

Investigating the Relationship between Problem Solving Skills with Self-Efficacy and Social Adjustment of Kermanshah Female Students

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Authors:

Zohre Zeraatpish¹
Susan Laei^{2*}
Faramarz Malekian³
Sahar Mohammadi³

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Affiliations:

1. Master of Educational Technology, Islamic Azad University, Kermanshah Branch, Kermanshah, Iran.
2. Assistant Professor, Department of Educational Sciences, Islamic Azad University, Kermanshah Branch, Kermanshah, Iran (Corresponding Author). susanlaei100@gmail.com
3. Assistant Professor, Department of Educational Sciences, Islamic Azad University, Kermanshah Branch, Kermanshah, Iran.

Abstract

Purpose: The present research was conducted with the aim of investigating the relationship between problem solving skills with self-efficacy and social adjustment of Kermanshah female students.

Methodology: This research in terms of purpose was applied and in terms of implementation method was cross-sectional from type of correlational. The study population was female high school students in Kermanshah city in the 2021-2 academic year with number 4100 people, that the sample size based on Krejcie and Morgan table was estimated 350 people who were selected by cluster method. Data were collected with using the problem solving skills inventory (Hepner and Patterson, 1982), self-efficacy scale (Scherer et al., 1982) and social adjustment subscale in adjustment inventory (Sinha & Singh, 1993) and their face validity was confirmed by experts and their reliability was determined by Cronbach's alpha method were obtained 0/80, 0.82 and 0.87, respectively. To analyze the data were used from the methods of Pearson correlation coefficients and multiple regression with enter model in SPSS software.

Finding: The findings showed that problem solving skills and its dimension including problem solving confidence, approach-avoidance style and personal control had a positive and significant correlation with self-efficacy and social adjustment of female students. Also, the findings showed that the dimensions of problem solving skills were able to significantly predict the self-efficacy and social adjustment of female students ($P < 0.001$).

Conclusion: The results indicated the effective role of problem solving skills in predicting self-efficacy and social adjustment of female students. Therefore, education system specialists and planners to improve their self-efficacy and social adjustment can promote their problem-solving skills.

Keywords: Problem Solving Skills, Self-Efficacy, Social Adjustment, Female Students.

Introduction

Adolescence is a period of transition from childhood to adulthood, and this period has always faced many challenges that can face adolescents with various crises (Xie & et al, 2021). Adolescence is an important and sensitive period of development that is characterized by many difficulties and difficulties in adapting to situations (Luca-Thompson, et al 2022). Adaptation is a set of behaviors and actions that a person expresses in new situations to provide appropriate responses to existing stimuli (Thandi, Fear & Chalder, 2017). Adaptation also means the ability to blend, adapt, compromise, collaborate and cope with oneself, others and the environment (Oksuzyan, et al, 2019). Adaptation is a general concept for using real and unrealistic stress management situations in life, and whenever a person's physical and mental balance is disturbed and he / she feels uncomfortable, he / she needs to use internal forces and external support to achieve balance and achieve adaptation (Lin , Tseng & Gau, 2021). Adaptation is a process in which a person's learning experiences create the individual's ability to adapt to the environment and environmental demands (Zhang, Yang, Tu, Ding & Lau, 2020). One of the dimensions of adaptation is social adaptation means a psychological process and the ability of the individual to adapt to the social environment through self-change or change of environment (Lee, Wang & Lee, 2022). Social adjustment is a process that enables a person to understand and predict the behavior of others on the one hand and to control their own behavior on the other hand to manage their social interactions (Meyer, et al, 2021). Social adjustment is one of the most important aspects of social development that has a great impact on interaction with others and academic and career success (Twilhaar, et al, 2019).

Another important and need for study in adolescents is self-efficacy, which means the beliefs and judgments of the individual about their overall adequacy and ability to organize and perform actions, achieve goals and deal with stressful and challenging events and situations (Huang & Ren, 2020) and shows the ability of the individual to perform a desired action or cope with a particular situation (Kurniawan, Hariyati & Afifah, 2019). Individual self-efficacy arises from gathering information from their own experiences and evaluating them, and plays an important role in adapting to different situations and facing challenging situations (Bosman, et al, 2021). Beliefs about high self-efficacy affect many personal functions, and such people often choose higher goals, show more effort and perseverance to achieve goals, and enjoy higher health and quality of life (Truong & Wang, 2019). Also, people with high self-efficacy are more focused on tasks than people with low self-efficacy, show more effort in doing tasks, have less anxiety, and are more successful in finding solutions (Byun, et al, 2020).

Problem solving skills are one of the variables related to self-efficacy (Cam, et al, 2020) and social adjustment (Moran, et al, 2015). Problem solving is one of the important goals of learning that its growth leads to good academic performance, creativity and innovation and helps people to solve problems in a creative way when faced with problems (Caldas, et al, 2020). Problem solving is a cognitive-behavioral process by which individuals identify and discover effective strategies for coping with problematic and challenging situations in daily life (Dindar, 2018). Problem solving is a way for a person to learn to use their effective cognitive skills set to cope with problematic interpersonal situations (Pakarinen & Kikas, 2019). Problem solving skills are a logical and orderly thinking process that helps a person to identify and evaluate various solutions or skills when facing problems and challenges and choose the best solution (Korkmaz, et al, 2020). Problem-solving skills enable people to gather information, come up with new ideas and solutions, hypothesize, analyze and analyze hypotheses, and decide whether or not they are right (Vatutin, et al, 2021).

The results showed that the relationship between problem solving skills and self-efficacy. For example, the results of Cam et al (2020) showed that there was a positive and significant relationship between self-efficacy, hope and problem solving. Seker & Karakurt (2020) while researching concluded that there was a significant relationship between problem solving skills and academic self-efficacy. In another study, Mahvelati, Eshagzadeh & Pour Shahriari (2019) reported that there was a significant correlation between problem-solving styles and employee self-efficacy, and problem-solving styles were able to predict 63% of self-efficacy. Khormaei & Zaboli (2018) while researching concluded that therapeutic and inhibitory styles had a negative and significant relationship with academic self-efficacy and creative styles, trust, avoidance and tendency had

a positive and significant relationship with academic self-efficacy. In another study, Mahzoonzadeh Bushehri (2017) reported that problem-solving skills had a significant positive relationship with self-efficacy as well as a significant effect on it. Other studies have shown that there is a relationship between problem solving skills and social adjustment. For example, the results of Mahdavi, et al (2019) showed that problem-solving skills training played an effective role in increasing social adjustment and self-regulatory strategies. Moran & et al (2015) while researching concluded that social problem solving and social adjustment had a positive and significant relationship. In another study, Yazdanpana, Hazrati, Kiani & Ashrafabadi (2013) reported that rational problem solving had a positive and significant relationship with social adjustment and avoidance and impulsive / inattention problem solving had a negative and significant relationship with social adjustment. Bell & D’Zurilla (2009) while researching concluded that the ability to solve social problems had a positive and significant relationship with adaptation.

Self-efficacy and social adjustment are important issues in adolescents because of their role in the future of the country. In this regard, it is more important to study female adolescents because of their role in educating the next generation. Given the importance of self-efficacy and social adjustment in them, it is necessary to first identify the factors associated with them and then design and implement solutions based on them. Since problem-solving skills play an important role in many psychological characteristics, it seems that this structure is also related to self-efficacy and social adjustment of adolescent female students and can predict them. As a result, the present study was conducted to investigate the relationship between problem solving skills and self-efficacy and social adjustment of female students in Kermanshah.

Methodology

This research was applied in terms of purpose and correlational in terms of cross-sectional implementation method. The study population of female high school students in Kermanshah in the academic year 2021-22 was 4100. The sample size based on Krejcie and Morgan table was 350 people who were selected by cluster sampling. In this sampling method, among all girls' high schools in Kermanshah, five schools were randomly selected and all students of the mentioned schools were considered as a sample.

To conduct this research, after the necessary coordination with the officials of Kermanshah Education Department, the number of female high school students was prepared separately for schools and then random sampling was performed. In the next step, the sampled schools were referred to and after coordination with the school executive staff, all female high school students were asked to respond to the research tools. It should be noted that before completing the tools, they were asked to observe ethical points such as the freedom of individuals to participate or not to participate in the research, confidentiality, privacy of the subjects, etc., and their consent to participate in the research was obtained. At the end, the tools were completed by the samples and they were appreciated for participating in the research and responding to the tools. In the present study, in addition to the demographic information form including educational background and age, the following three tools were used.

The first tool was the Heppner & Perersen (1982) problem-solving skills list with 32 items and three dimensions of problem-solving confidence (11 items), avoidance-avoidance style (16 items), and personal control (5 items). The items are graded according to the Likert scale from six strongly agree (score 1) to strongly disagree (score 6) and the instrument score and its dimensions are calculated with the total score of the items and 15 items are scored in reverse, so the total score range of the instrument is 192-32. The dimensions of trust in problem solving were 11-66, attitude-avoidance style was 16-96 and personal control was 5-30. Heppner & Perersen (1982) examined the construct validity by exploratory factor analysis method and the results indicated the existence of three factors of trust in problem solving, attitude-avoidance style and personal control and reliability by Cronbach's alpha method for all problem solving skills. 0.90 and for the dimensions of problem solving trust 0.85, tendency-avoidance style 0.84 and personal control 0.72. In Iran, Abazari, Bagheri & Sepahvand (2022) reported reliability with Cronbach's alpha method for the whole tool 0.72 and for the dimensions of problem solving trust 0.74, tendency-avoidance style 0.70 and personal control 0.72. In the present study, the face validity of the problem-solving skills checklist was confirmed by experts and the reliability was calculated by Cronbach's alpha method for the whole tool 0.80

and for the dimensions of problem-solving trust 0.83, orientation-avoidance style 0.81 and personal control 0.78.

The second instrument of the self-efficacy scale was Sherer, et al (1982) with 17 items. Items according to the five Likert scale from strongly disagree (score 1) to strongly agree (score 5) Scoring and instrument score are calculated with the total score of the items and 6 items (items 1, 3, 8, 9, 13 and 15) are inverted they are graded, so the range of instrument scores was 15-85. Sherer et al (1982) confirmed the validity of the instrument with the inhibition scale and the reliability with the Cronbach's alpha method, which was 0.86 for the self-efficacy scale. In Iran, Nabavi & Sohrabi (2017) reported reliability using the Cronbach's alpha method for the self-efficacy scale of 0.75. In the present study, the face validity of the self-efficacy scale was confirmed by experts and its reliability was calculated by Cronbach's alpha method of 0.82.

The third subscale instrument of social adjustment was Sinha & Singh (1993) with 20 items. The items are calculated according to the two-point scale of yes (score 1) and no (score 0) and the instrument score is calculated with the total score of the items, so the range of instrument scores was 0-20. Sinha & Singh (1993) examined the validity of the adaptation log structure with the development of exploratory factor analysis and the results indicated the existence of three factors: social adjustment, emotional adjustment and academic adjustment came. In Iran, Khoshkonesh, Asadi, Shiralipour & Keshavarz Afshar (2010) reported the reliability of Cronbach's alpha method for the social adjustment subscale of 0.83. In the present study, the face validity of the subscale of social adjustment was confirmed by experts and its reliability was calculated by Cronbach's alpha method of 0.87. For data analysis, Pearson correlation coefficients and multiple regression with simultaneous model in SPSS software were used.

Findings

The sample was 350 female students whose frequency and percentage of educational level and age were presented in Table 1.

Table1. Frequency results and frequency percentage of educational level and age of female students

Variable	Level	Abundance	Frequency
Grade	tenth	108	30/86
	Eleventh	123	35/14
	twelfth	119	34
Age	16 years	112	32
	17 years	122	34/86
	18 years	116	33/14

According to Table 1, most of the samples were studying in the 11th grade (35.14%) and were 17 years old (34.86%). The results of mean, standard deviation and Kolmogorov-Smirnov test of problem-solving skills, and self-efficacy and social adjustment of female students were presented in Table 2.

Table2. Mean standard deviation and Kolmogorov-Smirnov test results of problem solving, self-efficacy and social adjustment skills of female students

Variable	Average	Standard deviation	Kolmogorov-Smirnov	meaningful
Confidence in problem solving	34/33	6/42	1/18	0/11
Orientation style - avoidance	45/78	8/58	1/34	0/05
Personal control	18/27	3/11	1/05	0/21
Total problem solving skills	98/38	15/06	1/46	0/34
Efficacy	46/35	5/56	0/82	0/50
Social adjustment	121/05	18/17	0/79	0/55

According to Table 2, the assumption that all research variables were normal, including problem-solving skills (and its three dimensions including problem-solving confidence, avoidance and self-control style), self-efficacy, and social adjustment in female students was not rejected. Also, the value of variance inflation factor

for predicting self-efficacy and social adjustment based on the dimensions of problem-solving skills due to being smaller than 10 indicates the rejection of the multiple alignment hypothesis and the value of Watson camera for predicting self-efficacy and social adjustment based on dimensions of problem-solving skills. In the range of 1.5 to 2.5, the residual correlation hypothesis was rejected. Therefore, the use of regression is allowed. The results of correlation coefficients of problem solving skills with self-efficacy and social adjustment of female students were presented in Table 3.

Table3. Results of correlation coefficients of problem solving skills with self-efficacy and social adjustment of female students

Predictor variable / criterion variable	Efficacy	meaningful	Social adjustment	meaningful
Confidence in problem solving	0/49	0/001	0/48	0/001
Orientation style - avoidance	0/46	0/001	0/51	0/001
Personal control	0/51	0/001	0/50	0/001
Total problem solving skills	0/58	0/001	0/60	0/001

According to Table 3, problem-solving skills and their dimensions including problem-solving confidence, attitude-avoidance style and personal control had a positive and significant correlation with self-efficacy and social adjustment of female students ($P < 0.001$). The results of multiple regressions with simultaneous model for predicting self-efficacy of female students based on the dimensions of problem solving skills were presented in Table 4.

Table4. Multiple Regression Results with Simultaneous Model for Predicting Female Students' Self-Efficacy Based on Dimensions of Problem Solving Skills

Predictive variable	R	R ²	df	The value of F	meaningful	B	SE	Beta	The value of t	meaningful
Confidence in problem solving			3			0/20	0/04	0/24	4/37	0/001
Orientation style - avoidance	0/59	0/35	346	64/50	0/001	0/14	0/03	0/22	4/38	0/001
And personal control						0/46	0/09	0/26	4/73	0/001

According to Table 4, the dimensions of problem-solving skills were able to predict 35% of the changes in self-efficacy of female students. In this prediction, all three variables had a positive and significant effect. ($001 / 0P <$), the results of multiple regression with a simultaneous model to predict the social adjustment of female students based on the dimensions of problem-solving skills were presented in Table 5.

Table5. Multiple regression results with simultaneous model for predicting social adjustment of female students based on the dimensions of problem solving skills

Predictive variable	R	R ²	df	The value of F	meaningful	B	SE	Beta	The value of t	meaningful
Confidence in problem solving			3			0/54	0/15	0/19	3/52	0/001
Orientation style - avoidance	0/61	0/37	346	68/70	0/001	0/63	0/10	0/30	5/91	0/001
And personal control						1/46	0/31	0/25	4/59	0/001

According to Table 5, the dimensions of problem-solving skills were able to predict 37% of the changes in social adjustment of female students. In this prediction, all three variables had a positive and significant effect. Was ($P < 0.001$).

Conclusion

Considering the role and importance of self-efficacy and social adjustment in current and future life of students, the present study was conducted to investigate the relationship between problem solving skills and self-efficacy and social adjustment of female students in Kermanshah.

The findings of the present study showed that problem solving skills and its dimensions including trust in problem solving, attitude-avoidance style and personal control had a positive and significant correlation with female students' self-efficacy. These findings were consistent with the findings of Cam et al (2020), Seker & Karakurt (2020), Mahvelati, et al (2019), Khormaei & Zaboli (2018) and Mahzoonzadeh Bushehri (2017). Explaining these findings, it can be said that problem solving is an important coping strategy that can enable a person to control difficult life situations and their emotional effects, and thus control or reduce psychological stress. Since the focus of education today is to teach thinking and use the mental and educational abilities of people who are capable of problem solving, problem solving skills can be an important and effective coping strategy that students' personal, academic and social ability and progress in situations. Increase the problematic and challenging life. In the present study, the role and relationship of problem solving skills with belief in students' ability or self-efficacy was observed and students with problem solving ability or having problem solving skills could easily compare their behavior with others and select achievable goals and accessibility To have them. As a result, by increasing problem-solving skills and its dimensions, one can expect self-efficacy to increase in female students. Be meaningful.

Other findings of the present study showed that problem solving skills and their dimensions including trust in problem solving, attitude-avoidance style and personal control had a positive and significant correlation with social adjustment of female students. These findings were consistent with the findings of Mahdavi et al (2019), Moran & et al (2015), Yazdanpana et al (2013) and Bell & D'Zurilla (2009). In explaining these findings, it can be said that problem-solving skills help a person to look more closely at their interpersonal relationships and social relationships, and to resolve and manage problems in these areas logically, and to express their views from any relationship. Clearly define him so that he can give more reasonable answers in accordance with the environment and different social conditions, and gain satisfaction from these relationships for mutual benefit. As a result, it can be expected that increasing problem-solving skills and their dimensions will increase the social adjustment of female students and the so-called problem-solving skills and its dimensions including trust in problem-solving, tendency-avoidance and personal control with their social adjustment is positively correlated. And exist meaningfully.

Also, the findings of the present study showed that the dimensions of problem solving skills including trust in problem solving, attitude-avoidance style and personal control were able to significantly predict self-efficacy and social adjustment of female students. The findings on the ability of problem-solving skills in predicting self-efficacy with the results of Seker & Karakurt (2020) and Mahvelati et al (2019) and the ability of problem-solving skills in predicting social adjustment with the results of Moran & et al (2015) and Yazdanpana et al (2013) were consistent. In explaining these findings, it can be said that social adjustment is a process that enables a person to understand and predict the behavior of others on the one hand and to control his own behavior on the other hand to manage his social interactions. In addition, self-efficacy indicates a person's ability to perform a desired action or cope with a particular situation, and such people usually choose higher goals for themselves, show more effort and perseverance to achieve goals, and show health and quality. They have a higher life. Because problem-solving skills are a logical and orderly thinking process that helps a person to identify and examine multiple solutions or skills when faced with problems and challenges, and to choose the best solution. Therefore, it seems logical that problem-solving skills can play a significant role in predicting self-efficacy and social adjustment of female students. Another explanation is that people with higher problem-solving skills face fewer problems and challenges, usually use appropriate or adaptive strategies to deal with them, perceive the stress and tension of events less than others,

have more friends and social support. And they usually have higher health, optimism, hope, happiness and quality of life and lower stress, anxiety, depression and obsession. Therefore, it can be expected that people with higher and more desirable problem-solving skills in life will experience less problematic and challenging behaviors such as decreased self-efficacy and social adjustment. As a result, the dimensions of problem-solving skills can play an effective role in predicting self-efficacy and social adjustment of female students.

This study, like any other study, faced some limitations, including the fact that the statistical population of this study was limited to female high school or high school students in Kermanshah. Also, the tools of this research were limited to closed-ended questionnaires and no other quantitative and qualitative tools were used. Another limitation was the difficulty in implementing and completing the tools by students due to the prevalence of Covid-19 and the frequent absenteeism of schools. Therefore, it is recommended to conduct research on female high school students in other cities, students of other educational levels and male students and compare their results with the results of the present study. Other suggestions include using other data collection tools such as viewing and interviewing and designing tools electronically and sending them through a happy virtual network and completing them by students.

In general, the results showed the relationship between problem solving skills and its dimensions including trust in problem solving, attitude-avoidance style and personal control with self-efficacy and social adjustment of female students and the effective role of problem solving skills in predicting their self-efficacy and social adjustment. Therefore, education system specialists and planners can improve their problem-solving skills to improve their self-efficacy and social adjustment. Another practical suggestion is to hold practical workshops on problem-solving skills training by the education system for students and even parents and teachers to increase their self-efficacy and social adjustment.

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