



Prediction of School Anxiety based on the Academic Self-Efficacy, Academic Support and Academic Engagement of First Secondary Students of Tabriz City

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Purpose: Considering the importance of school anxiety and its role in the decline of other academic performance, the present study was conducted with the aim of prediction of school anxiety based on the academic self-efficacy, academic support and academic engagement of first secondary students.

Methodology: The current research was a descriptive from type of correlation. The research population was all first secondary students of Tabriz city in the academic years of 2022-2023. The sample size based on the Krejcie and Morgan table was calculated 269 people, which this number were selected by multi-stage cluster random sampling method. The research tools were the questionnaires of school anxiety (Philips, 1987), academic self-efficacy (Jinks & Morgan, 1999), academic support (Sands & Plunkett, 2005) and academic engagement (Reeve, 2013). The data obtained from the implementation of the questionnaires were analyzed with the methods of Pearson correlation coefficients and multiple regression with enter model in SPSS software.

Findings: The findings showed that all three variables of academic self-efficacy, academic support and academic engagement had a significant negative relationship with school anxiety in first secondary students ($P < 0.01$). Also, the three mentioned variables significantly were able to predict 56.5 percent of school anxiety changes in first secondary students ($P < 0.001$).

Conclusion: The results of this study have practical implications for people who deal with students, and they to reduce school anxiety in students can increase their academic self-efficacy, academic support and academic engagement through educational workshops.

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1. Introduction

Anxiety disorders are one of the most common psychiatric disorders in children and adolescents, which can pave the way for the onset of other psychological and psychiatric disorders (Putwain et al., 2021). School is one of childhood's social environments that can trigger anxiety in children, including excessive worry and sadness about various situations (Kaczmarek & Trambacz-Oleszak, 2021). School anxiety is one of the anxiety disorders and a major problem for many students, including separation anxiety, social anxiety, and test anxiety experienced when attending school (Pascoe et al., 2020). Studies indicate a prevalence rate of 1.41% for this disorder and related factors in students, and the psychological stress experienced by students during school attendance is a common symptom of school anxiety, including disturbing thoughts and behaviors faced with school attendance (Khademi et al., 2019). School anxiety is a social and psychological issue characterized by the individual's irregular attendance at school, which should last at least five days as a baseline and be accompanied by severe anxiety symptoms and physical complaints such as headaches, nausea, etc. (Fraser et al., 2021). School anxiety has many negative effects on students, hurting their entire lives and threatening their health (Bakhla et al., 2013). If left untreated and persistent, this anxiety can gradually lead to hopelessness, worthlessness, despair, isolation, depression, and suicidal tendencies, causing irreparable damage to the family (Jones, West, and Suveg, 2019).

One of the factors related to school anxiety is academic self-efficacy, which is an activating, motivating, and guiding motivational factor toward predetermined goals (Zhen et al., 2017). Academic self-efficacy, derived from Bandura's cognitive-social theory (1986), refers to an individual's judgment about their abilities to perform a series of actions (Bergey et al., 2019). Academic self-efficacy refers to students' beliefs about their abilities to understand or perform academic tasks and achieve academic goals, which plays an important role in organizing motivation and academic guidance (Cheng, 2020). In other words, this structure means the individual's belief and confidence in their abilities to challenge academic tasks and overcome academic problems and challenges (Lv et al., 2018). Individuals with high academic self-efficacy show more effort and resistance when faced with academic tasks, have a high commitment to achieving their academic goals, have realistic planning for their studies, and make appropriate use of cognitive and metacognitive strategies (Neroni et al., 2022).

One of the factors related to school anxiety is academic support, which directly or indirectly increases students' desire and academic performance (Carter et al., 2018). Academic support refers to any source that directly or indirectly increases enthusiasm, interest, and academic performance improvement (McCabe, 2018). Academic support has various dimensions, including emotional support (providing incentives), instrumental support (collaboration in completing tasks), and cognitive support (transferring the importance of academic success to students), which has an inhibitory role in academic fatigue and a promoting role in optimal academic performance (Hawkins et al., 2022). In academic support, the relationship between teachers and students, teachers and parents, and parents and peers provides combinations that each play an important role in the quality and quantity of students' academic activities (Snedden et al., 2019). Academic support improves academic performance because it provides expectations and values in the classroom for students and encourages their efforts to achieve these values and expectations. In other words, students feel secure while striving and do not see themselves as threatened by the environment, and feel valuable (Bao, Villavisanis, and Taub, 2023).

Another factor related to school anxiety is academic engagement, a multidimensional construct that refers to the quality of effort students put into purposeful learning activities to achieve desired outcomes (Lawson et al., 2019). Academic engagement indicates constructive, enthusiastic, desirable, and learner-centered participation in learning activities, leading to positive academic outcomes (Mou et al., 2022). Social conditions and educational factors influence academic engagement and have three behavioral (persistence in academic tasks and learning), emotional (valuing academic tasks and learning), and cognitive (using learning strategies and active self-regulation in academic tasks and learning) components (Gremmen et al., 2018). This construct leads to active student engagement in completing tasks or learning activities, emphasizing the

role of self-awareness in studying, designing metacognitive beliefs, and cognitive self-regulation (Shin & Chang, 2022).

A study on the relationship between academic self-efficacy, academic support, and academic engagement with school anxiety was not found, but studies in this area are described below. Sanli's (2021) study showed a significant negative relationship between task value and academic self-efficacy with exam anxiety in students. Garcia and Velazquez (2020) found a significant negative correlation between academic self-efficacy and symptoms of anxiety and depression in students. In another study, Saeed N, Dortaj (2018) reported a significant negative relationship between academic self-efficacy and emotional intelligence with anxiety in students. Zamani and Pouratashi (2018) also found a significant negative relationship between academic self-efficacy beliefs and working memory with test anxiety. Additionally, Tavajjohi and Tamannaefar's (2022) study showed a significant negative relationship between exam anxiety in students and social support. Adibnia and Shams Esfandabad (2021) reported a significant negative correlation between metacognitive beliefs and social support with school anxiety in students. Zeng, Liang, Zhang, Xia, Li, Kang, Yi, and Wang (2021) found a significant negative relationship between academic support and anxiety and depression in students. Furthermore, the results of Ng, Zhang, Phipps, Zhang, and Hamilton's (2022) study showed a significant negative correlation between anxiety and sleep problems with academic happiness in students. In another study, Yazdani and Asadi (2022) reported a significant negative relationship between virtual learning and exam anxiety with academic engagement. Pahlusari, Pirani, and Taghvaei (2022) found a significant positive relationship between academic anxiety and executive function deficits and a significant negative relationship between academic engagement.

As mentioned above, the level of school anxiety is very high, which negatively impacts other academic and even non-academic variables. Therefore, it is essential first to identify the related variables and then design and implement programs to reduce school anxiety based on them. Although previous studies have examined the relationship between some variables and school anxiety, a study that has examined the relationship between academic self-efficacy, academic support, and academic engagement with school anxiety was not found, and conducting this study can help managers, officials, and planners of the education system to understand the situation of students and design better and implement programs to reduce school anxiety. In addition, the results of this study can contribute to the development of the psychology and educational sciences in school anxiety and awareness of the role of academic self-efficacy, academic support, and academic engagement in it. Therefore, given the high prevalence of school anxiety in students and the importance of it and its role in the decline of other academic functions, the present study was conducted to predict school anxiety based on academic self-efficacy, support, and engagement in high school students.

2. Methodology

The present study was a descriptive correlation type. The research population consisted of all high school students in Tabriz city during the academic year 2022-23. The sample size was calculated to be 269 individuals based on Krejcie and Morgan's table, and this number was selected through a multi-stage cluster random sampling method. In this sampling method, first, one district was randomly selected from different education districts in Tabriz city, then six schools (three girls' and three boys' schools) were randomly selected from that district, and four classes were randomly selected from each school. All selected students from the chosen classes were asked to respond to the research instruments.

In this study, the following four standard instruments were used to collect data:

A) School Anxiety Questionnaire: This questionnaire was designed by Philips (1987) with 74 items, in which a Likert scale with three degrees (score of three for "yes", sometimes a score of two, and a score of one for "no") was used to respond to each item. Therefore, the lowest score in this questionnaire is 74, and the highest score is 222, with higher scores indicating higher levels of school anxiety. Experts confirmed this instrument's construct and content validity, and its reliability was calculated to be 0.67 through a two-week retest method. In Iran, using Cronbach's alpha method, Saffari Bidhendi, Asadzadeh, Farrokhi, and Dortaj

(2021) reported its reliability as 0.81. The present study calculated its reliability to be 0.91 using Cronbach's alpha method.

B) Academic Self-Efficacy Questionnaire: This questionnaire was designed by Jinks and Morgan (1999) with 30 items, in which a Likert scale with four degrees (score of four for "completely agree" and score of one for "completely disagree") was used to respond to each item. Therefore, the lowest score in this questionnaire is 30 and the highest score is 120, with higher scores indicating higher levels of academic self-efficacy. The construct validity of this instrument was confirmed through exploratory factor analysis, and its reliability was calculated to be 0.82 using Cronbach's alpha method. In Iran, MaghsoudluNejad, Saffarinia, and Shirafkan Koupan (2021) reported its reliability to be 0.81 using Cronbach's alpha method. In the present study, its reliability was calculated to be 0.80 using Cronbach's alpha method.

C) Academic Support Questionnaire: This questionnaire was designed by Sands and Plunkett (2005) with 24 items, using a four-point Likert scale for each item, ranging from strongly agree (score of four) to strongly disagree (score of one). Therefore, the lowest score on this questionnaire is 24 and the highest score is 96, with higher scores indicating greater academic support. The construct validity of the instrument was confirmed through exploratory factor analysis and its reliability was calculated using Cronbach's alpha method, yielding a value of 0.89. In Iran, Sheikholeslami and Karimianpour (2021) reported a reliability of 0.88 using the Cronbach's alpha method. In the current study, the reliability was calculated to be 0.93 using Cronbach's alpha method.

D) Academic Engagement Questionnaire: This questionnaire was designed by Reeve (2013) with 17 items, using a seven-point Likert scale for each item, ranging from strongly agree (score of seven) to strongly disagree (score of one). Therefore, the lowest score on this questionnaire is 17 and the highest score is 119, with higher scores indicating greater academic engagement. The instrument's construct validity was confirmed through exploratory factor analysis and its reliability was calculated using Cronbach's alpha method, yielding a value of 0.89. In Iran, Sabbaghi, Karimi, Akbari, and Yarahmadi (2020) reported a reliability of 0.81 using the Cronbach's alpha method. The current study calculated the reliability to be 0.89 using Cronbach's alpha method.

The current study involved coordinating with officials from the Education Department in Tabriz to conduct the research and review the instruments with them; in the next step, a list of schools was prepared and sampling was carried out. The selected schools were then visited and, with the coordination of school officials, students were asked to attend class with the researcher and complete the instruments. It took approximately 35 to 45 minutes to complete the instruments, after which the students were thanked and appreciated. It should be noted that students were informed that there are no right or wrong answers and the best answer is one that reflects their actual situation. In addition, the importance and necessity of the research was explained to them and they were assured about the ethical considerations taken by the researchers. Finally, the data obtained from administering the abovementioned questionnaires were analyzed using Pearson correlation and multiple regression methods with a simultaneous model in SPSS software.

3. Findings

Participants in this study were 269 high school students from Tabriz city. The results of the mean, standard deviation, and Kolmogorov-Smirnov test for academic self-efficacy, academic support, academic engagement, and school anxiety in high school students can be seen in Table 1.

Table 1. Results of mean, standard deviation and Kolmogorov-Smirnov test of academic self-efficacy, academic support, academic engagement and school anxiety in secondary school students

Variable	Mean	SD	K-S	Sig.
academic self-efficacy	67.925	6.246	0.416	0.079
academic support	52.611	5.710	0.214	0.091
engagement academic	44.769	5.129	0.177	0.115
school anxiety	133.028	12.238	0.173	0.107

As shown in Table 1, according to the Kolmogorov-Smirnov test, the assumption of normality for the variables of academic self-efficacy, academic support, academic engagement, and school anxiety in secondary school students was not rejected due to a significance level greater than 0.05. Additionally, based on the Bartlett's test, with a value of 1.419 and a distance from 0 and 4, it was indicated that the predictor variables were independent. Moreover, based on the variance inflation factor for the predictor variables with a range of 1.618 to 2.750 and a value less than 10, it was indicated that the assumption of multicollinearity was rejected. The results of the Pearson correlation matrix for academic self-efficacy, academic support, academic engagement, and school anxiety in secondary school students can be seen in Table 2.

Table 2. Pearson correlation matrix results of academic self-efficacy, academic support, academic engagement and school anxiety in secondary school students

Variables	academic self-efficacy	academic support	academic engagement	school anxiety
academic self-efficacy	1			
academic support	0.708**	1		
engagement academic	0.593**	0.633**	1	
school anxiety	-0.524**	-0.567**	-0.602**	1

** $p < 0.01$

As shown in Table 2, all three variables of academic self-efficacy ($r = -0.524$), academic support ($r = -0.567$), and academic engagement ($r = -0.602$) had a significant negative relationship with school anxiety in secondary school students ($p < 0.01$). In other words, as academic self-efficacy, academic support, and academic engagement increase, the level of school anxiety decreases in secondary school students, and vice versa. The results of multiple regression analysis with a simultaneous model for predicting school anxiety based on academic self-efficacy, academic support, and academic engagement in secondary school students can be seen in Table 3.

Table 3. Multiple regression results with simultaneous model for predicting school anxiety based on academic self-efficacy, academic support and academic engagement of secondary students

Variables	R	R ²	F	Sig	Beta	T	Sig
academic self-efficacy					-0.331	-6.327	0.001
academic support	0.752	0.565	59.650	0.001	-0.342	-6.413	0.001
engagement academic					-0.351	-7.325	0.001

As shown in Table 3, the three variables of academic self-efficacy, academic support, and academic engagement significantly predicted 56.5% of the variance in school anxiety in secondary school students ($p < 0.001$). Based on the beta values, the contribution of academic engagement was greater than the other two variables, and all three variables had a significant negative effect on school anxiety ($p < 0.001$).

4. Discussion

Given the importance of school anxiety and its role in other academic and non-academic variables, the present study aimed to predict school anxiety based on academic self-efficacy, academic support, and academic engagement of secondary school students.

The first finding of the present study showed a significant negative relationship between academic self-efficacy and school anxiety in secondary school students. In other words, as academic self-efficacy increases, the level of school anxiety decreases, and vice versa. This finding is consistent with the findings of Sanli (2021), Garcia and Velazquez (2020), Saeed N, Dortaj (2018), and Zamani and Pouratashi (2018). This finding can be interpreted as students who perceive themselves as capable and have high self-efficacy demonstrate better adaptation to different situations and exhibit skilled behaviors, effectively coping with various events and circumstances. As they expect success in overcoming challenges, they show more resilience in tasks, including academic tasks, and often perform at a higher level. These individuals view problems as challenges rather than threats compared to those who have less confidence in their abilities and more doubts. Therefore, they actively seek new opportunities and their self-efficacy beliefs influence their behavior and thoughts while performing tasks. They use adaptive coping strategies to solve non-academic challenges and cognitive and metacognitive strategies to solve academic challenges, which are factors that lead to an increase in academic self-efficacy and a decrease in school anxiety in secondary school students.

The second finding of the present study showed a significant negative relationship between academic support and school anxiety in secondary school students. In other words, as academic support increased, the level of school anxiety decreased in these students, and vice versa, with a decrease in academic support, the level of school anxiety increased. This finding is consistent with the findings of Tavajjohi and Tamannaefifar (2022), Adibnia and Shams Esfandabad (2021), and Zeng et al (2021). In explaining this finding, it can be inferred that academic support from parents, teachers, and peers enhances the ability to cope with challenging factors in academic issues. Therefore, these sources of support create active learning environments where students interact with parents, peers, and teachers and provide various opportunities and situations to help them with tasks and encourage them to study, learn, and have a positive attitude towards their academic activities and goals. As a result, when students perceive the learning environment and the prevailing atmosphere as positive and suitable, they show more willingness and enthusiasm to participate in academic activities and learning. Based on the above explanations, it seems logical that increasing academic support plays an effective role in reducing school anxiety in secondary school students.

The third finding of the present study showed that academic engagement had a significant negative relationship with school anxiety in middle school students. In other words, as academic engagement increased, the level of school anxiety decreased, and vice versa. This finding was consistent with the findings of Ng et al (2022), Yazdani and Asadi (2022), and Pahlusari et al (2022). This finding can be interpreted as high academic engagement causing students to spend more time on assigned tasks and have positive experiences completing and presenting them to their teachers, which in turn can play a significant role in reducing academic anxiety and school anxiety. Additionally, academic engagement is an indication of students' willingness to participate in daily school activities, attend classes regularly, complete academic tasks, and follow teachers' instructions in class. Students with higher academic engagement attend school more regularly, are more focused on learning, have a stronger commitment to school rules, achieve higher grades, and have higher academic performance and satisfaction. Another important point is that individuals with higher academic engagement also have higher self-efficacy compared to other students, which not only reduces their experience of school anxiety but also helps them cope effectively with it.

The fourth finding of the present study showed that the variables of academic self-efficacy, academic support, and academic engagement could significantly predict school anxiety in middle school students, with the contribution of academic engagement being greater than that of the two variables of academic self-efficacy and academic support. Although no research was found in this regard, it can be inferred that individuals with higher academic self-efficacy, academic support, and academic engagement face fewer academic challenges in

their school life and are able to overcome them on their own or with the help of others. Additionally, these individuals use motivational, cognitive, metacognitive, resource management, and other strategies when learning course materials, which leads to their success in learning and their ability to learn the material in a reasonable amount of time and increase their academic confidence. Therefore, it seems logical that the variables of academic self-efficacy, academic support, and academic engagement play a significant role in predicting school anxiety in middle school students.

Every research has its limitations, and the limitations of this study were that it was conducted on secondary school students in Tabriz. In addition, self-report tools were used, which may not have enough introspection and respondents may not answer accurately, which can reduce the accuracy of the results to some extent. Therefore, caution should be exercised in generalizing the findings of this study to other students. In line with these limitations, it is recommended that this research be repeated with a statistical population and other age groups in other cities using interview tools. It is also recommended that counselors and psychologists identify students with school anxiety and refer them to counseling centers and psychological services for interventions based on improving academic self-efficacy, academic support, and academic engagement. Therefore, the results of this study have practical implications for individuals working with students, and they can increase the level of academic self-efficacy, academic support, and academic engagement through workshops to reduce school anxiety in students.

Ethical Considerations

In this research, ethical considerations such as confidentiality, privacy of personal information, protection of participants' rights, and proper data analysis were taken into account.

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Authors' Contributions

In this article, the student was responsible for data collection, analysis, and writing. The professors were responsible for supervising the data analysis and final writing of the article.

Conflict of Interest

The authors declared no conflict of interest.

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