Journal Website

Article history:
Received 14 April 2026
Revised 03 October 2026
Accepted 11 October 2026
Initial Publication 15 October 2026
Final Publication 01 January 2027

International Journal of Education and Cognitive Sciences

Volume 8, Issue 1, pp 1-15

E-ISSN: 3041-8828

Factor Structure, Validity, and Reliability of the Academic Self-Efficacy Scale Among Upper Secondary School Students in Kirkuk, Iraq

Dawood. Salman Hamood Hamood[1], Yousef. Adib[2*], Firooz. Mahmoudi[2], Shahram. Vahedi[3]

[1] PhD Student, Department of Curriculum Planning, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran
[2] Professor, Department of Educational Sciences, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran
[3] Professor, Department of Educational Psychology, Faculty of Education and Psychology, University of Tabriz, Tabriz, Iran

*** Corresponding author email address**: adib@tabrizu.ac.ir

A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Salman Hamood Hamood, D., Adib, Y., Mahmoudi, F., & Vahedi, S. (2027). Factor Structure, Validity, and Reliability of the Academic Self-Efficacy Scale Among Upper Secondary School Students in Kirkuk, Iraq. *International Journal of Education and Cognitive Sciences, 8*(1), 1-15.
https://doi.org/10.61838/kman.ijecs.505

© 2027 the authors. Published by Iranian Association for Intelligence and Talent Studies, Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

A B S T R A C T

Purpose: This study aimed to examine the factor structure, construct validity, and reliability of the Arabic version of the Morgan–Jinks Student Efficacy Scale among upper secondary school students in Kirkuk, Iraq.

Methods and Materials: This quantitative, applied, descriptive-analytical study was conducted among upper secondary school students in Kirkuk during the 2024–2025 academic year. A total of 375 students were selected using cluster sampling. Data were collected using the Arabic version of the Morgan–Jinks Student Efficacy Scale. The factorial structure was evaluated sequentially through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Principal axis factoring with oblimin rotation was applied in the EFA. Internal consistency was assessed using Cronbach's alpha and composite reliability, while convergent and discriminant validity were evaluated using average variance extracted (AVE) and the heterotrait–monotrait ratio (HTMT), respectively.

Findings: EFA supported a two-factor structure comprising "Academic Self-Concept and School Value" and "Academic Effort and Educational Expectations," which jointly explained 48.22% of the total variance. Item 30 was removed because of substantial cross-loading, resulting in a final 29-item model. CFA confirmed the adequacy of the two-factor solution, with model-fit indices falling within acceptable to excellent ranges. Cronbach's alpha and composite reliability coefficients ranged from 0.92 to 0.94, demonstrating strong internal consistency. The AVE value was 0.48 for both factors, indicating marginal but acceptable convergent validity when interpreted alongside the strong reliability and overall model evidence. The HTMT coefficient was 0.82, supporting adequate discriminant validity between the two latent dimensions.

Conclusion: The Arabic version of the Morgan–Jinks Student Efficacy Scale demonstrates a stable two-factor structure and satisfactory psychometric properties among upper secondary school students in Kirkuk. The 29-item version can therefore be considered a reliable and sufficiently valid instrument for assessing academic self-efficacy in educational and psychological research and evaluation within this population.

Keywords: *Academic self-efficacy; factor structure; construct validity; reliability; secondary school students; Kirkuk*

1. Introduction

Academic self-efficacy is widely recognized as a central motivational construct in educational psychology because it reflects students' judgments of their capability to organize and execute the actions required to attain designated academic outcomes. Within social cognitive theory, self-efficacy is not conceived as a generalized trait or a direct reflection of objective competence; rather, it represents a context-sensitive belief concerning one's capacity to perform particular tasks, regulate effort, persist in the face of difficulty, and recover from setbacks. Bandura emphasized that efficacy beliefs influence cognitive, motivational, affective, and decisional processes and thereby affect how students approach learning demands, interpret challenges, select goals, and sustain engagement (Bandura, 1993). These beliefs are especially important in school settings, where students repeatedly encounter evaluative situations and are required to regulate their behavior under conditions of uncertainty, competition, and varying task difficulty. The broader social cognitive formulation further proposes that self-efficacy develops through mastery experiences, vicarious experiences, verbal persuasion, and interpretations of physiological and emotional states, making it both developmentally responsive and susceptible to educational context (Bandura, 1997). Academic self-efficacy therefore occupies a distinct position between students' cognitive capabilities and their observable academic behaviors: two students with comparable ability may show markedly different levels of persistence, strategy use, and performance if they differ in their beliefs about their capacity to succeed. This distinction is particularly relevant during adolescence, when academic demands increase, future educational pathways become more consequential, and students are required to make decisions that may affect later educational and occupational opportunities. Contemporary evidence continues to show that academic success in adolescence cannot be understood solely through cognitive ability, because achievement also depends substantially on motivational and self-regulatory processes that shape how students deploy their abilities in actual learning contexts (Lemos et al., 2025).

The theoretical importance of academic self-efficacy is also evident in its close relationship with expectancy-value perspectives on achievement motivation. Expectancy-value theory proposes that students' achievement-related choices, persistence, and performance are jointly influenced by expectations of success and the subjective value attached to academic tasks (Wigfield & Eccles, 2000). In this framework, beliefs about competence overlap conceptually with, but remain distinguishable from, self-efficacy judgments because both influence whether learners engage with challenging academic activities and how much effort they invest. Motivational beliefs, values, and goals interact dynamically rather than functioning as isolated determinants of achievement behavior (Eccles & Wigfield, 2002). A student who believes that academic work is valuable but doubts his or her capacity to succeed may avoid demanding tasks or disengage quickly, whereas a student with stronger efficacy beliefs may interpret difficulty as a challenge requiring additional effort rather than as evidence of inability. This motivational function is closely related to academic self-concept, although self-concept and self-efficacy are theoretically distinct constructs. Academic self-concept refers more broadly to students' perceptions of themselves as learners, whereas academic self-efficacy is more explicitly concerned with perceived capability for successful performance. Longitudinal research has shown reciprocal relationships between academic self-concept and achievement, indicating that prior performance shapes self-perceptions while self-perceptions subsequently affect achievement trajectories (Marsh & Craven, 2006). Similar reciprocal effects have been observed across adolescence, with academic self-concept, achievement, self-esteem, and educational attainment influencing one another over extended developmental periods (Marsh & O'Mara, 2008). These findings underline the importance of measuring perceived academic competence accurately because students' beliefs may function not merely as correlates of achievement but as mechanisms through which previous educational experiences shape subsequent engagement and performance.

Empirical studies further demonstrate that academic self-efficacy is associated with a broad range of educational and psychological outcomes. Stronger academic self-efficacy has been linked to more adaptive responses to academic demands, whereas lower efficacy beliefs are frequently associated with greater academic stress and psychological distress. Within-person evidence suggests that fluctuations in academic self-efficacy can influence the relationship between academic stress and emotional distress, indicating that efficacy beliefs may operate as an important psychological resource under demanding educational conditions (Kristensen et al., 2023). Similarly, academic self-efficacy beliefs may mediate associations between contextual and self-regulatory factors such as family

E-ISSN: 3041-8828

emotional climate, time management, and academic stress (Kordzanganeh et al., 2022). More recent evidence among middle school students indicates that coping styles may partly explain the relationship between academic self-efficacy and academic stress, suggesting that students who perceive themselves as academically capable may also be more likely to employ adaptive strategies when confronted with educational pressures (Sun et al., 2025). Academic self-efficacy is also relevant to home-based and disrupted learning environments. During periods of school closure, cognitive abilities alone did not fully account for students' successful engagement with home learning; affective-motivational variables contributed meaningfully to students' capacity to organize and sustain learning activities outside the conventional classroom (Lockl et al., 2021). Moreover, the relationship between self-efficacy and academic performance appears reciprocal rather than unidirectional. Academic self-efficacy can support later performance, while successful performance can subsequently strengthen efficacy beliefs; however, this relationship may vary according to task difficulty and students' baseline level of achievement (Honicke et al., 2023). Consequently, accurate measurement of academic self-efficacy is essential not only for descriptive purposes but also for investigating the mechanisms through which educational environments influence achievement, stress, resilience, and adaptation.

The growing importance of academic self-efficacy has resulted in the development and validation of several measurement instruments across educational settings and cultural groups. One of the established instruments designed for school-aged students is the Children's Perceived Academic Self-Efficacy Scale developed by Jinks and Morgan, which was intended to assess students' beliefs regarding their academic capability across dimensions associated with talent, effort, and context (Jinks & Morgan, 1999). The scale has been used and adapted in different educational contexts because of its concise format and its focus on students' perceived academic functioning. Nevertheless, psychometric evidence accumulated across cultural settings demonstrates that the factor structure of self-efficacy measures cannot automatically be assumed to remain invariant when an instrument is translated or transferred to a different population. For example, adaptation of the Jinks–Morgan instrument in another cultural context required careful examination of its validity and reliability rather than simple acceptance of its original structure (Özyeter & Kutlu, 2022). Similarly, the development of an academic self-efficacy measure for Filipino junior high school students illustrated the need to identify dimensions that adequately represent the construct within the educational and cultural experiences of the target population (Dullas, 2018). Other contemporary work has established psychometric support for broader academic self-efficacy instruments while also emphasizing the importance of testing longitudinal invariance and criterion validity (van Zyl et al., 2022). Validation among Latvian adolescents has likewise demonstrated that the dimensionality and measurement characteristics of academic self-efficacy instruments require direct empirical verification in each new population (Kampmane & Ozola, 2025). Most importantly for the present regional context, recent research on a brief academic self-efficacy scale across six Arab countries reported satisfactory validity, reliability, and measurement invariance, demonstrating both the feasibility and the necessity of rigorous psychometric assessment in Arabic-speaking populations (Hemade et al., 2025). Together, these findings suggest that self-efficacy is theoretically generalizable but its observed measurement structure may be shaped by linguistic, educational, and cultural conditions.

Cross-cultural psychometrics provides strong methodological reasons for examining an instrument's factor structure rather than assuming equivalence across populations. Translation alone does not guarantee that items retain the same psychological meaning, response tendencies, or relationships with latent constructs in the target culture. Test adaptation requires attention to linguistic equivalence, cultural appropriateness, construct representation, administration procedures, and empirical evidence of score comparability (Hambleton & Patsula, 1998). The International Test Commission guidelines similarly emphasize that translated and adapted instruments should undergo systematic evaluation to ensure that interpretations derived from test scores remain valid for the intended target group (International Test, 2017). Cultural differences can influence the interpretation of educational expectations, teacher relationships, effort, achievement, family involvement, and perceived ability, all of which may affect how students respond to academic self-efficacy items. Cross-cultural research has repeatedly shown that apparent differences between groups may reflect measurement nonequivalence rather than genuine psychological differences, making the examination of structural equivalence an essential part of instrument adaptation (Byrne & van de Vijver, 2010). Measurement invariance and related forms of equivalence are therefore fundamental when researchers seek to compare latent constructs across

E-ISSN: 3041-8828

languages, cultural groups, or educational systems (Milfont & Fischer, 2010). This issue is especially important because a large proportion of psychological theories and measurement instruments have historically been developed in Western, educated, industrialized, rich, and democratic populations. The increasing recognition of cultural and psychological distance from these populations has challenged the assumption that instruments validated in Western settings can be transferred unchanged to substantially different cultural environments (Muthukrishna et al., 2020). Research in Arabic-speaking Middle Eastern populations has likewise documented the importance of testing psychometric properties rather than presuming that factor structures identified in Western samples will necessarily replicate in Arab contexts (Megreya et al., 2021).

These concerns are especially relevant in Kirkuk, Iraq, where the educational and social context possesses characteristics that may influence the meaning and organization of academic self-efficacy beliefs. Kirkuk is socially and ethnoculturally diverse, and everyday interactions occur within a broader context shaped by complex social identities, political histories, and experiences of conflict and coexistence (O'Driscoll, 2021). Such contextual characteristics may affect students' perceptions of school, future educational opportunities, teacher support, academic value, and the relationship between personal effort and expected outcomes. From a psychological measurement perspective, therefore, it cannot be assumed that dimensions originally labeled as talent, effort, and context will be reproduced identically among upper secondary school students in Kirkuk. Research involving young people facing culturally or socially distinctive schooling circumstances has shown that academic self-efficacy may possess a structurally meaningful relationship with schooling experiences and educational participation, reinforcing the importance of examining the construct within the specific context in which students are educated (Olmedo-Moreno et al., 2020). At the same time, adolescence represents a developmental period during which cognitive abilities and school achievement undergo substantial change and may become increasingly differentiated across domains (Lemos et al., 2025). Accurate evaluation of academic self-efficacy among secondary school students is therefore particularly important because inaccurate measurement could obscure relationships between motivational beliefs, educational expectations, academic stress, performance, and later educational attainment.

From a psychometric standpoint, the validation of an adapted scale requires evidence from multiple complementary procedures. Exploratory factor analysis is useful when the dimensionality of a measure is uncertain or when an originally proposed structure does not adequately represent data from a new cultural group. Methodological recommendations emphasize the importance of appropriate extraction methods, theoretically defensible rotation, adequate factor loadings, and the combined consideration of statistical and substantive criteria when determining the number and meaning of factors (Costello & Osborne, 2005). However, an exploratory solution should subsequently be evaluated through confirmatory procedures to determine whether the hypothesized measurement structure provides an acceptable representation of the observed data. Research examining factor structures derived exploratorily has demonstrated the importance of confirmatory analysis for evaluating the replicability and plausibility of such models (van Prooijen & van der Kloot, 2001). Confirmatory factor analysis further allows researchers to evaluate model fit through multiple indices and to estimate the strength of relationships between observed indicators and latent constructs. Standard multivariate guidelines emphasize that factor structure, construct validity, reliability, and overall model fit should be considered jointly rather than relying on a single criterion (Hair et al., 2019). Moreover, because self-report measures collected at a single time point may be affected by shared measurement processes, researchers should remain attentive to common method variance and related response artifacts when interpreting associations among self-reported constructs (Podsakoff et al., 2003). These considerations support a validation strategy that integrates exploratory evidence, confirmatory evidence, internal consistency, convergent validity, and discriminant validity rather than treating reliability alone as sufficient evidence of psychometric adequacy.

The need for such a systematic validation is particularly strong when the empirical data suggest that an established instrument may function differently from its original configuration. A scale can display high internal consistency while still lacking an appropriate latent structure, and strong correlations among subscales may indicate either theoretically meaningful relationships or insufficient discriminant validity. Thus, adaptation requires attention not only to whether items are linguistically understandable but also to whether they organize into conceptually coherent and empirically distinguishable factors in the target population. This distinction is central to the present study because the

E-ISSN: 3041-8828

original Jinks–Morgan model was developed within a Western educational context, whereas Iraqi secondary school students experience a different linguistic, cultural, and educational environment (Jinks & Morgan, 1999). Evidence from cross-cultural measurement research indicates that structural nonequivalence may emerge even when the same broad construct is meaningful across cultures (Byrne & van de Vijver, 2010), and contemporary studies of academic self-efficacy demonstrate that factor solutions and psychometric characteristics may vary across age groups, languages, and national settings (Hemade et al., 2025; Kampmane & Ozola, 2025; van Zyl et al., 2022). Establishing the psychometric properties of an Arabic version for students in Kirkuk can therefore provide a more defensible basis for future research on academic motivation and can support educational and psychological assessments intended to identify students with weak efficacy beliefs, evaluate intervention outcomes, or investigate pathways linking self-efficacy with stress and achievement. Such evidence may also contribute to the broader effort to diversify psychological measurement beyond historically dominant Western samples and to establish contextually valid tools for adolescent populations in Middle Eastern educational systems (Muthukrishna et al., 2020).

Accordingly, the aim of the present study was to examine the factor structure, validity, and reliability of the Arabic version of the Morgan–Jinks Student Academic Self-Efficacy Scale among upper secondary school students in Kirkuk, Iraq.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a quantitative approach, was applied in terms of purpose, and was descriptive in terms of the nature of the data. The statistical population consisted of upper secondary school students in Kirkuk, Iraq, during the 2024–2025 academic year. For exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), a minimum sample size based on a participant-to-item ratio of 5:1 or 10:1 has been recommended. For the 30-item questionnaire used in the present study, the sample was selected using cluster sampling. For this purpose, each classroom was initially considered a sampling cluster, and a specific number was assigned to each class. Fifteen classes were selected as clusters. These 15 classes were selected from among all classrooms in Kirkuk using simple random sampling. The selected classes were located in different schools across Kirkuk, and all eligible students present in each selected classroom were invited to participate in the study. After explaining the ethical framework, including informed consent, confidentiality of data, and the right to withdraw from the study at any stage, data were collected from 375 participants. Throughout all stages of the study, ethical principles, including informed consent, confidentiality of data, and the right to withdraw at any stage, were observed. Preliminary analyses aimed at confirming the original Western three-factor structure in the Iraqi sample indicated a substantial violation of discriminant validity. This finding suggested that the original theoretical framework lacked sufficient stability in this specific Middle Eastern context; therefore, it was necessary to conduct EFA on the data before CFA. In circumstances in which the original factor structure requires reconsideration in a new cultural context, conducting EFA prior to CFA on the same dataset for this purpose has been regarded as acceptable.

2.2. Data Collection Tools

Student Academic Self-Efficacy Scale: The Student Academic Self-Efficacy Scale developed by Jinks and Morgan (1999) consists of 30 items designed to assess three subscales: talent, effort, and context. Items are scored on a 4-point Likert-type scale ranging from strongly agree = 4 to strongly disagree = 1. Items 4, 5, 15, 16, 19, 20, 22, and 23 are reverse-scored. Total scores on the scale range from 30 to 120. In the original study, the internal consistency of the scale, assessed using Cronbach's alpha, was reported to be .82. The original study also reported a satisfactory factor structure. In the present study, Cronbach's alpha was .96 after the preliminary analysis and removal of unsuitable items, indicating satisfactory reliability of the instrument. The Arabic version of the questionnaire was developed by translating the English text independently by an English-language specialist and a student holding a master's degree in educational sciences. The two resulting translations were reviewed by two specialists, and consensus was reached regarding the final version. To assess face and content validity, the final version was reviewed by two professors of educational sciences and was approved after the required revisions were implemented.

2.3. Data Analysis

SPSS version 27 was used for EFA, and SmartPLS version 4 was used for CFA.

E-ISSN: 3041-8828

3. Findings and Results

Before conducting CFA, EFA was performed as an initial diagnostic step to evaluate the structural integrity of the translated version of the Academic Self-Efficacy Scale. To determine whether the data met the requirements for factor extraction, the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity were first examined. The KMO measure of sampling adequacy was .97, indicating excellent sample adequacy, and Bartlett's test of sphericity, $\chi^2(435) = 6131.26$, $p < .001$, indicated sufficient shared variance among the items. Principal axis factoring was used for factor extraction. Because the dimensions of academic self-efficacy were theoretically expected to be correlated, oblimin rotation was applied. The factor-loading cutoff was set at .30. Based on the Kaiser criterion, that is, eigenvalues greater than 1, EFA initially extracted three statistical factors. The first factor had an initial eigenvalue of 13.62, whereas the second and third factors had eigenvalues of 1.84 and 1.04, respectively. However, visual inspection of the scree plot revealed a clear break immediately after the second factor. Given the borderline eigenvalue of the third factor and the visual evidence, a two-factor extraction was used to provide a more accurate representation of the structural characteristics of the data. Based on the item content and the subscales of the original version, the two extracted factors were labeled Academic Effort and Educational Expectations and Academic Self-Concept and School Value. Table 1 presents the eigenvalues and percentages of variance explained by the factors.

Table 1

Eigenvalues and Percentage of Variance Explained by the Two Factors

Factor	Extracted Eigenvalue	Percentage of Variance Explained	Cumulative Percentage of Variance	Rotated Eigenvalue	Rotated Percentage of Variance Explained	Rotated Cumulative Percentage
Academic Effort and Educational Expectations	13.63	45.42	45.42	13.12	43.75	43.75
Academic Self-Concept and School Value	1.85	6.16	51.58	1.34	4.74	48.22

As shown in Table 1, 48.22% of the total extracted variance in the data was explained by the two-factor model. After 10 iterations of rotation, the factors of Academic Effort and Educational Expectations and Academic Self-Concept and School Value explained 43.75% and 4.74% of the total extracted variance, respectively. Accordingly, Academic Effort and Educational Expectations emerged as the most important factor, explaining 43.75% of the total variance. Table 2 presents the factor loadings after oblimin rotation.

Table 2

Factor Loadings of the Academic Self-Efficacy Scale Items

Item	Statement	Factor	Factor Loading
1	I work hard in class.	Academic Self-Concept and School Value	.69
2	I can get the highest grade in my class if I try hard enough.	Academic Self-Concept and School Value	.56
3	Most of my classmates like doing mathematics because mathematics is easy.	Academic Self-Concept and School Value	.66
4	If the teacher liked me more, I could get better grades.	Academic Self-Concept and School Value	.66
5	Most of my classmates work harder than I do on their assignments.	Academic Self-Concept and School Value	.75
6	I am a good student in science.	Academic Self-Concept and School Value	.75
7	I will earn a high school diploma.	Academic Self-Concept and School Value	.68

E-ISSN: 3041-8828

8	I will attend a good university.	Academic Self-Concept and School Value	.74
9	I always get a good grade when I try hard.	Academic Self-Concept and School Value	.51
10	Sometimes I can complete an assignment that my classmates think is difficult.	Academic Self-Concept and School Value	.68
11	I am good at social studies.	Academic Self-Concept and School Value	.69
12	Adults who have good jobs were probably good students when they were in school.	Academic Self-Concept and School Value	.72
13	When I am old enough, I will go to university.	Academic Self-Concept and School Value	.72
14	I am one of the best students in my class.	Academic Effort and Educational Expectations	.66
15	Even if I do well in school, nobody cares.	Academic Effort and Educational Expectations	.73
16	My teacher thinks I am a smart student.	Academic Effort and Educational Expectations	.67
17	It is very important for me to go to university.	Academic Effort and Educational Expectations	.68
18	I am a good student in mathematics.	Academic Effort and Educational Expectations	.70
19	My classmates usually get better grades than I do.	Academic Effort and Educational Expectations	.63
20	What I learn in high school is not important.	Academic Effort and Educational Expectations	.61
21	I usually understand my assignments.	Academic Effort and Educational Expectations	.67
22	I usually do not get good grades in mathematics because it is too difficult.	Academic Effort and Educational Expectations	.58
23	If I do well in school, it does not matter very much.	Academic Effort and Educational Expectations	.75
24	I understand that school subjects are important for my future career.	Academic Effort and Educational Expectations	.73
25	I am good at reading aloud.	Academic Effort and Educational Expectations	.87
26	Getting good grades in school is not difficult for me.	Academic Effort and Educational Expectations	.69
27	I am a smart person.	Academic Effort and Educational Expectations	.45
28	I will finish high school as soon as possible.	Academic Effort and Educational Expectations	.53
29	Teachers like children even when they cannot get good grades.	Academic Effort and Educational Expectations	.40
30	When the teacher asks a question, I usually know the answer even when the other students do not.	Academic Effort and Educational Expectations	.35

According to the findings presented in Table 2, Items 1–13 showed their highest factor loadings on Academic Self-Concept and School Value, whereas Items 14–30 showed their highest factor loadings on Academic Effort and Educational Expectations. None of the item loadings fell below the .30 cutoff. However, Item 30 was removed from the scale because of cross-loading (.35 and .31). Based on the EFA results, CFA was subsequently conducted to examine the measurement model. Figure 1 presents the two-factor CFA model of the Academic Self-Efficacy Scale with standardized coefficients, and Table 3 presents the correlation matrix between the scale factors.

E-ISSN: 3041-8828

Figure 1

First-Order Confirmatory Factor Analysis of the Academic Self-Efficacy Scale With Standardized Coefficients

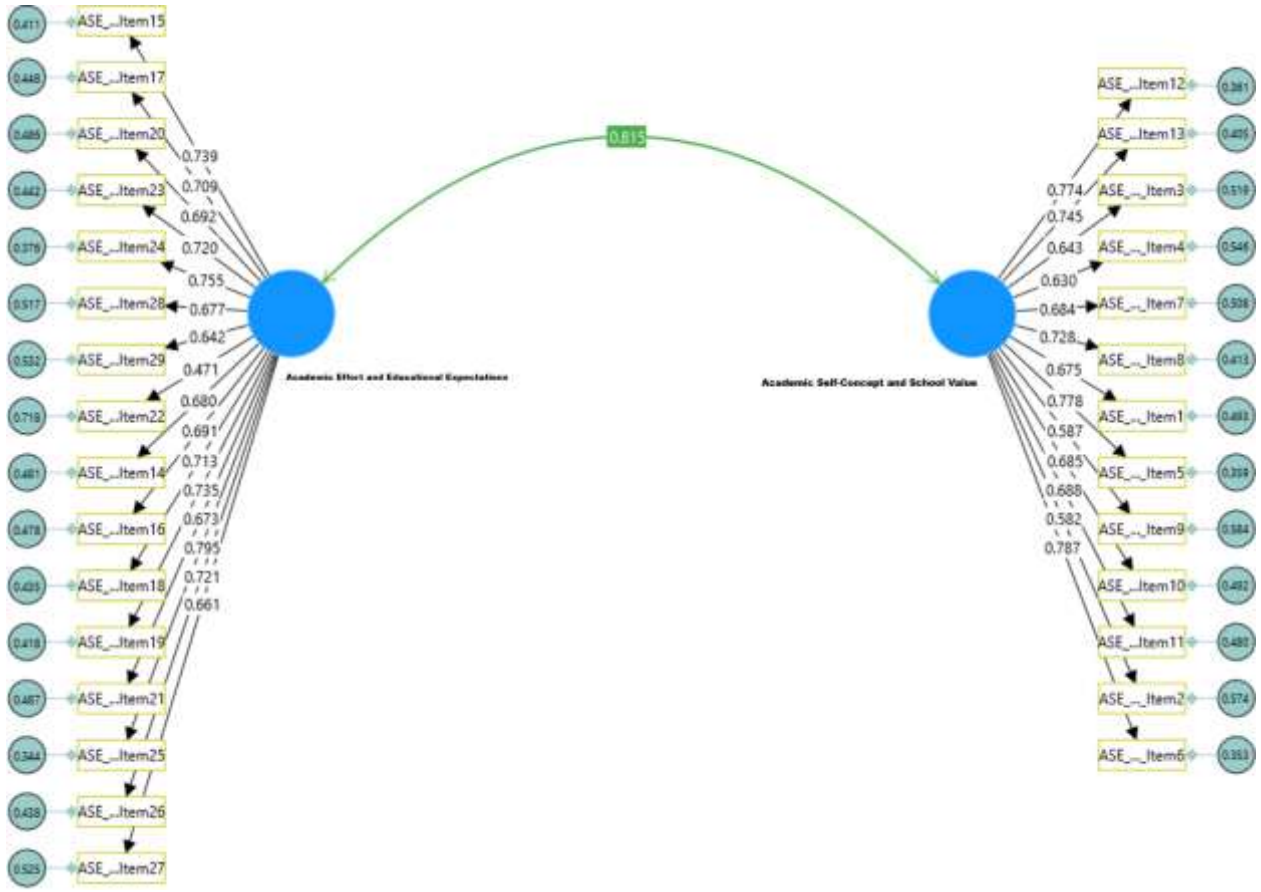


Table 3

Correlation Matrix Between the Two Academic Self-Efficacy Factors

Variable	1	2
1. Academic Self-Concept and School Value	1.00	
2. Academic Effort and Educational Expectations	.82	1.00

As shown in Figure 1, the two-factor measurement model of the Academic Self-Efficacy Scale was examined using a covariance-based structural equation modeling algorithm. Most indicators demonstrated acceptable factor loadings on their respective latent factors. Standardized factor loadings ranged from .47 to .80. All estimated factor loadings were statistically significant; therefore, the observed indicators contributed significantly to the explanation of their corresponding constructs. For the Academic Self-Concept and School Value factor, the highest standardized factor loadings were observed for Items 6, 5, and 12. For the Academic Effort and Educational Expectations factor, the highest standardized factor loadings were observed for Items 25, 24, and 15. As noted above, most items showed satisfactory factor loadings; however, Item 22 had a relatively weak standardized factor loading. Nevertheless, because its estimated factor loading was statistically significant and the item was considered theoretically important, it was retained. The correlation between the two factors was strong and statistically significant, indicating a close relationship between the two dimensions. At the same time, the magnitude of the correlation supported conceptualizing academic self-efficacy as comprising two related but distinct dimensions. Table 4 presents the fit indices for the two-factor model of the Academic Self-Efficacy Scale.

E-ISSN: 3041-8828

Table 4

Fit Indices for the Two-Factor Academic Self-Efficacy Model

Model	χ^2	df	χ^2/df	RMSEA	90% CI for RMSEA	CFI	TLI	SRMR	GFI	AGFI
Two-Factor Academic Self-Efficacy Model	517.34	376	1.38	.032	[.025, .038]	.98	.97	.033	.91	.90

To evaluate the fit of the two-factor model of the Academic Self-Efficacy Scale, the chi-square statistic, relative chi-square, root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), Tucker–Lewis index (TLI), comparative fit index (CFI), goodness-of-fit index (GFI), and adjusted goodness-of-fit index (AGFI) were examined. The chi-square test was statistically significant, $\chi^2(376) = 517.34$, $p < .001$. Although a nonsignificant chi-square test is generally desirable, this statistic is highly sensitive to sample size; therefore, overall model evaluation was based on multiple fit indices rather than on the chi-square test alone. The relative chi-square value was 1.38, which was below the commonly recommended cutoff of 3 and indicated satisfactory fit. The RMSEA was .032, with a 90% confidence interval of [.025, .038], indicating good fit. The SRMR was .033, which was below the commonly recommended cutoff of .08 and was therefore satisfactory. The incremental fit indices, including the CFI, TLI, GFI, and AGFI, were .98, .97, .91, and .90, respectively. All of these values met or exceeded the .90 cutoff and therefore indicated satisfactory model fit. Overall, the pattern of fit indices supported the adequacy of the two-factor model of the Academic Self-Efficacy Scale. After examining model fit, internal consistency was assessed using Cronbach's alpha and composite reliability, while convergent validity was evaluated using average variance extracted (AVE). The results are presented in Table 5.

Table 5

Reliability and Convergent Validity of the Academic Self-Efficacy Scale

Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
Academic Self-Concept and School Value	.92	.92	.48
Academic Effort and Educational Expectations	.94	.94	.48

As shown in Table 5, the results indicated high internal consistency. Cronbach's alpha coefficients for Academic Self-Concept and School Value and Academic Effort and Educational Expectations were .92 and .94, respectively. Composite reliability values for these two factors were also .92 and .94, respectively. These values exceeded the commonly recommended threshold of .70 and indicated satisfactory internal consistency for both dimensions of the Academic Self-Efficacy Scale. The AVE value was .48 for both factors, which was slightly below the recommended threshold of .50. Therefore, although the high reliability coefficients and factor loadings indicated strong measurement quality for both factors, the AVE findings suggested that convergent validity was borderline. Given the theoretical importance of the retained indicators and the overall adequacy of the CFA model, the two-factor structure was retained for subsequent interpretations. Discriminant validity was then examined using the heterotrait–monotrait ratio (HTMT). The results are presented in Table 6.

Table 6

Discriminant Validity of the Academic Self-Efficacy Scale Based on the Heterotrait–Monotrait Ratio

Factor Comparison	HTMT
Academic Self-Concept and School Value vs. Academic Effort and Educational Expectations	.82

To assess discriminant validity, the more robust HTMT approach was used instead of the traditional Fornell–Larcker criterion. As shown in Table 6, the HTMT value between the two factors was .82, which was below the conservative cutoff of .85. This finding indicates that although the two factors are strongly related, they remain empirically distinguishable. Therefore, the findings support the discriminant validity of the two-factor model. Overall, the

E-ISSN: 3041-8828

results demonstrated that the Academic Self-Efficacy Scale had satisfactory internal consistency, model fit, and discriminant validity. However, the AVE values, which were slightly below the recommended level, indicated only borderline convergent validity.

4. Discussion and Conclusion

The present study examined the factor structure, reliability, convergent validity, and discriminant validity of the Arabic version of the Morgan–Jinks Student Academic Self-Efficacy Scale among upper secondary school students in Kirkuk, Iraq. The findings provided overall support for a two-factor structure rather than the original three-factor configuration. Exploratory factor analysis indicated that the items were more coherently organized into two dimensions, labeled Academic Self-Concept and School Value and Academic Effort and Educational Expectations. The two factors jointly explained 48.22% of the extracted variance. Although the Kaiser criterion initially suggested three factors, inspection of the scree plot and the weak eigenvalue of the third factor supported retention of a more parsimonious two-factor solution. Item 30 was subsequently removed because of cross-loading, and confirmatory factor analysis of the resulting 29-item model showed satisfactory to excellent fit across multiple indices. The standardized factor loadings were statistically significant, Cronbach's alpha and composite reliability values ranged from .92 to .94, and the HTMT value of .82 supported discriminant validity. At the same time, the AVE values of .48 for both factors were slightly below the conventional .50 benchmark, suggesting borderline convergent validity. Taken together, these findings indicate that the Arabic adaptation demonstrates strong internal consistency and acceptable construct validity, while also showing that the latent organization of academic self-efficacy in this Iraqi sample differs from the structure originally proposed for the instrument.

The emergence of a two-factor rather than three-factor structure is theoretically plausible when academic self-efficacy is considered as a culturally embedded motivational construct. Bandura's social cognitive framework emphasizes that efficacy beliefs are shaped not only by individual perceptions of competence but also by contextual feedback, prior achievement experiences, social persuasion, and interpretations of success and failure (Bandura, 1993, 1997). In the present sample, items reflecting perceived competence, school value, effort, future educational expectations, and perceived teacher or peer responses appeared to cluster into broader dimensions than those identified in the original version. This pattern may suggest that Iraqi secondary school students do not psychologically separate "talent," "effort," and "context" as distinctly as the original model assumed, but instead organize these beliefs around a more integrated perception of academic competence and school-related value on the one hand, and effortful engagement and educational expectations on the other. Such a result is consistent with the broader literature showing that motivational beliefs are interdependent and that expectations of success, perceived competence, task value, and future-oriented academic goals are closely connected in students' achievement systems (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). The strong correlation between the two retained factors is also consistent with this theoretical overlap, while their empirically distinguishable nature suggests that they are related components rather than redundant representations of the same construct.

The present findings are also consistent with the wider psychometric literature demonstrating that academic self-efficacy scales may exhibit different dimensional structures across cultures, age groups, and educational contexts. Adaptation of psychological measures should not assume that the original factor solution will reproduce unchanged in a new population, because linguistic and cultural differences can influence how respondents interpret items and how specific behaviors map onto latent constructs (Hambleton & Patsula, 1998; International Test, 2017). Cross-cultural measurement research has repeatedly emphasized that construct equivalence must be empirically established rather than presumed, particularly when measures are transferred from Western settings to populations that differ substantially in language, educational organization, and cultural norms (Byrne & van de Vijver, 2010; Milfont & Fischer, 2010). This consideration is particularly relevant to the present study because the original Morgan–Jinks scale was developed in a Western context (Jinks & Morgan, 1999). The observed restructuring therefore should not necessarily be interpreted as a psychometric failure of the Arabic version; rather, it may represent culturally specific reorganization of the same broader construct. This interpretation aligns with arguments that psychological measurement should move beyond uncritical reliance on instruments developed in Western, educated, industrialized, rich, and democratic populations and should instead test the

E-ISSN: 3041-8828

cultural and psychological distance between source and target populations (Muthukrishna et al., 2020).

The results also correspond with previous studies showing that the psychometric properties of academic self-efficacy measures may vary across populations. Özyeter and Kutlu reported that adaptation of the Children's Perceived Academic Self-Efficacy Scale required re-examination of its validity and reliability in a new cultural context rather than direct adoption of the original structure (Özyeter & Kutlu, 2022). Similarly, Dullas demonstrated the importance of developing and validating a contextually appropriate academic self-efficacy measure for Filipino junior high school students, reinforcing the idea that adolescent self-efficacy may be expressed through dimensions shaped by educational and cultural experience (Dullas, 2018). More recent validation work has likewise shown that academic self-efficacy scales can demonstrate strong psychometric performance while requiring careful evaluation of factor structure, invariance, and criterion validity in specific populations (van Zyl et al., 2022). The present results are especially compatible with evidence from Kampmane and Ozola, who validated an academic self-efficacy scale among Latvian adolescents and highlighted the need for direct empirical verification of dimensionality in adolescent samples (Kampmane & Ozola, 2025). In Arab populations, Hemade and colleagues reported satisfactory validity, reliability, and measurement invariance for a brief academic self-efficacy scale across six Arab nations, providing further evidence that academic self-efficacy can be measured reliably in Arabic-speaking populations while still requiring culture-specific psychometric assessment (Hemade et al., 2025). The present study extends this line of evidence to upper secondary school students in Kirkuk and suggests that reliable measurement is achievable in this setting, although the latent factor organization may differ from that reported in Western samples.

The high internal consistency coefficients obtained in the present study further support the reliability of the two-factor model. Cronbach's alpha values of .92 and .94 and equivalent composite reliability estimates indicate that the items within each factor were strongly interrelated. These values are substantially above the conventional .70 criterion and suggest that both dimensions can be measured with a high degree of score consistency. This finding is consistent with prior validation studies showing strong reliability for academic self-efficacy instruments in different populations (Hemade et al., 2025; Kampmane & Ozola, 2025; van Zyl et al., 2022). The overall reliability coefficient of .96 observed after item refinement is also compatible with the assumption that academic self-efficacy represents a coherent motivational domain. At the same time, the very high reliability coefficients should be interpreted together with factor structure rather than in isolation because strong internal consistency can occur even when items are highly redundant or when related dimensions are not sufficiently differentiated. The present study addressed this issue by combining reliability analysis with exploratory and confirmatory factor analyses, in accordance with multivariate measurement recommendations emphasizing the joint evaluation of reliability, factor loadings, model fit, and construct validity (Hair et al., 2019).

The confirmatory factor analysis provided particularly strong support for the adequacy of the two-factor model. The relative chi-square value of 1.38, RMSEA of .032, SRMR of .033, CFI of .98, TLI of .97, GFI of .91, and AGFI of .90 collectively indicated good to excellent model fit. Although the chi-square test was statistically significant, this result is not unexpected given its known sensitivity to sample size, and the broader pattern of fit indices clearly supported the proposed measurement model. These findings are consistent with methodological guidance recommending that confirmatory factor models be judged using multiple fit indices rather than the chi-square statistic alone (Hair et al., 2019). The sequence used in the present study, in which exploratory analysis was followed by confirmatory testing after evidence indicated that the original factor structure did not fit the target population adequately, is also defensible in light of previous methodological research on confirmatory evaluation of factor structures obtained exploratorily (van Prooijen & van der Kloot, 2001). Costello and Osborne similarly emphasized that factor retention should be based on a combination of statistical criteria, graphical evidence, and theoretical interpretability rather than mechanical adherence to eigenvalues greater than 1 (Costello & Osborne, 2005). The decision to retain two factors despite an initially extractable third factor is therefore supported by the convergence of the scree plot, factor interpretability, item patterning, and subsequent CFA fit.

The observed factor loading pattern also deserves attention. Most items showed moderate to strong standardized loadings, and all retained indicators contributed significantly to their respective latent factors. Item 22 showed a relatively weaker loading but was retained because it remained statistically significant and theoretically relevant. This decision is consistent with the principle that item retention should not rely on arbitrary loading thresholds

E-ISSN: 3041-8828

alone when the item contributes meaningful conceptual content to the construct. At the same time, removal of Item 30 because of cross-loading improved structural clarity and is consistent with standard psychometric recommendations to avoid retaining items that do not show sufficiently distinct associations with a single factor (Costello & Osborne, 2005). The resulting 29-item solution appears to balance statistical adequacy and theoretical coverage, preserving broad representation of academic self-efficacy while reducing ambiguity in the measurement structure.

The convergent validity findings were more nuanced. AVE values of .48 for both dimensions fell slightly below the commonly recommended threshold of .50, indicating that the average proportion of variance captured by the latent factors was marginally lower than ideal. However, these values were very close to the threshold, and they occurred alongside high composite reliability, statistically significant factor loadings, and excellent overall model fit. In this context, the evidence suggests borderline rather than inadequate convergent validity. From a psychometric perspective, AVE should be interpreted as one component of a broader construct validity evaluation rather than as an absolute pass-fail criterion, particularly when other indicators consistently support measurement quality (Hair et al., 2019). The present result may also reflect the breadth of the scale, which includes items addressing perceived competence, school value, effort, educational expectations, teacher perceptions, and peer comparison. Such breadth can reduce average shared variance while preserving substantive coverage of the construct. This interpretation is consistent with the multidimensional nature of academic self-beliefs described in prior research, in which related but nonidentical perceptions of competence, self-concept, and achievement expectations contribute to students' broader motivational functioning (Marsh & Craven, 2006; Marsh & O'Mara, 2008).

In contrast, discriminant validity was clearly supported. The HTMT value of .82 was below the conservative .85 criterion, indicating that Academic Self-Concept and School Value and Academic Effort and Educational Expectations were strongly associated but empirically separable. This finding is theoretically coherent because efficacy beliefs, academic self-concept, effort regulation, and expectations for educational success are expected to reinforce one another. The strong correlation between the two factors is therefore consistent with motivational theory, while the HTMT result indicates that they are not merely duplicate dimensions. This distinction is important because academic self-concept and self-efficacy are conceptually related but not identical; self-concept reflects broader self-perceptions, whereas self-efficacy more directly concerns perceived capability to perform and persist in specific tasks. Reciprocal models of academic self-concept and achievement indicate that students' competence beliefs are dynamically related to performance and educational attainment over time (Marsh & Craven, 2006; Marsh & O'Mara, 2008). The present two-factor model appears to capture related aspects of this broader motivational system.

The substantive interpretation of the two factors is also supported by studies linking self-efficacy with academic stress, coping, persistence, and educational performance. The Academic Effort and Educational Expectations factor likely reflects students' beliefs that sustained engagement and future educational success are attainable, which is compatible with evidence that stronger academic self-efficacy supports adaptive coping and reduces vulnerability to academic stress (Kristensen et al., 2023; Sun et al., 2025). Similarly, Kordzanganeh and colleagues found that self-efficacy beliefs play a mediating role in relationships between contextual factors and academic stress, indicating that efficacy beliefs may convert environmental and self-regulatory resources into more adaptive academic functioning (Kordzanganeh et al., 2022). The Academic Self-Concept and School Value factor is likewise consistent with findings showing that students' perceived competence and valuation of schooling influence motivation, engagement, and achievement behavior (Eccles & Wigfield, 2002; Wigfield & Eccles, 2000). These dimensions may be particularly consequential in adolescence, when educational expectations become more closely linked to future academic and occupational trajectories.

The present findings are also interpretable in relation to the specific context of Kirkuk. The city is characterized by sociocultural diversity and by everyday interactions shaped by complex social and historical conditions (O'Driscoll, 2021). Such contextual characteristics may influence how students understand school value, teacher support, effort, ability, and future educational opportunity. It is therefore plausible that items originally organized into separate talent, effort, and contextual dimensions become integrated differently in this population. This interpretation is consistent with evidence showing that academic self-efficacy can be shaped by schooling conditions and social circumstances and may function differently among students exposed to distinctive educational environments (Olmedo-Moreno et al., 2020). The present two-factor solution may

E-ISSN: 3041-8828

therefore reflect not only translation effects but also meaningful adaptation of academic self-beliefs to the social and educational realities of Iraqi adolescents.

The scale's strong psychometric performance is also important because academic self-efficacy is closely related to academic achievement and adaptive learning. Research has shown that self-efficacy and achievement can influence one another reciprocally, with stronger efficacy beliefs supporting performance and successful performance subsequently reinforcing efficacy (Honicke et al., 2023). During adolescence, cognitive ability remains an important determinant of school achievement, but motivational and self-regulatory processes help explain why students with similar cognitive resources may achieve differently (Lemos et al., 2025). Academic self-efficacy can therefore provide information that is not reducible to cognitive ability alone. Likewise, research conducted during school closures showed that affective-motivational factors predicted students' capacity to sustain home learning, illustrating that self-beliefs remain relevant even when conventional schooling conditions are disrupted (Lockl et al., 2021). These findings reinforce the practical value of having a psychometrically defensible Arabic instrument for assessing academic self-efficacy among secondary school students in Kirkuk.

Finally, the use of self-report data should be considered in light of possible common method effects. Self-efficacy necessarily involves subjective judgments and is therefore appropriately measured through self-report, but responses may still be influenced by acquiescence, social desirability, response style, or shared measurement conditions. Podsakoff and colleagues emphasized that common method variance can affect observed associations in behavioral research and should be considered when interpreting self-report data (Podsakoff et al., 2003). The present study reduced some concerns by focusing primarily on measurement structure rather than associations among multiple self-reported constructs, yet response-style effects may still have influenced item covariance. This point further supports the need for replication using independent samples and complementary forms of validity evidence.

Several limitations should be considered when interpreting the findings. First, the sample was restricted to upper secondary school students in Kirkuk, and the results therefore cannot automatically be generalized to younger students, university populations, students in other Iraqi governorates, or adolescents in other Arabic-speaking countries. Second, the study relied exclusively on self-report data, which may be affected by social desirability, acquiescence, misunderstanding of item wording, or transient motivational states. Third, EFA and CFA were conducted on the same overall dataset, which may increase the risk of capitalizing on sample-specific characteristics and may produce an overly optimistic estimate of model fit. Fourth, although the Arabic version underwent expert review for translation and content appropriateness, the study did not include formal quantitative indices of content validity, cognitive interviewing, or a full back-translation procedure. Fifth, the AVE values for both factors were slightly below the conventional .50 criterion, indicating that convergent validity should be interpreted cautiously. Finally, the study did not test measurement invariance across sex, school type, grade level, or other relevant subgroups.

Future studies should replicate the two-factor structure in independent samples from Kirkuk and other regions of Iraq and should preferably use separate subsamples for exploratory and confirmatory analyses. Multi-group confirmatory factor analysis should be conducted to evaluate measurement invariance across sex, grade level, school type, socioeconomic background, and different Arabic-speaking populations. Longitudinal research would also be valuable for determining whether the factor structure remains stable over time and whether academic self-efficacy predicts subsequent academic achievement, persistence, stress, school engagement, and educational aspirations. Researchers should additionally compare the present 29-item version with alternative academic self-efficacy instruments to establish convergent, criterion, and incremental validity. Item response theory and Rasch modeling could be used to investigate item difficulty, discrimination, differential item functioning, and the precision of measurement across the latent trait continuum. Future adaptation work may also benefit from cognitive interviewing with students to examine how culturally specific interpretations of school, ability, effort, teacher relationships, and future educational expectations shape responses to individual items.

The validated Arabic version of the scale can be used by school psychologists, counselors, teachers, and educational researchers as a screening and assessment tool for identifying students with relatively weak academic self-beliefs. The two dimensions should be interpreted separately rather than relying only on a total score, because low Academic Self-Concept and School Value may require different interventions from low Academic Effort and Educational Expectations. Schools can use the results to

E-ISSN: 3041-8828

design targeted programs that strengthen mastery experiences, realistic goal setting, persistence, study planning, perceived school relevance, and future educational orientation. Counselors may also use the scale to monitor changes in students' academic confidence before and after academic support or motivational interventions. However, score interpretation should remain contextual and should be combined with academic records, teacher observations, and student interviews rather than being used as a stand-alone basis for high-stakes educational decisions.

Authors' Contributions

All authors significantly contributed to this study.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the interview and participated in the research with informed consent.

References

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*(2), 117-148. https://doi.org/10.1207/s15326985ep2802_3

Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman.

Byrne, B. M., & van de Vijver, F. J. R. (2010). Testing for measurement and structural equivalence in large-scale cross-cultural studies: Addressing the issue of nonequivalence. *International journal of testing, 10*(2), 107-132. https://doi.org/10.1080/15305051003637306

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical assessment, research, and evaluation, 10*(1), 7. https://doi.org/10.7275/jyj1-4868

Dullas, A. R. (2018). The development of academic self-efficacy scale for Filipino junior high school students. *Frontiers in Education, 3*, 19. https://doi.org/10.3389/feduc.2018.00019

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual review of psychology, 53*, 109-132. https://doi.org/10.1146/annurev.psych.53.100901.135153

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.

Hambleton, R. K., & Patsula, L. (1998). Adapting tests for use in multiple languages and cultures. *Social Indicators Research, 45*, 153-171. https://doi.org/10.1023/A:1006941729637

Hemade, A., Malaeb, D., Alhuwailah, A., Helmy, M., Barakat, M., Hallit, R., El Khatib, S., Rahal, M., Rabbani, S. A., Alzayer, R., Farrag, N. H., El Hajjar, R., Mallouh, J., Obeid, S., Hallit, S., & Fekih-Romdhane, F. (2025). The 9-item academic self-efficacy (ASE) scale: Validity, reliability and measurement invariance across sexes and six Arab nations. *Scientific reports, 15*(1), 12620. https://doi.org/10.1038/s41598-025-96896-6

Honicke, T., Broadbent, J., & Fuller-Tyszkiewicz, M. (2023). The self-efficacy and academic performance reciprocal relationship: The influence of task difficulty and baseline achievement on learner trajectory. *Higher Education Research & Development, 42*(8), 1936-1953. https://doi.org/10.1080/07294360.2023.2197194

International Test, C. (2017). The ITC guidelines for translating and adapting tests (Second edition). *International journal of testing, 18*(2), 101-134. https://doi.org/10.1080/15305058.2017.1398166

Jinks, J., & Morgan, V. (1999). Children's perceived academic self-efficacy: An inventory scale. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 72*(4), 224-230.

Kampmane, K., & Ozola, A. (2025). Validation of the Academic Self-Efficacy Scale in a Latvian Adolescent Sample: A Cross-Sectional Study. *Education Sciences, 15*(8), 1082. https://doi.org/10.3390/educsci15081082

Kordzanganeh, Z., Bakhtiarpour, S., Hafezi, F., & Dasht Bozorgi, Z. (2022). Mediating role of self-efficacy beliefs in the relationship between family emotional climate and time management with academic stress in university students. *Journal of Research and Health, 12*(3), 185-192. https://doi.org/10.32598/JRH.12.3.1958.1

Kristensen, S. M., Larsen, T. M. B., Urke, H. B., & Danielsen, A. G. (2023). Academic Stress, Academic Self-efficacy, and Psychological Distress: A Moderated Mediation of Within-person Effects. *Journal of youth and adolescence, 52*(7), 1512-1529. https://doi.org/10.1007/s10964-023-01770-1

Lemos, G. C., Guisande, M. A., & Almeida, L. S. (2025). Cognitive Abilities and School Achievement: Addressing Challenges Across Adolescence. *Journal of Intelligence, 13*(2), 21. https://doi.org/10.3390/jintelligence13020021

Lockl, K., Attig, M., Nusser, L., & Wolter, I. (2021). Cognitive and Affective-Motivational Factors as Predictors of Students' Home Learning During the School Lockdown. *Frontiers in psychology, 12*, 751120. https://doi.org/10.3389/fpsyg.2021.751120

E-ISSN: 3041-8828

Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science*, *1*(2), 133-163. https://doi.org/10.1111/j.1745-6916.2006.00010.x

Marsh, H. W., & O'Mara, A. (2008). Reciprocal effects between academic self-concept, self-esteem, achievement, and attainment over seven adolescent years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin*, *34*(4), 542-552. https://doi.org/10.1177/0146167207312313

Megreya, A. M., Alrashidi, M., & Al-Dosari, N. F. (2021). Evaluating self-reported psychopathy and associations with personality traits outside the WERID countries: Evidence from two Arabic speaking Middle Eastern countries. *Mental Health, Religion & Culture*, *26*, 347-360. https://doi.org/10.1080/13674676.2021.1999401

Milfont, T. L., & Fischer, R. (2010). Testing measurement invariance across groups: Applications in cross-cultural research. *International Journal of Psychological Research*, *3*(1), 111-130. https://doi.org/10.21500/20112084.857

Muthukrishna, M., Bell, A. V., & Henrich, J. (2020). Beyond Western, Educated, Industrial, Rich, and Democratic (WEIRD) Psychology: Measuring and Mapping Scales of Cultural and Psychological Distance. *Psychological Science*, *31*, 678-701. https://doi.org/10.1177/0956797620916782

O'Driscoll, D. (2021). Everyday peace and conflict: (un)privileged interactions in Kirkuk, Iraq. *Third World Quarterly*, *42*, 2227-2246. https://doi.org/10.1080/01436597.2021.1925104

Olmedo-Moreno, E. M., Expósito López, J., Olmos-Gómez, M. d. C., Sánchez Martín, M., & Chacón-Cuberos, R. (2020). Academic Self-Efficacy in Unaccompanied Foreign Minors: Structural Equation Modelling According to Schooling. *Sustainability*, *12*(11), 4363. https://doi.org/10.3390/su12114363

Özyeter, N. T., & Kutlu, Ö. (2022). Adaptation of the children's perceived academic self-efficacy scale: Validity and reliability study. *International Journal of Assessment Tools in Education*, *9*(2), 430-450. https://doi.org/10.21449/ijate.958871

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Sun, P., Wang, L., & Yan, L. (2025). Mediation of coping style between academic self-efficacy and academic stress in middle school students. *Frontiers in psychology*, *16*. https://doi.org/10.3389/fpsyg.2025.1496528

van Prooijen, J. W., & van der Kloot, W. A. (2001). Confirmatory Analysis of Exploratively Obtained Factor Structures. *Educational and psychological measurement*, *61*(5), 777-792. https://doi.org/10.1177/00131640121971518

van Zyl, L. E., Klibert, J., Shankland, R., See-To, E. W. K., & Rothmann, S. (2022). The General Academic Self-Efficacy Scale: Psychometric Properties, Longitudinal Invariance, and Criterion Validity. *Journal of Psychoeducational Assessment*, *40*(6), 777-789. https://doi.org/10.1177/07342829221097174

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology*, *25*(1), 68-81. https://doi.org/10.1006/ceps.1999.1015

E-ISSN: 3041-8828