ISSN E: 3006-1466
ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

EFFECT OF SELF REGULATED LEARNING STRATEGIES ON LOCUS OF CONTROL OF UNIVERSITY STUDENTS

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Abstract

This study aimed at investigating how self-regulated learning (SRL) strategies can affect locus of control among university students. It was a quantitative research and the causal-comparative research design was used. The population of study included students of B.Ed. of six universities of Lahore district (three public and three private). Stratified random sampling method was employed by the researcher when selecting the sample of 300 students towards this end. In this study, the data from respondents were collected using two research instruments. The two instruments were adapted in order to meet the requirements of the research. The instruments were validated with respect to expert opinion. Pilot testing was done. The reliability of the instruments was verified by using Cronbach alpha. The results were obtained by descriptive (i.e. Mean, Standard Deviation, Frequency, and Percentage) and inferential statistics (i.e. Pearson's r correlation and regression analysis). The results showed moderate but statistically significant levels of self-regulated learning and locus of control (LOC) among the students of the university. The positive correlations and the results of the regression indicated that self-regulated learning strategies are important in shaping the perception of control among students. The enhancement of SRL methods helps to enhance self-confidence, determination and academic performance of students.

Keywords: *Self-regulated learning strategies, Locus of control.*

Introduction

The current difficult academic landscape requires students to be even more responsible in their learning, than in previous times. To this end, SRL strategies have gained relevance in the sense that they can be used to assist learners to improve their academic achievements and match to new academic requirements. This becomes even essential in online and blended learning in which there are extremely low levels of external guidance to students. Vital skills such as self-evaluation, metacognitive skills and effort management have played a significant role in academic achievements such as improved GPA scores in these environments (Xu et al., 2022).

Motivational and contextual factors such as the perception of self-efficacy of students, learning environment nature and psychology determines the ways in which students develop, and use the SRL strategies. It is revealed that the students begin to comprehend the processes of learning well and to find academic activities enjoyable and improve their academic performance when beginning to use SRL strategies (Angeles, 2024). In addition, self-regulated learning is not just concerning what students do in isolation it is also concerning what students do in the social as well as collaborating learning setting. Recent research insists that the combination of self-regulation, co-regulation and shared regulation is necessary to understand how learning occurs in digital and blended learning contexts (Majumdar & Bao, 2023).

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CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Another primary concept connected with the learning of students is locus of control. It denotes degree to which people have the thought that their actions can shape the outcome of the events in their life. People who perceive their success as a product of their own performance possess internal locus of control, whereas the ones who perceive their success as a product of external factors like luck, fate possess external locus of control (Carton, 2021).

Students who subscribe to internal locus of control justify the poor performance by acknowledging that they have not prepared to achieve good results, but those students that believe in an external locus of control attribute the poor results to external causes like unfair marking. Due to the fact that locus of control determines the way students perceive their successes and failures such that it is a central determinant of academic success, the students with internal locus of control are more confident and more motivated, attribute their own learning, have realistic goals and persist in their academic challenges (Scott et al., 2010). The students with external locus of control are more anxious since they tend to believe that their level of success always depends on the factors that are beyond their control (Ferguson, 2001).

Locus of control is acquired as a person goes through the experiences in his or her life. Such students who consider that their success is the outcome of their activities are always persistent in hardships whereas those students who consider that their success is a product of external forces may be upset after experiencing small disruptions. Previous literature shows that locus of control is a significant aspect that determines academic behaviours and performances of students (Majzub et al., 2009; Turker & Inel, 2012).

Statement of the Problem

In the current stressful academic world, university students are supposed to assume more responsibility in their learning as compared to the past. This has not stopped several students to struggle with the process of learning and continuing with good academic performance. This scenario brings a significant question whether students possess sufficient SRL strategies that assist them on how to manage their learning process and assess their performance. These ideas have also received much attention but the studies in the local context have been minimal on how the concepts interrelate to one another. A lot of the past studies have investigated these factors individually or in a school based setting but not at higher level.

With this gap in mind, it is highly important to investigate that to what degree self-regulated learning is able to affect the locus of control of students towards their academic performance. The current research meets this requirement since it examines how self-regulated learning strategies influence locus of control in university students.

Objectives of the Study

The present study was designed to achieve the following objectives:

1. To assess the level of self-regulated learning strategies among university students.
2. To determine the level of locus of control (internal and external) of the university students.
3. To examine how locus of control among university students is affected by self- regulated learning strategies.

Null Hypotheses

Based on the above objectives, this study sought to answer the following null hypotheses:

H_{01}: There is no statistically significant level of self-regulated learning strategies among university students.

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CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

H_{02}: There is no statistically significant level of internal and external locus of control among university students.

H_{03}: There is no statistically significant effect of self-regulated learning strategies on locus of control in university students.

LITERATURE REVIEW

The Nature of Self-Regulated Learning strategy

In the recent research, it is evident that the academic growth and outcome of students who utilize the SRL strategies is higher and consistent. According to the scholars, SRL strategies, including goal setting, evaluation and feedback assist students to control their learning process and manage their time effectively (Sinkkonen & Tapani, 2024).The strategies allow students to organize and regulate the learning process and use their time efficiently.

A literature review of research published within the last decade reveals that the issue of emotional aspects of SRL has not received extensive research. This is shocking since the available studies indicate SRL is not only significant with regard to academic success, but also the psychological well-being of students. This brings out the point that SRL is a wide term that harbors both cognitive and emotional elements of learning. The majority of recent studies also indicate that culture-sensitive self-regulated learning methods, flexible instructional strategies and an adjustable learning process are necessary, that would assist students to cope with their learning in this challenging and demanding learning environment. This is why SRL can be considered a focal concept in educational studies and has significant role in the formation of learning in both conventional classrooms and remote learning (Majumdar & Bao, 2023).

Phases of SRL

In a study by Saadawi and Krish (2024) it was found out that self-regulated learning strategies are utilized by students with different frequencies in Bilda University. The results indicated that the best strategies that were used by the students were setting goals, planning and monitoring, seeking help and social support. Nevertheless, record keeping and monitoring were used on average level.

The self-regulated learning strategies help students to be in charge of their own learning process in terms of planning, monitoring and evaluating their learning process. These tips comprise setting of goals, monitoring, time management and seeking assistance. Research indicates that the learner independent use of SRL strategies enhances their learning whilst demonstrating motivation in various learning settings like in classrooms, online or blended learning. As an illustration, it was determined that the SRL strategies such as planning and monitoring aids in ensuring students remain goal-oriented (Faza & Lestari, 2025).

SRL strategies also influence motivation and confidence of the learners. A recent study by Zhang (2024) in China with EFL learners of Chinese universities investigated the fact that learners who practiced self-regulated learning strategies were better motivated and self-efficient, had superior communication and creativity skills than those who did not practice them. This indicates that SRL is not just regarding task management, but also it enhances learning attitudes and behaviors.

Characteristics of Student using Self-Regulated Strategies

It has been empirically proven that the students who manage and control their learning process themselves acquire numerous qualities that distinguish them among other students who do not adopt the same strategies (Montalvo & Torres, 2015, p. 3).These students employ various strategies which reinforce their knowledge and academic results. They know how to arrange

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CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

information to boost the memory and track their learning and establish goals related to their objectives. Students who are self-regulated are highly motivated and confident in their academic skills that guarantee their consistency and interest in their work. They are also aware of the learning conditions that promote their success and can know when and where to consult and seek assistance. In addition to this they control their time and make sure that they work hard in order to accomplish their academic duties. Simply speaking self-regulated learners are proactive, goal-focused and assume complete responsibility on their learning process.

Locus of Control

Locus of control is a psychological phenomenon that gradually evolves because of the experiences of an individual. It is the level at which an individual reckons that his or her success and things that happen in his or her life are product of his or his actions. The locus of control according to the framework by Julian Rotter is split into two categories; internal and external. In this perspective, other people consider that whatever happens in their life is the result of their choice and actions whereas others feel that results in their life are due to external influences (Changing Works, 2016).

Whereas locus of control and attribution theory have some form of relationship though they differ in their focus. Attribution theory refers to the process by which humans interpret the already occurred events whereas locus of control addresses the beliefs regarding the outcome of the future (Miller-Smedema, 2014). Weiner asked himself the question of whether or not a person can hold on to internal attribution without feeling that he is in control; he proposed that, a person who possesses high achievement motivation believes that he/she has more control over situations. Rotter, in his turn, claimed that those attributions, which are internal, are consequences of the personal abilities and actions whereas external are those attributions associated with the outside circumstances like luck fate or chance (Weiner, 2010).

The scholars discovered that students with a high internal locus of control had persistence and hard worker tendencies in their studies whereas students with external locus of control failed to maintain consistency and surrender lightly (Saleh et al., 2023). Students manage their tasks also under the influence of LOC. Bahl et al. (2024) discovered that students who had internal LOC had a lower chance of procrastinating and had better academic outcomes. Student with external locus of control, on the other hand, took longer to accomplish tasks and had lower grades.

Arsinoe et al. (2023) investigated that internal LOC students had a greater resilience and better grades than external ones. Lastly, in the medical training field it was discovered that Saudi medical students who possessed an internal LOC had greater chances of securing higher GPAs. Students who perceived themselves to be in control in academics performed better even when the learning styles differed.

Theory of locus of control

According to this theory, persons who have an internal locus of control perceive the situation in their lives as the result of their behavior, whereas those with an external locus of control are of the opinion that the situation in their lives is determined by external factors that they cannot control. Internal oriented students tend to see the definite connection between their actions and academic achievements and to explain their accomplishment with their own actions. On the contrary, students with the externality orientation would point the finger to others, among them teachers, to be the causes of their failure at school.

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CJSSR
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Vol.04 No.01 (2026)

The locus of control model, therefore, implies that the academic performance of students is determined by how much they perceive either success or failure to be caused by something beyond their control or inside their control. Despite the inconsistencies in research results, most of the available studies in various disciplines show that locus of control is significantly associated with the academic performance (mostly negative), and the internally oriented students perform better than externally oriented students. As an example, there are numerous studies that proved that students with a high internal locus of control have higher grades and better performance in exams as compared to students with an external attribution (Carden et al., 2004; Shepherd et al., 2006).

Examining Internal and External Locus of Control

Weiner (2010), a renowned academic of the attribution theory explained that previous experiences of people are significant in determining their contribution in the present and future. According to him, people explain their previous success and failure in these ways so that it will affect them at the moment as they are reacting to the inner system of rewards and punishments. His concepts are tightly connected with the motivational theory, although they are not quite consistent with more mathematically oriented approaches of Rotter and other scholars of the field.

Weiner (2010) points out also the issue of causal stability that says that individuals perceive some causes to stand constant overtime. He considered that the aspect has not been adequately considered in previous researches of the change in expectations. In his view causal stability is also greatly linked to emotional reactions that include hopelessness, helplessness and hope and has a significant role to play in the explanation of why people tend to have such emotions.

Theoretical Framework

Attribution theory

Attribution refers to the activity of identifying the causal factors of outcomes (Ho et al., 2018). It encompasses the justifications people form in order to explain all their deeds not mentioning the deeds of others. Such reasons may vary in different cases, depending on the situation, how an event is perceived and the individual characteristics of people. In his earlier contribution Heider referred to human beings as naive psychologists, as they attempt to find out the cause of success and failure naturally. He presented a case then that causal attributions aided people in making sense of their experiences and give them a sense of control in the environment around them. Through the study of the attribution processes, researchers are in a better position to predict future behaviors and responses.

Goal orientation theory of motivation

Goal-Oriented Motivation Theory is based on the fact that the behaviour of people depends on the goals people want to attain. They can be goals like proving their abilities (performance-approach), preventing the circumstance in which they can fail (performance-avoidance), building their skills and knowledge (mastery-approach), or evading the activities that they find boring or not satisfying to them (work-avoidance) (Domurath et al., 2020; Lam et al., 2022).

Self Determination Theory

The self-determination theory (SDT) is an explanation of motivation that considers the degree of personal control and ownership in which an individual perceives himself/herself to do,

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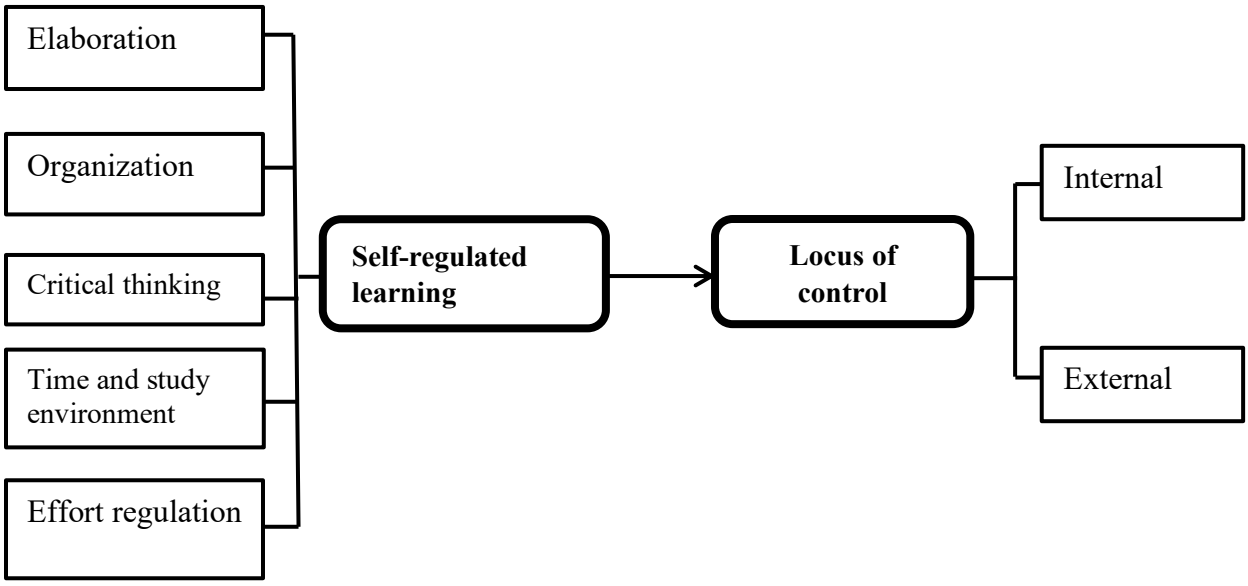
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

or do not do a thing. When people are engaged in such activities of their choice, and those that suit their own values and well-being, they are more motivated (Ryan, 2009).

Conceptual Framework



The conceptual framework demonstrated that the self-regulated learning strategy served as the independent variabl e in this research that impacted the locus of control among the students. It explained that when students employed such strategies they considered that their academic performance was the product of their own effort that they had internal locus of control and not an external locus of control. According to the framework, the successful application of self-regulation skills would caused students to have a better sense of responsibility in academic success (Al Mulhim, 2021).

Research Design

The nature of the current study was quantitative. In particular, the research study design was a causal-comparative study design, which was applied to examine cause-and-effect relationships.

Population

The population in this study comprised students of B.Ed. of six universities situated in the Lahore district, three of which were private universities and the other three were public universities. The selection of these universities was guided by the fact that combined they present a representative picture of the education environment on higher education in Lahore. They offered a wide scope of academic frameworks, had very big and diverse numbers of students, and were run by various administrative setups and were therefore suitable in capturing the variation across the industry.

Sampling

The current research paper targeted at all the B.Ed. students of three privately owned and three public universities in the Lahore district. In order to come up with reliable, valid and

ISSN E: 3006-1466
ISSN P: 3006-1458
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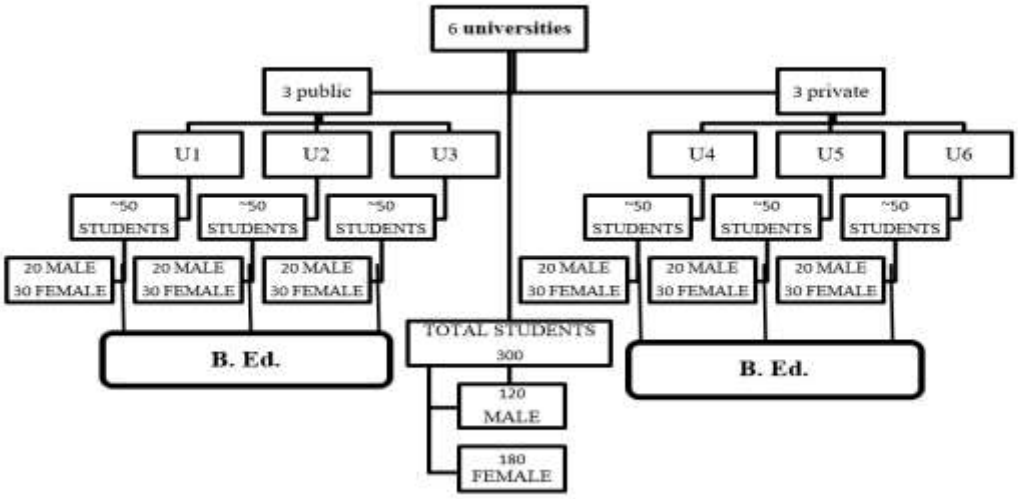
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

generalizable findings, the researcher selected 300 out of the total population of students as a sample. The stratified random sampling was employed. In the first stage the researcher developed strata of public and private universities. Three private universities and three public universities were selected in the second stage. The third stage involved the sampling of a sample of 300 students through random sampling technique.



Instrumentation

In the data collection in this study two standard research tools were used and all the instruments were adjusted and changed to the specifications of the research set up. The researcher relied on Motivated Learning Strategies Questionnaire (MSLQ) that is a reputable measure that Pintrich, Smith, Garcica and McKeachie (1991, 1993) used to identify self-regulated learning strategies. The researcher employed Multidimensional Control Scales 1973 by Levenson which was implemented in the measurement of the dimension of control beliefs, internal, powerful other, and chance to scale the locus of control.

The instruments were evaluated by experts and modifications were provided to the instrument based on the recommendations provided by the experts. The Cronbach alpha coefficient was used to check the reliability of the instruments and the Reliability of Motivated Learning Strategies Questionnaire (MSLQ) was 0. 83 and the Levenson Multidimensional Locus of Control Scale had 0. 80.

Data Analysis Techniques

The descriptive statistical and inferential approaches were used to fulfil the research objectives. Descriptive statistics were used to present the data set in order to illustrate the averages and variation of the statistics. Inferential statistics were used to show the relationship and difference between variables. Pearson's r correlation and regression analysis showed the strength and direction of relationship between variables and the impact of independent variable on the dependent variable respectively.

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CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

DATA ANALYSIS

Table 4.1

Descriptive Statistics for Self-Regulated Learning Strategies

	N	Minimum	Maximum	Mean	Std. Deviation
Elaboration	300	1.00	5.00	3.37	1.221
Organization	300	1.00	5.00	3.38	1.237
Critical thinking	300	1.00	5.00	3.37	1.221
Time and study Environment	300	1.00	5.00	3.38	1.218
Effort regulation	300	1.00	5.00	3.39	1.231
Valid N (listwise)	300				

Table 4.1 shows that all variables have mean values ranging between 3.37 and 3.39. This indicates a moderate to high level of responses among students. The standard deviation values around 1.21 to 1.23 reflect normal variability in students' perceptions. The consistent mean values of all factors describe balanced responses. The sample size of 300 enhances the reliability of the findings. Overall students show moderate agreement across all factors.

Table 4.2

Descriptive Statistics for Locus of Control

	N	Minimum	Maximum	Mean	Std. Deviation
Internal	300	1.00	5.00	3.37	1.247
External	300	1.00	5.00	3.36	1.231
Valid N (listwise)	300				

Table 4.2 indicates that both internal and external LOC have mean values of about 3.36 which is an indication that students are slightly agreeable with both factors. Normal variation in responses is displayed through the standard deviation (1.23-1.24). It is important to note that although the opinions of students are slightly different, there is a general consistency of views among students. On the whole, it is found that the perceptions of the students on these factors are moderately stable and positive and the data set is reliable and well distributed.

Table 4.3

Correlation between Self-Regulated Learning and Locus of Control

Self-Regulated Learning	LOC (Overall)	Internal LOC	External LOC
SRL (Overall)	.74**	.71**	.70**
Elaboration	.70**	.69**	.66**
Organization	.70**	.68**	.65**
Critical Thinking	.71**	.69**	.66**
Time & Study Environment	.71**	.70**	.67**

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ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

Self-Regulated Learning	LOC (Overall)	Internal LOC	External LOC
Effort Regulation	.71**	.69**	.67**

**. Correlation is significant at the 0.01 level (2-tailed)

Table 4.3 indicates that there is a strong positive relationship between the self-regulated learning and locus of control with the correlation value of r=.74. This demonstrates the fact that the stronger the self-regulated learning of students, the stronger the locus of control becomes. The significance value (p =.000) proves that this association is statistically significant. The p-value is much less than .01; therefore the relationship is very reliable. These results indicate that students that are effective in managing their learning are also once who are more likely to believe in personal control over their results. Altogether, SRL is significant in developing the control beliefs of students.

Table 4.4

Regression Analysis (SRL predicting Locus of Control)

Model Summary

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	737[a]	.554	.542	.83504

In summary of the model, the self-regulated learning is a good predictor of locus of control that had an R value of .737. The value (.544) of R Sq. means that self-regulated learning explains 54.4 percentage of the locus of control variance. This is an indication of the high explanatory power of the model. The stability of this prediction can also be supported by the value of the adjusted R square (.542). The standard error of estimate (.83504) is satisfactory in prediction. These results show that there is a significant role that self-regulated learning plays in predicting locus of control. The model is adopted and statistically acceptable and can be further interpreted.

(Regression Significance for Locus of Control)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	247.416	1	247.416	354.821	.000[b]
	Residual	207.795	298	.697		
	Total	455.211	299			

The table indicates that F value is 354.821 implying regression model is statistically significant. This level of significance demonstrates that the model is very significant. This implies that locus of control is greatly predictable by self-regulated learning. The high value of regression sum of squares 247.416 against the residual value shows the strength of the model. The overall variance 455.211 is one more indicator of the model reliability. The regression model is therefore valid.

Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std.Error	Beta	T	Sig.
1	(Constant)	.826	.143		5.761	.000

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ISSN P: 3006-1458
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
CJSSR
CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.01 (2026)

SRL_Mean	.752	.040	.737	18.837	.000

The regression coefficients demonstrate that self-regulated learning has a positive significant influence on locus of control. The beta value (=.737) is a good predictor that is standardized. The t-value (18.837) also supports the usefulness of the predictor. The value of significance (p =.000) shows that it is a statistically significant effect. The value of 0.826 is the constant value indicating the base of LOC. In general, SRL is an influential and strong predictor of locus of control.

Discussions

The outcome of the research suggested that the self-regulated learning strategies among the students in the university were moderate. Their competencies were elaboration, organization, critical thinking, time management and efforts regulation but not entirely consistent. These results rejected the null hypothesis (H_{01}) that the university students reported moderate level of self-regulated learning strategy. This showed that the students were also knowledgeable of such learning strategies yet they did not apply them on a frequent basis. The findings coincided with other past studies where most students of universities adopted SRL strategies on a simple level and could not maintain them across different academic demands (de Bruin and van Merriënboer, 2023; Panadero, 2022; Sinkkonen & Tapani, 2024). Such factors as the lack of training, academic pressure, and ignorance about how to plan, monitor, and evaluate the learning process may cause this moderate use of it (Mahmoodi et al., 2022).

The latest literature also reflected the great role of SRL to enhance the sense of control in the students that allowed them to correlate their effort to analyse results. When students were planning, monitoring and reflecting on themselves in their work they started to perceive themselves as participants in the learning process, not the passive ones. The current research reflected the view that the systematic SRL behaviour was extremely effective in enhancing internal locus of control among college students. Individual learners who intentionally control their learning processes and implemented such strategies enhance their internal locus of control instead of an external locus of control (Dogan et al., 2021; Lopez et al., 2023).

The regression analysis further affirmed that SRL is a good predictor of locus of control. Therefore the null hypothesis was dismissed whereby the self-regulated learning strategies were established to significantly predict locus of control in the university students. More internal orientation was formed in students who often make goals and track their achievement (Bol & Garner, 2021; Zheng et al., 2023). This is in line with other prior studies that indicated that students believed that success and failure had an internal cause, e.g., the effort or strategy use or preparation etc., rather than as a result of luck or fate. The learning process in the students who proactively control it was more confident and accountable in respect to their academic performance. These results could be explained by the social cognitive perspective according to which self-regulation and control beliefs were formed interdependently and determined student motivation and success (Chen & Chen, 2022; Karaman et al., 2022).

Another finding of this study was that there was moderate degree of agreement by the students in both aspects of locus of control. Although students did assume some blame of their academic successes, they also placed the blame on other factors like the difficulty of luck, the lack of time, and shortage of tasks. These findings result in the null hypothesis (H_{02}) being rejected, which was that students had moderate yet significant locus of control. This type implied that an individual refered to both internal and external locus of control to provide the explanation of the outcomes in a simple manner. This trend is in lined with the findings by Specht et al.

(2021), who said that blended attributions had been common among the university students because of diverse reasons, including academic stress, which was their current state of the environment. When speaking of challenges, the individuals who tend to attribute them to external causes surrender readily (Karaman et al., 2022).

These findings indicated that institutions of higher learning may start courses that develop internal locus of control (Azevedo et al., 2022; Lopez et al., 2023). Increasing both self-regulation and internal locus of control would help in propping up long term superior academic performance and personal growth (Panadero, 2022; Zheng, 2023).

Conclusion

As the findings of the current research indicated, the level of self-regulated learning among university students was moderate with regard to all the factors. This indicated that although students were occupied in planning monitoring and in control of their own learning process their use of these strategies was not completely organized and regular.

The locus of control analysis also revealed that the students had a moderate proportion of both internal and external beliefs on control. Additionally, the correlation and regression analysis had mentioned that self-regulated learning had a high positive impact on locus of control. This indicated that SRL did not just improve academic performance, but also contributed significantly to the development of student beliefs, and the manner in which the students interpreted their achievements and setbacks in their academic accomplishment. All the three null hypotheses developed in the research were rejected, thereby confirming the results that self-regulated learning strategies and locus of control exist at significant levels, and SRL is influential in developing the control beliefs of students.

Recommendations

1. Teachers may assist students in setting weekly or monthly academic goals to enhance the desire to perform better.
2. The digital tools may assist in planning and tracking learning among students. Online planners, online quizzes or feedbacks may be incorporated by teachers.
3. Components of self-regulated learning may be incorporated in curriculum and taught by teachers include planning, goal setting and self-monitoring.
4. Specific actionable feedback by the teachers may reinforce the internal locus of control by the students.
5. Universities may hold time management, exam-strategies and self-regulation workshop sessions for students regularly.

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