

Relationship Between Self-Regulated Learning Skills And Academic Achievement Of Health And Physical Education University Students

Tasleem Arif¹, Saba Gul², Malik Asif Mumtaz Ahmad³, ⁴Shehzadi Sanam Roohi Farooqi,
⁵Samreen Abid

¹Assistant Professor, Department of Sports Science and Physical Education, The University of Haripur, Pakistan
Tasleem.arif@uoh.edu.pk

²Physical Education Teacher, Government High School Shah Afzal Abad Charsada sabagulpet@gmail.com

³Physical Education Teacher, Government Elementary School Sabhral Khushab asifmalik3g@gmail.com

⁴Lecturer, Department of Sports Science and Physical Education, The University of Haripur, Pakistan
roohifarooqi1@gmail.com

⁵PhD Scholar, Department of Sports Science and Physical Education, The University of Haripur, Pakistan
bukhshmalik81@gmail.com

Corresponding Author: Tasleem.arif@uoh.edu.pk ORCID: <https://orcid.org/0000-0002-0718-5330>

ABSTRACT

This study examined the relationship between self-regulated learning skills and academic achievement of BS Health and Physical Education (HPE/PETE) students (n=112) at Higher Education Institutions, in Khyber Pakhtunkhwa (KP), Pakistan. An adapted version of the self-regulated learning perception (SRLP) scale (Turan et al., 2009) was administered one time among n=112 to determine the self-regulated skills of the students. Students' academic records were obtained from the universities. For the testing of hypotheses, statistical tests such as Pearson correlation, linear regression and t-test were used. The authors found a strong positive significant relationship between various self-regulated skills and academic achievement (motivation $r = 0.680$; planning & goal setting $r = 0.834$; strategy use & assessment $r = 0.834$, and directedness = 0.779). The authors also noted that the predictor has produced significant effects on the criterion variable of academic achievement ($p < .05$). No statistically significant differences were found on the criterion variable of gender and university ($p > 0.05$). Based on these results, it is recommended that self-regulated learning strategies be incorporated into PETE programs.

Keywords: Motivation, Goal setting, Strategy use, Self-directedness, Academic Achievement

INTRODUCTION

Self-regulated learning (SRL) is a critical psychological component of student learning. In today's academic, understanding of self-regulated learning has paramount significance not only helps students to sharpen their cognitive abilities but, also prove helpful in the development of achievement capabilities. In educational psychology, self-regulated learning has remained a controversial subject. Majority of

studies conducted at primary, middle, and secondary schools' students, however; little has known about SRL at university level (Wang et al., 2010).

Self-regulated learning is the process through which students become masters of their own learning processes. Self-regulation is the independent process through which learners transform their mental capabilities into tasks in a number of fields, including academia, athletics,

music and health. It is neither a mental capacity nor a performance skill. They keep track of how well strategies accomplish goals and make modifications when differences exceed a particular threshold. Adjustments can be made to learning processes and techniques; to conditions affecting learning activities, such as motivation or elements in the learning environment; or to learning results and outputs (Beaudoin, Gauthier, & Winne, 2013).

Academic success, often called academic achievement, refers to the extent to which a student, instructor or institution is progressing towards its short and long-term educational goals. Completion of educational milestones such as secondary school diplomas and bachelor's degrees is characterized as academic accomplishment. The physical educator teaches cognitive learning to increase knowledge of the pupils, improve problem-finding skills, clarify comprehension, develop and identify concepts. The development of cognitive learning makes use of the mental process as a primary form of activity. The degree to which time is spent teaching for cognitive development depends on factors such as the complexity of the information to be imparted and the abilities of the students to understand the material being presented.

Self-regulated learning is linked to students' preparation for learning, their involvement in academic assignments, and the way they manage their learning environment in order to succeed, and is strongly associated to learning quality, student outcomes, and academic achievement. (Young, 2005). Existing body of the literature indicates that multiple intellectual and non-intellectual characteristics can influence academic success (Richardson, Abraham & Bond, 2012; Veas, Castejón, Gilar & Miñano, 2015). Some of these characteristics are more changeable and context-sensitive than others, such as self-regulated learning processes,

motivational beliefs, and accomplishment goals (Richardson et al., 2012).

Learning is a complicated process that many students, even after years of schooling, find perplexing. How can detriment the difference between successful university students and less successful peers? A rising body of evidence supports the idea that optional academic success is directly linked to the learner's ability to exercise self-regulation (Zamora, Suárez, & Ardura, 2018; Ziegler & Opdenakker, 2018; Verstege, Pijera-Díaz, Noroozi, Biemans, & Diederer, 2019). Understanding the concept of self-regulation is critical in the development of these university students' accomplishment capacities (Xiao, Yao, & Wang, 2019). Therefore, this study focused on determining the relationship between self-regulated learning skills and academic achievement of students enrolled in BS Health and Physical Education at Higher Education Institutions, Khyber Pakhtunkhwa (KP), Pakistan.

Education must be aware of some fundamental aspects in order to have an effective learning scenario, which serve as a frame of reference for the conduct of learning and teaching in the school, college, or university atmosphere.

Motivation

Student motivation is usually and naturally linked to a student's willingness to participate in the educational process. Motivation refers to the reasons for their participation or non-participation in academic activity. Online classes demand more effort, dedication, and self-discipline than regular classroom programs (Mandernach, Gonzales, & Garrett, 2006). Motivated students are better equipped to adapt learnt knowledge to new settings, because they tend to reflect on underlying causes or frameworks. They have less cognitive and emotional resources to focus on their social image if a student is focused fully by his activity

(Hmelo-Silver, 2004; Shulman & Shulman, 2009).

Every kid deserves the chance to reach their full potential. In a school setting, the teacher fulfills a substantial portion of the child's demands for affection, belonging, approval, esteem, and self-actualization. His or her needs are met if the youngster is given the opportunity to participate in activities that are personally meaningful to him or her and is given the chance to succeed. As a result, teachers should plan their lessons so that all students have the opportunity to meet their needs. Physical education teachers are in a unique position to provide individual pupils with opportunities to engage in activities that will help them meet their basic needs. Students can satisfy their need for belonging in physical education by, for example, having the option to play on a team. Here, the student wins' classmates' affection, friendship, approval, and respect.

Goal Setting

Goals are essential for academic success as well as achievement in other aspects of life. Setting and tracking goals teaches your child key life skills like planning, organization, and time management, as well as communication, self-awareness, and confidence. Psychology is commonly recognized to play a substantial influence in the narrow line between success and failure in top sport. The psychological side of sport is acknowledged increasingly as just as crucial as physical and research has demonstrated that setting objectives is one of the most effective strategies to bring psychological benefits to athletes. There is a statistically significant relationship between the process of creating goals and language levels, based on an overview of the objective setting process and language skills results (Moeller, Theiler, & Wu, 2012). The findings revealed that elementary pupils who were involved in goal-setting improved their multiplication fact performance (Sides & Cuevas, 2020).

Strategy Use and Assessment

Strategies promote self-directed learning. Students that employ strategies become more efficient and effective learners. Learning techniques are especially crucial for assisting pupils in avoiding their areas of weakness and relying on their strengths. According to the findings, hard work combined with effective method application can lead to classroom success, according to the findings (Ong'uti, Aloka, & Nyakinda, 2001). Teaching strategies and materials that can help students develop a growth mindset and promote tenacity are suggested as keys to improving academic performance (Polirstok, 2017).

Self-directedness

Self-directed learning (SDL) is an educational method that allows students to select how they wish to study. Students receive instruction from a teacher, whether in a classroom environment or online. Tutors or parents who homeschool their children can also be teachers. Once a student has been assigned an educational goal or target, he or she has the freedom to select how to achieve it. However, few studies have looked into how self-directed learning could affect cognitive processes like attention and memory. Students can learn better if they control the flow of experience, or if their learning is "self-directed" according to the underlying reason. The active aspect of self-directed learning helps us to encode and retain data over time (Gencel, & Saracaloglu, 2018).

Gender Differences

The teacher must accommodate individual variances among students in any educational setting. In a physical education class, for example, the teacher is confronted with a group of boys and girls who have different physical characteristics: some are bigger than others, and others have better motor skills. There are social and economic differences; some pupils come from middle-class families, while others come

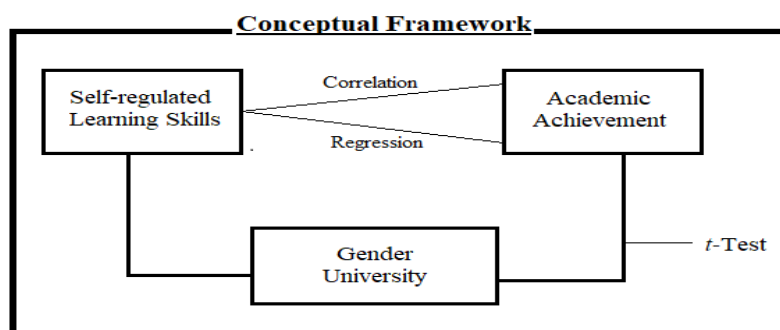
from low-income households or have come from broken households. There are disparities in personality among students; some are exceptional, while others are shy and reserved. Teachers must be mindful of their pupils' differences.

Conceptual Framework

The following framework has extracted from thorough review of the related literature. However, we have included our own concepts

like gender and type of university. Thus, the present research builds a diagram as conceptual framework which helped in formulating the research hypotheses. The underlying conceptual framework consisted an independent variable (self-regulated learning skills) and dependent variable (academic achievement). However, the detailed description of various skills has been given in the table of hypotheses testing (Table 2 to Table 5).

Figure 1: Diagram of conceptual Framework



Development of Hypotheses

As mentioned previously, the conceptual framework of the study contributed to the

development of hypotheses for investigation. Thus, in the literature and conceptual framework the following hypothesis were developed.

Table 1: The emerging Hypotheses in Detail

Hypotheses	Statistical Test Applied	Code Used
There is a significant relationship between self-regulated learning skills and academic achievement.	Pearson Correlation	H1
There are significant effects of self-regulated learning skills upon academic achievement.	Linear Regression	H2
There is no significant difference between male and female regarding academic achievement	Independent Sample t-Test	H3
There is no significant difference between Gomal University and Sarhad University students regarding academic achievement	Independent Sample t-Test	H4

Material and Methods

Settings

The current study was conducted at Gomal University (GU) and Sarhad University of Science & Information Technology (SUIT), Khyber Pakhtunkhwa, KP, Pakistan. These universities used integrated curriculum with the primary aim of producing broad base graduates able to face the challenges of the modern world. The Curriculum of Health and Physical Education is designed to establish a strong linkage between theory and practical in addition to writing research thesis and comprehensive viva in the last semester.

Subjects

The study's participants were BS 4-year students in Health and Physical Education. Data was collected from 112 students out of a total of 122 students who completed the study's scale. The return rate of the students remained (91.80%), however; students enrolled in MS/MPhil/Ph.D did not include in the study. Of those who participated, $n = 88$ (78.57%) were males and $n = 24$ (10.71%) were females.

Research Instruments

Self-regulated Learning skills

An adapted version of the self-regulated learning perception (SRLP) scale developed by Turan (2009) and Turan, Demirel and Sayek (2009) was

used in the current study. SRLP has been used by a number of studies to assess students' self-regulated learning skills, and they have found its reliability to be quite useful (Turan, 2009). In the present study, the same scale was used after making an important modification considering all the aspects of prevailing culture. Self-regulated learning perception (SRLP) was determined on four important attributed including Motivation and action to learn, Planning and goal setting, Strategy use and assessment, and Lack of self-directedness.

Students' Academic Achievements

A test consisted fill in the blanks, multiple-choice questions, true/false, and short definitions of specifics course related points, of which 25 marks were specified for each portion, was used at the end of the semester. Every student's academic fulfillment score become determined by using calculating the rate of accurate responses to the questions related to the objectives of curriculum designed for BS 4-Years health and physical education.

Piloting the Research Instruments

The pilot testing was done on 34 students enrolled in first and second semester, BS 4-Years Health and Physical Education. Valuable feedback was received on the complications of the items and the scale was then finalized. The participants' responses were assessed on a Likert 5-point scale.

Never	Seldom	Sometimes	Usually	Always
1	2	3	4	5

The Reliability Statistics

The final draft of the instrument (questionnaire) was administered among five experts in the field

to check the appropriateness of the items and contents. They were given liberty to feel free while giving suggestions on the developed draft of the questionnaire. Their valuable suggestions

were accordingly incorporated and the final questionnaire was proceeded for reliability. In order to assess the reliability of the instruments, a Cronbach alpha was used. The Cronbach's alpha values were calculated against four aspects through 81 items. The reliability statistics were found (0.972) which indicates that the constructs have significant reliability. Based on the statistics, it can be concluded that instrument was acceptable for the collection of primary data on self-regulated learning skills of BS (HPE) students.

The Study's Implementation

Before implementing the study, we informed all the students about the objectives of the study. The students were also asked to fill the consent form. The second and third years of BS (HPE), students accordingly submitted SRLP. The academic achievement of the concerned students was obtained from the Internal Controller of

Examinations of the concerned faculty administration.

Data Analysis

Statistical Package for Social Science (SPSS), version 25 was used to process the obtained data. To determine the relationship between SRLP and academic achievement, a statistical test such as Pearson's correlation coefficient was used, contrast, a multiple linear regression was applied to evaluate the students' self-regulated learning skills. In addition, a test of significance was applied to find out the statistical significant differences pertaining to self-regulated learning skills based on students' gender and university.

Results

H 1 There is a significant relationship between self-regulated learning skills and academic achievement.

Table 2: Results of Pearson Correlation between Motivation and Academic Achievement

		Motivation and action to learn	Academic Achievement
Motivation and action to learn	Pearson Correlation	1	.680**
	Sig.		.000
	N	111	111
Academic Achievement	Pearson Correlation	.680**	1
	Sig.	.000	
	N	111	111

At the 0.01 level, correlation is significant

Table 3: Results of Correlation between Action to learn Planning and Academic Achievement

Action to Learn Planning	Academic Achievement
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Action to Learn Planning	Pearson Correlation	1	.834**
	Sig.		.000
	N	111	111
Academic Achievement	Pearson Correlation	.834**	1
	Sig.	.000	
	N	111	111

At the 0.01 level, correlation is significant

Table 4: Results of Pearson Correlation between Goal Setting Strategies and Academic Achievement

		Goal Setting Strategies	Academic Achievement
Goal Setting Strategies	Pearson Correlation	1	.834**
	Sig.		.000
	N	111	111
Academic Achievement	Pearson Correlation	.834**	1
	Sig.	.000	
	N	111	111

At the 0.01 level, correlation is significant

Table 5: Results of Pearson Correlation between Self Directedness and Academic Achievement

		Self-Directedness	Academic Achievement
Self- Directedness	Pearson Correlation	1	.779**
	Sig.		.000
	N	111	111
Academic Achievement	Pearson Correlation	.779**	1
	Sig.	.000	
	N	111	111

At the 0.01 level, correlation is significant

The H1 was established to determine the relationship of various self-regulated learning skills with academic achievement and the results are shown in various tables. Tables 1-4 describes the results of correlation analysis presenting R (value of correlation) and P (significant value) pertaining to various self-regulated skills. For readers, the last columns in the tables is of great interest where the scores of association related to

independent variables (motivation and action to learn, planning and goal setting, strategy use and assessment & lack of self-directedness) and dependent variable (academic achievement). The highest value of association is between planning and goal setting ($r = .834$ & $p\text{-value} = .000$), strategy use and assessment and academic achievement ($r = .834$ & $p\text{-value} = .000$). Similarly, the remaining skills including

motivation and action to learn ($r = .680$ & $p\text{-value} = .000$) and lack of self-directedness ($r = .779$ & $p\text{-value} = .000$) are also significantly associated with academic achievement. Based on the statistical inferences, it can be concluded that H1 is accepted.

H 2 There are significant effects of self-regulated learning skills upon academic achievement.

To check the effects of self-regulated learning skills upon academic achievement, a linear regression test was applied and the results are shown in different tables. The statistical measurement and interpretation have been given in separate tables.

Table 6: Results of Linear Regression
Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	1.000 ^a	1.000	1.000	.000275

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	26.264	4	6.566		
	Residual	.000	106	.000	86953210.12	.000 ^b
	Total	26.264	110			

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients		Σ
		β	Std. Error	Beta	t	
1	(Constant)	-1.635	.000		-.116	.908
	Motivation	.250	.000	.298	4676.225	.000
	Action Planning	.250	.000	.282	3688.591	.000
	Goal Setting	.250	.000	.376	5290.076	
	Self-Directedness	.250	.000	.319	4539.704	

R-Square in the table of “Model Summary” tells the proportion of variance (academic achievement) which can be predicted from the independent variable (self-regulated learning skills). This value indicated that 1.000% of the variance in academic achievement is caused due to self-regulated learning skills.

The $p\text{-value} < 0.05$ in the “ANOVA” table states that independent variable (self-regulated learning skills) reliably predict the dependent variable (academic achievement). Therefore, it can be concluded that Ha 2 is accepted.

The 'B' unstandardized coefficient beta as highlighted in the table is -1.635 with a standard error of .000. It tells us that for each additional unit of academic pressure, sport's performance is expected to increase by .250. The p-value ($p < .005$) indicated that the predictor variable of self-regulated learning skills is statistically significant.

Role of gender affecting the responses

The table 5 presented the descriptive statistics of male and female students regarding academic achievement through self-regulated learning skills. The mean values of male and female students were found insignificant. From the above statistics, the emerging hypothesis is:

H 3 There is no significant difference between male and female regarding academic achievement

Table 7: Results of t-Test (Overall Gender-wise Group Statistics)

Variable	Gender	n	Mean	Std.	t	Df	Sig.
Academic Achievement	Male	88	2.3820	.532201	1.861	110	.000
	Female	24	2.1759	.187215			

The t-Test was applied to examine the gender-based differences on academic achievement. The results indicated that gender produced no significant effects on the dependent variable (students' academic). It can be interpreted that the obtained results cannot be generalized upon the entire population. Therefore, the results presented surprising results pertaining to gender on academic achievement. Therefore, the H3 is accepted.

Role of University Affecting the Responses

The table 5 presented the descriptive statistics of Gomal University and Sarhad University regarding academic achievement through self-regulated learning skills. The mean values of Gomal University and Sarhad University students were found insignificant. From the above statistics, the emerging hypothesis is:

H 4 There is no significant difference between Gomal University and Sarhad University students regarding academic achievement

Table 8: Results of t-Test (Overall University-wise Group Statistics)

Variable	University	n	Mean	Std.	t	Df	Sig.
Academic Achievement	Gomal University	84	2.3631	.48478	.950	110	.521
	Sarhad University	28	2.2622	.491741			
	IT						

The t-Test was applied to examine the university-based differences on academic achievement. The results indicated that type of university produced no significant effects on the dependent variable

(students' academic). It can be interpreted that the obtained results cannot be generalized upon the entire population. Therefore, the results presented surprising results pertaining to gender on

academic achievement. Therefore, the H4 is accepted.

Summary of Testing of Hypotheses

Table 9: Detail of the Results of Hypotheses

Hypotheses	Statistical Test Applied	Code Used	Result
There is a significant relationship between self-regulated learning skills and academic achievement.	Pearson Correlation	H1	Accepted
There are significant effects of self-regulated learning skills upon academic achievement.	Linear Regression	H2	Accepted
There is no significant difference between male and female regarding academic achievement	Independent Sample t-Test	H3	Accepted
There is no significant difference between Gomal University and Sarhad University students regarding academic achievement	Independent Sample t-Test	H4	Accepted

Discussion

The purpose of this research was to find out the relationship the relationship between self-regulated learning skills and academic achievement of BS Health and Physical Education (HPE) students at Higher Education Institutions, Khyber Pakhtunkhwa (KP), Pakistan. When we analyze the correlational analysis, the results indicated a significant positive relationship between self-regulated learning skills and participants reported significant effects of these skills upon their academic achievement. These self-regulated learning skills included motivation, planning and goal setting, strategy use and assessment and self-directedness.

This results indicated that the most important aspect in effective learning is motivation. The term motive refers to a state of mind in which a human undertakes activities aimed at achieving a goal. The essential structure for motivation is made up of needs and desires. Individuals are motivated to act when they notice a gap in the

market. People are motivated by this desire to find a solution to the organized demand by taking the appropriate course of action. Certain demands can arise from the environment, according to phenomenology. These are external forces at work. These forces should be considered in a thorough understanding of motivation. Second, defining and determining goals is widely acknowledged to play a big influence in the narrow line between success and failure in elite sport. While the benefit of self-directed learning is generally established, it is less and well understood how a sensation of control leads to better material acquisition. Some teachers have emphasized the motivational aspect of self-directed learning, claiming that this kind of gaining knowledge of is effective as it motivates students to analyze.

As identified in the literature that self-regulated learning skills significantly predicted motivation of the students and self-efficacy (Mirhosseini, Lavasani, & Hejazi, 2018). Another study found a link between academic motivation and

academic achievement that was both favorable and substantial (Amrai, Motlagh, Zalani, & Parhon, 2011). However, further research on its effect on affective traits is warranted. Another study reported positive correlation between goal setting and language achievement (Moller et al., 2012). Goal-setting and math achievement were found to have a statistically significant beneficial relationship. The study also found that pupils who set goals scored better in mathematics than kids who did not set goals. In addition, the findings of the study showed that when the students are in control over the flow of their experience or when their learning is self-directed, they learn better. Another study based on these findings concluded that the active aspect of self-directed learning helps us encode and retain information over time. (Gencel, & Saracaloglu, 2018). However, the belief that students have a higher motivation, goal setting, planning and self-directedness that they exercise over what they can do during their classroom environment will explain this result partially. Instead, the intimacy of teacher's relationship can have a direct/indirect effect, but that will depend how self-regulated skills including motivation, goal setting, and self-directedness were established. For this purpose, physical education teachers are in a unique position to provide opportunity for individual students to participate in activities that will assist them in meeting their basic needs. In physical education, students might fulfill their need for belonging by playing on a team, for example. Here, the student earns the affection, friendship, approval, and respect of his or her classmates.

Conclusion

It has been concluded that participants reported significant and positive relationship between self-regulated skills and academic achievement. Self-regulated skills were analyzed from four important perspectives a) Motivation and action to learn, b) Planning and goal setting, c) Strategy use and assessment, and d) Lack of self-

directedness. Results of the present study indicated that students involved in motivational strategy, goal setting, assessment and self-directedness produced better academic achievement. Hence, it can be said that motivation, goal setting and proper planning have produced positive effects on physical education students' academic achievement. The result supports the theory of motivation and goal setting in the perspective of academic achievement, suggesting that the teacher may consider the skills of goal setting in their daily teaching strategies.

Limitations

The present study was conducted at two higher education institutions of Khyber Pakhtunkhwa (PK), Pakistan. Hence, the results obtained through this study would not be effective in other settings or level of education i.e., college and schools. It is suggested that expanding the geographical as well as level of education would increase the credibility of results.

The students included in the current study have similar socio-cultural backgrounds. Keeping this into consideration, it is not cleared that self-regulated skills would have an effect on the academic achievement of students from other socio-cultural background. Therefore, it is suggested to include multicultural students to generalize the results.

Delimitations

The current study was primarily delimited to the BS (HPE) students. The self-regulated skills were correlated with their academic achievement. Though the students enrolled in BS (HPE) reported positive relationship between self-regulated skills and academic achievement, but it can be confirmed that self-regulated skills would be as effective for other disciplines. Self-regulated skills might not be the sole reason for academic achievement of the students. Teachers' instructional strategy and method of teaching

could have an impact of students' academic achievement.

Recommendations

1. It is suggested that self-regulated skills might be implemented in the courses at various level of education.
2. These skills should be implemented in such a way that could impact both curricular and extra-curricular activities.
3. The teachers of various levels of education can benefits determining and setting their own goals including class management and professional development.

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