# Investigating the impact of test anxiety and self-regulation on foreign language learning: A quantitative correlational approach[1]

## Investigación del impacto de la ansiedad ante los exámenes y la autorregulación en el aprendizaje de lenguas extranjeras: Un enfoque cuantitativo correlacional

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# Abstract

The present study investigated the self-regulated learning strategies adopted by EFL learners, their levels of cognitive test anxiety, and the potential correlations between self-regulated learning and cognitive test anxiety. The study also examined whether gender and level of language proficiency had a significant effect on self-regulated learning and cognitive test anxiety. A correlational survey design was employed to investigate EFL learners and cross-sectional data were collected through an online questionnaire. Data analysis of 269 undergraduate students revealed that gender consistently emerged as a significant variable. Notably, female students exhibited higher mean scores in both self-regulated learning and cognitive test anxiety. Furthermore, the results consistently found a correlation between self-regulated learning and cognitive test anxiety, with self-regulated learning effectively predicting cognitive test anxiety. Specifically, the predictive power of self-regulated learning for cognitive test anxiety was found to be statistically significant only within the group of students at A2 language level.

*Keywords:* cognitive test anxiety, self-regulated learning, EFL learners, higher education, foreign language learning, test anxiety

# Resumen

El presente estudio investigó las estrategias de aprendizaje autorregulado adoptadas por los estudiantes de EFL, sus niveles de ansiedad cognitiva ante los exámenes y las posibles correlaciones entre el aprendizaje autorregulado y la ansiedad cognitiva ante los exámenes. El estudio también examinó si el género y el nivel de competencia lingüística tenían un efecto significativo sobre el aprendizaje autorregulado y la ansiedad cognitiva ante los exámenes. Se empleó un diseño de encuesta correlacional para investigar a los estudiantes de EFL y se recogieron datos transversales mediante un cuestionario en línea. El análisis de los datos de 269 estudiantes universitarios reveló que el género se reveló sistemáticamente como una variable significativa. En concreto, las estudiantes obtuvieron puntuaciones medias más altas tanto en aprendizaje autorregulado como en ansiedad cognitiva ante los exámenes. Además, los resultados mostraron de forma consistente una correlación entre el aprendizaje autorregulado y la ansiedad cognitiva ante los exámenes, con el aprendizaje autorregulado prediciendo eficazmente la ansiedad cognitiva ante los exámenes. En concreto, el poder predictivo del aprendizaje autorregulado para la ansiedad cognitiva ante los exámenes resultó ser estadísticamente significativo sólo en el grupo de estudiantes de nivel A2.

*Palabras clave:* Ansiedad cognitiva ante los exámenes, aprendizaje autorregulado, estudiantes de inglés como lengua extranjera, educación superior, aprendizaje de lenguas extranjeras, ansiedad ante los exámenes

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# Resumo

O presente estudo investigou as estratégias de aprendizagem autorregulada adotadas pelos alunos de EFL, seus níveis de ansiedade cognitiva em exames e as possíveis correlações entre a aprendizagem autorregulada e a ansiedade cognitiva em exames. O estudo também examinou se o gênero e o nível de competência linguística tinham um efeito significativo sobre a aprendizagem autorregulada e a ansiedade cognitiva em exames. Foi utilizado um desenho de pesquisa correlacional para investigar os alunos de EFL, e foram coletados dados transversais por meio de um questionário online. A análise dos dados de 269 estudantes universitários revelou que o gênero se mostrou consistentemente como uma variável significativa. Especificamente, as alunas obtiveram médias mais altas tanto em aprendizagem autorregulada quanto em ansiedade cognitiva em exames. Além disso, os resultados mostraram de forma consistente uma correlação entre a aprendizagem autorregulada e a ansiedade cognitiva em exames, sendo que a aprendizagem autorregulada previu eficazmente a ansiedade cognitiva em exames. Especificamente, o poder preditivo da aprendizagem autorregulada para a ansiedade cognitiva em exames revelou-se estatisticamente significativo apenas no grupo de estudantes de nível A2.

*Palavras-chave:* Ansiedade cognitiva em exames, aprendizagem autorregulada, alunos de inglês como língua estrangeira, ensino superior, aprendizagem de línguas estrangeiras, ansiedade em exames

# Background of the Study

The role of self-regulated learning and test anxiety in language learning has long been a topic of interest and research. Scholars from around the world have conducted an investigation into the relationship between test anxiety and several variables, such as self-efficacy (Lei et al., 2021), academic buoyancy (Putwain et al. 2023), coping strategies (Thomas et al., 2017), goal orientation, perfectionism, and academic achievement (Eum & Rice, 2011). Similarly, self-regulation in learning has been investigated from many aspects, and researchers from various disciplines have documented that it facilitates learning (Chen, 2022; Ozer & Ispinar Akcayoglu, 2021; Tse et al., 2022; Tseng et al., 2017). Both self-regulated learning and cognitive test anxiety have been recognized as having a significant impact on the language learning process. While cognitive test anxiety can lead to poor concentration (Amate-Romera & de la Fuente 2021), fear of failure (Cassady, 2004; Lowe et al., 2008), and in some cases, students freezing up (Németh & Bernáth 2023), self-regulation strategies may play a role in mitigating the negative impact of cognitive test anxiety (Chen, 2022). Given the importance of self-regulated learning and cognitive test anxiety in foreign language learning, it is important to develop a better understanding of the relationship between the two variables. This literature review builds on existing research findings on the effects of cognitive test anxiety and self-regulated learning strategies on foreign language learning. The review focuses on the sources and consequences of anxiety, as well as the strategies that learners use to mitigate its impact.

## Sources and effects of test anxiety in foreign language learning

The literature underscores the significant effects of test anxiety on the foreign language learning process (Cassady & Johnson 2002). The study of Aydın et al. (2020) emphasizes the relevance of understanding the sources and impacts of test anxiety among learners. Zheng and Cheng (2018) further contribute to this discourse by establishing cognitive test anxiety as a substantial negative predictor of academic achievement in language learning. This suggests that test anxiety not only affects learners' psychological well-being but also bears tangible implications for their language proficiency and academic performance. In a comprehensive study by Aydın et al. (2020), an exploration of test anxiety among learners of English as a foreign language (EFL) reveals multifaceted sources and effects. The study identifies physical, test-related, and affective problems as key sources of test anxiety among EFL learners. In another study, Aydın (2012) confirmed that fear of negative evaluation was a reason for test anxiety. All these sources contribute to learners' experiences of distress, which can hinder their language learning progress. Cognitive test anxiety embodies multifaceted

dimensions, including general worry, freezing up, and fear of failure, among other dimensions (Németh & Bernáth 2023). Putwain (2019) also found that higher self-handicapping was associated with poorer examination performance, mediated by lower perceived control and higher worry. His findings suggest that increasing perceived control and reducing self-handicapping could be effective strategies for test anxiety interventions. In a separate study, Aydın and Yerin Güneri (2022) investigated the role of psychological inflexibility, rumination, perfectionism cognitions, cognitive defusion, and self-forgiveness in the context of cognitive test anxiety in a sample of 715 EFL learners at a public university. Their findings indicated that psychological inflexibility, rumination, and perfectionism cognitions exhibited positive correlations with cognitive test anxiety and were predictors of test anxiety. A 30-year meta-analytic review by von der Embse et al. (2018) found that self-esteem was a significant and strong predictor of test anxiety. The perceived difficulty and high-stakes consequences of the test were also associated with higher levels of test anxiety.

Overall, test anxiety has been found to negatively predict students' academic performance and success (Balogun et al., 2017; Cassady, 2004; Möcklinghoff et al., 2023; Thomas et al., 2017; Zheng & Cheng, 2018). The negative impact of anxiety on language learning exhibit variability based on the context, educational levels of students, and the target language (Aydın et al., 2021; Teimouri et al., 2019). Andujar and Cruz-Martínez (2020), Aydın et al. (2021) and Horwitz (2010) support the assertion that foreign language anxiety persists across learners of different proficiency levels. This persistent role implies that anxiety does not diminish as learners progress in their language studies. Such a conclusion underscores the need for continuous attention to anxiety management strategies throughout the language learning journey.

## Self-Regulated learning strategies of language learners

While anxiety exerts detrimental effects, self-regulated learning strategies exert a positive influence on language learning outcomes. Even though there is a huge amount of theoretical basis, most of which have been proposed and tested especially since the 2000s (Chen, 2022), self-regulated learning mainly covers some principal components. Despite the many different names and forms self-regulated learning can take, it is prudent to say that it comprises goal setting, self-monitoring, and self-evaluation, amongst others (Andrade & Evans 2012; Cassidy, 2011; Zimmerman & Schunk, 2001), and they are all interrelated (Peel, 2019). All the components of self-regulated learning help learners regulate their learning to improve their performance and adapt to changing contexts (Zimmerman & Schunk, 2001).

Self-regulated learning occurs when there is a reciprocal relationship between forethought, performance, and self-reflection (Zimmerman, 2002). This reciprocal relationship provides researchers with a rich ground for gaining insights into student

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learning and sustaining lifelong learning. In the context of foreign language learning, there exists a gradually growing body of research. Seker (2016), for example, conducted a study on 222 undergraduate foreign language learners and found that self-regulated learning is a significant predictor of foreign language achievement, even though participants in her study reported using self-regulation strategies at only moderate to low levels. This suggests that self-regulated learning is an important skill for foreign language learners to develop, and that even using SRL strategies to a limited extent can lead to improved language learning outcomes. Martirossian and Hartoonian (2015) assert that the implementation of these strategies empowers learners to take control of their learning process, thereby enhancing their academic engagement. Guo et al. (2018) delve deeper into this aspect, exploring Chinese EFL learners' utilization of self-regulatory strategies to combat foreign language anxiety. Their research identifies cognitive, metacognitive (appraisal), and affective strategies as particularly favoured by learners. The findings suggest that learners who are better able to regulate their emotional and cognitive processes exhibit enhanced language learning performance. There are also some studies indicating that self-regulated learning occurs more effectively when formative assessment is preferred (Lam, 2015; Xiao & Yang, 2019). Lam (2015), for instance, studied the relationship between explicit strategy instruction and the development of metacognitive knowledge, along with the mental processes that underlie students' utilisation of strategies in a process-oriented EFL writing course. According to his research, strategy instruction in writing is likely to increase the capacity for self-control and resourcefulness in coping with diverse writing tasks.

The synthesis of these findings holds valuable implications for foreign language teaching. EFL teachers need to be attentive to the multifaceted sources of test anxiety. This awareness might enable language teachers to create a supportive classroom environment that addresses physical, test-related, and affective concerns, thereby fostering a more conducive learning atmosphere. Additionally, Guo et al. (2018), by exploring self-regulated learning strategies, suggests that educators should encourage learners to adopt cognitive, metacognitive, and affective strategies to effectively manage anxiety. This approach not only enhances learners' emotional well-being but also positively impacts their language learning.

## Present Study

The existing body of literature underscores the significant role of test anxiety and self-regulated learning strategies in shaping the foreign language learning process. While test anxiety poses challenges by hindering language proficiency and test scores (Zheng & Cheng, 2018), self-regulated learning strategies offer a wealth of opportunities to mitigate the negative effects of anxiety. The persistent nature of foreign language anxiety across proficiency levels highlights the need for ongoing efforts to address and manage anxiety throughout the language learning journey. On

the other hand, students with higher levels of test anxiety were found to engage less in self-regulating their learning, as demonstrated by Amate-Romera and de la Fuente (2021), in a sample of university students in Spain. By incorporating these insights into foreign language teaching practices, educators can cultivate a more nurturing and more supportive learning environment that promotes language learning.

The underlying premise was that the recruitment of EFL learners across diverse proficiency levels would yield insightful data regarding the mechanisms through which language learners at the university level manage their learning processes and test-related anxiety. Therefore, the purpose of this investigation was to delve into the self-regulated learning strategies adopted by EFL learners, their levels of test anxiety, and the potential correlations between test anxiety and self-regulated learning. Specifically, this study aimed to determine whether low self-regulation is a predictor of higher levels of test anxiety. The present study aimed to build on previous research on how cognitive test anxiety is affected by the way EFL learners approach their learning, act to achieve their learning goals, and evaluate their performance accordingly. Based on previous research, it was hypothesised that there would be significant negative statistical relationships between learners' perceived anxiety and self-regulated learning means. It was also hypothesised that anxiety would persist across language proficiency levels.

Underlying this discussion, the following research questions were posited:

1. How do students with different levels of language proficiency and genders differ on self-regulated learning and cognitive test anxiety?

2. Is there a significant correlation between self-regulated learning and cognitive test anxiety?

3. How does self-regulation among EFL learners predict cognitive test anxiety?

## Data and Methods

The study employed a correlational survey design to investigate EFL learners who had been studying for one year at a school of foreign languages. It utilised cross-sectional data collected through an online questionnaire, which investigated the relationship between students' test anxiety, self-regulated learning factors, and sociodemographic factors.

## Study population

A cross-sectional study was conducted among EFL learners at a state university in southern Turkey. The students were enrolled in the Preparatory Year Programme (PYP) of the School of Foreign Languages, which provides a foundation for students to proceed to their departmental courses. All undergraduate programmes at the university are offered in English, so language instruction in the PYP is a requirement for all students before advancing to the undergraduate programme in which they are enrolled.

A total of 284 students responded to the survey, but due to incomplete, non- or inconsistent responses, the data from 269 respondents were subjected to data analysis. Of the respondents, 43.9% were male and 56.1% were female. The students were studying in different proficiency groups at the school, with 51.3% at A2 level, 32.7% at B1 level and 16% at B2 level. The age of the students ranged from 18 to 46 years, with a mean age of 19.79 years (SD = 2.62).

## Data collection tools

The survey instrument comprised a range of multiple-choice and Likert-type questions, allowing respondents to rate their agreement with each item.

The Scale on Self-Regulation in Learning (SSRL), developed by Erdogan and Senemoglu (2016), is a self-report instrument designed to quantify cognitive and motivational aspects related to self-regulation in learning. The scale comprises four dimensions: 'before study' ($\alpha$= 0.78), 'during study' ($\alpha$= 0.77), 'after study' ($\alpha$= 0.82), and 'motivation' ($\alpha$= 0.81). The sections and main dimensions of the instrument are modular in design, allowing researchers to tailor their use to their specific needs. In this study, only the three cognitive factors ('before study', 'during study', and 'after study') were utilised. Respondents rated each item on a 5-point scale, with 1 representing 'never' and 5 representing 'always'.

Test anxiety among university students was assessed using the Turkish version of the Cognitive Test Anxiety Scale–Revised (T-CTAR), validated by Bozkurt et al. (2017). This 23-item assessment tool demonstrates a unidimensional structure, consistent with the conceptualisation of cognitive test anxiety and previous examinations of the original scale, developed in English. The instrument used in the present study is TCAR, which is the Turkish revised version of the Cognitive Test Anxiety Scale (CTAR) originally developed by Cassady and Johnson in 2002. The CTAR was developed to measure only the cognitive aspects of test anxiety, throughout the learning-testing cycle. The 23-item T-CTAR's internal consistency was found to excellent, aligning with previous research findings (Cronbach's $\alpha$ = .93). Respondents rate their suitability on a 4-point scale, with 1 indicating 'not suitable for me at all' and 4 indicating 'very suitable for me'.

## Data collection and analysis

After obtaining ethical clearance from the Human Research Ethic Committee at the university where the study took place, the researchers distributed the questionnaire within the school via an online platform. Data were collected using convenience sampling during the spring term of the 2021-2022 academic year. Respondents were directed to an online survey via a link, which presented an informed consent page before proceeding. Participants were informed of their right to refuse participation or withdraw from the study at any time. As a result, the participation was voluntary. Only students who provided informed consent were permitted to proceed to the questionnaire.

All calculations were made using IBM SPSS Statistics, Version 21 for Windows. The threshold for statistical significance was set at 'p < 0.05'. Descriptive statistics are reported, including absolute frequencies (n), mean and standard deviation (±), and relative frequencies (%) for categorical variables. The statistical analyses were conducted in three stages. The independent variables were assessed for normal distribution. After the distribution was confirmed to be normal, parametric tests were selected for analysis. Firstly, independent samples t-tests and ANOVA analysis were used to compare differences between the distributions of means across pairs of independent groups (males/females) and proficiency level groups (A2, B1, and B2 language levels), respectively. In one case, when the assumption of homogeneity of variance was violated, a robust Welch's ANOVA test was used. Secondly, Pearson's correlation coefficient was calculated to determine the relationship between self-regulated learning strategies and cognitive test anxiety. To determine the association between self-regulated learning and cognitive test anxiety, a linear regression test was conducted. Finally, the effect size was calculated to determine the statistical significance of the differences between the variables.

## Results

The results are presented in the order of the research questions. First, the relationship between self-regulated learning and cognitive test anxiety was examined to determine whether it varied depending on the student's levels of language proficiency or gender. Second, correlation analysis was used to identify the association between the two dependent variables. Finally, self-regulated learning was used as a predictor of cognitive test anxiety in a linear regression model to identify differences between the groups.

Table 1. Gender and language proficiency related differences in variables: means, standard deviations, t-test and ANOVA

| | | | Self-regulated learning | | Cognitive test anxiety | |
|---|---|---|---|---|---|---|
| **Variable** | | **n** | **Mean ± SD** | **p.** | **Mean ± SD** | **p.** |
| Gender | Female | 151 | 3.22 ± .053 | .004 | 2.91 ± .075 | .000 |
| | Male | 118 | 3.04 ± .050 | | 2.48 ± .084 | |
| Levels of language proficiency | A2 | 138 | 3.15 ± .046 | .358** | 2.83 ± .079 | .069 |
| | B1 | 88 | 3.09 ± .052 | | 2.62 ± .086 | |
| | B2 | 43 | 3.22 ± .069 | | 2.57 ± .079 | |

** The Welch's ANOVA test was run as the variances of the variable across the groups were not equal.

When they were tested by gender, there were significant differences in the mean scores of cognitive test anxiety $t(267) = -4.457$, $p = .000$ and of self-regulated learning $t(267) = -2.889$, $p = .004$. The effect size, as measured by Cohen's d, was $d = 3.494$, indicating a small effect. No statistically significant difference was found in average self-regulated learning [$F(2) = 1.032$, p = .358] or cognitive test anxiety [$F(2) = 2.707$, p = .069] according to the levels of language proficiency.

To examine the relationship between self-regulated learning and cognitive test anxiety in response to the second research question, a Pearson correlation coefficient was calculated.

Table 2. Correlations between self-regulated learning and cognitive test anxiety (N = 269)

| | | **Self-regulated learning** | **Cognitive test anxiety** |
|---|---|---|---|
| Self-regulated learning | Pearson correlation Sig. (2 tailed) | 1 | .205 .001 |
| Cognitive test anxiety | Pearson correlation Sig. (2 tailed) | .205 .001 | 1 |

The results showed a significant, positive correlation of .205 between the two variables (p = .001), indicating that higher levels of test anxiety are associated with higher levels of self-regulated learning.

Linear regression analyses were conducted to identify the relationship between self-regulated learning and cognitive test anxiety. Table 3 shows the standardized coefficients for the regression analysis.

*Table 3.* Regression analysis for self-regulated learning in predicting cognitive test anxiety

| Variable | B | Std. Error | B | t | p |
|---|---|---|---|---|---|
| Constant | 1.713 | .298 | | 5.742 | .000 |
| Self-regulated learning | .321 | .094 | .205 | 3.427 | .001 |
| R | .205 | | | | |
| R2 | .042 | | | | |

\* Dependent variable: cognitive test anxiety

A significant regression equation was found, with self-regulated learning explaining 4.2% of the total variation in cognitive test anxiety ($F(1, 267) = 11.742$, $p = .001$). Although the analysis revealed a significant difference between self-regulated learning and cognitive test anxiety, it is noteworthy that only 4.2% of the variation in the cognitive test anxiety variable is explained by self-regulated learning. This implies that predictive power of self-regulated learning over cognitive test anxiety is relatively modest.

*Table 4.* Linear regression models of self-regulated learning as predictor of cognitive test anxiety by each level of language proficiency

| | | B | Std. Error | B | t | p |
|---|---|---|---|---|---|---|
| A2 ($n = 138$) | | | | | | |
| | Constant | 1.176 | .442 | 2.659 | .009 | |
| | Self-regulated learning | .525 | .139 | .308 | 3.782 | .000 |
| | $R^2$ | .095 | | | | |
| B1 ($n = 88$) | | | | | | |
| | Constant | 1.858 | .553 | | 3.360 | .001 |
| | Self-regulated learning | .248 | .177 | .149 | 1.401 | .165 |
| | $R^2$ | .022 | | | | |
| B2 ($n = 43$) | | | | | | |
| | Constant | 2.221 | .586 | | 3.790 | .000 |
| | Self-regulated learning | .108 | .178 | .094 | .606 | .548 |
| | $R^2$ | .009 | | | | |

\* Dependent variable: cognitive test anxiety

The results showed that the predictor of self-regulated learning explained 9.5% of the total variation in cognitive test anxiety ($F(1, 136) = 14.304$, p = .000). The p-value for the regression coefficient was less than 0.001, which indicates that the relationship between self-regulated learning and cognitive test anxiety was statistically significant. The results of the test showed that there was no statistically significant relationship between the two variables within B1 and B2 groups.

## Discussion

Even though this is a complex area, lower levels of self-regulation and cognitive test anxiety are generally thought to negatively impact language achievement. This study adds to the existing body of evidence that investigates the associations between self-regulated learning and cognitive test anxiety focusing on the case of EFL learners at the tertiary level.

First, the study findings revealed that the levels of self-regulated learning and cognitive test anxiety varied significantly by gender, with female students possessing higher mean scores both on self-regulated learning and cognitive test anxiety. Several scholars have reported higher levels of test anxiety among female students (Aydın et al., 2021; Aydın & Yerin Güneri, 2022; Santana & Eccius-Wellmann, 2018; Zheng & Cheng, 2018). Similarly, females exhibited significantly higher levels of self-regulation than their male counterparts. This finding has been echoed in the existing literature in recent years. For example, Tseng et al. (2017) examined EFL learners' self-regulatory capacity and found gender-related differences. Specifically, female EFL learners had better control over their strategy use than males. In a recent study by Liu et al. (2021), researchers explored gender differences in self-regulated learning among a group of Chinese students. The findings indicated that across all three dimensions—preparatory, performance, and appraisal phases—of self-regulated learning, female students outperformed their male counterparts. However, it is worth to note that these findings are not uniform across disciplines and educational levels. The existing literature demonstrates conflicting results. For instance, a study by Hong et al. (2016) in the Chinese context found that male language learners scored higher on a measure of self-regulated learning than female language learners. However, it is essential to interpret these findings cautiously. This is because higher levels of cognitive test anxiety do not always lead to poor test performance. There were no significant differences observed in the scores for either self-regulated learning or cognitive test anxiety on levels of language proficiency. Some studies, such as that by Aydın and Yerin Güneri (2022) and Zheng and Cheng (2018), indicate a connection between language level and cognitive test anxiety. Therefore, the findings we obtained in our sample might need to be acknowledged in future studies.

Second, we found that self-regulated learning and cognitive test anxiety have a positive correlation. However, the findings in the literature are not consistent and show contradictory results. Despite the limited number of studies investigating the relationship between test anxiety and self-regulation for learning, a negative correlation is often reported (Cassady & Finch, 2020; Romera & de la Fuente, 2021).

Last, it was found that self-regulated learning successfully predicted cognitive test anxiety. However, the regression model explained 4.2% of the variance in cognitive test anxiety scores. Future research could attempt to add other related variables, such as academic buoyancy and self-handicapping, to their regression models to see if they can help explain more of the variance in cognitive test anxiety. There have been few studies investigating the associations between cognitive test anxiety in higher education settings. One example is the work of Putwain et al. (2016), who suggested that academic buoyancy could be effective in ameliorating performance-interfering worries. Putwain (2019) examined how test anxiety develops from executive self-regulation processes and self-beliefs using a structural equation model. He found that higher self-handicapping was linked to worse examination performance through lower control and higher worry. In the present study, the predictive power of self-regulated learning for cognitive test anxiety was found to be statistically significant only within the group of students possessing the lowest language proficiency among the three language levels. In particular, when the A2 level group was compared to learners of other language levels, it was observed that self-regulated learning effectively predicted the levels of cognitive test anxiety among these language learners. Fear of failure (Németh & Bernáth, 2023; Zeidner, 2007) and perceived low proficiency levels (Andujar & Cruz-Martínez, 2020; Aydın et al., 2021) are two strong sources of test anxiety. This connection likely influenced the experiences of A2-level language learners examined in our study. As students' language proficiency advances throughout their learning journey, their test anxiety is likely to decrease, aligning with the cognitive appraisal model's principles (Cassady & Johnson, 2002).

## Conclusion

This study is a cross-sectional survey of Turkish EFL learners at a state university. The main goal of this study was to add to the body of knowledge by investigating the potential for better identifying the connections between self-regulated learning and cognitive test anxiety. To this end, we discuss the effects of gender and language proficiency levels on respondents' cognitive test anxiety and self-regulated learning levels. We also examine the effects of gender and language proficiency levels on respondents' cognitive test anxiety and self-regulated learning levels. The study also determines the strength and direction of the linear relationship between these two ordinal variables. Learners with higher levels of self-regulated learning have been

found to have a tendency towards higher levels of cognitive test anxiety. This is quite interesting, as it contradicts the majority of findings in the existing literature. Therefore, these findings should be investigated further. Self-regulated learning was found to be a predictor of cognitive test anxiety. However, this finding is neither inherently positive nor negative. When students are anxious about a test, they may focus their attention and avoid distractions. They may also use effective learning strategies, such as setting goals and monitoring their progress. It is also worth gaining insight into the reasons for the existence of significantly higher self-regulated learning and cognitive test anxiety scores among A2 level learners, as previous research suggests that lower levels of English proficiency can be a source of test anxiety. The results are important for language educators, as they can help students identify the sources of their anxiety and develop coping strategies. Additionally, the findings can be helpful for researchers examining the sources of negative emotions students experience before and during exams, and how this affects their ability to persevere in the face of academic difficulties and improve their academic performance.

Although this study poses a few conundrums to be addressed by researchers, there are two notable limitations. The participants were from the School of Foreign Languages, where a full-year language instruction is offered. As a result, the students may not necessarily engage with their departmental courses during this period. Therefore, the results obtained may not be generalizable to other groups of EFL learners. This includes those who are learning English in addition to their departmental courses, as well as those studying at other educational levels. Another shortcoming is that due to the use of cross-sectional data instead of time-series data, both fellow researchers and language education practitioners should exercise caution when interpreting causal relationships identified in this study.

## Disclosure statement

No potential conflict of interest was reported by the authors.

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