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The Effectiveness of Enrichment Training on Self-Esteem and Self-Efficacy of Gifted High School Students in Shiraz

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ABSTRACT

Objective: The present study aimed to investigate the effectiveness of enrichment training on self-esteem and self-efficacy among gifted high school students in Shiraz.

Methods: This study was applied in purpose and employed a quantitative, quasi-experimental design using a pretest–posttest format with a control group. The statistical population included all gifted lower secondary school students in the educational districts of Shiraz during the 2022 academic year. Participants were selected and assigned to experimental and control groups. Data were collected using the Self-Esteem Questionnaire (1976), the Self-Efficacy Questionnaire (2000), and the enrichment training protocol developed by Kaufman et al. (1995). The experimental group received enrichment training, while the control group did not receive any intervention. Data were analyzed using multivariate analysis of covariance (MANCOVA).

Results: The findings indicated that enrichment training had a significant effect on overall self-esteem, its dimensions, and self-efficacy among gifted lower secondary school students. The results of covariance analysis were significant for all dimensions of self-esteem except academic self-esteem. Specifically, significant differences were observed between the experimental and control groups in general, social, and family self-esteem, demonstrating the effectiveness of the enrichment training. However, the effect of enrichment training on academic self-esteem was not statistically significant.

Conclusions: Enrichment training can be considered an effective educational intervention for enhancing self-esteem and self-efficacy in gifted lower secondary school students, particularly in non-academic dimensions of self-esteem. Incorporating such programs into gifted education curricula may promote students' psychological well-being and personal development.

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Introduction

Intelligence is generally defined as a broad mental capacity that enables reasoning, problem solving, and learning, and it is closely related to developmental processes across the lifespan (Sadiku, Alexandru, & Musi, 2020). As a multidimensional construct, intelligence plays a fundamental role in shaping individuals' cognitive, emotional, and social functioning. However, high intelligence does not automatically guarantee optimal development or successful outcomes. Rather, the full expression of intellectual potential depends on the dynamic and reciprocal interaction between individual and social factors. In this regard, giftedness can be understood as the result of the interaction between personal characteristics—such as advanced cognitive abilities, creativity, perseverance, and motivation—and contextual influences, including family environment, school climate, and peer relationships (Goldmund et al., 2017).

Despite their high cognitive potential, gifted students—particularly those enrolled in schools for the talented—often face a range of psychological, emotional, and social challenges. Research has shown that these students may experience difficulties related to heightened expectations, rigid or insufficiently differentiated educational environments, maladaptive perfectionism, distinctive personality traits, and complex social interactions (Nasiran & Irawani, 2016). Such challenges can place gifted students at risk for emotional distress, reduced academic engagement, and difficulties in self-regulation. Consequently, giftedness should not be viewed solely through an academic lens, but rather as a multidimensional phenomenon that requires comprehensive psychological and educational support.

In recent years, educators, researchers, and policymakers have increasingly recognized the importance of attending to non-cognitive factors—particularly self-esteem and self-efficacy—in gifted populations. This growing awareness has led to a surge of empirical investigations aimed at understanding and enhancing the psychological well-being of gifted individuals (Martin, Burns, & Schonlau, 2020). Among the psychological variables associated with healthy development and academic success, self-esteem occupies a central position.

Self-esteem has been defined as an individual's evaluation of the self or personal judgments regarding one's own worth and value (Wagner, 2014). From this perspective, self-esteem reflects how individuals perceive themselves in relation to their abilities, relationships, and social roles. Importantly, self-esteem influences the way individuals interpret experiences, regulate emotional

responses, and cope with stressors. It has also been identified as a key determinant in various life domains, including interpersonal relationships, mental health, and overall psychological resilience (Malekian, Mohseni, & Keshavarz, 2019). For gifted students, self-esteem plays a particularly critical role, as discrepancies between high intellectual ability and emotional development may create vulnerability to self-doubt, anxiety, or fear of failure.

Another crucial variable examined in the present study is self-efficacy. Self-efficacy refers to individuals' beliefs in their capacity to organize and execute the actions required to manage prospective situations. Numerous studies have demonstrated that performance and achievement are strongly influenced by self-efficacy beliefs. Individuals with high self-efficacy tend to exhibit greater effort, persistence, adaptability, and resilience in the face of challenges, whereas those with low self-efficacy are more likely to withdraw or avoid demanding tasks (Terman & Oden, 2020).

There are multiple reasons why some gifted students demonstrate lower-than-expected academic or personal performance. One significant factor is the bias inherent in identification and selection procedures, which may result in delayed or missed identification of giftedness. As a consequence, many gifted students are deprived of appropriate educational opportunities and supportive interventions. This lack of recognition can undermine their sense of competence and agency, leading to diminished self-efficacy and reduced motivation for achievement (Montgomery, 2020). Over time, such experiences may negatively affect both academic outcomes and psychological well-being.

Given these concerns, a variety of educational and psychological interventions have been proposed to address academic, motivational, and emotional difficulties among students. One approach that has gained attention for its effectiveness in reducing interpersonal conflict and relational distress is relationship enrichment training (Babayi Garmkhani, Rasouli, & Davarnia, 2017). Relationship enrichment programs are grounded in a psychoeducational and skills-based framework, emphasizing the development and strengthening of interpersonal competencies rather than merely focusing on symptom reduction (Accordino & Guerney, 2013, as cited in Chang, 2017).

Relationship enrichment training aims to help individuals enhance the quality of their close relationships while maintaining these improvements over time (Chang, 2017). This approach integrates psychoeducational principles with structured skill-building activities designed to foster effective communication, emotional awareness, and constructive problem solving. By

emphasizing skill acquisition and behavioral change, relationship enrichment programs seek to reduce interpersonal difficulties and promote psychological adjustment (Accordino & Guerney, 2013).

One of the distinctive strengths of relationship enrichment programs lies in their flexibility and broad applicability. These programs can be implemented with both distressed and non-distressed individuals or families (Chang, 2007), and they can be adapted to various formats, such as intensive short-term interventions or extended multi-week programs (Silliman & Schumm, 2020). Relationship enrichment initiatives are typically delivered as educational services intended to enhance and enrich interactions among close and intimate partners, particularly within family systems (Eisanejad, Ahmadi, & Etemadi, 2019). Moreover, such programs can be implemented at the individual, couple, or group level.

The primary objective of relationship enrichment programs is to increase psychological and emotional satisfaction within close relationships (Suka, 2005, as cited in Eisanejad, 2010). Empirical evidence suggests that these programs contribute to improved emotional well-being, enhanced interpersonal functioning, and increased life satisfaction among participants. Consequently, relationship enrichment training is widely regarded as a powerful intervention with the potential to produce meaningful and lasting effects (Nazari, 2019).

Within the relationship enrichment framework, individuals are trained in a set of core interpersonal skills that facilitate healthy and adaptive communication. These nine skills include expressive skills, empathic skills, dialogue and discussion, facilitative skills, conflict and problem resolution, self-change, helping others change, transfer and generalization, and maintenance of learned behaviors (Chang, 2017). Mastery of these skills is expected not only to improve interpersonal relationships but also to strengthen psychological constructs such as self-esteem and self-efficacy. As discussed above, deficiencies or weaknesses in self-esteem and self-efficacy are among the most prevalent psychological challenges observed in gifted students. Low levels of self-confidence, reduced resilience, emotional dysregulation, and inadequate self-management skills may contribute to maladaptive emotional responses, which in turn can result in academic decline and disengagement. Despite the significance of these issues, previous research has often focused predominantly on academic achievement, with limited attention to self-esteem and self-efficacy as core psychological outcomes.

Therefore, given the existing research gaps and the growing need for holistic interventions targeting the psychological well-being of gifted students, the present study seeks to examine the effectiveness of enrichment training on self-esteem and self-efficacy among gifted lower secondary school students in Shiraz. Specifically, this research aims to answer the following question: To what extent is enrichment training effective in enhancing self-esteem and self-efficacy among gifted lower secondary school students in the city of Shiraz?

Material and Methods

Research Design

The present study was applied in terms of purpose, quantitative in terms of methodology, and quasi-experimental in terms of data collection. A pretest–posttest design with a control group was employed to examine the effectiveness of enrichment training on self-esteem and self-efficacy among gifted students.

Population and Sample

The statistical population consisted of all gifted high school students in the educational districts of Shiraz during the 2022 academic year, totaling approximately 1,500 students. The study sample was selected using convenience sampling, while considering predefined inclusion and exclusion criteria. Participants were then randomly assigned to either the experimental group or the control group.

Given the potential for participant attrition and in line with recommendations from similar studies suggesting a minimum of 15 participants per group (Delavar, 2005), a total of 40 students were initially recruited to allow for overestimation and dropout compensation. The final sample comprised 40 students, who were equally allocated into two groups: 20 students in the experimental group and 20 students in the control group.

Instruments

1. Self-Esteem Questionnaire (Coopersmith, 1976): The Coopersmith Self-Esteem Inventory (CSEI) was developed based on a theoretical revision of the Rogers–Diamond Scale (1954). This instrument consists of 58 items, of which 8 items (Items 6, 13, 20, 27, 34, 41, 48, and 55) function as lie-detection items, and 50 items assess self-esteem across four subscales:

General self-esteem

Social self-esteem

Family self-esteem

Academic self-esteem

Responses are provided in a dichotomous format (Yes/No) and scored using a 0–1 system, yielding a total score ranging from 0 to 50. Higher scores indicate higher levels of self-esteem. Individuals scoring above the mean are considered to have high self-esteem.

The validity of the instrument has been examined and confirmed in multiple studies. Coopersmith and colleagues (as cited in Nisi & Shahni-Yailagh, 2002) reported a test–retest reliability coefficient of 0.88. In a study by Shahni-Yailagh et al. (2007), reliability estimates using split-half and Cronbach's alpha methods ranged from 0.73 to acceptable levels. Furthermore, several studies have demonstrated strong psychometric properties for this scale, reporting split-half reliability coefficients of approximately 0.90 (Johnson, Redfield, Miller, Simpson, Sears, Taylor, & Ritz), and test–retest reliability coefficients of 0.88 after five weeks and 0.70 after three years (Sajadi, 2006).

2. General Self-Efficacy Questionnaire (Sherer et al., 2000): The General Self-Efficacy Scale, developed by Sherer and colleagues (2000), assesses individuals' beliefs in their ability to successfully perform tasks and cope with challenging situations. This questionnaire consists of 17 items, rated on a 5-point Likert scale. Item scores are summed to obtain a total score, with higher scores indicating greater perceived self-efficacy. The minimum and maximum possible scores on this scale are 10 and 40, respectively (Moradi, 2010).

Previous studies have reported high internal consistency for this instrument, with coefficients ranging from 0.82 to 0.93, as well as satisfactory test–retest reliability. Test–retest reliability coefficients obtained from five different samples over a six-month interval was reported as 0.67, while coefficients over one-year intervals ranged from 0.55 to 0.70, and over two-year intervals ranged from 0.47 to 0.63 (Moradi, 2010). In an Iranian sample of 30 father-deprived adolescent girls, a Cronbach's alpha coefficient of 0.85 was reported, indicating acceptable internal consistency.

3. Enrichment Training Protocol: The enrichment training protocol was developed by Kaufman et al. (1995) and implemented in the present study across eight training sessions focused on

relationship enrichment skills. At the conclusion of the final session, participants in the experimental group completed the posttest questionnaires.

The content of the enrichment training sessions was structured as follows:

Session 1: Introduction, establishment of initial rapport, overview of training objectives, and instruction in communication and negotiation skills.
Session 2: Review of previous session content and training in self-expression skills.
Session 3: Review of prior content and instruction in empathy skills.
Session 4: Review of prior content and training in problem-solving and conflict-resolution skills.
Session 5: Review of prior content and instruction in facilitation skills.
Session 6: Review of prior content and training in self-change and assisting others' effectiveness.
Session 7: Review of prior content and instruction in transfer and generalization skills.
Session 8: Review of prior content and training focused on self-esteem and self-efficacy skills.
The control group did not receive any intervention during the study period.

Ethical Considerations

This study was conducted in accordance with ethical principles governing research involving human participants. Prior to data collection, informed consent was obtained from all participants and their parents or legal guardians. Participants were assured of the confidentiality and anonymity of their responses and informed that participation was voluntary, with the right to withdraw from the study at any stage without any negative consequences. The research procedures were designed to minimize potential psychological harm, and the intervention content was appropriate for the participants' age and educational level. All collected data were used solely for research purposes and stored securely.

Results

The results presented in Table 1 correspond to the multivariate test of significance (MANOVA).

Table 1. Multivariate Test Results

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta²	Statistical Power
Intercept	Pillai's Trace	0.57	24.12	2	37	0.0001	0.57
	Wilks' Lambda	0.43	24.12	2	37	0.0001	0.57
	Hotelling's Trace	1.30	24.12	2	37	0.0001	0.57
	Roy's Largest Root	1.30	24.12	2	37	0.001	0.57
Group	Pillai's Trace	0.69	41.23	2	37	0.001	0.69
	Wilks' Lambda	0.31	41.23	2	37	0.001	0.69
	Hotelling's Trace	2.23	41.23	2	37	0.001	0.69
	Roy's Largest Root	2.23	41.23	2	37	0.001	0.69

As shown, the F-value obtained for the group effect was 41.23, with a significance level less than 0.05 ($p = 0.001$), which indicates that the differences between groups were statistically significant

across the combined dependent variables. This outcome suggests that the enrichment training intervention produced measurable changes in posttest scores compared with pretest scores. In other words, the combination of self-efficacy and self-esteem demonstrated meaningful improvements as a result of the applied training program. Subsequent analyses examined which specific dependent variables were most affected by the intervention.

Table 2. Between-Subjects Effects Test

Source	Sum of Squares	df	Mean Square	F	Sig.	Effect Size (η^2)
Model (posttest self-efficacy)	4315.60	3	1438.53	33.34	0.001	0.72
Model (posttest self-esteem)	330.41	3	110.14	9.06	0.001	0.42
Intercept (self-efficacy)	1882.47	1	1882.47	43.63	0.001	0.53
Intercept (self-esteem)	298.22	1	298.22	24.52	0.001	0.39
Group (self-efficacy)	3565.87	1	3565.87	82.65	0.001	0.68
Group (self-esteem)	313.02	1	313.02	25.74	0.001	0.40
Error (self-efficacy)	1639.38	38	43.14	–	–	–
Error (self-esteem)	462.07	38	12.16	–	–	–

As summarized in Table 2, the results of the Analysis of Covariance (ANCOVA) for the two dependent variables—self-efficacy and self-esteem—were both statistically significant at the 0.001 level.

This finding indicates that participants in the experimental group obtained significantly higher posttest scores than those in the control group, after controlling for pretest scores. These differences confirm the effectiveness of the enrichment training on enhancing both self-efficacy and self-esteem among gifted students.

The effect sizes were large, particularly for self-efficacy ($\eta^2 = 0.68$) and self-esteem ($\eta^2 = 0.40$), suggesting that the training accounted for a substantial proportion of variance in the posttest outcomes. The high statistical power (≈1.00) across analyses further supports the robustness and credibility of these results.

Taken together, the MANOVA and ANCOVA results show that relationship enrichment training significantly improved the psychological outcomes of gifted lower secondary students. Improvements were observed in both general self-esteem and perceived self-efficacy, indicating that structured psychoeducational interventions targeting interpersonal and self-development skills can foster stronger self-confidence and a greater sense of competence among gifted youth.

These findings align with previous international studies reporting that psychoeducational enrichment programs effectively strengthen adolescents' self-perceptions, adaptive coping mechanisms, and motivation for personal growth.

Discussion

The results of the statistical analyses indicated that the F value associated with the independent variable (group) was 41.23, which was statistically significant at a level below 0.05 ($p < 0.001$). This finding demonstrates that the enrichment training intervention led to significant changes in posttest scores compared with pretest scores. To further examine the nature of these changes, a between-subjects effects test (ANCOVA) was conducted. The results revealed that the covariance analyses for both self-efficacy and self-esteem were statistically significant, indicating that the intervention produced meaningful differences between the experimental and control groups. These findings confirm the effectiveness of enrichment training in improving the psychological outcomes of gifted students.

The present findings are largely consistent with previous research, including studies by Dowlati et al. (2019), Aliamian-Rad and Shafiepour Motlagh (2015), and Khatoon Rahimi et al. (2014). These studies similarly reported positive effects of enrichment-based educational programs on students' self-esteem, emotional adjustment, and overall psychological functioning. The alignment of the current results with prior evidence strengthens the validity of enrichment training as an effective psychoeducational approach for gifted students.

From a theoretical perspective, the observed improvements can be explained by the personal intelligence and success-oriented components embedded in the enrichment program. Such programs emphasize self-awareness, interpersonal skills, communication, problem-solving, and emotional regulation, which are closely associated with the development of self-confidence and perceived competence. As gifted students often face heightened academic pressure, social sensitivity, and perfectionism, structured enrichment interventions can provide a supportive framework for strengthening adaptive self-beliefs and coping strategies.

Importantly, the findings have significant implications for the prevention of social harm and the promotion of students' physical, psychological, and academic well-being, as noted by Dowlati et al. (2019). In line with this, Aliamian-Rad and Shafiepour Motlagh (2015) emphasized that

enrichment-oriented educational environments are significantly associated with improvements in learning participation, decision-making abilities, attention regulation, and multidimensional development across cognitive, social, emotional, moral, and physical domains. Elements such as learning environment enrichment, educational equipment arrangement, instructional material design, and individual and group activities were found to play a meaningful role in students' developmental outcomes.

Furthermore, Khatoon Rahimi et al. (2014) reported that the mean self-esteem scores of students increased significantly after enrichment interventions, and that relationship-based enrichment training was effective in reducing stress, anxiety, and depression while enhancing self-esteem. The present study corroborates these findings by demonstrating that enrichment training not only improves self-esteem but also significantly enhances self-efficacy, a key predictor of motivation, persistence, and academic resilience.

Overall, the results suggest that enrichment training constitutes a valuable and effective intervention for supporting the psychological health and developmental needs of gifted students. By fostering positive self-perceptions and adaptive beliefs, such programs can contribute to healthier individual functioning and more balanced educational experiences.

Based on the findings of the present study, the following recommendations are proposed:

School counselors, psychologists, and educators are encouraged to incorporate enrichment training programs into regular support services for gifted students, with particular emphasis on self-esteem and self-efficacy development.

Educational policymakers should consider systematic implementation of enrichment-based psychoeducational programs within gifted education curricula to promote students' psychological well-being alongside academic achievement.

Future intervention programs should integrate individual and group-based activities, focusing on communication skills, emotional regulation, problem-solving, and self-reflection to maximize developmental outcomes.

Training workshops should be provided for teachers and school counselors to enhance their competence in delivering enrichment-oriented interventions effectively.

Longitudinal enrichment programs are recommended to ensure the sustainability of psychological gains and to monitor changes in students' self-beliefs over time.

Limitations

Despite its contributions, the present study has several limitations that should be acknowledged:

The study employed a quasi-experimental design with convenience sampling, which may limit the generalizability of the findings to broader populations of gifted students.

The sample size was relatively small, and participants were drawn from a single city, which may restrict external validity.

The use of self-report questionnaires may have introduced response bias, as participants' answers could be influenced by social desirability or subjective interpretation.

The study did not include a long-term follow-up assessment, making it difficult to determine the durability of the intervention effects over time.

Potential moderating variables such as gender, socioeconomic status, parental support, or academic track were not examined and may have influenced the outcomes.

Future research is encouraged to address these limitations by employing larger, more diverse samples, randomized controlled designs, and follow-up measurements to further validate and extend the present findings.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Farhangian University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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