionnaire again. The reliability of the two set of scores was assessed by applying Cronbach's alpha, yielding a value of 0.86, which indicates an acceptable level of reliability for the measures.

SRLS instrument has 43 statements and examines the SRL strategies of undergraduate students in seven factors including goal setting (six-items), strategy choice (five items), intrinsic motivation (six items), self-recording (five items), self-evaluation (four items), time management (six items), help-seeking (five items) and self-efficacy (six items). The responses categories were gauged on a 5-point Likert type scale ranging from always, very frequently, occasionally, rarely, very rarely, which were weighted from 5 to 1 respectively. The range of score of the questionnaire with 43 items was between 43 (minimum) and 215 (Maximum), therefore, the norm for SRLS was decided as to poor (score range 1-75), fair (score range 76-150), and good (score range 151-225). To examine the academic achievement of undergraduate students, the CGPA(s) of the previous seven semesters were used according to which a CGPA greater than 3.00 was considered to be "high achievers" and less than 3.00 was considered as "low achievers".

RESULTS

Data were analyzed and interpreted using Statistical Package for Social Sciences version 22 (SPSS v.22; SPSS Inc., Chicago, IL, USA). Descriptive statistics such as frequencies, mean, and standard Deviation and inferential statistics such as t-test were used for the analysis of data.

Table 1 *Description of Categorical Variables*

Categorical Variables	Sub-categories	Number (n=322)	(%)
Gender	Male	148	46.0
	Female	174	54.0
Achievement level	High Achiever	161	50.0
	Low Achiever	161	50.0
Gender wise Achievement level	Male-High Achiever	70	21.7
	Female-High Achiever	91	28.3
	Male-Low Achiever	78	24.2
	Female-Low Achiever	83	25.8
Departments	1. Economics	52	16.1
	2. Applied Psychology	46	14.2
	3. Education	68	21.1
	4. Political Science and IR	52	16.1
	5. Sociology	44	13.6



6. Business School

60

18.6

Table-1 indicated that of the 322 undergraduate students who participated in the research study, 46% were male and 54 were female. 50% were high achievers (CGPA>3) and 50% were low achievers (CGPA<3). The %age of male high achievers and female high achievers was 21.7 and 28.3 respectively, similarly, the %age of male low achievers and female low achievers was 24.2 and 25.8 respectively. The majority of the undergraduate students were from the department of education (21.1%) and business school (18.6%).

Table 2 Relationship between SRL strategies and Academic Achievement

Variables	Statistics testing	SRL Strategies	Academic Achievement
SRL Strategies	Pearson correlation	1	0.362
	Sig. (2- tailed)		0.002
	N	322	322
Academic Achievement	Pearson correlation	0.362	1
	Sig. (2- tailed)	0.002	
	N	322	322

Based on the result in Table 2 indicated that there is a statistically positive relationship between SRL strategies and academic achievement because the value of the Pearson correlation coefficient yield a result of ($r=.362$, $n=322$, $p=0.05$, $p=.002$, 2-tailed) which means SRL strategies could have a significant impact on the academic achievements of undergraduate students. One could glean that high self-regulated person might necessarily be a high achiever.

Table 3 Comparison of SRL Strategies of High and Low Achievers

Achievements Level	N	Mean	SD	Mean difference
Low Achiever	161	144.07	18.42	
High Achiever	161	181.52	16.01	27.45

Table 3 indicated the mean score of SRL strategies was found respectively to be 144.07 and 171.52 for low and high achievers. It could be concluded that low and high achiever undergraduate students were found at a fair and good levels of SRL strategies respectively according to specified norms for SRL strategies construct.

Table 4 Factor wise Comparison of SRL Strategies of Low and High Achievers

Factors	Achievements Level	N	Mean	SD	t	Sig
Goal setting	Low achiever	161	17.08	6.66	8.44*	0.000
	High achiever	161	27.14	5.05		
Strategy choice	Low achiever	161	19.71	6.41	16.18*	0.001
	High achiever	161	23.30	6.33		
Intrinsic motivation	Low achiever	161	18.06	4.97	12.98*	0.007
	High achiever	161	26.07	3.64		
Self-recording	Low achiever	161	19.62	5.81	10.23	0.664
	High achiever	161	17.80	5.97		
Self-evaluation	Low achiever	161	17.18	4.31	10.56*	0.000
	High achiever	161	22.79	3.09		
Time management	Low achiever	161	19.93	1.9	12.76	0.584
	High achiever	161	14.27	1.79		

Help-seeking	Low achiever	161	17.22	2.29	12.72*	0.111
	High achiever	161	11.09	1.99		
Self-efficacy	Low achiever	161	13.36	3.40	9.583*	0.000
	High achiever	161	25.22	2.15		

* Significant at $p < .05$.

Table 4 revealed that among eight factors of SRL strategies, the difference between high and low achievers in five factors (i-e goal setting, strategy choice, intrinsic motivation, self-evaluation, and self-efficacy) was significant ($p < .05$). Higher achiever undergraduate students had good SRL strategies in goal setting, strategy choice, intrinsic motivation, self-evaluation, and self-efficacy as compared to low achievers. Whereas in the other three sub-factors of SRL strategies (i-e self-recording, time management, and help-seeking) the difference between high and low achievers was not significant ($p > .05$), which means both were by and large similar in their SRL strategies.

Table 5 Comparing SRL strategies of Male and Female High and Low achievers

Gender	Level	N	Mean	SD	t	Sig
Male	High Achiever	70	163.42	17.13	10.70*	0.001
	Low Achiever	78	127.14	13.42		
Female	High Achiever	91	157.09	13.33	15.98*	0.012
	Low Achiever	83	131.31	10.21		

* Significant at $p < .05$.

Table 5 indicates there was a significant statistical difference in the means between high and low achievers on the SRL strategies scale of male and female undergraduate students. SRL strategies were found in the favor of high achievers both male and female. Therefore, one could infer that both male and female high achievers were at a good level of SRL strategies according to specified norms for SRL strategies construct than their counterparts.

Table 6 Department wise comparison of SRL strategies of Low and High Achievers

Departments	Level	N	Mean	SD	t	Sig
Economics	High Achiever		161.12	15.01	2.671*	0.001
	Low Achiever		117.12	13.13		
Applied Psychology	High Achiever		159.10	18.03	1.412*	0.001
	Low Achiever		129.03	12.12		
Education	High Achiever		170.31	19.17	0.513	0.521
	Low Achiever		123.13	14.32		
Political Science & IR	High Achiever		159.10	11.1	0.449	0.495
	Low Achiever		136.22	12.01		
Sociology	High Achiever		168.34	15.1	2.174	0.325
	Low Achiever		117.19	12.22		
Business School	High Achiever		158.15	15.23	0.876*	0.002
	Low Achiever		128.41	11.31		

* Significant at $p < .05$.

According to table Table 6, the t-test output didn't show significant differences among high and low achievers undergraduate students belonging to education, political science & IR, and sociology departments regarding the use of SRL strategies except for economics, applied psychology, and business school. Therefore, one could say that undergraduate students of economics, applied psychology, and business school departments were at a good level of SRL strategies according to specified norms for SRL strategies construct.

DISCUSSION AND CONCLUSION

SRL strategies are found to be a basic determinant of students' learning and achievements (Graham & Harris, 2005). In this study SRL strategies of high and low achievers, undergraduate students were



ascertained and it was found a significant majority of high achievers were at a good level. Researchers have found a significant positive relationship of SRL strategies with academic achievements (Smith, 2001; Zimmerman & Schunk, 2001; Yumusak, Sungur, & Cakiroglu, 2007), therefore, one could glean that SRL strategies are contributing positively towards better academic achievements in higher education institutions. The high and low achiever undergraduate students were significantly different in different sub-factors of SRL strategies, so it can be inferred that goal setting, strategy choice, intrinsic motivation, self-recording, self-evaluation, time management, help-seeking, self-efficacy could be key indicators towards high achievement.


In this study, high achiever male and female undergraduate students and even students belonging to the departments of economics, applied psychology, and the business school also have been seen good level on the SRLS scale. Departmental wise difference of SRL strategies among students is elaborated by Cassidy (2011), Hall & Goetz (2013), and Jouhari, et al.(2015), they stated that change of context, phenomenon, subject orientation, availability, and use of academic resources, teachers' self-reflection, learning environment, and motivational factors could also affect SRL strategies. On the basis of the results of this study, researchers believe that a better level of academic performance requires various factors and SRL strategies are a potentially important construct that can play a key role in improving academic achievements (Nota, Soresi, & Zimmerman, 2004; Junio & Liwag, 2016; Cohen, 2012).


Different sub-factors of SRL strategies were also brought under this study and results clearly indicate that consolidating each factor can be helpful in improving academic attainment. On the basis of finding and previous studies it can be inferred that goal setting, strategy choice, intrinsic motivation, self-recording, self-evaluation, time management, help-seeking, and self-efficacy are key indicators towards high achievement. Studies consistently demonstrate that students who set clear goals, employ effective strategies, possess intrinsic motivation, engage in self-recording and self-evaluation, manage their time efficiently, seek help when needed, and have a strong belief in their own abilities tend to exhibit higher academic achievement. These factors have been found to enhance self-regulation, and effective learning behaviors, all of which contribute to improved academic performance. Growing literature revealed that teachers have autonomy in higher education therefore, they can play a crucial role in the development of SRL strategies among students. SRL strategies can be developed through reflective practices, assignment of innovative and creative presentations, and moreover, for making low archiver students self-regulated learners, teachers should encourage them to teach at least one class and organize a seminar. Through this study, it suggests that teachers of higher education institutions should consider the development of SRL strategies among students during their teaching and assessment and support low achiever students to learn the strategies of self-regulation for their future success in the job market.

To get insights into the long-term impact of SRL strategies on academic achievement and examine whether high-achievers sustain their success and if low-achievers improve their performance, future researchers can initiate longitudinal design. Moreover, intervention studies can be conducted with the aim to determine the causal relationship between self-regulated learning strategies and academic achievement. In intervention studies researchers can design interventions to teach SRL strategies to low-achievers and compare their outcomes with a control group, thus assessing the effectiveness of these strategies in improving academic performance. Generalizability may be the limitation of this study that can be enhanced if future studies could involve multiple institutions, programs, and diverse samples.

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