

Effect of Resilience on Academic Achievement of University Students

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Abstract: *Academic achievement has been the focus of many studies in terms of the factors affecting it at various levels and in different contexts. The main purpose of this study was to examine how the academic achievement of university students is affected by their personality trait like resilience. The participants 532 students were selected from the population of 9125 students. The questionnaire of resilience consisted of 24 items was used to collect the data. The internal consistency of the resilience scale had also been examined. Factor analysis was conducted to explore the underlying dimensions of resilience. A cross-sectional study was conducted. SPSS was used to analyze the data. The simple linear regression resilience was observed wit have positive and significant effect on the academic achievement. The university administrations were suggested to promote the activities for the development of the attribute of resilience among the students to consequently improve their academic achievement.*

Introduction

Academic achievement refers to the knowledge, skills and subject to learning and training. Personality traits coupled with self-control can lead towards comprehensive academic achievement. Resilience, the capacity of managing the stress, accumulates over time as a skill, ability, knowledge, and insight when students confront challenges and adversity (Von Brede, 2001). In case of the adverse scenarios, the dynamic process of successful recovery as well as adaptation is called resilience.

According to Rugutt and Chemosit (2005) the factors including internet as well as campus technologies, quality of instruction, overall college experience, and student-faculty interaction affect the academic achievement as was discovered with the help of the empirical evidence which was collected through the multiple measures for the coverage of the more enriched learning environments. The student-faculty interaction in terms of learning and engagement depends upon the emotional intelligence of the teacher even in online learning spaces (Gunasekara, 2022).

Impact of stress on the academic performance of university students was studied by Taj, Tabassum and Bibi, 2024 who concluded that the stress is governed by the personal family lives, educational factors, and environmental factors. A good liaison among parents, teachers, and university administration will help in making the stress-coping plans to ensure all around personality development of the students. Researchers suggested the students to exhibit a healthy life-style maintaining a balance between working hours and relaxing hours. It was interesting to note that stress was observed to have insignificant association with gender. Stress affects not only the relationships between an individual and the society but also results in psychological, physiological, and behavioral issues.

Review of Related Literature

As discovered by Yeo and Yap (2023) the psychosocial recourses (resilience factors) comprise self-esteem, dispositional optimism, and perceived academic. The former most is independent of stress while the latter two are inversely proportional to stress. The four dimensions of resilience as provided by Masten (2008) include processing, regulation, social support, and attachment. In the Neuroscience perspective presented by Heikura (2018), prefrontal (orbit of rontal and dorso lateral) cortex (attachment and self-mechanism) dampens the amygdala cortex (emotions and effective memories) which consequently supports resilience and recovery. Mindfulness and self-compassion are positively correlated with each other and both promote the resilience (Akiki, Dahdouli, and Dimassil, (2021).

According to Hersberger (2011) resilience is a sort of defense mechanism of a university student while facing the stressful consequences on the campus e.g. the lack of support and effective teaching style on the part of the teacher, work burden, huge class size, longer working hours, bullying by the students and the teachers, financial hardships, lack of sleep, relationship breakup, tough evaluation system, lack of confidence due to limited digital literacy, fatigue, social isolation, difficulty of course material, lack of psychological well-being, health issues, low emotional intelligence, part-time job, competition, bad connections, defeat, abuse, inflation, weaker relationships, fear, uncertainty, and the habit of procrastination. Concepts of stress, resilience, social support, and cognition collectively serve the students to buffer from unfavorable events on as well as off the campus.

Support of peers in schools plays a significant role when students face unfavorable circumstances (Werner and Ruth, 1982). It was found that support from peers has positive effects on the student's resilience and the existence of this effect is regardless of age, gender, and family of students (Stewart and Sun, 2004). In China, there were identified approximately six chief functions among the students of high school which include support and caring in everyday life, academic involvement and expectations, behavioral discipline, guidance, spiritual encouragement, providing opportunities for consequential association and role modeling (Li, H. 2017).

In contrast, another research study in India found when peer bullying of a high level was experienced by young men, this led to a low level of resilience (Narayanan and Betts, 2014). On the contrary, peer support of a high level may lead to develop a high level of resilience academically (Robinson, Raine, Robertson, Steen, and Day, (2015).

The research also described that in the development of academic resilience, getting support from teachers also played an important role. So support from teachers is also considered as a vital factor in the development of resilience (Werner, 1990). Theron (2016) also indicated that in developing the resilience of students were facilitating four major key processes which involved 1- building a respectful and warm relationship with students, 2- communicating consistent and achievable expectations of the students, 3- regarding students such as a capable and active agent, 4- developing of resilience supporting classroom environments and practices. Interviews of the students explored teachers who actively participated in little things regularly in classrooms, such as listening to them carefully, making themselves accessible to the students, or viewing them, these attributes promote the resilience of the students in turn (Johnson, 2008).

When the students of the primary level suffered verbal abuse from the teachers, they were likely to have more negative experiences of learning towards their teachers and react in somehow covert ways like keeping themselves silent and sometimes withdrawing from the schools (Geiger, 2017). In the same way, if students have a low level of engagement in the classroom or a negative safety sense of security they are likely to have a low level of resilience (Datta, Cornell, and Huang, (2017). Students who were bullied by the teachers or other staff members were likely to show poor school management and unenthusiastic experiences toward the climate of the school (Datta *et al.*, 2017). Thus the support from teachers develops positive academic resilience of students in schools.

Another vital factor is family support which provides academic resilience to the child. By conducting the interviews of 26 students and their parents, it was pointed out almost four techniques most parents utilized to develop the capacity of resilience among students including the

cultivation of independence ability in children, building a healthy relationship between children and adults, promotion of competences of children in socio-emotional knowledge, using of resources about community (Taket, 2014).

H. Li (2017) recommended that students who got more parental direction in the family unit and more energetic commitment in school could modify their situations of low-down school commitment and their own conflict attitude, and improve their achievements academically. On the other hand, children who got low level of parental support and monitoring have a low level of resilience (Sanders, Munford, and Liebenberg, 2016).

Methodology

Participants

The sample of 532 students from the population of 9125 students who were screened out from three selected universities. Sample size was determined based on the rule of thumb mentioned in Comrey and Lee (1994). The nature of this research was descriptive and was made to explore the effect, affiliation, and relationships of resilience on academic achievements among the students.

Instrument

Data were collected with the help of self-developed Questionnaire of Resilience for Students.

Data Collection

After getting permission for concerned authorities researcher personally visited seven departments of each university. With the help of a class teacher and class representative (CR), a performa was filled from the students before data collection. This performa consisted of questions to respond as any physical disability (1-hearing loss, 2- Eyesight issue, 3-Sleeping issue, 4- Walking issue, 5- Pain after injury/ illness, 6- Weakness because of any disease, and 7- Other), Any Issue in life (1- Travelling issue, 2-Lonliness, 3- Studied related stress 4-Money issue, 5- Drug issue, 6- Fail to maintain healthy relationship). Any Disease (Stress, Blood Pressure Issue, Diabetes, TB, Headache, Heart Problem, Liver Issue, Kidney problem, Skin related issue, Asthma, Hydro- nephrosis, Panic attacks, Vitiligo), After getting this personal information from students, a purposive sampling technique was applied and those students were selected to fill the questionnaire who were frustrated and suffering from some problems according to predefined criteria and remained were not included in the data collection. For testing and refining the purpose of the questionnaire, opinions from different experts were considered. By getting feedback from these experts questionnaire was refined and finalized.

Findings and Conclusions

The data were analyzed through the Statistical Package for Sciences (SPSS) version 27. Inferential Statistics i.e. factor analysis, chi-square, and regression were applied for the data interpretation. Factor analysis was used to check out Cronbach’s Alpha Value to know about the reliability of the questionnaire. A chi-square test was applied to determine the association between resilience and academic achievement and a regression analysis test was used to estimate the relationship among independent and dependent variables.

There is a significant association appears between demographic attributes i.e. disability and gender ($\chi^2 = 13.025, df = 6, P = 0.043$) at 5% level of significance.

Table 1: Showing association between gender and disability

Disability		No Disability	Hearing Issue	Eye Sight	Sleeping Issue	Walking Issue	Pain After Injury/Illness	Weakness disease	Total
gender	Male	54	10	9	11	7	9	12	112
	Female	229	11	80	51	13	19	17	420
Total		283	21	89	62	20	28	29	532

Table 1 indicated that there is a significant association observed between demographic attributes i.e. disability and gender ($\chi^2 = 13.025, df = 6, P = 0.043$) at 5% level of significance.

Table 2: Resilience correlation with the academic achievement

	R	R Square	Adjusted R ²	Standard Error of Estimate
Model	.567 ^a	.322	.320	.80832
	Unstandardized Coefficients		Standardized Coefficients	
	B	Std. Error	Beta	
			t	Sig.

(Constant)	1.577	.096		16.392	.000
Resilience	.484	.031	.567	15.853	.000

Table 2 showed that resilience has positive, moderate and significant ($P = 0.000$) correlation with the academic achievement i.e. 0.567. It also shows that the coefficient of determination is found to be 0.322 which states that 32.2% variation in academic achievement is explained by the independent variables namely resilience. The rest of the 67.8% variation in academic achievement is explained by the variables which are not included in our model.

Table 2 also depicts that the independent variable namely resilience has positive and the significant effect on academic achievement ($P = 0.000$) such that one unit increase in resilience brings about 0.484 units increase in the academic achievement. The estimated model is being represented by equation (1).

$$\text{Academic Achievement} = 1.577 + 0.484 \text{ Resilience} \rightarrow (1)$$

Equation (1) expresses that a resilience of size 3 units can lead to academic achievement equals to 3.029 units.

Table 3: Measure of sampling adequacy for resilience

Kaiser-Meyer-Olkin and Bartlett's Test: Resilience		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.859
	Approx. Chi-Square	2754.107
Bartlett's Test of Sphericity	D.f	276
	Sig.	.000

Factor analysis explores the dimensions underlying the items of that scale. Extraction and rotation are the two main phases of factor analysis. Principal component method has been used for extraction while Varimax has been used for rotation. Major output tables of factor analysis are Kaiser-Meyer-Olkin, Communalities, Total Variation Explained and Rotated Component Matrix.

Kaiser-Meyer-Olkin test decides whether the correlation structure of the items is stronger enough for the conduct of factor analysis or not. Table 3 shows that the value of Kaiser-Meyer-Olkin for the 24 items of resilience is 0.859. This falls in the desirable range because the threshold value of Kaiser-Meyer-Olkin is 0.7. Hence items of the resilience have a correlation structure that is stronger enough to make them fit for the factor analysis.

Table 4: Dimensions and Communalities of Resilience

Dimensions and Items			Communalities of Items			
Factor #	Factor Name	Items in the Factor	Item #	Item	Initial	Extraction
1	Self-motivation	R1	1	R1	1.000	.552
		R3	2	R2	1.000	.455
		R2	3	R3	1.000	.496
		R6	4	R4	1.000	.424
		R4	5	R5	1.000	.538
		R5	6	R6	1.000	.465
2	Enthusiasm	R21	7	R7	1.000	.445
		R8	8	R8	1.000	.416
		R7	9	R9	1.000	.374
		R12	10	R10	1.000	.444
		R24	11	R11	1.000	.561
3	Dissatisfaction	R22	12	R12	1.000	.393
		R17	13	R13	1.000	.565
		R10	14	R14	1.000	.464
		R11	15	R15	1.000	.436
		R23	16	R16	1.000	.484
4	Socialization	R14	17	R17	1.000	.633
		R15	18	R18	1.000	.420

		R16	19	R19	1.000	.441
		R18	20	R20	1.000	.585
5.	Optimism	R19	21	R21	1.000	.519
		R13	22	R22	1.000	.505
		R20	23	R23	1.000	.443
		R9	24	R24	1.000	.254

Table 4 depicts that there are five dimensions underlying 24 items of the resilience. Based on the common characteristics of the items belonging to each factor, the factor was given a collective name that represents the items belonging to that factor. In this study the dimensions of resilience were given the names of Self-motivation, Enthusiasm, Dissatisfaction, Socialization, and Optimism. Underlying dimension of resilience is found to be five.

Table 5: Eigen Values and the Variation Explained by the Factors Extracted of Resilience

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.295	22.062	22.062	5.295	22.062	22.062	2.776	11.565	11.565
2	2.364	9.852	31.914	2.364	9.852	31.914	2.267	9.446	21.012
3	1.371	5.714	37.628	1.371	5.714	37.628	2.185	9.104	30.116
4	1.177	4.905	42.533	1.177	4.905	42.533	2.082	8.676	38.792
5	1.102	4.592	47.125	1.102	4.592	47.125	2.000	8.333	47.125

Table 5 shows that the five dimensions of resilience explain a variation of 47.125% while the threshold value is 50%. Internal consistency in terms of Cronbach Alpha of the resilience items was found to be 0.810 which is declared as Good.

The academic achievement of the university students was studied as a function of the psychosocial attribute, namely resilience. It was discovered that resilience predicts the academic achievement positively and significantly. Internal consistency in terms of Cronbach Alpha of the resilience items were found to be in the acceptable range. This study has a theoretical touch as it discovered the useful dimensions underlying the resilience.

Discussion

There are five prevalent feelings that are linked to a deficiency in resilience included anger, sadness or depression, guilt, anxiety or fear, embarrassment (Karen, 2002). According to Yang's point of view (2020), the learning and training of students represents students' command of learned knowledge and skills. It was defined as the main parameter and noteworthy indicator for the measurement and evaluation of student's knowledge, skills, and progress of learning respectively.

School and its environment, education, and performances are associated in many ways with resilience. Educational access is also regarded as one of resilience's factors (Ungar, 2006). This approach defined education contributes to an individual's overall ability to cope with the hardships of life. The mechanism of compensation provides the child its competence sense (A chance to experience success), and also permits an individual to escape from the unwanted environment for some time (Nickolite, and Doll, 2008).

From the discussion above it can be seen that there is a relationship between academic achievements and resilience. Previously, many research studies provided contradictory and inconsistent results and on the other hand research studies also more and less did confirm regarding effects of resilience on academic performance. It is also stated by Niemann, (2013), who reported the protective impact of resilience, educational goals, and self-regulation against the negative effects on the perception of probability and behavior. In secondary schools, resilience was described as a strong predictor of academic achievement. In broader views in schools, sustaining resilience may also affect individuals by reducing the presence of anxiety and depression, influencing academic performances positively, and the well-being of the students right now and in the future (Challen, Machin, and Gillham, (2014).

Although resilience is quite frequent among children in care, it can also be enhanced by accomplishment, participation in events, and other activities that boost self-esteem (Gilligan 1999). Because of their disparate living circumstances, children in care may experience social rejection from other kids, but if this exclusion helps them become more resilient, it will benefit them in adulthood. According to Gilligan (1999), fostering and advancing a child's interests and abilities can help them develop resilience and boost their self-esteem. By providing them with access to friends and/or mentors who would support resilience development through encouragement, one-on-one time, and meaningful talks, hobbies and activities could help young people discover positive ways to experience life (Gilligan 1999).

Psychologists are increasingly applying resilience methods in several facets of society as interest in the idea and its applications develops. Public administration, for instance, has just lately started incorporating resilience thinking into policies and other documents. At the moment, federal initiatives frequently focus on enhancing the resilience of the built and natural systems that supply society with services like energy, transportation, healthcare (Larkin, G, and Knutson, 2015).

Conclusion

To foster constructive links between communities, homes, and schools, it is necessary to look into the circumstances in which resilience emerges and how they might be linked. It was investigated how a Whole-University guidance curriculum affected the growth of students' resilience ability. It also looked into the potential effects of such a curriculum on teachers' growth in their capacity to deal with behavioral issues in students in a resilient manner. Despite being regarded as a basic aspect of care, school practitioners in Hong Kong have not sufficiently addressed and articulated the resilience component of school guidance. The development of resilient university guidance strategies requires constant dialogue between educators and University administrators. They should also look for practical ways to put these tactics into practice, particularly for students who struggle academically and have behavioral problems.

Recommendations

The results of this study offer recommendations for administrators across multiple universities to improve student academic outcomes by undertaking productive activities on campus that promote resilience. Students enrolled in the early semesters deserve special attention because they are more prone to the stress and in more need of adaptive measures than the senior students. Improved student-teacher as well as senior-junior students' interaction, induction of useful courses in the scheme of study etc. may enhance psycho-social attribute of the students and hence the academic achievement.

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