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How to Moderate Student Evaluation Apprehension and Increase Academic Achievement in Online Assessment: An Insight into the Roles of Critical Thinking, Self-esteem, and Self-assessment

Khaled Ahmed Abdel-Al Ibrahim (kibrahim1985@gmail.com)
College of Education, Prince Sattam bin Abdulaziz University, Al-Kharj, Saudi Arabia
and Sohag University, Sohag, Egypt.
https://orcid.org/0000-0001-6181-5500?lang=en

Abstract

Evaluation apprehension refers to the anxiety that might arise from the fear that an audience may view one's knowledge or skill poorly. A review of the existing literature reflected that evaluation apprehension was uncharted territory, especially in foreign language learning. Keeping this point in mind, the present study intended to uncover the effects of practicing critical thinking (CT), self-esteem (S-E), and self-assessment (S-A) on moderating evaluation apprehension (EA) and increasing academic achievement in online assessment. Data was collected from 391 EFL students through the use of the Watson–Glaser Critical Thinking Appraisal Form A, The Foreign Language Learning Self-esteem Scale (FLLSE), The Core of Self-Assessments Questionnaire, The Student Evaluation Apprehension Scale, and a Researcher-made test. Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) results indicate that developing CT, S-E, and S-A can moderate student EA and increase academic achievement. The results of this inquiry may benefit those who are learning a language, those who teach a language, and those who make policy decisions.

Keywords: Evaluation Apprehension, Academic Achievement, Critical Thinking, Self-Esteem, Self-assessment, EFL Learners

Introduction

Emotional and intellectual factors of the test takers are linked to language proficiency testing. From a pedagogical perspective, learning-oriented evaluation in the classroom is an effective tool for gauging students' linguistic growth and taking note of their emotional well-being. Evaluation Apprehension (EA) provides participants with an understanding of how learners may experience and, as a result, behave when carrying out an activity in the presence of other people. Cottrell (1972) initially proposed the EA hypothesis, which accounts for people's concerns about the evaluations of others when engaging in interactions with others. To be more specific, EA is an anxious, active worry that anybody participating in group activities may feel (Young, 1991). In this regard, Koch and Terrell (1991) have substantiated that individuals who are apprehensive about being negatively evaluated tend to exhibit symptoms of communication anxiety. Similarly, Shanahan (2012) posited that students experience anxiety concerning their assessments, classroom performance, and evaluations from instructors and peers, which are significant contributors to EA.

In a further investigation conducted by Joo and Damron (2015), it was shown that there exists a negative correlation between reading anxiety and performance, with reading

anxiety potentially serving as an explanation for the occurrence of EA. Additionally, this study revealed that there are notable differences between men and females in the context of Southeast Asia. In an investigation done by Rafeka et al. (2014), it was shown that female university students had higher levels of anxiety and dread compared to their male counterparts. This heightened emotional state resulted in negative assessment apprehension among female students. It was also emphasized that learners' fulfillment, dedication, and academic satisfaction may elicit good student engagement and achievement (Carter et al., 2017). The study's findings demonstrated that consistent flow, personal best, and academic buoyancy significantly predict positive self-efficacy for academic tasks and language acquisition accomplishment (Jahedizadeh et al., 2021). In a similar line of inquiry, Ismai and Heydarnejad (2023) EA is critical in predicting EFL learners' self-efficacy and personal best goals.

In the words of Bachman (2015), the term "assessment" refers to the many processes carried out to evaluate and draw conclusions on the students' learning progress. Several methodologies were proposed to comprehensively analyze the learners' development and plan for further endeavors. The act of learners actively participating in evaluating their work is often known as S-A. This kind of assessment is different from both teacher assessment and peer assessment. In the words of Bachman et al. (2010), check or evaluation of oneself or one's actions, attitudes, or performance. Following Judge et al.'s research (1997) and Andrade (2019), self-assessment is considered a higher-order feature encompassing generalized CT, self-esteem, neuroticism, and self-awareness. The learners' viewpoints are widened by the strategies incorporated in S-A, allowing them to keep track of their own learning growth. The effects of using S-A affect the learners' cognitive abilities and emotional well-being, which is, in turn, influenced by the methods they use.

In this respect, Hu (2022) pointed out that students can influence their emotional development by examining their improvement with the help of S-A. Additionally, Punpromthada et al. (2022) revealed that EFL students with elevated levels of S-A demonstrated improved management of their psychological well-being and excellent proficiency in language acquisition. Students can better handle educational downsides when they participate in self-assessment procedures, according to AlMamoory and Abathar Witwit (2021). Students learn to reason deeply and make deliberate decisions when participating in these processes. The organization's internal and external values can potentially affect its condition (Bourke & Mentis, 2007, 2013). Additionally, Çakmak et al. (2023) provided evidence that EFL students' S-A, reliance, and motivation could predict test-taking skills and anxiety in online assessment

As stated by Nemati et al. (2021) and Wei (2020), this demonstrates that putting S-A into practice and actively participating in it influences the intellectual, metacognitive, and emotional phases of students' educational experiences. It was also shown that many elements may be responsible for establishing the S-A culture among the students. Based on recent research findings, Ritonga et al. (2023) S-A, test-taking skills, and resilience are critical in determining the learners' success in virtual assessment. Similarly, Jahara et al. (2022) showed that students' coping styles had a beneficial effect on their social adjustment and stress tolerance.

Socrates, who lived around two centuries ago, originated the notion of critical thinking (CT). Socrates believed that deduction, reasoning, and assessing were essential components of an individual's thinking (Mason, 2008). There is no generally accepted

definition of CT, despite the length of time since its inception and the breadth of its applications (Halonen, 1995). According to Zhang (2020), CT is a higher-order thinking talent that engages brain mechanisms and cognitive abilities. In addition, Dewey (1933) defined CT as the ever-changing procedures of evaluation, reflection, and analysis that are carried out to arrive at a satisfactory conclusion. The intellectual and disciplined process of mind that emerges through critical thinking is stressed in Thomas and Lok's (2015) definition of CT.

As Mackinnon (2015) explained, S-E means having confidence in one's value or talents. According to Wang and Ollendick (2001), the construct under consideration results from an individual's perceptions of their own skills, capabilities, and interpersonal connections. In other words, SE is intricately linked to the self-evaluation process, including cognitive assessments crucial for one's sense of self-worth and mental wellness, as posited by Manning et al. (2006). Furthermore, Dörnyei and Ryan (2015) proposed a correlation between self-esteem, self-image, and self-examination in their study. Self-evaluation discusses the processes involved in constructing an individual's self-concept, whereas self-concept refers to the images people have of themselves. In a more precise manner, Lawrence (2006) defined self-concept as a comprehensive term including self-image, ideal self, and self-esteem.

S-E might influence students' ability to learn and their academic progress. It suggests that students with a higher S-E are more self-assured and set greater objectives for themselves despite the difficulties and problems they face (Murk, 2006). They have found that persistence in their efforts has helped them become more effective. According to Hosseinmardi et al. (2021), S-E can also foster people's self-regulatory skills and emotional states. Brown (2000) asserts that "no successful activity can occur without some degree of self-esteem" (p.145), and he backs up this claim with research. Reading comprehension may be improved by students' use of S-E, which is connected to the students' autonomy (Zhang, 2022).

Furthermore, Faramarzzadeh and Amini (2017) concluded that structural elicitation has a mediating function in forming speaking abilities among advanced and intermediate language learners. According to the study's findings, students of another language with higher levels of S-E performed better on oral tests in mixed groups. Mandokhail et al. (2018) found evidence to support the theory that instructors who model positive SE for their students are crucial in the students' development of positive S-E.

Given the considerable impact of the constructs mentioned above on improving foreign language learning online assessment and the lack of research examining their interconnectedness, this study aimed to investigate the influences of CT, S-E, and S-A on EA and Academic Achievement in higher education. A conceptual framework was constructed using pertinent scholarly sources and theoretical constructs to illustrate the fluid interaction among the abovementioned variables. The suggested model was next submitted to CFA and SEM, two widely used statistical approaches for assessing the structural integrity of latent variables and the associations between multiple variables, respectively. To achieve the objectives of the study, the researchers formulated the following research questions:

RQ1: To what degree does EFL learners' CT enhance their EA and Academic Achievement?

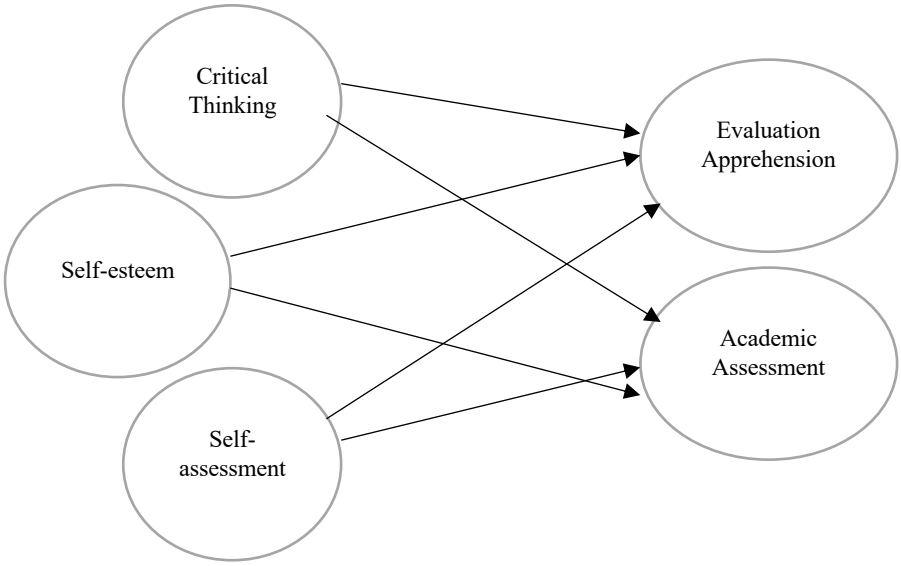
RQ2: To what degree does EFL learners' S-E enhance their EA and Academic Achievement?

RQ3: To what degree does EFL learners' S-A enhance their EA and Academic Achievement?

Figure 1 clearly depicts the interrelationships among CT, S-E, S-A, EA, and Academic Achievement to represent the ideas mentioned earlier. The diagram postulates that EFL university students' EA and Academic Achievement may be considerably impacted by their CT, S-E, and S-A.

Figure 1

The Suggested Model



Method

Participants

Three hundred ninety-one instructors participated in the research; male teachers comprised 68.47 percent of the group, and female teachers included the remainder. The respondents' ages ranged from 18 to 27, with the median being 22, and they were all studying Applied Linguistics at Suadi Arabian universities.

Materials

The Critical Thinking abilities of university students were evaluated by Watson and Glaser (2002) using the Watson–Glaser Critical Thinking Appraisal Form A (WGCTA). This scale is comprised of five different sections: inference (16 items), identifying assumptions (16 items), making deductions (16 items), interpretation (16 items), and assessment (16 items). As reported by the statistics, Cronbach's alpha was determined to be adequate in this investigation ($\alpha = 0.854$).

The Foreign Language Learning Self-esteem Scale (FLLSE) was used to investigate the self-esteem levels held by university students studying EFL. This measure was designed by Rubio (2007) using a Likert scale with five points, with one representing strongly disagreeing and five representing strongly agreeing. There are a total of 25 items on the FLLSE, which are broken down into four categories: (1) language capacity, (2)

actual in-class language use, (3) in-class correlations, and (4) attitude toward or conduct in the context of the foreign language class. During this research, the dependability of this instrument was evaluated, and the results of the Cronbach alpha coefficient showed that it was satisfactory ($\alpha = 0.869$).

Participants' fundamental S-A was evaluated using the 12-item The Core of Self-Assessments Questionnaire (CSAQ) created and validated by Judge et al. (2003), with a 5-point Likert response format of strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The CSAQ has a wide scoring range, from 12 to 60. Scores in the upper range indicate high levels of S-A, while scores in the lower range indicate poor S-A. Cronbach's alpha was used to analyze the CSAQ's internal consistency, and the results were good ($\alpha = 0.852$).

The Student Evaluation Apprehension Scale **(**SEAS) was used to determine the level of EA that the participants were experiencing. Jaheidzadeh and Ghanizadeh (2021) are accountable for developing and validating this scale. The SEA consists of twenty questions on a Likert scale ranging from 1 (which means "definitely disagree") to 5 (which means "definitely agree"). The three components of SEA are reading Commotion, presentation in the classroom, and participating in classroom discussions or question and answer exchanges. The results of this study demonstrated that the SEA's internal consistency, as determined by Cronbach's alpha, was satisfactory (with values ranging from 0.846 to 0.892).

A researcher-made test was developed to align with the content covered in the applied resources. The assessment has 30 questions to gauge vocabulary, grammar, and writing skills. The expertise of experts was used to evaluate the face and content authenticity of the items. As part of the evaluation process, three psychometricians and three EFL teachers were asked to assess the academic merit of the questions. After this procedure, the test was administered to a cohort of 29 university students who had similarities with the intended population to assess the test-retest reliability. To determine the consistency of the findings over a period of time, an identical examination was conducted once more on similar subjects after two months. The Pearson correlation values indicated a significant and robust test-retest reliability of the test ($r = 0.90$, $p < 0.05$).

Data Collection and Analysis

The data-gathering process was carried out in 2023. The information was gathered using an online tool (Google Forms). The four parts of this computerized survey form comprise the WGCTA, FLLSE, CSAQ, SEAS, and the researcher-made test. There was no chance of missing information since the computerized survey was well-planned. The data distribution was initially examined using the Kolmogorov-Smirnov test. Parametric approaches were valid after data screening revealed that the data followed a normal distribution. CFA and SEM using LISREL 8.80 were used since the data seemed normally distributed.

Results

This section presents the data analysis reports, including detailed explanations for each component. The first stage (Table 1) involves examining descriptive data about the various features of each instrument.

Table 1
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Inference	391	17	78	56.517	13.628
Recognizing Assumptions	391	33	78	61.041	8.006
Making Deductions	391	20	72	57.747	11.006
Interpretation	391	28	74	56.875	9.115
Evaluation	391	18	79	55.611	14.836
Critical Thinking	391	180	361	287.790	39.647
Language Capability	391	7	35	24.841	6.648
Real In-class Language Utilization	391	6	30	21.665	5.570
In-class Correlations	391	6	30	21.517	5.079
Attitude Toward Behavior in the Class of Foreign Language	391	6	28	20.862	5.288
Self-esteem	391	25	120	88.885	18.211
Self-assessment	391	25	54	43.931	7.185
Reading Commotion	391	10	35	25.427	5.037
Presentation in the Classroom	391	7	35	24.747	6.252
Participation in Classroom Discussions/ Question and Answer Exchanges	391	6	30	22.910	5.440
Student Evaluation Apprehension	391	28	95	73.084	14.148
Vocabulary	391	5	10	8.176	1.323
Grammar	391	4	10	8.187	1.674
Writing Skills	391	1	10	7.079	2.336
Academic Achievement	391	15	30	23.442	3.420

After considering CT, the most common response was to look for Recognizing Assumptions (M=61.041, SD=8.006). If the S-E scale's key variables are broken down into parts, it was discovered that Language Capability had the most outstanding mean value (M=24.841, SD=6.648) among the scale's core variables. The mean score on the second instrument, S-A, was 43.931, and the standard deviation was equivalent to 7.185. Reading Commotion was deemed to have the greatest level of EA, as shown by its mean score of 25.427. Grammar was in first place on Academic Achievement with a mean score of 8.187 and a standard deviation of 1.674.

The Kolmogorov-Smirnov test was then used for the data to look for out-of-the-ordinary patterns. The outcome is shown in Table 2.

Table 2
The Results of Kolmogorov Smirnov Test

	Kolmogorov-Smirnov Z	Asymp. Sig. (2-tailed)
Inference	0.896	0.398
Recognizing Assumptions	1.399	0.055
Making Deductions	1.178	0.125
Interpretation	0.722	0.675

Evaluation	1.002	0.267
Critical Thinking	0.563	0.909
Language Capability	0.913	0.375
Real In-class Language Utilization	1.085	0.190
In-class Correlations	1.288	0.072
Attitude Toward Behavior in the Class of Foreign Language	1.266	0.081
Self-esteem	0.930	0.352
Self-assessment	1.467	0.052
Reading Commotion	1.270	0.079
Presentation in the Classroom	1.371	0.054
Participation in Classroom Discussions/ Question and Answer Exchanges	1.253	0.087
Student Evaluation Apprehension	1.332	0.057
Vocabulary	1.026	0.205
Grammar	1.373	0.056
Writing Skills	1.106	0.173
Academic Achievement	1.016	0.253

According to Table 2, the sig values of all instruments and the individual components that make up those instruments were higher than 0.05. As a consequence of this, one might conclude that parametric techniques are suitable for the analysis of the data.

Then, the association between CT, S-E, S-A, E-A, and Academic Achievement was analyzed using a Pearson product-moment correlation in this study.

Table 3

The Correlation Coefficients between the CT, S-E, S-A, E-A, and Academic Achievement

	Critical Thinking	**Self-esteem**	**Self-assessment**	**Reading Commotion**	**Presentation in the Classroom**	**Participation in Classroom**	**Vocabulary**	**Grammar**	**Writing Skills**	**Reading Commotion**	**Presentation in the Classroom**
Critical Thinking	1.000										
Self-esteem	0.554**	1.000									
Self-assessment	0.603**	0.579**	1.000								
Reading Commotion	0.738**	0.895**	0.524**	1.000							
Presentation in the Classroom	0.704**	0.864**	0.558**	0.503**	1.000						

Participation in Classroom Discussions	0.682**	0.8844**	0.570**	0.624**	0.623**	1.000			
Vocabulary	0.631**	0.806**	0.505**	0.608**	0.664**	0.578**	1.000		
Grammar	0.585**	0.821**	0.483**	0.572**	0.558**	0.442**	0.612**	1.000	
Writing Skills	0.623**	0.755**	0.445**	0.598**	0.541**	0.631**	0.644**	0.705**	1.000

As indicated by the information provided in Table 3, significant connections existed between the various features of the subscales of CT, S-E, S-A, E-A, and Academic Achievement.

The findings are summarized in Table 4, and it can be seen that all of the fit levels for Model 1 are within the acceptable limits. This includes the chi-square/df ratio (2.956), the root-mean-squared error of approximation (RMSEA) (0.071), the goodness-of-fit (GFI) (0.948), the goodness-of-fit (NFI) (0.962), and the CFI (0.932).

Table 4

Model Fit Indices (Model 1)

Fitting indexes	$\chi 2$	df	$\chi 2/df$	*RMSEA*	*GFI*	*NFI*	*CFI*
Cut value			<3	<0.1	>0.9	>0.9	>0.9
Model 1	931.20	315	2.956	0.071	0.948	0.962	0.932

Figure 2

The Symbolic Representation of the Values of the Path Coefficients (Model 1)

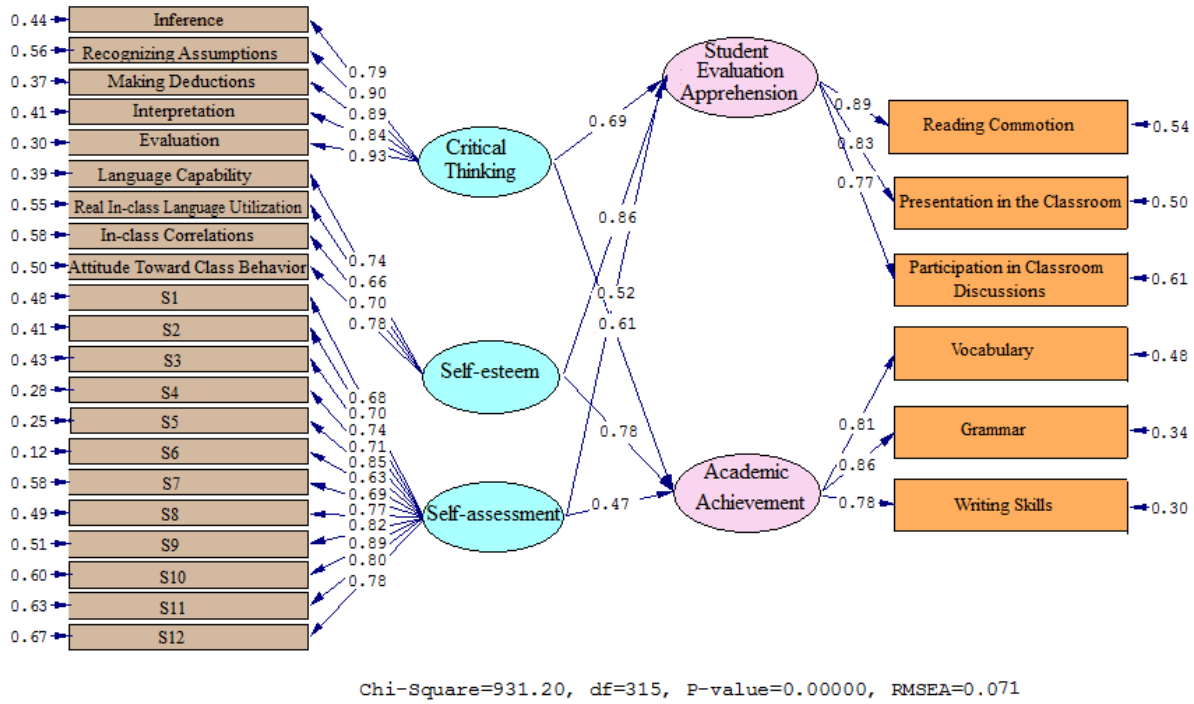


Figure 3

T Values for Path Coefficient Significance (Model 1)

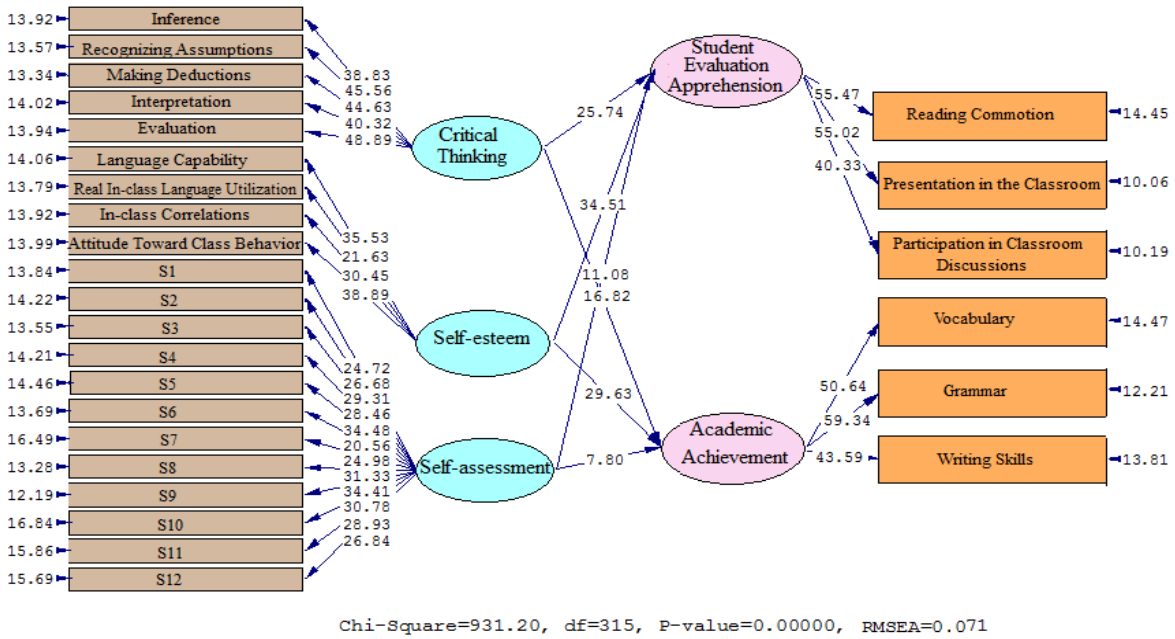


Table 5

Summary of the Findings in Model 1

Paths			Path Coefficient	T Statistics	Test results
Critical Thinking	→	Student Evaluation Apprehension	0. 69	25.74	Supported
Self-esteem	→	Student Evaluation Apprehension	0.86	34.51	Supported
Self-assessment	→	Student Evaluation Apprehension	0.52	11.08	Supported
Critical Thinking	→	Academic Achievement	0.61	16.82	Supported
Self-esteem	→	Academic Achievement	0.78	29.63	Supported
Self-assessment	→	Academic Achievement	0.47	7.80	Supported

The link between the components is visually shown in Figures 2 and 3 and Table 6. There is a significant association between CT and EA (β = 0. 69, t = 25.74) as well as CT and Academic Achievement (β = 0.61, t = 16.82) are shown by the standardized estimates and t-values. Additionally, there is a positive association between S-E and EA (β = 0.86, t = 34.51) and Academic Achievement (β = 0.78, t = 29.63). Moreover, S-A and EA (β = 0.52, t = 11.08) and Academic Achievement (β = 0.47, t = 7.80) were positively related.

Table 6

Model Fit Indices (Model 2)

Fitting indexes	$\chi 2$	df	$\chi 2/df$	RMSEA	GFI	NFI	CFI
Cut value			***<3***	0.1<	>0.9	>0.9	>0.9
Model 2	7067.04	2393	2.953	0.071	0.956	0.935	0.962

Table 6 demonstrates further that the chi-square/df ratio, which is 2.953; the RMSEA, which is 0.071; the GFI, which is 0.956; the NFI, which is 0.935; and the CFI, which is 0.962, all satisfy the conditions for a good fit concerning Model 2.

The connections between EA and Academic Achievement subscales with CT, S-E, and S-A are depicted in Figures 4 and 5.

Figure 4

The Symbolic Representation of the Values of the Path Coefficients (Model 2)

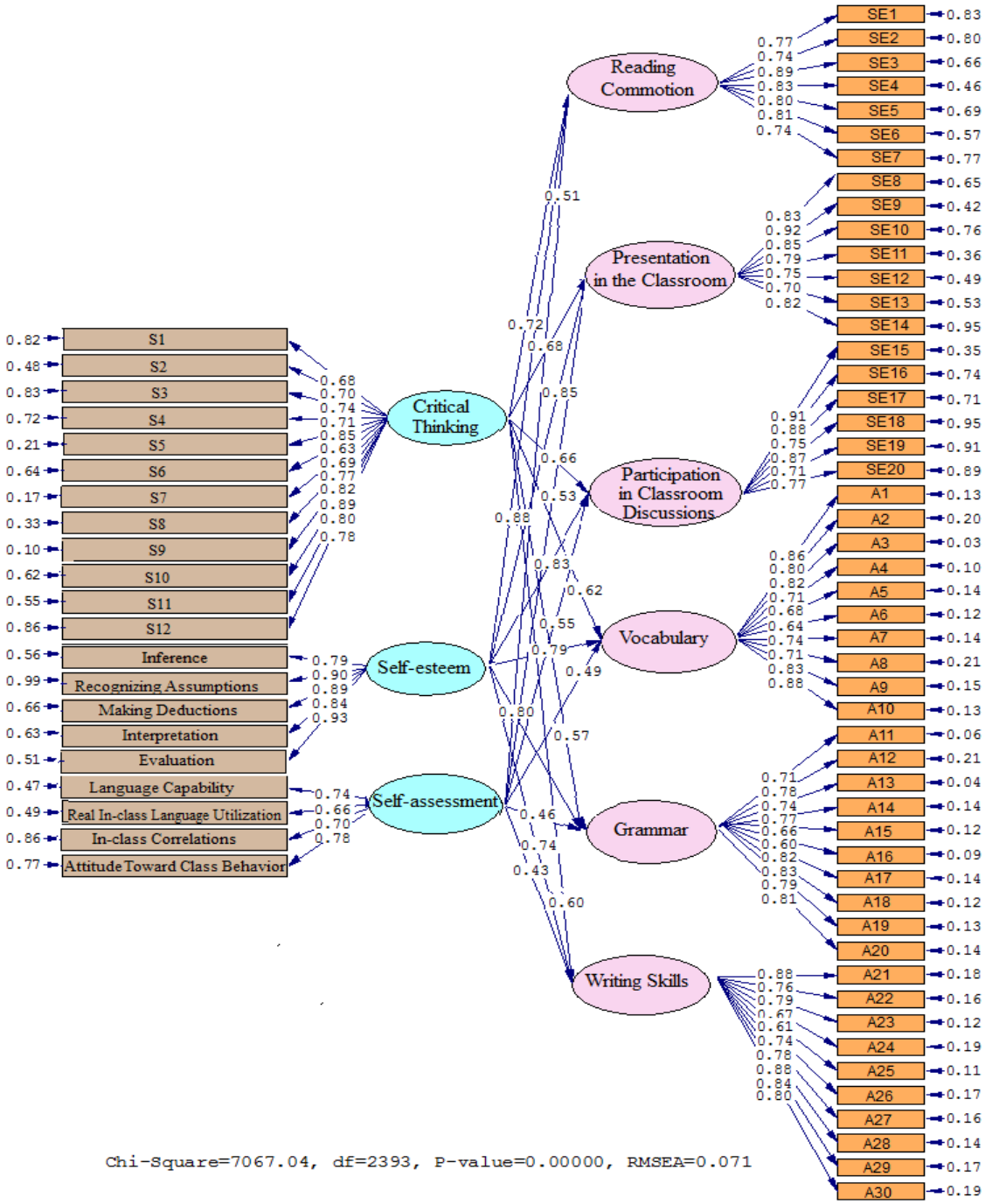


Figure 5.

T Values for Path Coefficient Significance (Model 2)

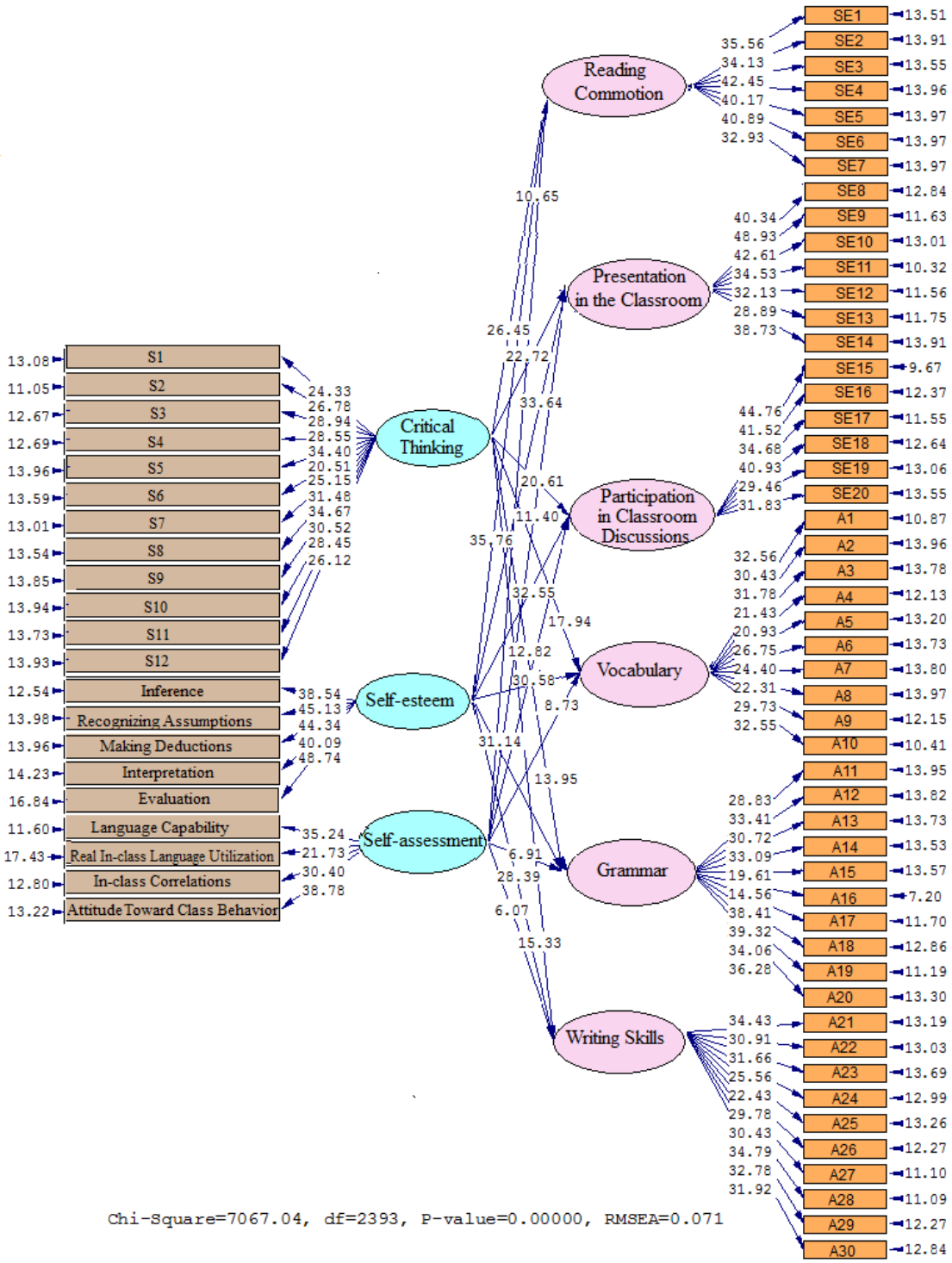


Table 7

Summary of the Findings in Model 7

	Paths		Path Coefficient	T Statistics	Test results
Critical Thinking	→	Reading Commotion	0. 72	26.45	Supported
Critical Thinking	→	Presentation in the Classroom	0.68	22.72	Supported
Critical Thinking	→	Participation in Classroom Discussions	0.66	20.61	Supported
Critical Thinking	→	Vocabulary	0.62	17.94	Supported
Critical Thinking	→	Grammar	0.57	13.95	Supported
Critical Thinking	→	Writing Skills	0.60	15.33	Supported
Self-esteem	→	Reading Commotion	0.88	35.76	Supported
Self-esteem	→	Presentation in the Classroom	0.85	33.64	Supported
Self-esteem	→	Participation in Classroom Discussions	0.83	32.55	Supported
Self-esteem	→	Vocabulary	0.79	30.58	Supported
Self-esteem	→	Grammar	0.80	31.14	Supported
Self-esteem	→	Writing Skills	0.74	28.39	Supported
Self-assessment	→	Reading Commotion	0.51	10.65	Supported
Self-assessment	→	Presentation in the Classroom	0.53	11.40	Supported
Self-assessment	→	Participation in Classroom Discussions	0.55	12.82	Supported
Self-assessment	→	Vocabulary	0.49	8.73	Supported
Self-assessment	→	Grammar	0.46	6.91	Supported
Self-assessment	→	Writing Skills	0.43	6.07	Supported

The findings suggest a strong and positive relationship between CT and the following sub-factors: Reading Commotion (β = 0. 72, t = 26.45), Presentation in the

Classroom (β = 0.68, t = 22.72), Participation in Classroom Discussions (β = 0.66, t = 20.61), Vocabulary (β = 0.62, t = 17.94), Grammar (β = 0.57, t = 13.95), and Writing Skills (β = 0.60, t = 15.33). Similarly, the association was significant between S-E and the following sub-scales: Reading Commotion (β = 0.88, t = 35.76), Presentation in the Classroom (β = 0.85, t = 33.64), Participation in Classroom Discussions (β = 0.83, t = 32.55), Vocabulary (β = 0.79, t = 30.58), Grammar (β = 0.80, t = 31.14), and Writing Skills (β = 0.74, t = 28.39). Positive and significant relationships were also evident between S-A and the following sub-components: Reading Commotion (β = 0.51, t = 10.65), Presentation in the Classroom (β = 0.53, t = 11.40), Participation in Classroom Discussions (β = 0.55, t = 12.82), Vocabulary (β = 0.49, t = 8.73), grammar (β = 0.46, t = 6.91), and Writing Skills (β = 0.43, t = 6.07)

Discussion

The primary objective of the current research was to investigate the connection between EA, academic achievement, CT, S-E, and S-A in Saudi Arabian EFL settings. As such, this study constructed and SEM-tested a model to illustrate the connection between these components. CT, S-E, and S-A were significantly predictive of EA academic achievement after the study results. The links between the abovementioned variables are shown in Models 1 and 2, and the mediating functions of CT, S-E, and S-A are highlighted and discussed in the following paragraphs:

The target of the first question was to determine whether EFL learners' CT enhances their EA and academic achievement. As the findings reflected, this suggests that students can protect their own EA and achieve better success by developing greater degrees of conceptual and metacognitive capacities. As indicated by the second model, CT had a substantial and beneficial impact on the EA's constituent parts. To rephrase, CT guides EFL students in their evaluations of the university's worth and their sense of belonging there, as well as their beliefs about their ability to stick with their chosen major, the usefulness of their virtual classes, their interactions with faculty and classmates, and their connections to the broader social and relational web. They are also encouraged to participate in oral class activities as an indispensable part of language learning.

This result makes sense, given that students' horizons are broadened by their exposure to and proficiency with technology. The CT of EFL college students shapes their sense of identity and academic efficacy. The more individuals use CT methods, the more their ideas and beliefs shift for the better. That is to say, CT helps students enhance their academic learning and perform better in their online assessments. Similar findings were found by Namaziandost et al. (2023) and Riswanto et al. (2022). They showed a connection between the ability to engage in higher-order thinking, self-regulation, social competence, and confidence in one's abilities.

The second research question is how EFL students' self-esteem enhances their EA and academic achievement. The results showed that students with high levels of S-E presented strong EA and did better in their assessments. This result can be discussed from a theoretical standpoint. Self-determination and self-identity theories provide conceptual support to S-E (Bourke & Mentis, 2007, 2013). It is possible to deduce that S-E both explicitly and indirectly assists EFL university students in achieving a positive self-identity, giving favorable attitudes toward learning and assessments. This finding is consistent with the results of Huang (2022), who reached a similar conclusion about the

positive impact of S-E on self-management and self-confidence, both of which are fundamental concepts in the context of EA.

The requirements of learning a language present learners with various problems, and students in higher education may find these challenges more complicated than their lower-level counterparts. Students in higher education are better able to build effective cognitive, metacognitive, and problem-solving techniques when they have a positive self-concept, which is the child of S-E. This result is supported by the foundational concepts of social-cognitive theory (Bandura, 2012), which emphasizes the crucial role learners play in being active in their self-monitoring and self-assessment, as well as their progress in effectiveness. According to the self-determination hypothesis developed by Martin and Marsh (2019), an increase in the degree to which a person is self-aware leads to gains in the individual's drive, contentment, and class participation.

The last research question was a step toward finding the degree of relationships between S-A, EA, and academic achievement in an EFL setting. The outcomes indicated that S-A provided avenues to positive EA of EFL students and improved their performance. This suggests that students' self-perceptions are shaped by the importance they attribute to social acceptance and their level of self-monitoring. The more EFL college students engage in self-evaluation, the more they grow to esteem and respect themselves. The second model reached the same conclusion and provided visual evidence that S-A affected the components of EA. The extent and intensity of S-A in educational settings are contingent upon many advantageous and disadvantageous conditions.

Consequently, learners are advised to exert optimal efforts in enhancing the impact of favorable elements while mitigating the consequences of unfavorable ones. This result lends credence, although in a roundabout way, to the findings of the earlier studies that uncovered the connection between S-E and EA (Ismail & Heydarnejad, 2023; Villarta et al., 2021). Moreover, Yang et al. (2022) demonstrated that instructional intervention in S-A promotes learners' beliefs in their ability to succeed.

EFL learners with a greater degree of CT, S-E, and S-A can better manage their test anxiety in online assessment. As a consequence, they develop higher levels of self-regulation and a feeling of confidence (model 2). This is a conclusion that can be drawn from the available evidence. Therefore, they can better handle the potential anxiety that may be encountered due to the communication and evaluation aspects of learning a foreign language. This discovery agrees with the results of Alazemi et al. (2023) and Ritonga et al. (2023). Based on their findings, there is a strong association between the level of anxiety that language students feel when taking online language tests and the degree to which those students participate in S-A.

Conclusion, Pedagogical Implications, and Limitations

In a nutshell, this exploration aimed to determine the possible connections between EA, academic achievement, CT, S-E, and S-A in colleges and universities. In this light, the researchers behind this work hypothesized a model, which was then evaluated using CFA and SEM. According to the results, the EA and academic achievement of EFL university students are significantly influenced by their CT, S-E, and S-A. The data obtained validated the predictive ability of the CT, S-E, and S-A in EA, supporting the proposed model. EFL learners' levels of success in language learning and online assessment were also affected by the degree to which they were involved in CT, S-E, and S-A.

Professors and instructors at schools and universities must play a part in creating and maintaining an environment conducive to successfully implementing CT, S-E, and S-A. They must acquire the knowledge necessary to grow CT, S-E, and S-A in their respective classes. Furthermore, it is essential to include practical strategies for fostering and implementing CT, S-E, and S-A within colleges and universities. Courses during training and pre-employment education may give university professors and instructors the relevant information they need.

It is important to stress that self-assessment EA, S-E, and S-A all need participants to have conceptual and conscious awareness as part of the process. Through the completion of a variety of activities in the classroom, it is intended that students will progress toward a state in which the application of suitable techniques will become automatic, and the learning abilities will evolve into an intuitive form. It strongly encouraged those tasked with constructing educational curricula, formulating educational policy, and creating new materials to consider the significant effects of EA, S-E, CT, and S-A when creating new materials and tasks. In addition to other kinds of academic work, EFL learners at schools and universities may also engage in activities that put into practice applicable methods for improving the effects of EA, S-E, CT, and S-A.

In light of the current research results, it is advised that university professors and instructors update the programs currently being used in their classrooms and produce learner-oriented evaluations. Any educational environment may benefit from an increase in the quality of teaching and assessment by encouraging students to take an active role in their education and guiding and enhancing the development of self-help structures. It is highly suggested that both students and educators develop their digital literacy skills. Students and instructors may rest easy with this information throughout online instruction and evaluation.

Like previous studies, the current study also exhibits several limitations: (1) Methods based on quantitative analysis were used to carry out this study. Implementing mixed-method techniques allows for a deeper look to be accomplished, and they are ways that may be explored for more research in the future. (2) As was said before, it is essential for EFL instructors to play a role in the cultivation of EA, S-E, CT, and S-A in their students. In the course of our investigation, we did not take this aspect into account. In further study, it may be possible to explore how the EA, S-E, CT, and S-A of pupils are affected by instructors' EA, S-E, CT, and S-A levels. (3) The intercultural backgrounds of the learners, as well as their demographic statistics, were not considered in this research. In further research, these issues may be addressed and investigated to what degree variances in sociocultural context and demographic information may impact the connection between EA, S-E, CT, and S-A. (4) Including students from different faculties and institutions would help achieve an overview of the results. It is possible that in the course of future research, this investigation will be carried out in different educational environments, such as schools and private language institutions. (5) In future studies, potential investigators may concentrate on the connection between EA, S-E, CT, and S-A with other learner-ascribed characteristics, such as buoyancy, willingness to communicate, and identity construction/reconstruction.

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