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Effectiveness of an Intervention Program in Fostering Academic Resilience of Students at Risk of Failure at Secondary School Level

Muhammad Irfan Arif [*] and Munawar S. Mirza[**]

Abstract

The major purpose of the study was to find out the effectiveness of an intervention programme in fostering academic resilience of non-resilient at-risk students at secondary school level. The programme based on a resilience building module for teachers was designed for this purpose. The module comprised of activity based sessions aiming at fostering protective factors-creativity, internal locus of control, self-concept, self-esteem, self-efficacy, autonomy, sense of purpose in life, optimism, good sense of humor and teacher student relationship. The experiment following pretest-post-test control group design was conducted in public secondary school. A total number of sixty four non-resilient at risk of failure 9th and 10th grade students equally divided in the experimental and the control group participated in the study.. These students were identified administering a risk identification survey and resilience assessment scale 'RAS' developed by the researchers measuring specific risk indicators and protective factors, respectively. The control group of the study was treated in traditional manner. One of the researchers acted as a resilience teacher. The treatment continued for three months. The pre-test and post-test analysis revealed that the intervention was significantly effective in enhancing students 'academic resilience in overall and by each selected protective factor.

Keywords: Intervention programme, resiliency module, protective factors, academic resilience.

* PhD Scholar, University of Education, Lahore-Pakistan. Email:Irfanarif149@yahoo.com
** Professor Emeritus, Punjab University & Advisor (Academics) Virtual University of Pakistan
Email: drmsmirza1968@gmail.com

Introduction

Mostly the school failure and school dropout phenomena happen due to occurrence of specific risk factors or risk incidents contributing to psychological and emotional problems in the personalities of students. These risk incidents are mostly present in the surroundings of an individual and usually involves severe types of risk antecedent and risk worthy situation which may create difficulties in the individual's life which may lead to problematic behaviors of severe harmful life outcomes (Wilson, 2003).There is some cause and effects dynamics that leads a child to negative events of future and seriousness of events may range from minimum to high risk (Mcwhirter, 2012). From broader point of view student's eager to learn is affected by their health, family characteristics, peer influences and social status (Morgen, 2002).

Carbonell (2015) stated that any incident or situation that produces a poor result may be called as risk factors. Risk factors may be distributed into two categories: one related to the individual, family, and community, and the other related to school (Barr & Parrett, 2003). Johnson (1999) submitted risk factors as conditions, situations and circumstances that influence students to face risk outcomes). Johnson (1999) defined risk outcomes as school failure and school dropout.

Bernard (2004) reported that many children develop capacity to fight with unfavorable circumstances. By doing so they not only continue to survive but do well in their academic and social spheres. The ability to survive and perform well in the presence of adverse life situations is termed as resilience. The theory of resilience attempts to explain why some students perform better in their academics and achieve success in their lives despite of having negative contextual or personality factors (Reis, Colbert, & Thomas, 2005).

Resilience is defined as bouncing back from difficult situations and to adapt well in adversity, trauma, tragedy and threats, stressors and health problems. Resilience helps a child to cope with adverse situations and thrive in grieve, hurt and disadvantage (Cameron & Maginn, 2009). Resilience, can however, be understood best with the study of combination of risk factors and protective factors in the life of an individual (Barrett & Turner, 2004).Protective factors not only diminish but in some cases may even eliminate the effects of risk factors in the life of a child (Keogh, 2000). Research on the role of protective factors has shown that they can often minimize the possible harmful effects of risk factors (Lewis, 2000). Such factors include self-confidence, self-esteem, self-efficacy, internal locus of control, sense of humor, autonomy and optimism, healthy relationship with a teacher, a positive peer cluster and good child care at an early age.

Studies on resilience identifying the situations where major risk factors remain restrained in producing harmful effects in a child's life are of high importance for the educationists and policy makers. Such research can give a lead to design prevention and intervention programs for controlling school failures among at risk students (Masten, 2012). The researchers are becoming more interested in exploring the strategies and techniques that may instill and foster resilience (Masten, 2012).Such research has established that resilience can be taught and that everyone has a capacity to learn it. Once cultivated, these self-protective traits can be further enhanced and strengthened over time (Bernard, 2004).

Research has also established that for creating resilience among children and youth the most important factor is the positive role of a supporting adult who may provide guidance, support, and recognition required by a child to counter the risk factors (Pianta & Walsh, 2014). Outside family, teachers are in the best position to provide such supportive conditions and opportunities to at risk students (Henderson, 2003). They are also the most competent to design and practice strategies and techniques for this purpose.

Given that the resilience can be fostered among at risk students, the study of academic resilience has emerged (Luthar, 2000; Wang, 1994). In the last few decades, multidimensional resilience research from the fields of psychology, sociology, and anthropology has addressed the importance of resilience. Relatively few studies have been conducted in the field of academic resilience. Nonetheless, studies of academic resilience have gained importance as a framework for investigating why some students perform better in school, while other students from the same backgrounds do not (Waxman, Padrón, Shin & Rivera, 2008). This study aimed at developing an intervention programme based on resilience fostering module comprised of several activity based sessions for the development of specific protective factors-creativity, internal locus of control, self-concept, self-esteem, self-efficacy, autonomy, sense of purpose in life, optimism, a good sense of humor and teacher student relationship.

The specific objectives of the study were to:

1. Develop and design an intervention programme to foster academic resilience of non-resilient at-risk of failure students at secondary school level.
2. To find out the effectiveness of the intervention programme in fostering the academic resilience of non-resilient at-risk of failure students at secondary school level.

The study was designed to test the following hypothesis:

H_o: There is no significant difference between the resilience mean gain scores of non-resilient at risk students receiving and those not receiving the intervention training.

Research Design of the Study

The study was a survey research (while identifying non-resilient at risk students) proceeded by a True Experimental Research (pretest-posttest control group design)using random assignment of subjects to the control and experimental groups (Fraenkel, 2006) out of the identified non-resilient at risk students.

Sample

The sample of the study was taken from a public secondary school for boys of District Lahore. The sample consisted of 9th and 10th grades' students of ages 14-16 years. The sampling was done in two phases. The researchers first identified students at risk of failure through administration of a demographic data survey about specific micro and macro risk factors. In the second phase non resilient at risk students were identified by administering a Resilience Assessment Scale (RAS) developed for the study. Table 1 elaborates the sample of the study.

Table 1
Sample of the study

Total No of Students	Students having Academic Issues	Students with Poor Health	Students with low Socio-economic Status	Students possessing Negative Life Events	Total number of At- Risk Students	Non Resilient at-risk Students	No of students in Control Group	No of students in Experimental Group
255	41	32	27	15	115	64	32	32

Instruments

1. **Academic Performance Form for the Class Teacher**. A form was developed for the class teacher to get information about the academic performance of students' achievement scores and class attendance.

2. **Demographic data Sheet for Students**. Information was solicited from students about socio-economic status i.e. parental education, parental occupation and parental income using a demographic data sheet.

3. **Questionnaire for At-Risk Students.** The questionnaire had two parts- . Student's Health Questionnaire (SHQ) and Negative Life Events Questionnaire (NLEQ). For better communication with students, the questionnaire was translated in Urdu through proper procedure of MAPI guidelines (MAPI Institute, 2012. For the present study, the Cronbach's alpha reliability of these two questionnaires is .78 and .82, respectively.

4. **Resilience Assessment Scale (RAS).**To measure the academic resilience, items were adapted from Resiliency Attitude and Skill Profile (RASP) by Hurtes (2001) and he Connor-Davidson resilience scale (2003) to make the final scale titled as Resilience Assessment Scale. The scale comprises of forty statements on 5point Likert scale ranging from 1 to 5. These statements measure the ten contributing factors of resilience i.e. Creativity, Self Esteem, Self-Efficacy, Internal Locus of Control, Problem Solving Skills, Autonomy/Independence, Sense of Humor, Stress Coping Skills, Positive Future orientation/Sense of purpose in life and Teacher-Student Relationship. A student could score from a minimum of 40 to a maximum of 200. Students scoring 120, the median, or above were considered as resilient and those scoring below it were labeled as non-resilient at risk students. The scale was found to have significantly high internal consistency with Cronbach's $\alpha = .87$

5. **Resiliency Module (RD): Activity Based Program (ABP) to foster resilience of students.** Resilience is not a natural trait that evidently deflects the hurtful circumstance from affecting the kid. The real reasons behind such students' success are the protective factors that fascinate the state of mind and abilities permitting them to go up against the impacts of the risk factors (Beauvais & Oetting 1999).

In the current study, in order to provide a holistic conceptualization of the term, resilience was investigated as a process consisting of various related processes and constructs, organized within a dynamic framework. An instructional module was designed and developed by the researchers for promoting resilience skills among at risk students. A review of the research found a relatively consistent list of internal and external protective factors associated with successful adaptation under antagonistic circumstances (Greene & Conrad, 2002. The module was comprised of various classroom activities for the development of selected protective factors contributing towards resilience i.e creativity, self-esteem, self-efficacy, internal locus of control, autonomy, problem-solving skill, sense of optimism and hope, sense of humor, stress coping skills and teacher-student relationship. The modules is an amalgamation of

self-directed reflection activities with group sharing in order to hear, more in-depth, other peoples' stories and to identify which skills they feel need additional practice. The resiliency module was validated through expert opinion. These experts were faculty members in the subject of education holding PhD degree in Education.

Procedure

The researchers selected a highly populated public secondary school of District Lahore on the basis of its high failure rate which was 57% in the matriculation examination conducted by BISE Lahore in year 2013-14. The consent to conduct the experiment was obtained from the principal of the school. A survey comprising of four sub-surveys i.e. academic issues survey, students' health survey, socioeconomic status survey, negative life events survey was conducted to identify students at risk of failure. From these at risk students the non-resilient students were identified by administrating resilience measuring scales RAS. A separate section of non-resilient at risk students (experimental group) was constituted with the mutual consent of the school principal and the teachers. One of the researchers took part in the experiment with the permission of the school principal and spent one hour daily in the class of non-resilient at risk students, teaching resilience activities. The remaining non-resilient at risk students were taught under normal conditions with normal students. The treatment continued for three months. After the completion of treatment/intervention, the resilience of the experimental and control groups was measured again. The data were analyzed applying t-test on the gain scores (Subtracting Pre-test score from Post-test score) of each of the two groups.

Results

Normality of the data

In this study the Shapiro-Wilk test was used to test the normality of data because researchers consider it as the best choice for the purpose (Thode, 2002).

Table 2
Normality of the data of control and experimental groups

Group	Shapiro-Wilk Statistics	F	Sig
Control	.95	32	.15
Experimental	.97	32	.39

Table 2 shows that p values for the control group and the experimental group are greater than 0.05. Thus, the null hypotheses tested through Shapiro-Wilk test were accepted showing that the data of both the groups have normal distribution.

The graphical representation of normality of data for the control and experimental group is shown in Figure 2.

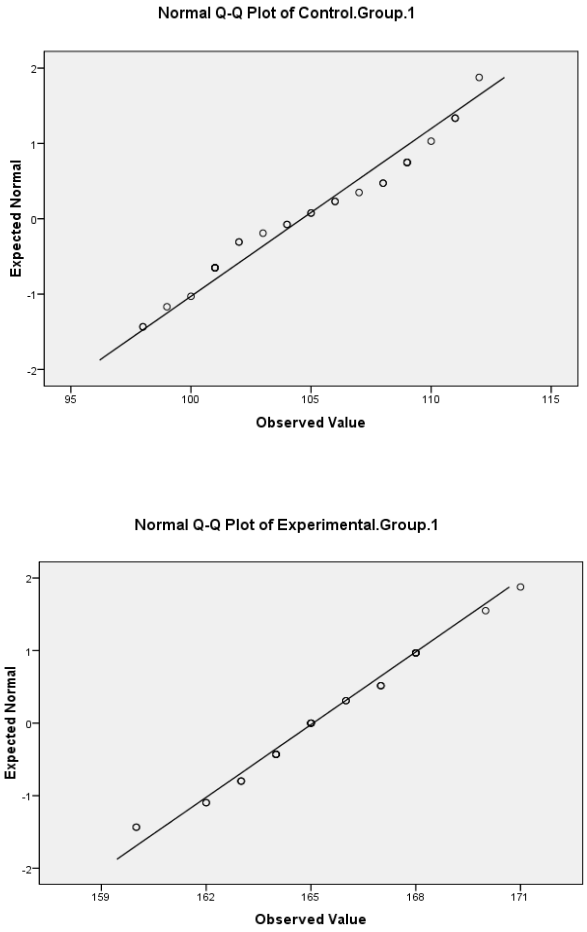

Figure 2 The graphical representation of normality of data for both control and experimental group is shown as under

Table 3
Skewness of data in control and experimental groups

Group	N	Skewness	Standard Error
Control	32	.034	.42
Experimental	32	.023	.40

Table 3 shows that the skewness of data is .034 for the control and .023 for the experimental group. This means, that the distributions are approximately symmetric.

Table 4

Mean scores and mean gain scores of non-resilient at risk students on their pre-test and post-test on Resilience Assessment Scale (RAS)

Protective Factor	No of Items	Control Group			Experimental Group		
		Pre Test	Post Test	Gain Score	Pre Test	Post Test	Gain Score
Creativity	4	8.75	10.20	1.45	9.12	15.74	6.62
Self Esteem	4	8.68	09.45	0.77	9.25	17.32	8.07
Self-Efficacy	4	9.46	11.05	1.59	9.50	16.50	7.0
Internal Locus of Control	4	8.65	10.44	1.79	8.55	16.25	7.7
Problem Solving Skills	4	8.90	09.75	0.85	9.32	16.20	6.88
Autonomy/Independence	4	8.96	10.88	1.92	9.05	16.32	7.27
Sense of Humor	4	10.25	11.56	1.31	9.75	17.50	7.75
Stress Coping Skills	4	8.75	09.59	0.84	8.65	16.56	7.91
Sense of Purpose in Life	4	9.96	10.54	0.58	9.28	16.22	6.94
Teacher Student Relationship	4	11.25	12.20	0.95	10.50	17.25	6.75
Overall Mean Score	40	93.60	105.66	12.06	92.97	165.86	72.89

Table 4 shows the pre-test and post-test mean scores and mean gain scores of non- resilient at risk students in the control and experimental groups in the study on each protective factor and overall resilience scale as well.

Hypothesis Testing

Table 5

Difference between the overall resilience mean gain scores of non-resilient at risk students receiving the training and those not receiving training

Group	N	$\bar{x}$	SD	df	t	P
Control	32	12.06	1.49	62	166.62	.001
Experimental	32	72.89	1.43			

P=.05, (n=64)

Table 5 indicates a significant difference between the mean gain scores of control and experimental groups' students on resilience.

Table 6

Difference between the mean gain scores of non-resilient at risk students in the experimental and control groups on selected factors of resilience

Protective Factor	Group	N	$\bar{x}$	SD	df	t	P
Creativity	Control	32	1.45	1.35	62	13.71	.001
	Experimental	32	6.62	1.65			
Self- Esteem	Control	32	0.77	1.30	62	22.89	.001
	Experimental	32	8.07	1.25			
Self-Efficacy	Control	32	1.59	1.10	62	16.10	.001
	Experimental	32	7.0	1.55			
Internal Locus of Control	Control	32	1.79	1.20	62	18.13	.001
	Experimental	32	7.70	1.40			
Problem Solving Skills	Control	32	0.85	1.75	62	16.08	.001
	Experimental	32	6.88	1.20			
Autonomy/Independence	Control	32	1.92	1.30	62	15.54	.001
	Experimental	32	7.27	1.45			
Sense of humor	Control	32	1.31	1.70	62	16.55	.001
	Experimental	32	7.75	1.40			
Stress Coping Skills	Control	32	0.84	1.25	62	22.18	.001
	Experimental	32	7.91	1.30			
Sense of Purpose in Life	Control	32	0.58	1.40	62	15.78	.001
	Experimental	32	6.94	1.80			
Teacher Student	Control	32	0.95	2.50	62	10.55	.001
Relationship	Experimental	32	6.75	1.85			

P=.05, (n=64)

Table 6 indicates significant difference between the mean gain scores of the control and experimental groups' students on each of the ten factors of resilience.

The null hypothesis, H_0, stating no significant difference between the resilience mean gain scores of non- resilient at risk students gone through intervention training and those not receiving the training was rejected. The students gone through intervention training performed better on their test of overall resilience than those not receiving the intervention training.

Comparison of intervention's effectiveness for various protective factors of resilience

The t-test analysis in hypothesis testing sections showed that the resilience intervention programme proved to be effective for the development of all protective factors contributing towards the resilience of at-risk students included in the experimental group of the study. Significant difference between the mean gain scores of control groups' and experimental groups' students on all factors of resilience was observed. All null hypotheses stating no significant difference between the mean gain score of non-resilient at risk students gone through intervention training and those not receiving the training were rejected. The mean gain scores of students of the two groups showed that the students gone through intervention training performed better on their overall resilience than those not receiving the intervention training.

Further, on comparing the by factor mean gain score, it was found that the students in the experimental group achieved maximum gain score on self-esteem, internal locus of control, sense of humor and stress coping skills factors of resilience. The mean gain score of students on the creativity factor of resilience was the lowest.

Throughout the treatment the researcher practiced resiliency attitude in as many ways as possible. For example, listening with compassion, validating the pain of a child's problems while conveying his or her ability to overcome, and providing thoughtful and nurturing gestures--great or small--are all part of this attitude.

Discussion

School failure and dropout are serious issues particularly in Pakistan where 38% of the primary school students drop out before completing 5th grade (Govt. of Pakistan, 2013). In such circumstances the school teachers must play their role in minimizing the risk of academic failure and dropout. The present study demonstrated that the teacher can foster the resiliency characteristics among at-risk students by helping them acquirea protective mechanism through providing supportive environment and developing protective factors contributing towards resilience.

In this research, specific protective factors were fostered to develop academic resilience among at-risk students. It was inferred that the development of these protective factors contributed towards the cultivation of students' resilience. Keogh (2000) has suggested that protective factors may mitigate or even eliminate the effects of risk antecedents in at risk children. Research describing the role of protective factors has shown that such factors as a child's self-confidence, self-esteem, self-efficacy, internal locus of control, sense of humor, autonomy and optimism, a child's warm and open relationship with a teacher, a positive peer cluster, or high quality child care at an early age can often to mitigate the possible harmful effects of risk factors (Lewis, 2000).

The role of researcher as a resilience teacher, as a guide, as a mentor and as a facilitator was established to be beneficial for the successful build-up of resiliency skills among at-risk students. The researcher as a resilience teacher developed a positive relationship with the students and remained successful in fostering their resilience through his positive motivational and inspiring attitude during the intervention. On the basis of review of literature on resilience Pianta and Walsh (2014) have also confirmed the positive impact of a supportive adult in the lives of at risk students. The importance of supportive adult in creating resilience has also been confirmed by the results of this study where a resilience training teacher was the only one supportive adult for non-resilient at-risk students throughout the experiment but he was successful in fostering resiliency attitude among students.

Teachers may foster students' resilience by providing purposeful activities and opportunities that may encourage them to apply their skills and optimize the use their abilities (Henderson &Milstein, 2003). The findings from the present study exhibit that the treatment was effective in helping students in a number of ways such as by providing explanations, encouraging students to elaborate their responses, appreciating and applauding students 'successes and providing support wherever needed during their task learning processes. As a result the students in the treatment group reported a more positive classroom-learning environment as compared with the students in the controlled group. They also obtained significantly higher resilience score than students in the controlled classrooms.

Recommendations

The educators should continue to develop strategies to engage all students in a meaningful learning process that develops young minds into successful and accomplished citizens as the results of the study revealed that resilience fostering activities play a vital role in the development of students' resilience.

The three months intervention training on resilience showed good results. Better results can be gained if the duration of the intervention program is extended. So it is recommended to implement such resiliency training for a longer time period in order to develop the resilience of low profiled students such as non-resilient at-risk students. Although, a good number of protective factors were focused in the study, but due to tight time schedule we were unable to include some other protective factors of resilience in the study such as social competence and emotional intelligence. It is recommended to consider the remaining protective factors of resilience in future research that might also play a significant role in the development of students' resilience.

The study shows that resilience can be fostered by the teachers in regular classrooms. It is recommended that schools should adopt strategies and train teachers to teach youth about their innate resilience, provide meaningful opportunities for communication among students and with teachers, develop and promote positive student-teacher relationships, promote positive peer relations through activities in the classroom and in the school, foster academic self- determination, confidence and feelings of competence, promoting students' creativity, self-esteem, self-efficacy, internal locus of control, sense of humor, stress coping skills, autonomy, optimism etc.

Limitations

Similar to most of the empirical researches, this study was also not beyond some limitations. Due to lack of time and financial resources the study was delimited to the secondary school level only and the selected protective factors of resilience. The intervention training on resilience was designed only for a period three months with short activity sessions offered to the students by one of the Researcher who was not their regular teacher. Such a program offered by the regular school teachers may help students confide promptly in the teacher resulting in rapid cultivation of resiliency traits and development of stronger student-teacher relationship. Moreover, a program continued over a longer period of time will ensure the strengthening of the newly cultivated resiliency traits.

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