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Research Paper

Exploring the Disconnect in EFL Leaners: How Test-Taking Strategies Affect Answer Selection and Test Anxiety Under Moderating Role of Achievement Goal Orientation

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Abstract

High-stakes testing is the main cause of test anxiety in English as a Foreign Language (EFL) learners, with the potential to undermine both performance and assessment validity. While test-taking strategies have commonly been offered as a solution to mitigate this anxiety, their effectiveness may not be generalizable to all learners. The current study investigated the moderating role of achievement goal orientation on test-taking strategy use and test anxiety levels among intermediate Iraqi EFL learners. Three self-report inventories were used from previous research: the Test-Taking Strategy Questionnaire, the Test Anxiety Inventory, and the Achievement Goal Questionnaire, and handed to a sample of 150 intermediate Iraqi EFL learners. Hierarchical multiple regression was used to analyze the effects of moderation. Results confirmed a strong negative main effect where greater strategy use was associated with lower test anxiety. Most importantly, a significant moderation effect for two goal orientations was established. Performance-avoidance motivation strongly reduced this relationship, rendering strategies ineffective in lowering anxiety in students highly motivated by fear of failure. Conversely, mastery-approach goal had a strong moderation effect that increased the relationship and the anxiety-reducing value of test-taking strategies for students directed towards actual learning. There were no effects for substantial moderation by performance-approach or mastery-avoidance goals. These findings confirm that psychological value of test-taking strategy is not fixed but highly dependent on the motivational framework of the learner. This study emphasizes the significance of pedagogies that not just teach students cognitive strategies but also proactively develop a mastery-classroom culture to prepare students to masterfully cope with academic pressures.

Test Anxiety, Test-Taking Strategies, Achievement Goal Orientation, Moderation, Performance-Avoidance Goals, Mastery-Approach Goals

روابط بین راهبردهای شرکت در آزمون، اضطراب امتحان و جهت‌گیری‌های هدف در زبان‌آموزان انگلیسی به‌عنوان زبان خارجی

آزمون‌های با پیامد بالا (High-stakes testing) اصلی‌ترین عامل اضطراب امتحان در زبان‌آموزان انگلیسی به عنوان زبان خارجی (EFL) هستند، و این موضوع می‌تواند هم عملکرد زبان‌آموزان و هم اعتبار ارزشیابی را تحت تأثیر منفی قرار دهد. در حالی که معمولاً استراتژی‌های آزمون‌دهی به عنوان راه‌حلی برای کاهش این اضطراب ارائه می‌شوند، کارایی این استراتژی‌ها ممکن است برای همه زبان‌آموزان قابل تعمیم نباشد. مطالعه حاضر نقش تعدیل‌گر جهت‌گیری هدف پیشرفت را در استفاده از استراتژی‌های آزمون‌دهی و سطوح اضطراب امتحان در میان زبان‌آموزان عراقی در سطح متوسط مورد بررسی قرار داد. در این تحقیق، سه پرسشنامه خودگزارشی برگرفته از پژوهش‌های پیشین مورد استفاده قرار گرفت: پرسشنامه استراتژی آزمون‌دهی، پرسشنامه اضطراب امتحان، و پرسشنامه هدف پیشرفت. این پرسشنامه‌ها به ۱۵۰ زبان‌آموز عراقی در سطح متوسط داده شد. برای تحلیل اثرات تعدیل‌گر، از رگرسیون چندگانه سلسله‌مراتبی استفاده شد . نتایج، یک اثر منفی قوی و اصلی را تأیید کردند که نشان می‌داد استفاده بیشتر از استراتژی‌ها با کاهش اضطراب امتحان همراه است. مهم‌تر از همه، یک اثر تعدیلی معنادار برای دو نوع جهت‌گیری هدف شناسایی شد. انگیزش اجتنابی مبتنی بر عملکرد (Performance-avoidance) این رابطه را به شدت تضعیف کرد، به‌طوری که استفاده از استراتژی‌ها برای زبان‌آموزانی که انگیزه بالایی از ترس شکست داشتند، در کاهش اضطراب بی‌اثر بود. در مقابل، جهت‌گیری هدف مبتنی بر رویکرد تسلط (Mastery-approach) اثر تعدیلی قدرتمندی نشان داد که این رابطه را تقویت کرده و ارزش کاهش‌دهنده اضطراب استراتژی‌های آزمون‌دهی را برای زبان‌آموزانی که به یادگیری واقعی گرایش داشتند، افزایش داد. هیچ اثر معناداری برای جهت‌گیری‌های مبتنی بر رویکرد عملکرد یا اجتناب از تسلط مشاهده نشد. این یافته‌ها تأیید می‌کنند که ارزش روان‌شناختی استراتژی‌های آزمون‌دهی ثابت نیست، بلکه به‌شدت به چارچوب انگیزشی زبان‌آموز وابسته است. این مطالعه بر اهمیت روش‌های آموزشی‌ای تأکید می‌کند که نه تنها به دانش‌آموزان استراتژی‌های شناختی را آموزش می‌دهند، بلکه به‌طور فعال فرهنگی مبتنی بر تسلط در کلاس درس ایجاد می‌کنند تا دانش‌آموزان را برای مواجهه مؤثر با فشارهای تحصیلی آماده سازند.

واژگان کلیدی: زبان‌آموزان انگلیسی به‌عنوان زبان خارجی، جهت‌گیری هدف، اضطراب امتحان، راهبردهای شرکت در آزمون

Introduction

In this increasingly competitive world, standardized testing has become an effective instrument for high-stakes decision-making. For EFL students, language proficiency test scores can be life-altering in terms of academic program admission or securing desired job opportunities (Al-Fraidan & Al-Khalaf, 2012). This tremendous pressure imposes a significant psychological burden on the students, inducing affective variables that compromise test validity. Test Anxiety (TA) is one such factor, a debilitating and pervasive condition that can inhibit students from communicating their true abilities. TA is defined as a social-evaluative anxious reaction in the form of physiological overarousal, worry, and self-deprecating thoughts that take place in evaluative settings (Zeidner, 1998). Its effects are well-documented, and research consistently shows that students who are highly anxious perform poorer on examinations than their less anxious peers (Eysenck, 2001; Putwain, 2008). This phenomenon presents what Messick (1996) calls "construct-irrelevant variance," in which the test is unintentionally measuring the anxiety of the student as much as his or her language ability, thus endangering the validity of the results and possibly restricting the academic and professional futures of competent individuals (Zeidner, 1990).

As a reaction to testing pressures, teachers and students have placed greater emphasis on the function of Test-Taking Strategies (TTS). These are strategic operations that are purposefully selected by students in order to manage the linguistic and procedural demands of a test (Cohen, 2006, p. 308). Effective strategy use—anything from time management and cognitive activities like rereading, to metacognitive planning and monitoring—is considered to enhance performance by allowing students to negotiate the test format and articulate knowledge more efficiently (Dodeen & Abdelmabood, 2005). Theoretically, the effective use of TTS should not only improve scores but also serve as a coping mechanism to reduce TA. By equipping students with a set of tools for tackling tests, strategy instruction can instill a sense of control and preparedness, which should alleviate feelings of helplessness and worry (Sweetnam, 2003). Several studies support this, indicating that students who employ good strategies have less TA and more favorable test attitudes.

However, the relationship between strategy use and anxiety reduction is not always straightforward. Despite the reported advantages, not all students utilize strategies effectively, and some may use them superficially or in a disorganized manner (Cohen, 2006). This leads to a fundamental question: what is the underlying variable that dictates whether the use of TTS is effective in alleviating anxiety? The answer may lie in the student's intrinsic desire to learn, a construct quantified by Achievement Goal Orientation (AGO) theory. Achievement Goal Orientations (AGOs) are the motives or intentions one has for participating in an achievement task, dictating their general attitude towards learning and assessment (Ames, 1992). These are typically distinguished as mastery goals, whereby concern is for learning and understanding the material for its own sake, and performance goals, whereby concern is for demonstrating ability relative to others (Dweck, 1986). These can be further distinguished as approach (striving to succeed) and avoidance (striving not to fail) dimensions (Elliot & McGregor, 2001).

The learner's goal orientation would logically moderate the relationship between their strategy use and emotional state (Huang, 2011; Kong et al., 2023). For instance, a learner who has a mastery-approach (M-Ap) orientation and uses strategies in the hope of actually comprehending the material may experience a strong reduction in anxiety because their efforts generate genuine confidence. On the other hand, a student with a performance-avoidance (P-Av) orientation, who uses the same strategies primarily to avoid looking incompetent, may not experience the same anxiety reduction. For this student, the strategies are a fear-based defense mechanism, and the underlying fear of failure may still be present regardless of the strategies employed. Thus, the effectiveness of a strategy in calming the nerves of a student could depend a great deal on the 'why' of its use.

While research has independently examined the pairwise relationships between TTS, TA, and goal orientations (e.g., Dinç et al., 2022; Huang, 2011; Kong et al., 2023), a huge knowledge gap exists with regards to how the three variables interact dynamically. Few efforts have been made towards investigating the conditional nature of these relations, i.e., determining whether a learner's AGO acts as a moderating variable on the impact of TTS on TA. In instructional environments like the Iraqi EFL setting, where students are under immense pressure to succeed in high-stakes English tests (Rashidi &

Javanmardi, 2012), this is particularly relevant. It is necessary to grasp this dynamic for the purpose of designing targeted pedagogical interventions; instructional strategies in and of themselves may be insufficient if students' underlying, dysfunctional goal orientations are not also addressed.

The current study, therefore, was an attempt to fill this gap in the literature by investigating the moderating role of AGO in the relationship between test-taking strategy use and the levels of TA among intermediate Iraqi EFL learners.

Literature Review

Test-Taking Strategies: The Tools of Engagement

TTS are the "consciously selected processes that the respondents used for dealing with both the language issues and the item-response demands in the test-taking tasks at hand" (Cohen, 2006, p. 308). Research on these strategies has been increasingly prominent in language testing because they present a very important window into test-taker cognition and provide evidence for test validity (Cohen, 2012). Understanding the means by which learners arrive at their answer, rather than just the answer, guarantees that a test is measuring the intended linguistic construct because test validity requires consideration of the cognitive pathways learners take (Cohen, 2006).

A tripartite classification of TTS is proposed by Cohen (2012). The operationalization of basic language abilities like reading, listening, and retrieval of vocabulary constitutes the first category, language learner strategies. The second type, test-management strategies, encompasses procedural skills like time management, pacing, reading the questions very carefully, and reviewing responses (Cohen, 1998; Dodeen, 2015). These metacognitive strategies help a test-taker respond to items meaningfully and appropriately. The third type, test-wiseness strategies, encompasses the utilization of knowledge of test format and peripheral cues to answer items without necessarily resorting to the target language competence. Examples include elimination across multiple-choice answers or guessing based on clues supplied by other items (Rogers & Bateson, 1991). These are score-enhancers but tend to be construct-irrelevant as they avoid the targeted cognitive processes (Cohen, 2012).

Within these broad categories, there is a recurring distinction between cognitive and metacognitive strategies. Cognitive strategies involve explicit mental control of information, e.g., by the use of memory aids or underlining key words (Phakiti, 2003), while metacognitive strategies involve higher-level planning, monitoring, and control of one's own cognitive processes (Flavell, 1979). It has been found that successful test-takers employ more metacognitive strategies than their less successful counterparts (Phakiti, 2003; Pugalee, 2004). Effective application of this strategic repertoire is believed to be a hallmark of expert learners and is strongly related to academic success (Allan, 1992; Amer, 1993).

Test Anxiety: The Emotional Barrier

TA refers to a specific form of performance anxiety characterized by a cluster of over-arousal physiological reactions, tension, and feelings of apprehension in test-taking situations (Zeidner, 1998). It is best described as a two-part multifaceted construct: worry and emotionality (Mowbray et al., 2015). The worry part is cognitive and involves negative thinking, self-criticism, and concern about the consequences of failure (Putwain, 2007). The emotionality aspect is the labeling of the physiological and affective reactions, e.g., increased heartbeat, tension, and panicky sensations, which occur during an exam (Benson & El-Zahhar, 1994). While the two factors are related, the cognitive concern factor has been determined to have a more consistently impairing effect on performance (Hembree, 1988).

The pathogenic impact of TA on academic performance is firmly established in the literature. Attention-based approaches propose that anxiety disturbs cognitive performance by occupying valuable working memory capacity (Cassady, 2004; Eysenck, 2001). Instead of focusing on the task, the mind of a nervous student is divided between the test items and intruding, negative thoughts, which results in lowered performance. Self-preoccupation can paralyze thought processes, interfere with memory recall, and prevent a student from being able to structure their thoughts, especially when doing challenging tasks (Harris & Coy, 2009; Sarason, 1975). Spielberger's (1966) wasp-waisted differentiation could also be used between state anxiety (specific response to a discrete situation) and trait anxiety (chronic personality tendency). High trait test anxious people perceive evaluative situations as more dangerous, and experience higher frequency of intensity of state anxiety when they sit tests (Spielberger & Vagg, 1995). The

consequences are severe, with chronic TA associated with lower academic performance, reduced motivation, and even higher levels of school dropout (Segool et al., 2013).

Achievement Goal Orientation: The 'Why' of Performance

AGO theory provides an effective framework for describing the underlying motive or reason why a student engages in an academic task (Ames, 1992). These aims constitute an interrelated system of beliefs that leads to "different ways of approaching, engaging in, and responding to achievement situations" (Ames, 1992, p. 261). Two primary aims were the focus of early research (Dweck, 1986). Master-oriented students focus on developing competence, learning the task to mastery, and knowing the material deeply; achievement is self-referenced and effort and change at the personal level define it, an orientation that is inevitably linked with positive outcomes like greater engagement, persistence, and intrinsic motivation (De La Fuente, 2004; Matos et al., 2007). On the other hand, performance students care about demonstrating their ability in relation to others, and achievement is normatively defined by outperforming others or receiving external rewards like good grades (Elliot & McGregor, 2001).

This early model was later revised when Elliot and Harackiewicz (1996) differentiated performance goals into approach and avoidance dimensions, thereby having a trichotomous model. This was further expanded to a 2 × 2 model using also the approach-avoidance distinction for mastery goals, in a work by Elliot and McGregor (2001). This developed into four orientations: M-Ap, an attempt to learn and understand the content and be most adaptive; mastery-avoidance (M-Av), attempting to avoid misconceptions of the content and is associated with mixed outcomes like procrastination (Van Yperen et al., 2009); performance-approach (P-Ap), attempting to perform better than others and can lead to good grades but also superficial learning; and P-Av, attempting to avoid incompetence and is the most maladaptive orientation, strongly related to high anxiety, low self-efficacy, and poor performance (van Yperen et al., 2015; Nadon et al., 2020). A student's goal orientation largely determines his/her cognitive, affective, and behavioral patterns in educational settings (Pintrich & Schunk, 2002).

Synthesizing the Relationships and the Rationale for Moderation

Literature strongly establishes pairwise relationships between the three variables under consideration. Effective TTS are hypothesized as a buffer to TA (Nelson et al., 2013). Concurrently, achievement goals are powerful predictors of anxiety; mastery goals are associated with reduced anxiety, whereas P-Av goals are consistently associated with heightened anxiety (Huang, 2023; Putwain & Symes, 2011). This leads to the primary argument of this study: the relationship between the use of TTS and TA is likely not the same across individuals. Instead, its effect is likely moderated by the student's AGO.

The theoretical rationale for this moderation effect is robust, as the function of a strategy can change depending on the underlying goal of the student. For M-Ap students, TTS are processes of deep processing and genuine understanding. Applying them builds genuine competence and control feelings that should yield a strong negative relationship between strategy use and worry. For the P-Ap oriented learner, strategies are means of competition; their use will also reduce anxiety, but by the mere boosting of confidence at outperforming others, an effect that would be less reliable with the presence of a problem. For the P-Av oriented learner, the scenario is decidedly darker. They employ strategies not by confidence, but by fear, and for the sake of avoiding shame. In this situation, the use of strategies may have a minimal, or even zero, effect in reducing anxiety, since the underlying fear of failing might be so overwhelming that it supersedes any procedural relief provided by the strategy.

In effect, a student's goal orientation provides the motivational and affective environment in which strategies are implemented (Ames, 1992). Although previous research by Diseth (2011) demonstrated that goal orientations act as mediators of the relationship between learning strategies and academic performance, the particular moderating influence of goal orientation on the strategy-anxiety relationship is a hitherto under-researched but essential topic of investigation. This study was intended to remedy this lacuna by statistically testing this model of moderation. Therefore, the following research question was formulated to spearhead the actions of this research:

RQ. To what extent does AGO moderate the relationship between the use of TTS and levels of Test Anxiety in intermediate Iraqi EFL learners?

Method

Participants

Participants were 150 Iraqi EFL learners at the intermediate level at an Iraqi university and were chosen through convenience random sampling. They were 87 males (58%) and 63 females (42%) and aged between 20 to 30 years old. The participants were all native Arabic speakers who had never resided or studied in an English-speaking country. The group was chosen because of the high-stakes nature of English language testing in the Iraqi higher education context.

Instruments

To collect the requisite quantitative information for testing the moderation model, three standardized questionnaires were employed.

Test-Taking Strategy Questionnaire

The use of TTS was measured using the questionnaire developed by Kheirzadeh et al. (2017). This 35-item instrument uses a Likert-type scale to assess four dimensions of strategy use: cognitive/metacognitive strategies (11 items), test-wiseness strategies (12 items), time strategies (5 items), and affective strategies (7 items). The original study reported a Cronbach's alpha of .81, while the reliability for the present study was calculated to be .91, indicating excellent internal consistency.

Test Anxiety Inventory

TA was measured using the TA Inventory (Spielberger et al., 1980). This 20-item self-report scale assesses two core components of TA: Worry (10 items, e.g., "I seem to defeat myself while working on important tests") and Emotionality (10 items, e.g., "I feel panicky before taking a test"). Participants respond on a 4-point Likert scale ranging from 1 (almost never) to 4 (almost always). The TA Inventory is a widely validated instrument with strong internal consistency and reliability. The Cronbach's alpha for the present study was .83.

Achievement Goal Questionnaire

AGOs were assessed using the 12-item Achievement Goal Questionnaire (Elliot & McGregor, 2001). This instrument measures the four orientations within the 2 × 2 framework: M-Ap (e.g., "I want to learn as much as possible from this class"), M-Av (e.g., "I worry that I may not learn all that I possibly could from this class"), P-Ap (e.g., "My goal in this class is to get a better grade than most of the students"), and P-Av (e.g., "My goal for this class is to avoid performing poorly"). Responses are rated on a 7-point scale from 1 (not at all true of me) to 7 (very true of me). The subscales have demonstrated sound reliability, and the Cronbach's alpha for the overall questionnaire in this study was .85.

Procedure

Data were gathered over a period of two months. The questionnaires were prepared in written form as one package and personally handed over to the 150 participants. Participants were orally and in writing told of the objectives and ends of the research after the instruments had been completed. Participation was assured to be anonymous and confidential, and they were required to sign an agreement form. Contact information of the researcher was provided in case of any questions by participants while completing questionnaires. Completed package instruments were collected by the researcher at the final time. Finally, Analysis proceeded through two steps. Initial analyses, including descriptive statistics and Pearson correlations, were performed first to investigate the nature of the variables and their initial intercorrelations. Second, hierarchical multiple regression analyses were run to examine the postulated moderation effects. For purposes of regression analyses, composite scores were created. A total Test-Taking Strategy (TTS) score was calculated by summing the response on all strategy subscales. Similarly, a total TA score was created by summing the worry and emotionality subscales. This was done in order to obtain a more parsimonious model and avoid multicollinearity issues between sub-components.

Results

Preliminary Analyses

Descriptive statistics for all key variables are presented in Table 1. Among the goal orientations, students reported the highest mean scores for P-Ap goals (M = 18.53, SD = 1.26) and the lowest for M-Av goals (M = 4.53, SD = 1.09). This suggests a student population that is generally motivated to demonstrate competence and outperform others.

Table 1

Descriptive Statistics for Key Variables

Variable	M	SD
TTS (Composite)	76.18	12.87
Cognitive/Metacognitive Strategies	17.72	4.74
Time Strategies	15.30	1.86
Test Wiseness Strategies	27.46	6.81
Affective Strategies	11.70	2.70
TA (Composite)	24.84	5.37
Worry	14.04	3.34
Emotionality	10.80	2.48
AGOs		
M-Ap	16.28	1.75
M-Av	4.53	1.09
P-Ap	18.53	1.26
P-Av	6.44	1.59

A Pearson product-moment correlation was run to assess the bivariate relationships among the composite variables and the goal orientation subscales (Table 2). As expected, there was a significant negative correlation between TTS use and TA ($r = -.28$, $p < .01$), indicating that students who reported using more strategies tended to experience lower levels of anxiety. Furthermore, TA was significantly and positively correlated with P-Av goals ($r = .21$, $p < .01$) and M-Av goals ($r = .17$, $p < .05$), suggesting that a focus on avoiding failure is linked to higher anxiety. Conversely, TTS use was positively correlated with M-Ap goals ($r = .25$, $p < .01$), indicating that learners focused on deep understanding reported using more strategies. The correlations were not high enough to indicate issues with multicollinearity, allowing for the use of these variables in the subsequent regression analyses.

Table 2

Pearson Correlation Matrix for Key Study Variables

Variable	1	2	3	4	5	6
1. TTS	--					
2. TA	-.28**	--				
3. M-Ap	.25**	-.14*	--			
4. M-Av	-.08	.17*	--			
5. P-Ap	.19*	.01	.45**	.11	--	
6. P-Av	-.15*	.21**	.09	.38**	.29**	--

*p < .05, **p < .01

To test the primary research question, four separate hierarchical multiple regression analyses were conducted. In each analysis, the composite TA score served as the dependent variable. The analyses followed a two-step procedure. In Step 1, the centered main effect variables—TTS and one of the four AGOs—were entered into the model. In Step 2, the interaction term (TTS × Goal Orientation) was added to determine if the goal orientation significantly moderated the relationship between strategy use and TA.

A significant interaction is indicated by a statistically significant change in R^2 (ΔR^2) and a significant beta coefficient for the interaction term.

Moderating Role of Performance-Avoidance Goals

The first analysis tested whether P-Av goals moderated the relationship between TTS and TA. As shown in Table 3, the main effects in Step 1 accounted for a significant portion of the variance in TA, $R^2 = .09$, $F(2, 147) = 7.29$, $p < .01$. Both TTS ($\beta = -.25$, $p < .01$) and P-Av ($\beta = .19$, $p < .05$) were significant predictors. In Step 2, the interaction term (TTS × P-Av) was added to the model. The interaction was found to be statistically significant ($\beta = .21$, $p < .05$), and it accounted for an additional 4% of the variance in TA ($\Delta R^2 = .04$, $F(1, 146) = 6.45$, $p < .05$). This significant interaction indicates that the strength of the relationship between TTS and TA depends on the student's level of P-Av orientation. A simple slopes analysis was conducted to probe the nature of this interaction. The analysis revealed that for students with low levels of P-Av (-1 SD), the use of TTS was strongly and negatively associated with TA ($\beta = -.46$, $t = -4.89$, $p < .001$). However, for students with high levels of P-Av (+1 SD), the relationship between strategy use and TA was non-significant ($\beta = -.04$, $t = -0.41$, $p = .68$). This suggests that TTS are effective at reducing anxiety for students who are not driven by a fear of failure, but they lose their anxiety-reducing power for students who are highly focused on avoiding incompetence.

Table 3

Hierarchical Regression Analysis for Performance-Avoidance as a Moderator

Variable	B	SEB	β	t	R^2	ΔR^2
Step 1					.09**	
TTS	-0.10	.03	-.25**	-2.98		
P-Av	0.64	.26	.19*	2.45		
Step 2					.13**	.04*
TTS	-0.11	.03	-.27**	-3.12		
P-Av	0.68	.25	.20*	2.68		
TTS × P-Av	0.05	.02	.21*	2.54		

*p < .05, **p < .01

Note: Predictor variables were centered before creating the interaction term.

Moderating Role of Mastery-Approach Goals

The second analysis tested the moderating role of M-Ap goals. The results are summarized in Table 4. In Step 1, the main effects model was significant, $R^2 = .10$, $F(2, 147) = 8.11$, $p < .001$, with both TTS ($\beta = -.26$, $p < .01$) and M-Ap ($\beta = -.15$, $p < .05$) being significant negative predictors of TA. In Step 2, the interaction term (TTS × M-Ap) was added and found to be significant ($\beta = -.18$, $p < .05$), explaining an additional 3% of the variance ($\Delta R^2 = .03$, $F(1, 146) = 5.21$, $p < .05$). This significant interaction demonstrates that the anxiety-reducing effect of TTS is also conditional on a student's M-Ap orientation. A follow-up simple slopes analysis revealed that the negative relationship between strategy use and TA was stronger for students with high M-Ap goals (+1 SD; $\beta = -.44$, $t = -4.52$, $p < .001$) compared to students with low M-Ap goals (-1 SD; $\beta = -.08$, $t = -0.95$, $p = .34$). This finding suggests that when students use strategies with the primary goal of genuinely learning the material, the strategies are particularly effective at lowering anxiety.

Table 4

Hierarchical Regression Analysis for M-Ap as a Moderator

Variable	B	SEB	β	t	R^2	ΔR^2
Step 1					.10**	
TTS	-0.11	.03	-.26**	-3.21		

M-Ap	-0.46	.22	-.15*	-2.09		
Step 2					.13**	.03*
TTS	-0.10	.03	-.24**	-2.95		
M-Ap	-0.49	.21	-.16*	-2.31		
TTS × M-Ap	-0.04	.02	-.18*	-2.28		

*p < .05, **p < .01

Note: Predictor variables were centered before creating the interaction term.

Moderating Role of Mastery-Avoidance Goals

A third hierarchical regression was conducted to examine whether M-Av goals moderated the relationship between TTS and TA. The results of this analysis are presented in Table 5. The main effects model in Step 1 was significant, $R^2 = .10$, $F(2, 147) = 8.42$, $p < .001$. Both TTS ($\beta = -.28$, $p < .001$) and M-Av ($\beta = .16$, $p < .05$) were significant predictors of TA. In Step 2, the interaction term (TTS × M-Av) was entered into the model. The addition of this term did not result in a significant change in the variance explained ($\Delta R^2 = .00$, $F(1, 146) = 0.33$, $p = .57$). The beta coefficient for the interaction term was also non-significant ($\beta = .04$, $p = .57$). These results indicate that there is no statistically significant interaction effect. Therefore, the hypothesis that M-Av goals moderate the relationship between TTS and TA was disconfirmed. The negative relationship between strategy use and anxiety remains consistent across different levels of M-Av orientation.

Table 5

Hierarchical Regression Analysis for Mastery-Avoidance as a Moderator

Variable	B	SEB	β	t	R^2	ΔR^2
Step 1					.10**	
TTS	-0.12	.03	-.28**	-3.45		
M-Av	0.79	.38	.16*	2.06		
Step 2					.10**	.00
TTS	-0.12	.04	-.27**	-3.29		
M-Av	0.77	.39	.16*	1.99		
TTS × M-Av	0.01	.02	.04	0.58		

*p < .05, **p < .01

Note: Predictor variables were centered before creating the interaction term.

Moderating Role of Performance-Approach Goals

Finally, a fourth analysis was performed to determine if P-Ap goals moderated the TTS-TA relationship. As shown in Table 6, the main effects model in Step 1 was significant, $R^2 = .08$, $F(2, 147) = 6.21$, $p < .01$. However, this was driven almost entirely by the significant negative effect of TTS ($\beta = -.28$, $p < .001$), as P-Ap was not a significant predictor of TA ($\beta = .03$, $p = .72$). When the interaction term (TTS × P-Ap) was added in Step 2, it did not significantly increase the variance explained ($\Delta R^2 = .01$, $F(1, 146) = 1.34$, $p = .25$). The beta coefficient for the interaction was also non-significant ($\beta = -.09$, $p = .25$). Consequently, the results do not support a moderating role for P-Ap goals. The relationship between using TTS and experiencing TA does not appear to differ for students with varying levels of P-Ap goals.

Table 6
Hierarchical Regression Analysis for Performance-Approach as a Moderator

Variable	B	SEB	β	t	R^2	ΔR^2
Step 1					.08**	
TTS	-0.12	.03	-.28**	-3.51		
P-Ap	0.13	.37	.03	0.36		
Step 2					.09**	.01
TTS	-0.13	.04	-.29**	-3.55		
P-Ap	0.15	.37	.04	0.42		
TTS × P-Ap	-0.02	.02	-.09	-1.16		

*p < .05, **p < .01

Note: Predictor variables were centered before creating the interaction term.

In summary, the statistical analyses gave birth to compelling evidence in support of a moderated relationship between TTS and TA among the sampled Iraqi EFL learners. While a general negative association was found, indicating that greater strategy use corresponds with lower anxiety, this relationship was not uniform across all motivational profiles. The findings specifically brought to light that a P-Av orientation significantly weakens the anxiety-reducing benefits of strategy use, rendering them ineffective for learners preoccupied with the fear of failure. Conversely, a M-Ap orientation was found to significantly strengthen this relationship, amplifying the positive impact of strategies for students who are focused on genuine learning and understanding. The moderating roles of M-Av and P-Ap goals were not supported by the data in this study. These results collectively underscore that the psychological utility of TTS is not absolute but is critically dependent on the underlying achievement goals of the learner, a point that will be explored further in the following discussion.

Discussion

The main goal of this study was to investigate whether a student's AGO serves as a moderator of the relationship between their use of TTS and their experience of TA. The results provided strong support for this moderation, and it indicated that the anxiety-reducing potential of TTS is not fixed but is largely influenced by the learner's underlying motivational structure. Specifically, it seems that a performance-avoid orientation negated the benefits of strategy use on anxiety, while a M-Ap orientation added additional ones. This evidence heavily supports the theoretical argument that the function of a strategy is conditional on its motivational context. For the P-Av student, the primary goal is not to gain proficiency in the material but to avoid negative evaluation and shame (Nadon et al., 2020; van Yperen et al., 2015). Strategy in these cases are not instruments of competence development but are desperate, defensive measures against anticipated danger. This underlying fear causes much cognitive interference, a state of mental noise and critical self-talk that overwhelms working memory capacity (Sarason, 1975; Cassady, 2004). Even if the student attempts to employ a strategy, such as rereading a passage, cognitive functioning is already so burdened by anxiety that the strategy is superficially and ineffectively executed. The focus is put on the self and potential failure, rather than on the task itself, and so any calming effect the strategy might have had is negated. This aligns with studies that link P-Av goals to disordered study behavior and unsuccessful application of learning strategies (van Yperen et al., 2015), since it would appear that the underpinning of this goal orientation is to undermine successful application and psychological reward of strategic action.

Conversely, the study found that M-Ap motivation significantly strengthened the negative relationship between strategy use and TA. The anxiety-reducing effect of strategies was greatest for students who were self-paced toward actually understanding and mastering the material. This outcome is explainable in the context of achievement goal theory in which mastery orientation supports the adaptive and healthy pattern of learning (Ames, 1992; De La Fuente, 2004). The mastery-oriented learner employs a strategy only in the direct service of his or her goal to learn. This congruence creates a virtuous cycle: using strategies produces more knowledge and tangible progress, which reinforces true self-efficacy and

mastery of the learning process. This enhanced competence has a direct counter-counter effect to anxiety and fear. As opposed to the performance learner's tentative effort-dependent confidence and one derived from others, the mastery learner's confidence is internally derived as a consequence of effort and progress. This is consistent with large bodies of research linking mastery goals with ideal outcomes such as higher motivation, persistence, positive affect, and decreased anxiety (Matos et al., 2007; Wolters et al., 1996; Huang, 2023). The discovery of this research further develops this literature in demonstrating not just that M-Ap is linked to lower anxiety, but that it actually improves the instruments—the strategies—that students employ to deal with the academic demands that create anxiety.

Contrary to expectation, P-Ap and M-Av goals were not significant moderators in this study. The inability to find a moderation effect for P-Ap goals might be due to their "double-edged sword" property (Elliot & Moller, 2003). Though they are driven to perform well, normative comparison still underlies their self-esteem. It could be that strategies would prepare them to compete, but their apprehension might be more subject to other factors, such as the feeling they have of their friends' expertise, which cannot be influenced directly by strategies. For M-Av goals, the zero finding may be a reflection of the inherent ambivalence of this motivation. These students are torn between wanting to learn and learning nothing at all (Van Yperen et al., 2009). This paradoxical motivation can create a disoriented psychological condition wherein the impact of strategy use on anxiety is inconsistent and without pattern, a finding supported by variable findings pertaining to this aim in the literature (Baranik et al., 2010). In conclusion, the present findings shift the dialogue from whether or not strategies are a source of reduced anxiety to for whom and under what conditions. The results strongly suggest that the underlying motivation of a student to tackle an activity is a very strong predictor of their psychological state when taking a test.

Conclusion

The present study investigated the dynamic interplay between testing strategies, TA, and AGOs among intermediate Iraqi EFL students. In a cross-sectional, quantitative study, the research sought to determine if TA was moderated by a student's goal orientation for the impact of strategy use on level of TA. The research established that though there is a negative, direct relationship between strategy use and anxiety, it varies with its strength. P-Av orientation was noted to significantly counteract, and nullify, the stress-relieving properties of TTS. On the other hand, a M-Ap goal direction significantly strengthened this positive correlation, making strategies an even stronger antidote to TA in students who are learning oriented.

The implications for teaching practice of these findings are significant. For EFL teachers, the central message is that teaching TTS in isolation is not sufficient. Instruction needs to move beyond the "what" and "how" of strategies and into the "why," building a M-Ap goal classroom culture that emphasizes effort and personal growth more than social comparison and fear of failure. Teachers also need to be trained to recognize indicators of P-Av orientation as they may require more targeted interventions that allow them to shift the way they set their goals. For policymakers and those who design tests, these results highlight the manner in which high-stakes testing stress leads to maladaptive goal orientations, and with it the necessity for further formative, low-stakes measures to refocus on an ongoing process of learning.

However, conclusions drawn here must be viewed against the limitations of the study. The sample came from a single university in Iraq and so may not be generalizable. Moreover, the cross-sectional design is unable to establish causality, and the dependence on self-report questionnaires leaves it open to bias. Lastly, other contextual variables such as specific classroom climates were not considered in the study and have the potential to affect the variables too.

Based on these findings and considering these limitations, numerous lines of inquiry for future studies are suggested. Future studies can use experimental and longitudinal designs to test causal hypotheses, such as an intervention study comparing strategy instruction in different motivational frames. Qualitative studies, such as think-aloud protocols, would also be helpful in order to understand the lived experience of students with different goal orientations. By ongoing investigation of the intricate psychological processes of language testing, teachers and researchers can more adequately prepare learners not just to excel on exams but also to become more confident, resilient, and lifelong learners.

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