Analyzing Impact Of Formally Taught Life Skills' Curriculum On Self Esteem And Thinking Skills Of Early School Children

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Abstract
There is a rapidly developing trend of anxiety and depressive disorders; the level of prevalence of such disorders is at 34% in urban Pakistan. Given this alarming level of anxiety and depressive disorders and the evidence that intervention is mandatory for prevention, we have analyzed the role, if any, that educational institutions can play in providing preventive tools that will facilitate in coping with diverse situations that pose challenges leading to disorders. Our study is an attempt to investigate: (a) the impact of structured, taught and activity based curriculum for life skills with focus on self-esteem and thinking skills; (b) the differences in impact, if any, by gender. Out of total population of 3000 students, 220 students of Grade 1 (age 6-7 years) participated in the study. Five sample sets were taken, with identical numbers for both genders. Experimental design was pre tests, followed by 30-week program intervention and subsequent post tests in order to measure the changes in the self-esteem and thinking skills of early school children. The instruments used were Rosenberg Self-Esteem Test and Drawing and Conservation Tests for assessment of thinking skills. T-Test and ANOVA were used to evaluate the significance of impact of intervention. Based on this research: (a) it is conclusively clear that structured intervention enhances thinking skills (40.2%) and self-esteem (31.6%); (b) it can be reasonably deduced that improvement level is not directly correlated with the base level skill; (c) it can be intuitively determined that while prolonged intervention is expected to lead to a continuous improvement, the skill development over time is not likely to be linear. Based on our findings, it is deemed necessary and recommended that: (a) more targeted research be conducted to determine the level of intervention, on self-esteem and thinking skills, at which a significant correlation exists to treat this intervention as a prevention tool against developing mental disorders; (b) on concluding such research, it may be used to form the basis of prescriptive policy and law making for changing the early education curriculum to include mandatory life skills education as one preventive intervention against avoidable mental disorders caused by inability to manage stress and frustration.

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Introduction

Within the fast changing world of globalization and change, in Pakistan, there is a rapidly developing trend of anxiety and depressive disorders. Mirza & Jenkins suggest that in urban Pakistan, the level of prevalence of such disorders is at 34% and is linked to relationship problems, financial difficulties and low educational level [1]. Also, the argument that health will automatically improve with economic growth, alone, is not supported by evidence. WHO study suggests that diseases will not go away without specific investments in health interventions [2].

Given this alarming level of anxiety and depressive disorders and the evidence that intervention is mandatory for prevention, we have set about analyzing the role that educational institutions can play in developing tools, amongst young children, that will facilitate them in avoiding falling prey to suffocation and stagnation associated with instability and frustration. These tools, we have assumed, are skills associated with thinking and self-esteem, which are jointly called life skills. These skills, we believe, are indispensible for students to cope with diverse situations that pose ever changing challenges causing anxiety and depressive disorders [3, 4, 5].

Human beings are inherently blessed with these life skills, though most of these remains hidden, latent, underdeveloped or unexplored, due to various reasons. All over the world, educational institutions are considered influential in polishing and developing these skills, though other social institutions such as family and peers also play an important role. Studies show that the positive family environments offer opportunities for personal autonomy and encourage nurturance of thinking skills, which are associated with the positive outcomes such as self-esteem, satisfaction with school and student teacher relations, self-reliance, positive school adjustment and advanced moral reasoning [6]. Parental styles also affect self-esteem and overall personality of children [7]. However, in most of the third world / developing countries, the parenting style is coercive, authoritarian and not aligned to the children needs for autonomy and input. This kind of parental style is associated with self-consciousness and lowered self esteem [8]. Stakeholders of education are recognizing that developing life skills in children, from an early age, is now a needed invention - developing self-esteem and thinking skills should be an affirmed objective of education as it enables the students to think for themselves [9]. The natural next question, then, is when and how to work on shaping these life skills. This question has been answered by many social and natural scientists, where they suggested that early childhood (age 6-10) is the most crucial period of one's life. Early childhood period is most significant because it provides a strong foundation for rest of the life. Intervention during early childhood can change the life (quality) trajectory of an individual [10]. Through these years, children forge a personal identity, a self concept and an orientation toward achievement that will play a significant role in shaping their relative success in life [11]. Children, especially in their early childhood period, have an ability to readily acquire knowledge and skills. In this process, education (and by extension, educational institutions) play a key role [12].

In previous practices, life skills were amalgamated in some traditional curriculum subjects like Mathematics, History & Geography [3, 13, 14]. Lately, focused life skills programs have been implemented across many countries, with half of this implementation taking place in the United Kingdom and the United States. No

substantial work has been done in Pakistan to develop thinking skills and self-esteem of the children. Higgins et al., in 2005 [15], reported that only one such study has been conducted in Pakistan.

Our study is an attempt to investigate: (a) the impact of structured, taught and activity based curriculum for life skills with focus on self-esteem and thinking skills; (b) the differences in impact, if any, by gender. In order to draw relevant and actionable results, we have used T-Test and ANOVA to evaluate the mean differences between the pre-test and post-test scores to identify the significance of impact of intervention on thinking skills and self-esteem.

Materials And Methods

Experimental design

Quasi-experimental design was used to conduct the study with pre and post tests [16]. Before giving treatment (i.e. intervention through a structured life skills' taught program), a pre-test was conducted. After pre-test, all intact groups from Grade-1 were given treatment, so that some students should not feel themselves being deprived from the treatment. The treatment was in the form of structured, taught and activity based curriculum for life skills which, we called "Silver Oaks Model Curriculum (SOMC) for Life Skills". This model curriculum was designed by combining various models and techniques i.e. Philosophy for Children (P4C) [17, 18, 19]; Cognitive Acceleration [20]; Cooperative Learning [21]; and Murk's Self Esteem Enhancement Techniques [22]. This treatment was given for thirty weeks and then post test was conducted to analyze the impact of treatment. The design of study is represented in Figure 1

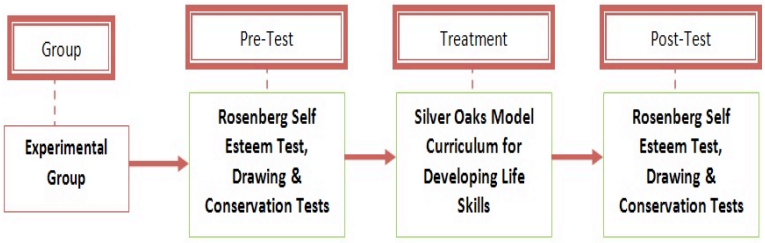

Figure 1 Experimental Design of Study

Sampling

Five sample sets were taken from five different schools in various areas of Rawalpindi, Pakistan. Each sample set included 44 children (ages 6-7). A total of 220 children participated in the study - 116 boys and 104 girls. Data of only 28 children per sample set, with identical numbers for both genders, who were present at the time of both pre and post tests, was analyzed.

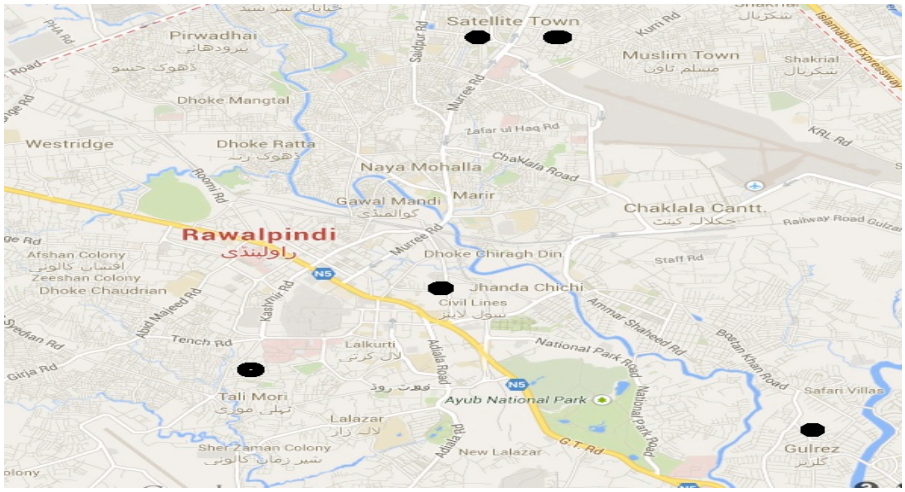

Figure 2 Map indicating sampling points at different sampling sites

Instruments of study

Three instruments were used in this study to conduct pre and post tests in order to measure the changes in the self-esteem and thinking skills of early school children. The instruments were: (1) Rosenberg Self-Esteem Test [23]; (2) Drawing Test [24, 25, 26]; (3) Conservation Test [26] for the assessment of thinking skills. Self-esteem test included a standard questionnaire to assess the self esteem of the children. Drawing test included water level and plumb line tasks. For the task, pre-printed sheets were provided. The sheets had pictures of bottles and jars and children were required to show water level and plumb line respectively. Conservation test included the Piagetian conservation of number, liquid amount, solid and weight. These tests measure the cognitive development from late pre-operational to mid concrete level. There were five tasks in the conservation test: one related to conservation of numbers; one related to conservation of liquid amount; two related to conservation of solid amount and one related to conservation of weight. Considering thinking skills of early school children, most of them, perhaps, are either at preoperational or concrete operational level. Concrete operational level is identified by the schema of operational thinking leading to conservation, classification and reversibility. Hence, our use of Conservation Test, in conjunction with the Drawing Test that is developed for children ranging from pre-conceptual to late concrete level, for result verification.

Table 1 Interpretation of Drawing Test Scores

Raw Scores	Piagetian Level	Description
0-3	Preconceptual	0
4-9	Early Preoperational	1A
10-13	Late Preoperational	1B
14-18	Early Concrete	2A
19-21	Mid Concrete	2A/B
22	Late Concrete	2B

RESULTS

We carried out this research to study the impact of "Silver Oaks Model Curriculum (SOMC) for Life Skills" (the only available structured program being implemented at an educational institution) on thinking skills and self esteem of early school children.

Impact of SOMC for Life Skills on Self-Esteem
Results depict that self-esteem has improved in all sample sets across all five schools (see Figure 3), irrespective of gender. The range of improvement is from 11.1% to 61.5% and average / mean improvement is 31.6%. Overall improvement in boys is 34.7%, higher than girls at 28.8%.

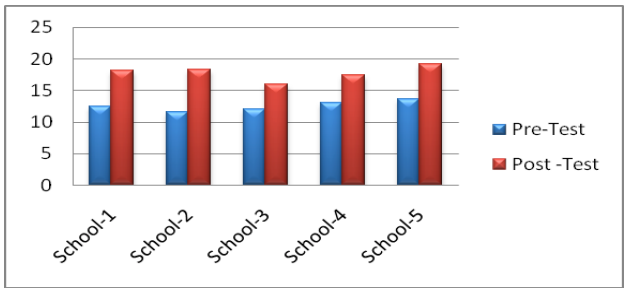

Figure 3 Pre-test and post-test scores for self-esteem assessment

Pre-test base level self-esteem in girls was higher by 6.7% than boys, although improvement in boys is more. Post-test self-esteem development of girls is still marginally higher i.e. by 1.98%.

In school-4, where pre-test level of girls and boys was identical, improvement in boys is higher i.e. 61.5% versus 46.2% in girls (see Figure 4).

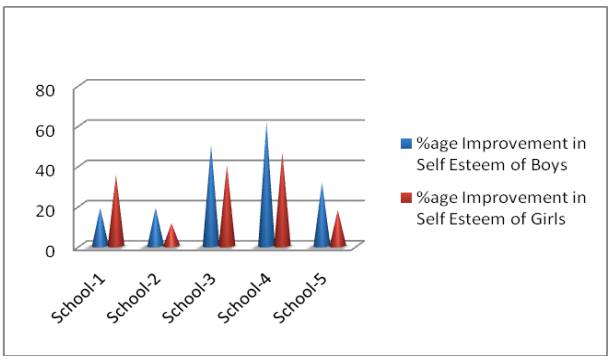

Figure 4 Percentage improvement in self-esteem

Except one set, where it was equal, in all other four data pairs, girls had a higher pre-test score. Post-test results indicated that intervention is more effective on boys in four schools. However, in one school, intervention is more effective on girls.

Impact of SOMC for Life Skills on Thinking Skills
The results of drawing test revealed that thinking skills in all sample sets across five schools (see Figure 5), irrespective of gender, have increased.

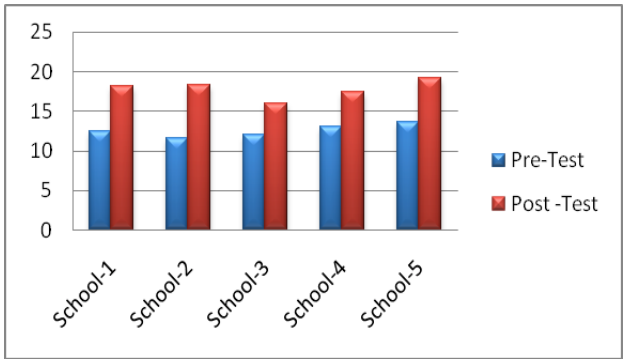

Figure 5 Pre-test & post-test scores for thinking skills assessment

Range of improvement, irrespective of gender, is from 13% to 72.7%. Overall improvement in boys is 55.9%, higher than girls at 26.5%.

Pre-test base level thinking skills in girls, compared to boys, are higher by 15%. However, post intervention, thinking skills of boys have exceeded those of girls by 7%. In school-4, while pre-test result of girls and boys was identical, improvement in boys was slightly higher i.e. 38.4% versus 30.8% (see Figure 6).

Except one school, where pre-test score is equal, in other four data pairs, thinking skills of girls were higher. Post-test indicates that intervention has enhanced the scores of boys in four schools, completely reversing the pre-test trend. In the fifth data pair (School-3), the improvement in boys is higher than girls, although the absolute scores of girls are still higher.

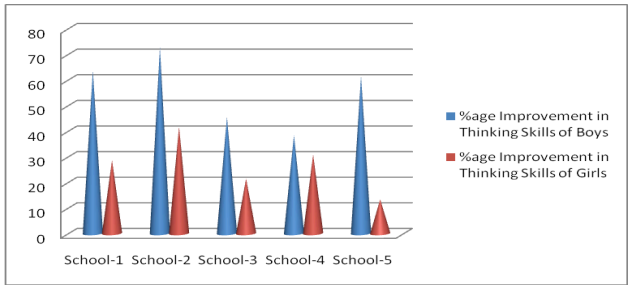

Figure 6 Percentage improvement in thinking skills

The conservation test conducted in mixed gender groups reconfirmed the findings of drawing test for thinking skills. The level of improvement is varying across schools within the range of 0.3 times – 1.2 times (see Figure 7).

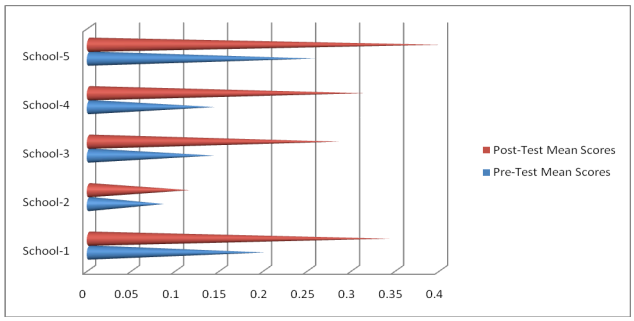

Figure 7 Pre-test & post-test scores for thinking skills assessment (Conservation Test)

T-Statistics & ANOVA

T-Statistics and ANOVA were applied to the data of all three tests to find the mean difference between the results of pre-test and post-test. The results of T-statistics and ANOVA for all three tests revealed that the maximum level of significance i.e. p-value = 0.00, 0.00,& 0.13 for self esteem test, drawing test and conservation test respectively, which is < 0.05. This indicates that there is a significant difference between the mean scores of pre-tests and post-tests. The confidence interval of the difference for all three tests was found to be 95% (see Table 2).

Table 2 Paired Sample Test for Self-Esteem

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	Pre-Test 1 - Post-Test 1	-5.000	2.219	.593	-6.281	-3.719	-8.432	13	.000
Pair 2	Pre-Test 2 - Post-Test 2	-2.429	1.555	.416	-3.326	-1.531	-5.844	13	.000
Pair 3	Pre-Test 3 - Post-Test 3	-6.357	1.946	.520	-7.481	-5.234	-12.225	13	.000
Pair 4	Pre-Test 4 - Post-Test 4	-6.500	1.506	.403	-7.370	-5.630	-16.145	13	.000
Pair 5	Pre-Test 5 - Post-Test 5	-3.357	1.499	.401	-4.223	-2.492	-8.379	13	.000

Result & Interpretation

After intervention, the impact was significantly high amongst both genders. This result is supported by another study conducted by Shyer & Adey in 2002 [27], where these life skills were developed in the children of age 5 through interventions provided over a period of one year. Many other studies have revealed that the improvements in self-esteem and thinking skills are directly linked to the intervention, not to non specific factors [28, 29].

Improvement in boys is found to be more, as compared to girls. This is also consistent with the study [30, 31, 32], which indicated that brain growth patterns of girls and boys are different. The decrease in the growth of boys' brain does exist, beginning at about 4.5, 7.5, 9.5, 12 and 15 years of age. These decreases are followed by rapid increases called "spurts". Another study [33] reported that brain spurts in boys occur at 6-7 years and 11-14 years, which supports the results of our study, as children between age 6-7 were taken as an experimental group.

On average, the control experimental data indicated that the base level of girls was higher than boys. This is due to the fact that the brain spurt in girls occurs in ages: 1.5, 2.5, 7.5, 10.5, 14.5 & 16.5 years [34]. By the time they had reached age 6, they had already gone through two brain spurts versus boys, who had only one brain spurt after 4.5 years of age [30].

Irrespective of gender, the impact of intervention on thinking skills, at 40.2%, is higher than that on self esteem at 31.6%.

After intervention, while girls have more improvement in self-esteem than thinking skills (a result also supported by another study done by Puala et al., in 1999 [35]), both skills have improved. Boys, on the other hand, have equally significantly high impact on both thinking skills and self esteem.

Based on this research: (a) it is conclusively clear that structured intervention enhances thinking skills and self-esteem; (b) it can be reasonably deduced that improvement level is not directly correlated with the base level skill; (c) it can be intuitively determined that while prolonged intervention (5 years) is expected to lead to a continuous improvement, the process of enhancement of skill development is not likely to be linear.

Conclusion and Recommendations

Before drawing our conclusions, two references need attention: a) Ability of school children, to detect mental disorders after being given health education, improves [36]; b) A coherent mental health policy with a strategic implementation plan is essential for enhancing economic and social capital [37].

Based on previous research and our study, our conclusions and recommendations are as follows:

1. Introducing a structured and well-researched program in the early school years, to develop self-esteem and thinking skills, will play a significant role in preparing children for inclusive, reflective and productive citizenship;
2. 5 years intervention of SOMC for Life Skills is projected to lead to a 55% to 65% enhancement (based on linear progression assumption) in self-esteem and thinking skills respectively. However, there is no way to determine the actual or maximum impact on improving of these skills, as progression in not likely to be linear but compounded;
3. In light of the 34% presence of anxiety and depressive disorders in Pakistan, and based on our findings, it is deemed necessary that: (a) more targeted research be conducted to determine the level of intervention, on self-esteem and thinking skills, at which a significant correlation exists to treat this intervention as a prevention tool against developing mental disorders; (b) on concluding such research, it may be used to form the basis of prescriptive policy and law making for changing the early education curriculum to include mandatory life skills' education as one preventive intervention against avoidable mental disorders caused by inability to manage stress and frustration.

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