



## The level of academic self-efficacy and its relationship to achievement goal orientations and academic achievement

 **Ahmed Abdulaziz  
Alsunaydi**

Ministry of Learning - General Directorate of Learning, Al-Qassim, Saudi  
Arabia.

Email: [ahmad.asn@hotmail.com](mailto:ahmad.asn@hotmail.com)



(+ Corresponding author)

### ABSTRACT

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This research aimed to determine the degree of academic self-efficacy among postgraduate university students and to explore its correlation with achievement goal orientation and academic achievement. The study employed a quantitative descriptive and comparative methodology, sampling 363 male and female postgraduate students from diverse disciplines within the College of Education at King Saud University. An achievement goal orientation scale along with a self-constructed academic self-efficacy scale was used for data collection. The findings indicated that students exhibited a high level of academic self-efficacy. However, no significant relationship was found between academic self-efficacy and performance-approach or performance-avoidance orientations. A negative correlation was observed between academic self-efficacy and mastery-avoidance orientation, a positive relationship between academic self-efficacy and mastery-approach orientation and a positive relationship between academic self-efficacy and academic achievement. There were also differences in academic self-efficacy according to the stage of study (M.A. versus Ph.D.) However, no significant differences were found in academic self-efficacy according to gender (male and female).

**Contribution/Originality:** This study adds to the literature on academic self-efficacy, its measurement, its correlation with achievement goal orientations and academic achievement and the differences in it according to gender and stage of study.

## 1. INTRODUCTION

The process of learning development represents one of the paramount objectives pursued by educational systems which can only be realized through a holistic and integrated approach to development. So, it's very valuable to measure the different variables that affect the different sides of education. In this context, motivational and personal factors have recently received a lot of attention from researchers. Academic self-efficacy, a subset of general self-efficacy rooted in Albert Bandura's social cognitive theory has garnered significant scholarly attention.

Self-efficacy can be defined as "how an individual can achieve specific levels of performance that may influence events affecting their life" (Bandura, 1994). Other scholars articulate self-efficacy as "the expectation one holds regarding their capabilities to accomplish a particular task or goal" (Walsh, 2008) as well as "the individual's capacity to effect significant outcomes" (Flammer, 2001). The concept being referred to is a crucial component of social cognition theory which facilitates the relationship between information obtained from one's surroundings and

the resulting behavioural consequences (Fang & Ha, 2015). According to Maddux and Volkmann (2010) beliefs about competencies refer to our understanding of the world and our ability to do tasks in the environment.

In general, the definition of academic self-efficacy parallels the broader definitions of self-efficacy but is focused on academic situations and tasks which are therefore defined as "a cognitive structure formed as a result of cumulative educational practices that lead to the belief or expectation that the learner can succeed in educational tasks" (Molhem, 2015) and "the level of students' awareness of the effectiveness of their academic selves, their ability to perform all the academic assignments required of them, the ability to face educational situations and problems, and successfully address them" (Abu-Hudra & Mohamed, 2022). Academic self-efficacy has also been defined as

"Self-based knowledge that contains subjective expectations about the student's ability and capabilities to successfully overcome various tasks where these expectations are a constant dimension of the personality and are represented in his convictions and his ability to control the requirements of the achievement of academic tasks and to overcome the problems faced by the student through his actions based on existing environmental determinants." (Aldars, 2018).

In this research, academic self-efficacy is defined as "the self-awareness of one's abilities and potential regarding achievement as well as the execution of academic activities and tasks at the requisite level of performance through which it is possible to achieve the set academic goals."

The concept of "self-efficacy" was introduced by Bandura (1977) as an effort to establish a comprehensive theory of behavior change. He posited that the impact of psychological interventions on behavioral change is mediated by beliefs in self-efficacy. Consequently, self-efficacy theory is regarded as one of the most significant advancements in the field of psychology and its various sub-disciplines (Gallagher, 2012). In social learning theory, self-efficacy is conceptualized as coming from various sources of information and being transmitted and acquired through direct or indirect experience (Bandura, 1977).

Social cognitive theory considers self-efficacy to be a cognitive mental act within social conditions. Human abilities can be understood as the product of interplay among personal, behavioral and environmental factors. Hence, individuals analyse and interpret the consequences of their behaviors and the changes in their self-beliefs as well as their environments which contributes to how their subsequent behaviors develop and change (Sharma & George, 2016).

Social cognitive theory offers a dynamic framework for understanding emotions, behaviors and the cognitive processes underlying human thought. It also provides a framework for understanding a person's motives and how they impact their activities and interactions within the environment and contribute to shaping them. In addition, social cognitive theory highlights the concept of reciprocal determinism by highlighting the tripartite relationship between individual characteristics, behavior and environment. It's also beliefs that sit at the forefront of these personality factors (Gallagher, 2012) and serve as an important set of proximate determinants of human self-regulation. These beliefs also affect the efficiency of people relative to the choices they make, their aspirations, the patterns of thinking they adopt and the amount of stress they are exposed to while adapting to environmental demands (Bandura, 1991, 1994).

Self-efficacy is an important element of an individual's feelings of personal will. It is a critical component of learner motivation and with it, the students aspire to achieve more and demonstrate more persistent determination in educational tasks (Walsh, 2008). In contrast, students with low self-efficacy exhibit greater apprehension towards challenging educational or training subjects compared to their high self-efficacy counterparts. This reluctance frequently results in low self-efficacy students struggling to master complex topics or to acquire the experience needed to navigate difficult situations (Los, 2014). Self-efficacy has a variety of distinguishing features such as a focus on one's perceived abilities to perform an activity or manage specific task. These features are not focused on one specific field but may be related to more refined contexts and tasks. Thus, the degree to which an individual's

assessments of their own competence are generalizable or transferable to other activities, situations or domains is known as their perceived self-efficacy (Bassi, Steca, & Fave, 2018).

Self-efficacy beliefs play a pivotal role in determining the extent of effort individuals devote to academic tasks, their capacity to persevere challenges and their adaptability in adverse conditions. Consequently, these beliefs exert a positive influence on their performance (Klassen & Usher, 2010). The idea of self-efficacy also asserts that psychological interactions have an impact on the level and intensity of its beliefs. An individual's degree of efficacy, initiation of coping mechanisms, amount of effort exerted and duration of overcoming hurdles and unfavorable experiences are all influenced by their own expectations. Verbal persuasion added to performance accomplishments is considered the main information source along with vicarious experience and feeling arousal which have a strong effect on an individual's efficacy (Bandura, 1977).

Learners can get self-efficacy information by comparing themselves to others in the class. Other students that achieve at a similar level are the best basis for comparison. When students observe peers who are like themselves successfully perform a task, they develop a willingness to believe that they too can do the task (Schunk, 1995). Teachers need to provide a learning atmosphere of emotional and psychological safety, use educational curricula appropriately and systematically, and implement the learning process in a manner that engages, adapts, and produces continuous success to strengthen learners' beliefs about their academic self-efficacy (Michaels, Wilson, & Margolis, 2005).

There are four diverse sources of it in educational situations:

1. Performance Achievements: These serve as a crucial reservoir of valuable competence-related knowledge and are derived from personal mastery experiences. Achievements elevate the anticipation of proficiency while setbacks diminish the anticipation of proficiency. Strong efficiency expectations are developed by repeating successes and avoiding failures (Bandura, 1977).
2. Alternative Experiences: These are the indirect experiences provided by social models because a learner's observations of similar people to performing well serve to motivate their continued efforts. It also increases their belief that they have similar key abilities that will allow them to achieve at the same level (Bandura, 1994).
3. Verbal Persuasion: Students often get motivational messages from teachers and parents, urging them to persist in tackling academic obstacles. These statements of persuasion are used frequently to enhance student self-efficacy (Walsh, 2008).
4. Emotional Arousal: Emotional arousal has the potential to influence one's perception of their ability to effectively handle challenging or harmful events. However, high arousal can impair performance. Therefore, the probability of expecting success is greater when individuals refrain from negative arousal and stress (Bandura, 1977).

An associated idea with self-efficacy is that of accomplishment goal orientations which are from the fundamental principle of socio-cognitive theory which is recognized as one of the fundamental theories that address the motivation of the students to state that behaviors are interpreted in educational situations and consider the cause and behavior. There are multiple definitions of achievement goal orientations. These definitions converge within the overarching framework of social cognitive theory.

Achievement goal orientations are defined as follows:

- The types of goals adopted by students that represent the purpose for which students are engaged in an activity or task (Aloty, 2014).
- Everything that a person thinks, feels, does, and concentrates on while they work to accomplish their objectives (Pintrich, Roeser, & De Groot, 1994).
- The ultimate destination towards which one's efforts are aimed (Barkur, Govindan, & Kamath, 2013).
- What motivates people to take part in activities that test their skills (Elliot, 2005).

In this research, achievement goal orientations are articulated as "individuals' attitudes and beliefs concerning their capabilities and performance in academic endeavors which are reflected in their interpretations and reactions in educational and achievement situations."

The achievement goal orientation hypothesis which focuses on the causes of students' academic behavior and their integration into the academic environment is one of the most significant ideas for qualitative describing motivation (Rashwan, 2020). This idea pertains to the many goal orientations that students choose which are connected to an impact on their beliefs and use of self-regulating cognitive techniques. The idea also encompasses cognitive, emotional and behavioral involvement. Goal orientations include the cognitive aspects linked to conduct but the establishment and attainment of objectives may be influenced by the social environments in which students are involved (Anderman & Patrick, 2012). Therefore, this notion has become crucial in comprehending the variables that motivate people to engage in studying (Guan, Xiang, Land, & Hamilton, 2023).

Studying at the university level requires greater degree of self-reliance, prompting students to ask questions on what, when, and how to study and gain knowledge. Therefore, motivation is essential in determining their course, level of tenacity, and caliber of academic pursuits (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010).

Students' engagement in assignments is driven by their achievement goal orientations (Senko, 2016) and they conduct themselves in manners they deem conducive to attaining their objectives and mastering their learning tasks. Motivation also depends on a learner's level of self-belief for achieving the desired results which is represented by positive output expectations as well as on their ability to learn and perform which is represented by high self-efficacy (Schunk, 2016).

The following binary achievement goal orientation models have been examined by researchers studying achievement goal orientations: the orientation towards mastery goals and the performance objective (Hulleman & Senko, 2010) the triple mastery, performance and performance approach model (Bong, 2012). The paradigm consists of the following four quadrants: mastery approach, mastery-avoidance, performance-avoidance and performance approach. The interaction between two traditional factors in goal achievement, namely mastery versus performance and approach versus avoidance, resulted in the emergence of the subsequent paradigm (Butler, 2012; Elliot & Church, 1997).

Individuals with a performance approach goal orientation primarily driven by the desire to demonstrate their capabilities. Such individuals also tend to be more involved in their tasks because they view these tasks as opportunities to demonstrate high competence compared to other people, and this leads them to feel satisfied in academic situations. However, they are prone to experiencing more negative feelings if they fail which can affect how they perceive their educational experience (Putri & Saleh, 2020).

A student who has performance-avoidance goal orientation engages in a task to prevent failing and from coming out as inept or unable (Bembenutty, 2001). They make an effort to avoid giving the impression that their performance is lacking. They become less motivated to complete academic assignments because they anticipate failing and receiving subpar grades (Putri & Saleh, 2020).

The learner prioritizes the accuracy of their actions based on the task's criteria or their personal standards with a mastery-approach goal orientation (Linnenbrink & Pintrich, 2000). This orientation also pertains to the learner's inclination to acquire new knowledge and enhance proficiency (Elliot & McGregor, 2001). Mastery orientation learners determine their own performance without the influence of others and hold the view that success comes through making the effort to learn while difficulties present. Hence, they are less likely to experience negative emotions in academic situations (Putri & Saleh, 2020).

A mastery-avoidance goal orientation is thought to be best suited for people who have a strong tendency towards perfection and who want to keep their degree of success after they have made the best of a specific specialty. It signifies the inclination to evade the potential of not acquiring maximum knowledge and a predilection for jobs that one can proficiently do (Elliot & McGregor, 2001). The focus of mastery orientation learners is on

avoiding what is wrong with the task or its criteria and avoiding doing the task incorrectly (Linnenbrink & Pintrich, 2000).

### 1.1. Research Significance

The significance of this study lies in enhancing our understanding of the academic self-efficacy levels among students at this advanced stage of education as shown by postgraduate students. For adult learners, academic self-efficacy is crucial because it raises self-awareness of one's capacity and ability to complete tasks and activities at the necessary level of performance which paves the way for the achievement of desired academic objectives.

The purpose of the study is to develop more awareness of the characteristics of academic self-efficacy and how grades and gender affect it. Moreover, how each of the four approaches to accomplishment goals and academic success interacts with it.

The study's findings will be helpful to educational institutions since they will emphasize how crucial it is for students to have higher levels of academic self-efficacy and the tools that may help them practice more. So, the understanding of its nature will support academics and administrators at the institution in motivating students to concentrate on it to achieve their academic objectives.

### 1.2. The Research Question

This study was devised to verify the nature of the relationship between these variables. The research questions are as follows:

1. What is the degree of academic self-efficacy among postgraduate students at the College of Education, King Saud University?
2. Is there a relationship between academic self-efficacy and the four types of achievement goal orientations among postgraduate students at the College of Education, King Saud University?
3. Is there a relationship between academic self-efficacy and academic achievement among postgraduate students at the College of Education, King Saud University?
4. Are there statistically significant differences in academic self-efficacy according to study stage (M.A. versus Ph.D.) among postgraduate students at the College of Education, King Saud University?
5. Are there statistically significant differences in academic self-efficacy based on gender (male versus female) among postgraduate students at the College of Education, King Saud University?

## 2. THE LITERATURE REVIEWS

### 2.1. The Level of Academic Self-Efficacy

The findings of some studies (e.g., (Abu-Hudra & Mohamed, 2022; Al-Zadjali, 2014; Ibrahim, 2013; Zheng, Chang, Lin, & Zhang, 2021)) have demonstrated that postgraduate students possess a high level of academic self-efficacy while other studies (e.g., (Al-Zaq, 2009; Alersan, 2017; Alotaibi, 2016; Jawad, 2019; Molhem, 2015; Sachitra & Bandara, 2017)) presented a moderate level of academic self-efficacy among students.

### 2.2. The Correlation between Academic Self-Efficacy and the Four Achievement Goal Orientations

A multitude of prior research works on academic self-efficacy and accomplishment goal orientations have shown one or more relationships between the concepts (e.g., (Al-Harthy & Was, 2013; Alotaibi, 2016; Alsaidi & Aldhafri, 2021)).

### 2.3. Relationship between Academic Self-Efficacy and Academic Achievement

It can be observed from the findings of some studies (e.g., (Al-Harthy & Was, 2013; Al-Zadjali, 2014; Alegre, 2014; Alsaidi & Aldhafri, 2021; Crippen, Biesinger, Muis, & Orgill, 2009; Hayat, Shateri, Amini, & Shokrpour, 2020;

Los, 2014; Mantooth, Usher, & Love, 2021; Özer & Akçayoğlu, 2021; Phan & Chen, 2022; Shaine, 2015; Zeinalipour, 2022; Zheng et al., 2021)) show that a significant correlation exists between academic self-efficacy and academic achievement. In contrast, other studies (e.g., (Bembenutty, 2006; Sahlol, 2005)) have shown no significant relation.

#### *2.4. Variations in Academic Self-Efficacy Based on Study Stage*

Some studies (e.g., (Al-Zaq, 2009; Aljahwari & Aldhafri, 2018; Jawad, 2019; Sachitra & Bandara, 2017)) demonstrated that significant variations in academic self-efficacy were observed based on academic degree, favoring students at a higher academic level.

#### *2.5. Variations in Academic Self-Efficacy Based on Gender*

Several research projects found no significant variations in academic self-efficacy based on gender (e.g., (Al-Zaq, 2009; Molhem, 2015; Phan & Chen, 2022)). In contrast, other studies (e.g., (Aldamour, 2011; Alersan, 2017; Aljahwari & Aldhafri, 2018; Ibrahim, 2013; Sachitra & Bandara, 2017)) have shown statistically significant differences in academic self-efficacy related to gender in favor of females.

### **3. METHODOLOGY**

#### *3.1. Research Design*

A descriptive methodology was used because this methodology depends on dealing with the phenomenon as it is in reality through an accurate description of it.

#### *3.2. Participants*

The research cohort comprised postgraduate students from the College of Education at King Saud University in the Kingdom of Saudi Arabia. Data were meticulously gathered at the commencement of the 2022-2023 academic year from a total of 363 postgraduate students encompassing 91 males and 272 females representing a diverse array of disciplines. These students were chosen using simple random sampling from a postgraduate population of 1832 students (according to official statistics from King Saud University).

Two pilot samples were used to examine the nature of the data. The first consisted of 46 students and was employed to ascertain the reliability of the data collection instruments through Cronbach's alpha alongside an evaluation of the internal consistency of the scales using the split-half method. The second pilot study consisted of 28 students and was used to verify the test-retest reliability and criterion validity of the academic self-efficacy scale.

#### *3.3. Procedures*

This research consisted of reviewing previous literature, theoretical frameworks and scales that focused on academic self-efficacy and achievement goal orientations. Subsequently, an academic self-efficacy scale was devised and its psychometric properties were rigorously evaluated using a pilot sample before its administration to the study sample of 363 participants. This comprehensive process of data collection and analysis aimed to validate the study's hypotheses, facilitate a thorough discussion of the findings, and propose recommendations for future research endeavors.

#### *3.4. Instruments*

##### *3.4.1. Academic Self-Efficacy Scale*

The researcher developed the academic self-efficacy scale for this study by synthesizing insights from educational literature, leveraging established theoretical frameworks, and incorporating elements from existing assessments of academic self-efficacy. The ultimate scale included 18 items that were responded to using a five-point

Likert scale. Therefore, the overall score for each participant varied between a minimum of 18 and a maximum of 90 degrees.

The reliability of the scale was verified using the first pilot sample of 46 students by calculating Cronbach's alpha. The value of the coefficient was 0.89. This sample was also used to verify the reliability using the split-half method; this gave a Pearson correlation coefficient of 0.897, a Spearman-Brown correlation coefficient of 0.946, and a Guttman split-half coefficient of 0.945. The reliability was also verified using the test-retest method with the second pilot sample of 28 students at three-week intervals using the intraclass correlation coefficient to verify the relationship between test and retest. The reliability coefficient of the scale was 0.79. All reliability coefficient values were classed as high.

Inter-rater reliability was used to confirm the accuracy and credibility of the scale. The scale was submitted to a panel of 12 experts in the subject who were requested to provide their feedback on the scale.

The validity of the scale was assessed by computing the correlation coefficient between the score of each individual item and the overall score of the scale achieved by excluding each item's score from the total. The assessment was performed using a pilot sample of 46 students. The calculated correlation coefficients derived from the total scores of the scale ranged from 0.33 to 0.74. All correlation coefficients were statistically significant and classified as acceptable, moderate, or high. These findings are presented in Table 1.

**Table 1.** Internal consistency—the correlation coefficient between the degree of each item and the total degree of the academic self-efficacy scale, N=46.

Items	The correlation coefficient with the total degree of the scale	Items	The correlation coefficient with the total degree of the scale
1	0.42**	10	0.62**
2	0.44**	11	0.74**
3	0.50**	12	0.47**
4	0.40**	13	0.45**
5	0.66**	14	0.50**
6	0.73**	15	0.33*
7	0.74**	16	0.58**
8	0.69**	17	0.61**
9	0.60**	18	0.60**

**Note:** \*\* p < 0.01; \* p < 0.05.

The criterion validity of the scale was evaluated by calculating the Pearson correlation coefficient between the academic self-efficacy scale employed in this study and the academic self-efficacy scale developed by Owen and Froman (1988) which was subsequently translated into Arabic by Al-Badarin (2008). This analysis was conducted on a second pilot sample comprising 28 students. The resulting correlation coefficient of 0.80 was considered robust and statistically significant, with a p-value of less than 0.01.

After comparing these results with previous evaluations, it was concluded that the scale developed in this study demonstrated a satisfactory level of validity and reliability. As a result, it was employed to test the hypotheses using the entire sample of 363 participants.

### 3.4.2. Achievement Goal Orientations Scale

The achievement goal orientations scale (quadripartite model) developed by Elliot and McGregor (2001) which was translated into Arabic by Al-Watban (2013) was used in this study. The scale consisted of 12 items that measure the four achievement goal orientations (performance-approach, performance-avoidance, mastery-avoidance, and mastery-approach) with three items for each orientation. The items on the scale were assessed using a five-point Likert scale. The total score for each orientation for each respondent ranged from a minimum of 3 to a maximum of 15.

The reliability of this scale has been substantiated by numerous studies in both its original language (English) and various translations. Elliot and McGregor (2001) established the stability of each of the four orientations using Cronbach's alpha through three sub-studies conducted at the University of Rochester in New York, reporting reliability coefficients that ranged from 0.82 to 0.96. Al-Watban (2013) in translating the scale to Arabic, achieved Cronbach's alpha coefficients ranging from 0.65 to 0.78 for the four orientations.

The present study assessed the Cronbach's alpha reliability for the four orientations using a pilot sample of 46 students. The obtained coefficients were found to be high ranging from 0.81 to 0.91 (see Table 2).

**Table 2.** Cronbach's alpha coefficients for the four dimensions of the achievement goal orientations scale, N = 46.

Orientation	Number of items	Cronbach's alpha coefficient
Performance approach	3	0.91
Performance avoidance	3	0.81
Mastery avoidance	3	0.84
Mastery approach	3	0.88

The internal consistency was assessed by computing the Pearson correlation coefficient between the items inside each dimension and the overall score of the dimension after excluding the score of each individual item. The coefficients varied from 0.52 to 0.87, all falling within the medium to high range. These coefficients were statistically significant at a p-value of less than 0.01 as shown in Table 3.

**Table 3.** Internal consistency—the correlation coefficient between the degree of each item and the total degree of the item's dimension for the achievement goal orientations scale, N=46.

Items	Relationship to the total degree of the dimension	Item	Relationship to the total degree of the dimension
1	0.84**	7	0.67**
2	0.80**	8	0.87**
3	0.84**	9	0.62**
4	0.70**	10	0.70**
5	0.52**	11	0.80**
6	0.80**	12	0.85**

**Note:** \*\* p < 0.01.

It was determined that the scale had a good degree of validity and reliability when used with the data in this study by examining prior research on the psychometric characteristics of the achievement goal orientation scale and its sub-dimensions. Therefore, it was used to examine the hypotheses.

### 3.5. Data Analysis

Data were analyzed using SPSS Version 24, employing a variety of statistical tests including Cronbach's alpha, means, standard deviations, the (K-S) test, Pearson correlation coefficient and the Mann-Whitney U test.

## 4. RESULTS

As seen in Table 4, to address the first study question, we computed the mean and standard deviation of the total scores for academic self-efficacy and evaluated its degree based on the mean value criteria using a five-point Likert scale to examine the responses to the scale components: quite high (4.20 to 5.00), high (3.40 to 4.19), medium (2.60 to 3.39), low (1.80 to 2.59), or very low (from 1.00 to 1.79).

**Table 4.** The mean and standard deviation for academic self-efficacy, N=363.

Variables	Number of items	Mean	SD	Level
Academic self-efficacy	18	3.92	0.526	High

According to Table 4, postgraduate students from the College of Education had a high degree of academic self-efficacy with an average score of 3.92.

The relationship between academic self-efficacy and the four achievement goal orientations were examined using the non-parametric Spearman's rank correlation coefficient due to the abnormal distribution of the data and to address the second research question (see Table 5).

**Table 5.** Spearman's correlation coefficients for the relationship between academic self-efficacy and achievement goal orientations, N=363.

Orientation	Academic self-efficacy
Performance approach	0.036
Performance-avoidance	-0.080
Mastery-avoidance	-0.289**
Mastery-approach	0.428**

Note: \*\* p < 0.01.

No significant statistical correlation was found between academic self-efficacy and either performance-approach or performance-avoidance orientations. However, there was a significant negative correlation ( $p < 0.01$ ) between academic self-efficacy and mastery-avoidance as well as a significant positive correlation ( $p < 0.01$ ) between academic self-efficacy and mastery-approach.

Given the abnormal distribution of the data, the third research question was also examined using Spearman's rank correlation coefficient to assess the relationship between academic achievement and self-efficacy (see Table 6).

**Table 6.** Spearman's correlation coefficients for the relationship between academic self-efficacy and achievement goal orientations, N=363.

Variables	Academic achievement
Academic self-efficacy	0.253**

Note: \*\* p < 0.01.

Table 6 illustrates a statistically significant positive correlation ( $p < 0.01$ ) between academic self-efficacy and the level of academic achievement among postgraduate students.

In addressing the fourth research question, due to the abnormal distribution of the data and a non-parametric test (Mann-Whitney U) was employed to examine the differences between the mean ranks of academic self-efficacy scores across study stages. The results are detailed in Table 7.

**Table 7.** Differences between the rank means for academic self-efficacy for study stage (M.A.–Ph.D.), N = 363.

Variable	Study stage	N	Mean rank	Sum of ranks	Mann-Whitney U	Sig.
Academic self-efficacy	M.A.	207	167.35	34640.50	13112.500	0.002**
	Ph.D.	156	201.45	31425.50		

Note: \*\* p < 0.01.

Table 7 indicates significant variations ( $p < 0.01$ ) in academic self-efficacy among postgraduate students in the College of Education at King Saud University, with the Ph.D. cohort demonstrating notably higher self-efficacy compared to other groups.

To address the fifth research question, the Mann-Whitney U test was utilized, given the abnormal distribution of the data. This test was employed to investigate disparities in the average ranks of academic self-efficacy scores based on gender (see Table 8).

**Table 8.** Differences between the rank means for academic self-efficacy for gender (Male-Female), N = 363.

Variables	Gender	N	Mean rank	Sum of ranks	Mann-Whitney U	Sig.
Academic self-efficacy	Male	91	183.11	16663.00	12275.00	0.907 (Not statistically significant)
	Female	272	181.63	49403.00		

Table 8 shows no statistically significant differences in academic self-efficacy based on gender among postgraduate students.

## 5. DISCUSSION

### 5.1. The Level of Academic Self-Efficacy

Studies and other research have investigated academic self-efficacy and its variations based on gender and study stage as well as its correlation with achievement goal orientations. The findings of some of these studies (e.g., (Abu-Hudra & Mohamed, 2022; Al-Zadjali, 2014; Ibrahim, 2013; Zheng et al., 2021)) are consistent with the results of this study which demonstrated a high level of academic self-efficacy among postgraduate students. On the other hand, other studies (e.g., (Al-Zaq, 2009; Alersan, 2017; Alotaibi, 2016; Jawad, 2019; Molhem, 2015; Sachitra & Bandara, 2017)) have shown that there is a moderate level of academic self-efficacy among students. In this study, it is logical to accept that the students' high academic self-efficacy is related to their advanced educational level and age, especially by default, they must be among the best students because they have reached a postgraduate level. Their prior achievements are likely to have influenced their efficacy for academic success.

### 5.2. Relationship between Academic Self-Efficacy and the Four Achievement Goal Orientations

The findings indicate no significant correlation between academic self-efficacy and performance-approach goal orientation. This outcome aligns with the results of several prior studies (e.g., (Al-Harthy & Was, 2013; Alotaibi, 2016; Crippen et al., 2009)), yet it contrasts with the findings of Alsaidi and Aldhafri (2021) which identified a positive relationship.

Similarly, research by Crippen et al. (2009) and Al-Harthy and Was (2013) supports the absence of a significant correlation between academic self-efficacy and performance-avoidance goal orientation. Conversely, Alotaibi (2016) reported a positive relationship between these constructs while Alsaidi and Aldhafri (2021) found a negative correlation.

The study identified a negative correlation between academic self-efficacy and mastery avoidance goal orientation supporting the findings of Alsaidi and Aldhafri (2021). In contrast, earlier research by Alotaibi (2016) and Crippen et al. (2009) found no relationship between these variables.

Furthermore, the findings of this study revealed a significant and positive correlation between academic self-efficacy and mastery-approach goal orientation. These results are consistent with previous research by Alotaibi (2016) and Alsaidi and Aldhafri (2021). Additionally, Al-Harthy and Was (2013) reported a positive correlation between academic self-efficacy and mastery goals in general. Conversely, Crippen et al. (2009) found no correlation between these two constructs.

The connection between academic self-efficacy and the two orientations of mastery may be elucidated by the fact that students strive to excel in their education to attain mastery in academic topics. This is their main goal and in turn, their successful achievements can positively reflect their self-beliefs and academic self-efficacy. The "performance to excel" criteria is an external criterion that can have a detrimental impact on a student's academic self-efficacy. This differs with the two performance orientations where a student's primary objective is to outperform their peers which are quite different from learning the academic topic. Academic self-efficacy enhances confidence in managing academic situations by using executive functions such as cognitive methods, arranging

study time, and controlling effort (Alegre, 2014). High self-efficacy reflects a student's belief that they can achieve what the situation requires of them. As a result, they handle tasks with confidence and participate in them with desire and determination. On the other hand, a student with low self-efficacy lacks confidence in their abilities and may question their potential for success. Consequently, they are more inclined to avoid challenging situations or tasks and are susceptible to failure (Seel, 2012).

The significance of one's beliefs about the anticipated results of their actions is paramount. Consequently, learners should be encouraged to engage in activities that they perceive will ultimately yield significant effects (Schunk, 1995). Academic self-efficacy beliefs also influence students' behaviors by influencing their choices, courses of action, and performance. In turn, an increased sense of efficiency increases effort, perseverance, and flexibility. The feeling of mastery is a very important source of information because when individuals see their own performance as successful, it enhances their academic self-efficacy. Conversely, when performance is seen as a failure, it may have a detrimental impact on their academic self-efficacy beliefs (Lovell, 2018).

### *5.3. Relationship between Academic Self-Efficacy and Academic Achievement*

Looking at the relationship between academic self-efficacy and academic achievement, the findings of some studies (e.g., (Al-Harthy & Was, 2013; Al-Zadjali, 2014; Alegre, 2014; Alsaïdi & Aldhafri, 2021; Crippen et al., 2009; Hayat et al., 2020; Los, 2014; Mantooth et al., 2021; Özer & Akçayoğlu, 2021; Phan & Chen, 2022; Shaine, 2015; Zeinalipour, 2022; Zheng et al., 2021)) align with the findings given here and demonstrate a significant correlation between academic self-efficacy and academic achievement. On the other hand (e.g., (Bembenutty, 2006; Sahlol, 2005)), there is no relationship between the variables.

The concept of self-efficacy pertains to an individual's beliefs regarding their scientific and cognitive capabilities as well as their capacity to exert control over events such as tests progressing through different educational stages and attaining a high level of accomplishment. These academic factors significantly influence their academic life (Abu-Hudra & Mohamed, 2022). Moreover, possessing a strong sense of academic self-efficacy plays a crucial role in attaining both academic and social equilibrium as well as motivating students to actively address and overcome obstacles and difficulties. Conversely, a student with low academic self-efficacy must enhance their competence to achieve the appropriate level of academic self-efficacy (Kurmash, 2016) which will subsequently affect their performance. Furthermore, learners who achieve academic success tend to possess elevated academic self-efficacy beliefs due to their access to a significant determinant of self-efficacy: knowledge (Zeinalipour, 2022).

### *5.4. Differences in Academic Self-Efficacy According to Study Stage*

The findings presented here also indicate statistically significant differences in academic self-efficacy according to the postgraduate study stage (MA vs. Ph.D.). These differences benefit the Ph.D. stage as students at this level exhibit a greater level of self-efficacy. Several studies (e.g., (Al-Zaq, 2009; Aljahwari & Aldhafri, 2018; Jawad, 2019; Sachitra & Bandara, 2017)) have consistently shown that students with a higher academic level exhibit significantly greater academic self-efficacy compared to those with lower academic levels. Conversely, Molhem's (2015) research revealed differences in favor of students enrolled in a lower academic tier. Specifically, students at a lower level have shown a greater likelihood of possessing strong self-efficacy.

This pattern of differences in academic self-efficacy beliefs can be explained by the nature of the age group and the different academic requirements, experiences, challenges and problems they face throughout their academic journey. This can result in more challenges and greater self-confidence which encourages students to exert more effort and in turn raises their academic self-efficacy (Aljahwari & Aldhafri, 2018). As students have more academic experiences, acquire more study skills and improve their familiarity with university life, their self-efficacy develops and improves (Alersan, 2017). Because doctoral students have more successful experiences, they gain more

confidence in themselves and their ability to achieve more future successes. This is potentially in contrast to master's students who have typically had fewer academic experiences and successes.

### 5.5. Differences in Academic Self-Efficacy According to Gender

The findings of this research reveal that there are no statistically significant differences in academic self-efficacy among postgraduate students when analyzed by gender. These results corroborate earlier studies in the field (e.g., (Al-Zaq, 2009; Molhem, 2015; Phan & Chen, 2022)). In contrast, other studies (e.g., (Aldamour, 2011; Alersan, 2017; Aljahwari & Aldhafri, 2018; Ibrahim, 2013; Sachitra & Bandara, 2017)) show statistical analysis has shown substantial gender-based disparities in academic self-efficacy with females exhibiting greater levels of self-efficacy. The lack of gender disparities in this study may be attributed to the characteristics of the educational system and the alignment of educational opportunities for both male and female students at early levels of schooling.

## 6. CONCLUSION

This research investigated the extent of academic self-efficacy among postgraduate students in the College of Education at King Saud University and its correlation with four achievement goal orientations as well as academic achievement. Furthermore, it highlighted the variations influenced by educational level and gender. The results indicated that students demonstrated a strong belief in their ability to succeed academically. There was no relationship between their belief in their abilities and their orientation towards seeking achievement or avoiding failure. However, there was a negative relationship between their belief in their abilities and their tendency to avoid mastering new material. On the other hand, there was a positive relationship between their belief in their abilities and their motivation to master new material. Additionally, their belief in their abilities was positively related to their abilities academically. Furthermore, their belief in their abilities varied depending on their stage of study (M.A. and Ph.D.) but did not differ based on gender (male and female).

Students exhibited a moderate degree of academic self-efficacy indicating that educational institutions, teachers, and students themselves need to put in more effort to enhance students' self-efficacy. The observed correlation between academic self-efficacy and the two mastery orientations implies that students should prioritize the mastering process and their benchmarks for success rather than fixating on performance and competing with others. Furthermore, the correlation between academic self-efficacy and accomplishment implies that enhancing levels of competence is crucial for students to attain higher academic success.

### 6.1. Implications and Suggestions

Subsequent studies might use this study methodology in other educational settings and at different educational levels to get a deeper comprehension of the connection between the variables and to further validate the psychometric features of the measurement tools utilized. An investigation of the correlation between academic self-efficacy and other factors associated with the educational process will help determine the significance of self-efficacy as an educational factor. This study relied on self-reported data provided by the student participants. However, it is crucial to supplement this approach by using other methods such as observations or interviews to enhance the validity of the results.

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**Transparency:** The author states that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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## APPENDIXES

Table 9 presents Academic Self-Efficacy Scale prepared by the researcher.

**Table 9.** Academic self-efficacy scale.

Number	Statement
1	I can participate effectively and actively in discussions during lectures.
2	I have the ability to write down ideas and notes during lectures.
3	I have the ability to submit research or work on time.
4	I prefer to avoid competitive academic assignments and activities.
5	I can search for additional information about topics in the library or online.
6	I can rely heavily on self-motivation to continue my learning.
7	I feel that I can help my colleagues clarify and explain what is difficult for them.
8	I can answer questions asked during lectures.
9	I can rely on myself to fully fulfill my academic requirements.
10	I enjoy performing educational tasks that are challenging, such as difficult or complex tasks.
11	I have the ability to organize and distribute study time between courses well.
12	I feel that my educational level is better than many of my colleagues.
13	I find it difficult to deal with the educational problems and difficulties I face.
14	I find it difficult to stay focused during lectures.
15	I suffer from test anxiety.
16	My abilities enable me to get high grades in courses.
17	I can achieve my academic goals as I planned.
18	I prefer to constantly self-evaluate my performance at university.

Table 10 presents the 2x2 achievement goals orientation scale.

**Table 10.** The 2x2 achievement goals orientation scale.

Number	Statement
1	It is important for me to do better than other student.
2	It is important for me to do well compared to others in this class.
3	My goal in the class is to get a better grade than most of the other student.
4	I worry that I may not learn all that I possibly could in this class.
5	Sometimes I'm afraid that I may not understand the content of this class as thoroughly as I'd like.
6	I am often concerned that I may not learn all that there is to learn in this class.
7	I want to learn as much as possible from this class.
8	It is important for me to understand the content of this course as thoroughly as possible.
9	I desire to completely master the material presented in this class.
10	I just want to avoid doing poorly in this class.
11	My goal in this class in to avoid performing poorly.
12	My fear of performing poorly in this class in often what motivates me.

**Note:** Prepared by Elliot and McGregor (2001).

Each statement is rated on the scales from 1 to 5, where 1 indicates "Not at all true of me" and 5 indicates "Very true of me."