



Relationship between Students' Self-Directed Learning and Academic Resilience

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DOI: <https://10.71145/rjsp.v3i1.117>

Abstract

This study investigates the relationship between self-directed learning (SDL) and academic resilience (AR) among undergraduate students at the University of Malakand, situated at Khyber Pakhtunkhwa in Pakistan. A quantitative research design was employed, involving 120 students from various departments. Data were collected through a structured questionnaire and analyzed using SPSS. The findings reveal that students exhibit high levels of SDL (means: 3.1 to 4.3) and strong AR (means: 3.1 to 4.3). Some items showed moderate to high skewness and deviations in kurtosis, but the overall data distribution was normal. Correlation analysis indicated a moderate positive relationship between SDL and AR ($r = 0.571$, $p < 0.01$). Regression analysis confirmed this relationship, with an R square value of 0.327, suggesting that 32.7% of the variance in AR can be explained by SDL. The regression model was significant ($F = 57.224$, $p < 0.000$). These results align with existing literature, highlighting that SDL enhances academic resilience by fostering self-efficacy, goal-setting, and intrinsic motivation. The study suggests that promoting SDL can improve students' ability to manage academic challenges and resilience. Moreover, the study providing a basis for developing effective educational strategies to support student success in higher education.

Keywords: Students' Self-Directed Learning, Academic Resilience, Undergraduate Students

Introduction

Developing or improving students' academic resilience has become progressively important in nowadays' constantly changing educational or learning environment (Ramadhani & Sagita, 2022). Academic resilience is the ability of the students for overcoming obstacles and challenges, persist or continue in the failure's environment, and to perform well, remain motivated and achieve academic success regardless of hardships and failure (Radhamani & Kalavani, 2021).

Resilience is necessary for success in school and in life because hurdles present everywhere (Yeager and Dweck 2012). Resilience is a person's capability to come back from a critical or traumatic condition. It is the capacity of a person to remain competitive in spite of hardships. It is the capability to bounce back from the emotional injury (Mirza & Arif 2018). One possible aspect which may encourage academic resilience is self-directed learning; an approach in which responsibility and initiative has been taken by students to learn on their own (Izadpanah, 2022). Self-directed learning is one type of the student-centered method (Beeler 2018). According to Shen et al., (2014) self-directed learning has been linked to enhanced curiosity, critical thinking, understanding quality, retention and recall, better decision making, achievement satisfaction, motivation, competence, and confidence. Currently, there is an increasing interest to explore the impact of (SDL) self-directed learning on improving academic resilience (Hasyim et al., 2023). It is proved that applying the self-directed learning method improved learning results and student learning independence. Moreover, recent study's findings determined how well the self-directed learning methodology was received by learners and motivate independent students to be life-threatening and creative (Syahputri et al., 2018).

Students who take part in self-directed learning, that involves them taking responsibility of their own process of education, have the ability for developing resilience. Utilizing the theoretical background of self-actualization theory offered by Maslow (Banz Jr, 2009), SDL is in accordance with the fundamental human need towards independence, autonomy, skills and competence which highlights the fundamental urge to seek individual development, growth as well as fulfillment (Jenkins, 2022). Self-directed learning (SDL) offers a unique approach for developing the skills, abilities and competencies and perspective that are necessary for overcoming challenges and succeed and flourish in diverse learning environment by allowing or encouraging students to create their own learning objectives, find available resources, and take up responsibility throughout their educational journey (Orn, 2022). Furthermore, of self-study's different teaching models have appeared, each of them facilitate self-directed learning. Such models involve divers and a number of approaches, from inquiry-based learning to problem-based learning, and highlight the role and significance of educators or instructors as facilitators of learning instead of just providers of knowledge (Berry, 2004). By strengthening and encouraging the autonomy of the students and offer opportunities for collaboration, feedback and reflection, these models of teaching build a conducive and favorable environment for academic resilience and self-motivated learning (Vanassche & Kelchtermans, 2015). The effect of self-directed learning on academic resilience has become more understood because of various related concepts. Self-motivated learning comprises the inner/natural curiosity and motivation which push individuals to engage willingly in learning and educational activities (Vanassche & Kelchtermans, 2015).

Based on this foundation, comprises the behavioral motivational and metacognitive approaches that individuals utilize to monitor, plan and assess their learning process (TAROUM, 2023). By improving the ability of planning or setting of goals/aims, self-analysis and self-consciousness the learners can take the multipurpose, adjustable and those skills which can productively run the educational hurdles (Shofiyyah et al., 2023). Moreover, the concept of being "self-made" highlights that how individuals could actively influence their own educational and achievements and experiences (Shofiyyah et al., 2023). Students could develop significant learning and educational pathways which encourage resilience and allow them to succeed in spite of hardships by using their skills, interests, abilities and goals (Rodgers & Scott, 2008).

Exploring the association or link between learners' self-directed learning and their academic resilience in distinct educational atmospheres is the aim of this study (Oveisi & Nosratinia, 2019). Through a review of available literature, theoretical frameworks and empirical studies, this study seeks to clarify the methods by which students' growth and improvement of resilience can be affected by self-directed learning.

Knowing the effect of SDL on academic resilience has significant consequences for policymakers, educators, and stakeholders of education (Oveisi & Nosratinia, 2019). This study aims to enhance and improve student's academic performance, well-being and long-term learning achievements by determining methods and strategies which effectively encourage self-directed learning.

Problem Statement

In spite of raising curiosity in academic resilience and learners' self-directed learning, the literature contained a prominent gap that the root ideas of theory of self-actualization (Nwagwu, 2015) and as well as the instructing framework of self-study (Tang et al., 2022). This investigation searches for addressing this gap through the exploration of the association between learners' self-directed learning and academic resilience.

Objectives of the Study

- To find out self-directed learning behavior of undergraduate students of University of Malakand.
- To find out academic resilience behavior of undergraduate students of University of Malakand.
- To determine the relationship between students' self-directed learning and academic resilience.

Hypotheses

H₀1: There is no significant relationship between students' self-directed learning (SDL) and their academic resilience.

H₁1: There is a significant relationship between students' self-directed learning and their academic resilience.

H₀2: There is no positive relationship between students' self-directed learning (SDL) and their academic resilience.

H₂2: There is a positive relationship between students' self-directed learning and their academic resilience.

Significance of the Study

The significance of this research lies in its potential to make stronger our perception about how students' self-directed learning (SDL) behaviors correlate their academic resilience (AR). By investigating SDL, we can diagnose fundamental behaviors and procedures that can aid to learners manage their own learning processes. Understanding about AR will provide insight into how students handle and deal with educational challenges. By assessing the association between SDL and AR this investigation can give meaningful perspectives for the educative professionals and policymakers in order to formulate measures/initiatives and as well as the academic projects or schemes that can strengthen both self-directed learning and resilience in learners.

Delimitations of the Study

- i. This study is limited to only undergraduate students at the University of Malakand.
- ii. A quantitative research approach was used which focused only on numerical data.
- iii. The study specifically examines the relationship between SDL and AR without bearing in mind other outside variables that could influence the academic resilience.

Limitations of the Study

- i. Generalizability of findings of the study is limited to more social and cultural circumstances and the learners at different educational levels.
- ii. This investigation focuses only on SDL and AR, not including other elements such as: motivation, family support, guidance, self-esteem and personality traits.
- iii. In this study gender-based comparisons are not included.

Research Methodology

A quantitative correlational research method was used with a “Purposive sampling method” to select a sample. Purposive sampling technique is a technique in which the researcher selects the participants based on specific criteria or characteristics that are relevant to the research question or phenomenon being studied.

Participants or Sample

The researcher selected Participants from the University of Malakand to participate in the study. For this research, the participants involved undergraduate students of the University enrolled at the University of Malakand. The students were from various departments, such as Biotechnology, English, Chemistry, Education, Sociology, Law, CS and IT, Psychology, Urdu and many more. The population contained the learners having different ages, ranging from 18 to 25 years old. Also, the Participants consisting of both female and male students.

Data collection Instruments

As research instrument, a self-constructed questionnaire comprising of two parts i.e. SDL and AR, was used for collecting data on students' self-directed learning behaviors and their academic resilience. After going through the relevant literature, comprising of reports, books, journals and articles, the research instrument was developed with the help of supervisor. Each part of questionnaire i.e. SDL contained 19 items/statements and AR contained 18 items with response options on a Likert scale Strongly Agree (S.A), Agree (A), Neutral (N), Disagree (D.A), Strongly Disagree (S.D.A). This questionnaire is designed to capture comprehensive data on the constructs of interest.

Content Validity

The validity of the questionnaire items was assessed by experts and supervisor. They have sufficient knowledge and experience in the teaching learning process and have Ph.D. degrees in the relevant field. Experts in educational research reviewed the questionnaire to make sure that the items adequately cover the constructs of SDL and AR. Expert feedback was used to make any necessary revisions to the items.

Reliability of the tool

The Reliability table demonstrated adequate or acceptable internal reliability/ consistency for both 1st and 2nd variables. For 1st variable SDL, with 19 items and 15 valid cases (100% of the sample), the Cronbach's Alpha is 0.7, signifying an acceptable level of reliability for the scale. In the same way, for the 2nd variable AR, with 18 items and 15 valid cases (100% of the sample), the Cronbach's Alpha was 0.839, signifying a good reliability. There were no cases excluded in both analyses, as presented by the listwise removal technique based on all the variables in the process. These results approved that the scales used for determining SDL and AR are reliable and consistent for the sample tested.

Data Analysis

Following tables show data analysis of the data:

Table 1: Descriptive Statistics of Self Directed Learning SDL (n=120)

	Statements	Minimum	Maximum	Mean	Std. Deviation
SDL1	I can recover when I miss the class	1	5	4.0	.91
SDL2	Motivated to participate in SDL activities	3	5	4.2	.7
SDL3	I can build goals on my own for academic career	2	5	3.1	.83
SDL4	I support my SDL by using resources (books, net)	2	5	4.3	.72
SDL5	I have successful experiences of SDL throughout in academics	1	5	4.0	.90
SDL6	I can efficiently handle challenges during SDL	1	5	3.1	.91
SDL7	I maintain my academic growth and assess my learning outcomes	1	5	3.1	.81
SDL8	I keep myself motivated and disciplined when I learn independently	1	5	4.1	.9
SDL9	In my learning process, I use self-reflection and self-assessment in academics	1	5	4.0	.9
SDL10	Feedback from teachers positively affect my SDL	1	5	4.3	.8
SDL11	I prefer learning independently in academic career	1	5	4.0	1.0
SDL12	I ensure my career and long-term academic goals are good due to my SDL	2	5	3.1	.9
SDL13	I can adapt my strategy of learning in response to new information/assignment	1	5	4.0	.81
SDL14	I would give advice to those who want to be self-directed learner	2	5	4.0	.93
SDL15	I see SDL as an essential part of my future career and academic goals	1	5	4.0	.83
SDL16	SDL gives me more confidence and empowerment	1	5	4.1	.10
SDL17	I set my study time in advance	1	5	4.0	.10
SDL18	I like to learn new things outside of my class	1	5	4.3	.9
SDL19	I learn even in a worst situation	1	5	4.0	1.0

Table 1 Descriptive Statistics of Self Directed Learning SDL (n=120)

The table gives a complete outlook of how learners perceive and participate in several aspects of self-directed learning. It shows that while learners typically assess themselves moderately high in SDL behaviors, there is variability in their observations and performances across diverse phases of SDL.

The mean score performance of students over the statements (SDL1 , SDL2 , SDL4 , SDL5 , SDL8 , SDL9 , SDL11, SDL13 , SDL14 , SDL15 , SDL16 , SDL17 and SDL19) were observed (4.0 , 4.2 , 4.3 , 4.0 , 4.1 , 4.0 , 4.0, 4.3 , 4.0 , 4.0 , 4.0 , 4.1 , 4.3 and 4.0). Similarly, the mean score performance of the remaining students over the statements (SDL3, SDL6, SDL7, and SDL12) were found (3.1, 3.1, 3.1 and 3.1) respectively.

Table 2: Descriptive Statistics of Academic Resilience AR (n=120)

	Statements	Minimum	Maximum	Mean	Std. Deviation
AR1	I am confident to face challenges in my education	2	5	4.2	.7
AR2	In hard academic situations I don't lose hope	1	5	3.1	.10
AR3	I am able to manage time to complete other activities along with academic responsibilities	2	5	4.0	.8
AR4	In my opinion, academic resilience/AR is important for the success of student.	1	5	4.1	.9
AR5	I believe that academic difficulties improve my skills and learning	1	5	4.1	.10
AR6	I overcome failure easily	1	5	4.0	1.0
AR7	I can change my grades with hard work	1	5	4.3	.82
AR8	I can overcome academic challenges	1	5	4.0	.74
AR9	When I get low grades, I stay positive	1	5	4.0	1.1
AR10	I can manage many academic responsibilities	1	5	4.0	.84
AR11	I am positive and optimistic during stressful academic environment	1	5	4.2	4.8
AR12	I learn from past academic failures to improve my future performance.	2	5	4.3	.7
AR13	I believe that difficult tasks are actually lucky chances for my growth and learning.	2	5	4.2	.8
AR14	In my learning process, I do not acknowledge the opinions of others	1	5	3.2	1.1
AR15	I manage and prioritize my time effectively for academic responsibilities	1	5	4.0	.90
AR16	When subject/ assignment is difficult, I try to find resources and help	2	5	4.1	.84
AR17	I use what I have learnt from my mistakes in order to improve	1	5	4.1	.9
AR18	I am calm during tests and exams	1	5	4.0	1.0

Table 2 Descriptive Statistics of Academic Resilience AR (n=120)

This table demonstrates the observed minimum and as well as the maximum marks for each account that highlight the series of reactions through the varied margins of academic resilience. It

also displays the mean score, which shows the average level of resilience for each statement which is reported by students. The standard nonconformity estimates inconsistency of the marks adjacent the mean that demonstrated in what way persistent or dissimilar learners' reactions are for separately AR performance. The mean score performance of students over the statements (AR1 , AR3 , AR4 , AR5 , AR6 , AR7 , AR8 , AR9 , AR10 , AR11 , AR12 , AR13 , AR15 , AR16 , AR17 and AR18) were observed (4.2 , 4.0 , 4.1 , 4.1 , 4.0 , 4.3 , 4.0 , 4.0 , 4.0 , 4.2 , 4.3 , 4.2 , 4.0 , 4.1 , 4.1 and 4.0) similarly the mean score performance of the remaining students over the statements (AR2 and AR14) were found (3.1 and 3.2) respectively.

Table 3: Correlation between Students' Self-Directed Learning SDL and Academic Resilience AR (N= 120)

Variables	Pearson Correlation	p
Self-directed-learning	0.571**	0.000
Academic resilience		

Table 3 Correlation between Students' Self-Directed Learning SDL and Academic Resilience

This table signifies that correlation among both variables SDL and AR is (moderate) positive plus statistically significant “ $r = 0.571$ and $p < 0.01$ ”. This shows that there is a moderate positive association between these two variables among the sample of 120 students. Thus null hypotheses are rejected *and* the alternative hypotheses of the study are accepted/supported.

Normality tests for both variables are also conducted which showed that the overall distribution of both variables were approximately normal.

Table 4: Regression Analysis

Model-1	Standardized Coefficients	Unstandardized coefficients		t	Sig.	R	R ²	Adj. R ²	F	Sig.
	Beta	B	Std. Error							
Self-directed learning		18.261	7.158	2.551	.012					
						.571 ^a	.327	.321	57.224	.000 ^b
Academic resilience	.571	.745	.098	7.565	.000					

Table 4 Regression Analysis

This table shows a strong indication to advocate that there is a significant association between SDL and AR. Moreover the p-value for the SDL coefficient is likewise .000, emphasizing that SDL

significantly predicts AR in this model. The table of coefficients tells that SDL has a positive and as well as significant influence on AR (Beta = .571, $p = .000$), with the unstandardized coefficient (B) of SDL being 0.745. Implies for each unit rise in SDL, AR increases by about 0.745 units. The hypothesis that the variable SDL can positively effects the variable AR is supported.

Findings of the Study

1. The analysis of correlation showed a modest positive connection between AR and SDL, having a (r) correlation coefficient of 0.571, that is significant statistically ($p < 0.01$).
2. The alternative hypotheses (H_1) are supported by these results, approving a positive and significant correlation between AR and SDL among undergrad students at University of Malakand.
3. It was observed from our results that the most of the students revealed a greater levels of SDL, on a 5-point scale, having mean scores ranges from 3.1 to 4.3.
4. As a whole, it was also observed that the most of the students showed strong AR, having mean scores ranges from 3.1 to 4.3.
5. The analysis of regression exhibited that SDL meaningfully predicts AR. The value of R square = 0.327 proposes that 32.7% of the change in AR could be described by SDL. The model of regression was valid and confirmed to be significant statistically having value of $F = 57.224$ ($p < 0.000$).
6. It was also found that the significance of model has been confirmed by the ANOVA consequences (F-value = 57.224, $p = 0.000$), indicating a good fit for this data.
7. We found that the coefficient of SDL was significant (Beta = .571, $p = 0.000$), with each unit bigger in an SDL variable which leads to an increase of 0.745 units in an AR variable.
8. The results line up with previous literature which highlights the significance of SDL in raising goal-setting, intrinsic motivation and self-efficacy, all of these are essential for AR.

Discussion

The validity of the regression along with the other statistical methods used for this study is supported by the normal distribution of AR and SDL data. This is in accordance with (Field, 2013), assumption that normality increases the confidence and reliability of findings from statistical analysis. The normal distribution of AR and SDL data is essential to understand the association between these variables. This strengthens the reliability and generalization of the findings, line up with (Pintrich, 2004), who reported that traits of self-regulated learning were uniformly distributed in varied populations of students. The findings of the current study disclose that students indicate higher levels of both AR and SDL.

The descriptive statistics demonstrate that SDL having mean scores ranges from 3.1 to 4.3, whereas, AR, similarly, having mean scores ranges from 3.1 to 4.3. The high SDL levels of identified during this study have been supported and confirmed by previous research. (Garrison, 1997) reported that SDL plays an important role in higher education since it provides students with the capability to have full control of their process of learning. As stated by (Knowles, 1975) adults students and learners are naturally attracted towards SDL since they try to find autonomy in their studies and personal growth. A notable and considerable level of involvement of students in activities of SDL has been demonstrated by mean scores between 3.1 to 4.3. (Candy, 1991) detected that a solid sense of self-efficacy, intrinsic motivation and fruitful time management are the features of self-directed students.

The characteristics which are marked in high mean scores recounted, representing that the learners at the University of Malakand show these potentials to changing degrees. In a similar way, the higher AR levels observed are align with research study by (Martin & Marsh, 2006) Martin and Marsh (2006), who concluded that resilient learners or students normally demonstrate a greater levels of self-confidence and have the capability to manage stressful educational environments. The competence to efficiently handle numerous educational jobs (Mean = 4.0) supports (Cassidy, 2015) affirmation that the administrative abilities and time management are the critical constituents of AR(Hartley, 2011) stressed that such interferences can lead to enhanced academic consequences and the inclusive well-being. Within the total number of 120 students, the analysis of the correlation between SDL and AR of the students shows somewhat positive relationship with a correlation coefficient (r) of 0.571 ($p < 0.01$) which makes it statistically significant. The current research is corroborated by previous research and literature.

The significant and positive correlation between AR and SDL lines up with previous study and research emphasizing that these constructs are of interconnected nature. (Zimmerman, 2002) claims that SDL contains goal-setting, intrinsic motivation and self-regulation, that are important components of AR as well. The moderate positive-association ($r = 0.571$) specifies that while AR and SDL are associated or interconnected. This finding is corroborated by (Wolters, 1998), who concluded that while SDL meaningfully influences the ability of students to deal with academic demands, other essential elements like emotional regulation, external resources and social support that also play essential characters. The correlation moderate strength shows that improving SDL may enhance AR, however, it should be a broader-strategy's part to improve resilience of student. Similar positive connections between AR and SDL were also observed in previous research. E.g., a study conducted by (Joo et al., 2011) concluded that the students that have participated in SDL showed increased degrees of academic achievement and academic resilience. This strengthens the notion that to help and to support the SDL could enhance academic experiences of the students in a number of ways such as their resilience and overall accomplishment. The regression analysis directed to discover the relationship between SDL and AR among undergraduate students at the University of Malakand generated important results.

The R square value of 0.327 shows that 32.7% of the alteration in AR can be described by SDL, representing a moderate descriptive influence. The ANOVA outcomes, with a significant F-value of 57.224 and a p-value of 0.000, approve the inclusive significance of the regression model. The regression analysis discloses a significant positive association between self-directed learning (SDL) and academic resilience (AR), demonstrating that higher levels of SDL are linked with higher levels of AR among learners. This conclusion supports the existing literature that intends that self-directed students tend to cultivate stronger resilience due to their capability to adjust their set objectives, learning and sustain intrinsic motivation (Zimmerman, 2002), (Garrison, 1997). The R square value of 0.327 advocates that self-directed learning accounts for almost 32.7% of the difference in academic resilience. While this signifies a moderate explanatory power, it shows that other elements also add to academic resilience. This is stable with (Wolters, 1998) who claimed that while SDL is a significant aspect in learner resilience, and some other elements can also play essential roles. The prior studies have emphasized the role of supportive connections and positive learning environments in order to improve the resilience (Martin & Marsh, 2006), (Cassidy, 2015). Educators should consider producing a culture of a classroom in a manner that values autonomy, inspires taking of risk and as well as offers productive feedback in order to support the learners' SDL and resilience improvement.

Conclusion

The study lines up with current literature, emphasizing the significance of SDL in fostering resilience. It was concluded from our study that as a result of stimulating behaviors of SDL, students can enhance and increase the capability to overcome problems regarding academic and carry on their studies. Furthermore, the research study highlights the need for a helpful learning environment that motivates, promote and encourages SDL, which leads to greater and increased well-being and academic routine. It was also concluded that, fostering, support and encouragement of SDL in educational environments is essential to increase academic resilience among the students or learners.

Recommendations and Future Directions

1. It is suggested and recommended that private as well as government educational institutions and all the stakeholders to make strategies mechanism or a to resolve the problems or issues that have discovered by researchers as shown in the findings.
2. The study referred to purposive sample of the students whose SDL was already good and their AR was found as well in better condition.
3. The SDL had influence over the AR as well. Usually, to make all of the students self-regulated, SDR and SDL, the following strategies and plans should be employed:
4. They should be given creative projects and assignments.
5. They should be offered the opportunities for reviewing the books, research studies, and other relevant materials.
6. Create a thoughtful journal at the University and departmental levels, where students may publish their research work, critical essays, and projects.
 - i. Future study and investigation should explore more factors which effect AR and consider longitudinal studies for examining the SDL long-term impacts.
 - ii. For validation of this study's results, samples from different educational institutions and sociocultural backgrounds should be contained in future research.
 - iii. One of the limitations is the absence of a gender based comparisons, a gender based comparison research needs to be conducted in the future.

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