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The effectiveness of problem-solving training on EFL learners' positive orientation and language teacher immunity

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Abstract

Introduction: The aim of this study was to investigate the effectiveness of problem-solving training on the positive orientation of EFL learners and the immunity of language teachers.

Methodology: The study was a quasi-experimental research with a pre-test and post-test design, conducted on ۲۰ EFL learners and ۲ English language teachers at Shahid Motahari High School in Farrashband. The participants were randomly divided into two groups, with ۱۱ in the control group and ۱۱ in the experimental group. The study employed three instruments: a problem-solving training protocol (D'Zurilla & Coldfried, ۱۹۷۱), positive orientation (Caprara et al., ۲۰۱۲), and a questionnaire and language teacher immunity questionnaire (Hiver, ۲۰۱۷). The experimental group received eight sessions of problem-solving training twice a week for ۱۲۰ minutes, while the control group did not receive any training.

Findings: The results of multivariate analysis of covariance showed that problem-solving training significantly increased the scores of EFL learners' positive orientation and language teachers' immunity (P<۰/۰۰۱). Therefore, problem solving training affects EFL learners' positive orientation and language teacher immunity.

Conclusion: In conclusion, the problem-solving training method can help EFL learners develop their skills and maintain a positive orientation. It can also improve language teachers' immunity to reach their goals, leading to increased motivation, passion, and patience.

Key Words: EFL learners, Language teacher immunity, Positive orientation, Problem-solving training

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Introduction

Problem-solving is a fundamental skill for navigating the complexities of the modern world. In real-world settings, it is also recognized as social problem-solving, which encompasses the self-directed process through which individuals strive to identify adaptive coping solutions to the challenges they encounter in their daily lives, both immediate and persistent. (Nezu et al., ٢٠١٣, p. ٨). D'Zurilla and Nezu's (٢٠١٠) conceptual model suggests that successful problem-solving (PS) necessitates a positive mindset towards challenges, a constructive and confident approach, and the ability to tackle problems rationally and systematically, known as the rational PS style. Maladaptive behaviors, as outlined by Ugueto et al (٢٠١٤), include pessimistic or catastrophizing attitudes (a negative problem orientation), passively waiting for problems to resolve (avoidant style), or acting impulsively without considering possible consequences and alternative solutions (i.e., impulsive/careless style). Problem-solving skills involve cognitive-behavioral processes that can help individuals identify and develop effective strategies for managing challenging situations in daily life. Specific and purposeful strategies are required to define problems, determine solutions, implement, and apply problem-solving methods (Behzadpour et al., ٢٠١٣). In this context, finding a specific solution for a particular problem is not the sole focus. Instead, the emphasis lies on deriving an abstract principle or law that can be applied to other situations after solving the problem. Problem-solving training serves as a method through which students can learn to practice and enhance their effective cognitive skills for addressing problematic situations (Perla & Donnell, ٢٠٠٤).

Positive orientation is a critical concept that must be considered when discussing learning and learners. It is a fundamental predisposition that inclines people to perceive life and experiences with a positive outlook. (Caprara et al., ٢٠١٢, p. ٧٠٢). Moreover, positive orientation is an integral part of life balance as it reflects individuals' perceptions about life and themselves. In the same vein, positivity is an optimistic personal perspective that discloses how people perceive themselves, the future, their present circumstances, and their level of satisfaction with their current situation. Their positive attitude serves as an indicator of successful adjustment and achievement, leading to a positive impact on mental health and enabling individuals to see the bright side of life (Karaman & Sarı, ٢٠٢٠). Positivity predicts measures of positive and negative emotions and depression. In addition, variations in positive orientation among individuals are indicative of significant social and biological factors that contribute to the balance of approach and prevention tendencies, predisposition to innovation and risk-taking, and cross-cultural differences. Several longitudinal studies have demonstrated the strength of positivity across different countries, such as Italy, Canada, Japan, and Germany. These differences are attributed to varying lifestyles and cultural factors (Caprara et al., ٢٠٠٩). Furthermore, when students exhibit high levels of positive orientation, they tend to demonstrate more positive evaluations of their teachers, peers, and events occurring in the classroom (Alessandri et al., ٢٠٢٠).

All people throughout their lives experience difficulties, challenges, threats, changes, limitations, and differences. Despite these challenges, individuals strive to adapt to these conditions, improve them, demonstrate flexibility, and find solutions to problems (Araghian & Ghanizadeh, ٢٠٢١). The concept of "immunity" can be analogized to the body's defense system, protecting it from harmful external factors. Educational experts and practitioners have identified a significant problem in educational systems worldwide – teacher attrition. As reported by Morrison (٢٠١٣), around ٢٥-٤٥ percent of teachers leave the profession within their first three years of teaching. EFL (English as a Foreign/Second Language) teachers are no exception to this trend, and

they should be equipped with the same resilience as other professionals, particularly athletes, to handle the physical and emotional strains of the profession (Farrell, ٢٠١٦). Language teacher immunity is a novel concept borrowed from the field of medicine. It functions as a protective shield for language teachers from the negative effects of contextual constraints and professional tensions. Similarly, the human body's biological immunity safeguards it against the debilitating effects of germs and pathogens in the external environment. In a similar way, language teacher immunity acts as a defense mechanism against professional stressors, supporting teachers in their profession while maintaining their "professional equilibrium and instructional effectiveness" (Hiver, ٢٠١٧, pp. ٦٦٩-٦٧٠).

Teacher immunity can be a source of strength, enabling innovation and risk-taking. The development of this immunity is linked to the psychological, emotional, and cognitive functioning factors of teachers in instructional settings (Hiver, ٢٠١٧). Therefore, assessing EFL teacher immunity development is crucial, particularly in times of crisis in the teaching profession, where teacher attrition threatens the educational structure (Rahimpour et al., ٢٠٢٠). To measure immunity, commitment to the profession, and attending to the quality of students' learning and their own psychological well-being are essential sub-dimensions. There is a metaphor that teachers are the architects of human hearts and students are the constructors of society, emphasizing the profound impact teachers have on shaping students' futures. However, teacher training has unfortunately been neglected over the past decades, focusing primarily on students' behavior (Skinner & Beers, ٢٠١٦).

Literature review

Beyranvand and Mohamadi Zenouzagh (٢٠٢١) investigated teacher immunity, technological pedagogical content knowledge (TPACK), and teacher engagement: contributing factors and relations. The results of the research showed that teacher immunity is more strongly associated with affective factors, such as teachers' engagement, teachers' autonomy, and teachers' experiences, rather than teachers' theoretical pedagogical content knowledge. Accordingly, Rahmati et al. (٢٠١٩) investigated the development of Iranian in-service English teacher immunity. They revealed that low self-confidence, low salary, insufficient time to teach English, inadequate equipment, students' demotivation, expectations of parents, and negative perception of English were among the main "triggers" of language teacher immunity among EFL/ESL Iranian in-service teachers. Additionally, teachers practiced different strategies, such as being prepared in advance, building a positive "rapport" with learners, reinforcing agency, and negotiating with learners' parents, to cope with unpredictable conflicts in such situations. Language teachers are often under pressure from various perspectives due to the complexities and adversities inherent in L٢ education. This can place a strain on them, and their instruction may deteriorate in effectiveness (Benevene et al., ٢٠٢٠). Wang et al. (٢٠٢٢) investigated the interplay of EFL teachers' immunity, work engagement, and psychological well-being: Evidence from four Asian countries. Their research concluded that structural equation modeling (SEM) analysis supported the observation that Asian EFL teachers' psychological well-being and work engagement positively influenced their immunity. The findings indicated that psychological well-being was a better predictor of teacher immunity than work engagement in Asia. Based on these results, it is important for language teachers to operate in a healthy psychological environment in order to remain committed to their work and resilient in the face of its challenges.

Krause et al. (٢٠٢١) concluded that problem-solving training may be helpful for assisting youth in solving personal issues, but it cannot measurably reduce depressive symptoms. Youth

experiencing elevated depressive symptoms may require more comprehensive psychotherapeutic support through problem-solving training. Additionally, Navabi et al. (۲۰۲۰) investigated the relative effectiveness of happiness education and problem-solving skills training on social anxiety and self-compassion in adolescents. They concluded that there is a distinction between the effectiveness of happiness education and problem-solving skills training on social anxiety and self-compassion in adolescents. Problem-solving skills training has a greater impact on social anxiety and self-compassion in adolescents than happiness training. Jooyani et al. (۲۰۲۱) conducted a comparative study on the effectiveness of metacognitive and problem-solving training in enhancing the awareness of teaching-learning strategies among gifted male high school students in Ardabil. They found that metacognitive and problem-solving training both develop teaching and learning skills. Based on test strategies, attitudes, focus, and time management, metacognitive training is more effective. However, information processing, main idea selection, anxiety, motivation, self-examination, and study guide usage were found to have similar effects in both groups. In conclusion, metacognitive training is more effective than problem-solving training. Philipp et al. (۲۰۱۳) argued that the ability to solve complex problems has only a slight incremental validity beyond traditional knowledge scales. The findings were related to the value of assessing the ability to solve complex problems in an educational context, demonstrating that reasoning ability is significantly associated with various indicators of educational achievement.

Azizpour and Gholami (۲۰۲۲) investigated the relationships among foreign language classroom anxiety (FLCA), positive orientation, and perceived teacher and student emotional support among Iranian EFL learners. They found that there were significant correlations among all variables. The results indicated that positivity and perceived teacher and student emotional support significantly predicted FLCA levels among Iranian teenage and adult beginner EFL learners. It is noteworthy that EFL teachers require formal training to foster rapport and positive relationships with their students, minimize their FLCA, and create a welcoming, supportive, and non-threatening learning environment in their EFL classes in Iranian language schools. Moghadam et al. (۲۰۲۲) examined the effect of a mindfulness-cultivation intervention on EFL learners' positive orientation, reflective thinking, and language achievement. To evaluate the participants' proficiency levels before the treatment, a pre-test was administered. It is crucial to note that the mindfulness-cultivation techniques employed in the experimental group involved observing all experiences, while fantasizing, planning, reasoning, analyzing, and judging were excluded. Additionally, mindfulness, reflective thinking, and positivity scales were administered before and after the treatment to assess changes in these variables. Based on the findings, about ٥٠٪ of the variance in reflective thinking among participants in the experimental group was accounted for by mindfulness cultivation techniques, positive orientation, and language achievement. Therefore, their intervention supports the development of learners' positivity and language achievement.

Since no investigation has been conducted to examine the effectiveness of problem-solving training on EFL learners' positive orientation and language teacher immunity. Accordingly, the current study makes a unique contribution to this field. In this study, the researchers formulated two hypotheses that had received little or no attention in the earlier studies:

١) Problem-solving training has a significant effect on EFL learners' positive orientation.

٢) Problem-solving training has a significant effect on language teacher immunity.

Research hypothesis

١) Does the problem-solving training hae a significant effect on EFL learners' positive orientation?

٢) Does the problem-solving training has a significant effect on language teacher immunity?

Methodology

The present study employed a quasi-experimental design with pre-test and post-test measurements, encompassing two experimental groups and a control group. The statistical population for this study comprised all male students enrolled in the ٢٠٠١-٢٠٠٢ academic year at Shahid Motahari High School in Farashband, second secondary level (high school). Through convenience sampling, ٢٠ students were selected. The participants' ages ranged from ١٥ to ١٧ years old, and two English language teachers at this school were also selected. These participants were randomly divided into two groups: ١١ individuals in the control group and ١١ individuals in the experimental group. The experimental group underwent problem-solving training protocol, while the control group did not receive this intervention.

Instruments

To address the research questions of this study, the researchers utilized the Positive Orientation Scale and Language Teacher Immunity Questionnaires, along with a protocol.

Positive orientation scale: The Positive Orientation Scale (POS) was adapted from Caprara et al. (٢٠١٢). It involved eight multiple-choice items with five points labeled strongly disagree, disagree, neither agree nor disagree, agree, and strongly agree. An important aspect is that one of the items was worded negatively. This scale is linked to the learners' confidence in the future or others, their focus on themselves, and their satisfaction with their lives. Two sample items from the positivity scale are: "I have great faith in the future," and "On the whole, I am satisfied with myself." The researchers assigned ١-٥ for positively worded items and ٥-١ for the negatively worded item when scoring. The scores on this scale ranged from ٨ to ٤٠, and higher scores indicated a higher level of positivity. The reliability was .٧٦. The reliability calculated by Cronbach's alpha was found to be ٠,٧٢. Confirmatory factor analysis investigated the construct validity of the questionnaire and its factors accounted for ٦٥,٠٨٧٪ of the total variance of the test.

Language teacher immunity: The Language Teacher Immunity Questionnaire (TIS) was developed by Hiver (٢٠١٧) and includes ٣٩ items and seven subscales: teaching self-efficacy (e.g., "If I really try hard, I can reach even the most difficult or unmotivated students"), burnout (e.g., "At school, I feel worn out from my work"), resilience (e.g., "I can overcome difficult times because I have faced challenges before"), attitudes toward teaching (e.g., "I enjoy working as a teacher because it brings me satisfaction"), openness to change (e.g., "As a teacher, I prefer the familiar to the unknown"), classroom affectivity (e.g., "At school or in the classroom, I often feel stressed"), and coping (e.g., "When problems arise at work, I accept what has happened and learn to live with it"). Participants responded to the items on a ٦-point Likert scale ranging from ١ (strongly agree) to ٦ (strongly disagree). The subscales demonstrated acceptable levels of reliability estimates, namely, teaching self-efficacy (٠,٨٦٦), burnout (٠,٧٨), resilience (٠,٧٢٧), attitudes toward teaching (٠,٨٨٦), openness to change (٠,٨١٤), classroom affectivity (٠,٨٦٩), and coping (٠,٧٤٥), respectively. Previous studies have shown high levels of reliability for the TIS (Hiver ٢٠١٧; Noughabi et al. ٢٠٢٠). Additionally, the reliability index of the TIS was assessed using Cronbach's alpha and found to be ٠,٩١. Based on these previous studies, the researchers translated the questionnaire into Persian and then back-translated it into English to evaluate the

equivalence of the two versions. Subsequently, three experts in the field of English teaching examined the content validity of the final questionnaire version. After considering their feedback, the content validity of the questionnaire was confirmed.

Problem-solving training protocol: this protocol was based on the model of D'Zurilla and Coldfried (١٩٧١).

Table ١: problem-solving training protocol

	Problem-Solving Training
١	Definition, importance and general role of problem-solving skills....
٢	Understanding the problem and its correct representation, its relationship to behaviors and awareness of the fact that potential problems can be solved
٣	Accurate identification and description of the problem in the form of precise and explicit words
٤	Teaching brainstorming methods, providing possible and impossible solutions to important problems
٥	Discussion and practicality in using the two column fan or fan disadvantages and advantages
٦	Explaining the choice of solutions with the most advantages and the least disadvantages
٧	Explain the effectiveness of learners' executive solutions and return if the solution fails and try other solutions and finally find a suitable solution
٨	Review of previous sessions, review and summary

Data collection procedure

Prior to administering a problem-solving training protocol, two questionnaires- the Positive Orientation Questionnaire and the Language Teacher Immunity Questionnaire- were administered as pretests to both the experimental and control groups. This protocol was then trained for students and teachers in the experimental group. The training consisted of eight sessions of problem-solving training, held twice a week for ١٢٠ minutes each. The researchers clarified the purpose of the research and presentation of questionnaires and educational intervention to the students in class, and since the students were not at a high level of English, the researchers decided that they would answer the questionnaires in Persian, and even the training would be in Persian. and the researchers explain that their information and responses to the questionnaires would be secret. At the conclusion of the training, the two questionnaires were administered again to both the experimental and control groups to investigate the effectiveness of the problem-solving training on EFL learners' positive orientation and language teacher immunity. The questionnaires' data were subjected to descriptive and inferential analysis using SPSS software version ٢٢.

Findings

Given that the current research design was a pre-test-post-test design, multivariate analysis of covariance (MANCOVA) was employed to analyze the data and control for the effects of these two tests. Table ٢ presents the mean and standard deviation of the scale.

Table ٢: mean and standard deviation of experimental and control groups in EFL learner's positive orientation and language teacher immunity in pre-test and post-test

variables	**groups**	**No**	**Mean**		**St. deviation**	
			pretest	posttest	pretest	posttest

	Control	۱۱	٤۹,۷	٥۰,۱۲	۷,۹	٦,۱
positive orientation	Experiment	۱۱	٥۳,٤	٥۸,٤۲	۷	٥,۳
	Control	۱۱	۱٦,٤۳	۱۷,٥۹	٤,۸	۳,٥
language teacher immunity	Experiment	۱۱	۱۷,۹۰	۱۹,۷۸	٦,٤	٦,۱

As evident in Table ۲, the average score for learners' positive orientation in the experimental group increased from ٥۳,٤ to ٥۸,٤۲, while the corresponding average for the control group rose from ٤۹,۷ to ٥۰,۱۲. However, the average score for language teacher immunity in the control group decreased from ۱٦,٤۳ to ۱۷,٥۹, whereas the experimental group's average score for this variable increased from ۱۷,۹۰ to ۱۹,۷۸. To evaluate the statistical significance of the difference between the mean scores of the experimental and control groups for the dependent variables (EFL learners' positive orientation and language teacher immunity) and to control for the pre-test effect and the presence of an independent variable (problem-solving training), a multivariate covariance analysis test was employed. To this end, the normality of data distribution for these two variables was first assessed using the Kolmogorov-Smirnov statistical test, yielding a p-value of (p>۰,۰٥). Consequently, the results of the multivariable covariance analysis are presented in Table ۲.

Table ۳: Results of multivariate covariance analysis for EFL learners' positive orientation and language teacher immunity

Variables	**Independent variable**	**sum of squares**	**Degrees of freedom**	**mean square**	**F**	**Significance level**	**Eta square**
positive orientation	pretest	٤۳,۳۸	۱	٤۳,۳۸	۱۱,٤۰	۰,۰۰۱	٥۲٪
	group	۱٤۳,۲٥	۱	۱٤۳,۲٥	٤۷,۲٦	۰,۰۰۱	۷٦٪
	error	۳۷,۱۲	۱۷	٥,٥			
	total	۲٥۷,٦۰	۲۱				
Language teacher immunity	pretest	۲۲,٤٥	۱	۲۲,٤٥	۱۱,۳۸		
	group	۸۰,٤۰	۱	۸۰,٤۰	۸٦,۲۰	۰,۰۰۱	٤۳٪
	error	٤۰,۱۱	۱۷	۳,۲		۰,۰۰۱	۷۰٪
	total	۱٥۹,۳	۲۱				

According to Table ٣, the protocol had a significant impact on the post-test scores of two variables: EFL learners' positive orientation and language teacher immunity, which were ٤٧,٢٦ and ٨٦,٢٠, respectively. Despite controlling for the pre-test scores of these variables, the experimental group's scores for all the studied variables in the post-test and after the intervention showed a significant increase compared to the control group. Additionally, eta squared indicated that ٧٦٪ and ٧٠٪ of the changes in both variables (EFL learners' positive orientation and language teacher immunity) among participants were attributable to problem-solving training. Therefore, based on the results, hypotheses ٢ and ٣ were supported. The higher average scores of the experimental group in the post-test demonstrated that problem-solving training was effective and enhanced EFL learners' positive orientation and language teacher immunity.

Discussion and conclusion

This research introduces hypotheses that separately explain each of the variables. The findings of the research demonstrated that problem-solving training was effective in improving EFL learners' positive orientation and language teacher immunity. The first hypothesis proposed that problem-solving training had a significant impact on EFL learners' positive orientation. The results confirmed this hypothesis, revealing that problem-solving training had a positive and significant effect on EFL learners' positive orientation. This indicates that EFL learners participating in the experimental group exhibited a substantial increase in positive orientation scores compared to those in the control group. Therefore, the hypothesis was supported. Despite extensive searching, the author found no existing studies examining the effect of problem-solving training on EFL learners' positive orientation. However, the results of this study align with previous research conducted by Mackey et al. (٢٠١٧) and Azizpour and Gholami (٢٠٢٢). Problem-solving training serves as a developmental process that empowers individuals to enhance their coping mechanisms in a wide range of situations. It also enables individuals to recognize their own and others' emotions, understand behavioral patterns, and respond appropriately to diverse emotional expressions.

The second hypothesis was that problem-solving training would have a significant effect on language teacher immunity. The results showed that problem-solving training did have a positive and significant effect on language teacher immunity. This means that the scores of language teacher immunity for participants in the experimental group increased significantly compared to those in the control group. Therefore, the hypothesis was confirmed. The findings of the present study are consistent with those of Beyranvand et al. (٢٠٢١), Rahmati et al. (٢٠١٩), and Benevene et al. (٢٠٢٠). According to Hiver and Dörnyei (٢٠١٧), language teacher immunity is an important indicator of teachers' cognition, experiences, and identities, as it "affects almost everything that teachers do in their careers" (Hiver, ٢٠١٥, p. ٢٢٦). Gu (٢٠١٨) also noted that teachers' beliefs and identities are mediated socially and institutionally. Therefore, studying the development of teacher identity as part of the construct of teacher immunity, both within and outside the classroom, is a worthwhile endeavor. The present study had some limitations. One limitation was the relatively small number of participants. Only ٢٠ students and ٢ teachers were involved. Another limitation related to the data collection procedure. For future studies in the language teacher community, narrative inquire could be adopted as the main means of data collection. Based on the implications of the study, the problem-solving method requires immersion in problem-solving situations. As a result, students need more time to initially master this method, utilize it effectively, and develop

their skills in this area. The more students are trained using this method, the more successful they will become. This method can vary in its approach and time requirements depending on the type of problem being addressed. Additionally, it is an individual skill that varies from person to person and situation to situation. Many teachers encounter adverse situations within classroom contexts and may become demotivated. Therefore, the primary goals of language teacher education should focus on increasing teachers' motivation, passion, patience, and innovation.

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