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THE DISCRIMINATORY SIGNIFICANCE BETWEEN THOSE WITH HIGH AND LOW ACADEMIC EFFICACY IN STRATEGIC THINKING AND HABITS OF MIND AMONG FEMALE UNIVERSITY STUDENTS[1]

A SIGNIFICÂNCIA DISCRIMINATÓRIA ENTRE AQUELES COM ALTA E BAIXA EFICÁCIA ACADÊMICA NO PENSAMENTO ESTRATÉGICO E HÁBITOS DE MENTE ENTRE ESTUDANTES UNIVERSITÁRIAS DO SEXO FEMININO

Hend Salah El Din Hassan Mohamed
Department of Kindergarten, Faculty of Education, Prince Sattam Bin Abdulaziz University Kingdom of Saudi Arabia, Wadi Dawaser, 11991.
Department of Educational Sciences, Faculty of Education for Early Childhood, Fayom University - Egypt.
hsh01@fayoum.edu.eg

ABSTRACT

The current research aimed to identify the discriminatory significance between those with high and low academic efficacy in strategic thinking and productive habits of mind among female university students. For this purpose, the academic efficacy scale, the strategic thinking scale, and the productive habits of mind scale were applied to a sample consisting of (126) female students. The descriptive research approach was utilized due to its suitability to the research nature. Results indicated that there was a low level of strategic thinking among university students, there was a relationship between strategic thinking and productive habits of mind, and there were statistically significant differences between those of high and low academic efficacy in strategic thinking and habits of mind. These results can be utilized in enhancing academic proficiency among university female students and providing planners with practical outcomes that contribute to promoting academic proficiency, strategic thinking, and productive mental habits among university students.

KEYWORDS: Academic efficacy. Strategic thinking. Productive habits of mind. University students.

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RESUMO

A presente pesquisa teve como objetivo identificar a significância discriminatória entre aqueles com alta e baixa eficácia acadêmica no pensamento estratégico e nos hábitos produtivos de mente entre estudantes universitárias do sexo feminino. Para esse fim, foram aplicadas a escala de eficácia acadêmica, a escala de pensamento estratégico e a escala de hábitos produtivos de mente em uma amostra composta por (126) estudantes do sexo feminino. A abordagem de pesquisa descritiva foi utilizada devido à sua adequação à natureza da pesquisa. Os resultados indicaram que havia um baixo nível de pensamento estratégico entre estudantes universitários, havia uma relação entre o pensamento estratégico e os hábitos produtivos de mente, e houve diferenças estatisticamente significativas entre aqueles com alta e baixa eficácia acadêmica no pensamento estratégico e nos hábitos de mente. Esses resultados podem ser utilizados para aprimorar a proficiência acadêmica entre estudantes universitárias e fornecer aos planejadores resultados práticos que contribuam para promover a proficiência acadêmica, o pensamento estratégico e os hábitos mentais produtivos entre os estudantes universitários.

PALAVRAS-CHAVE: Eficácia acadêmica. Pensamento estratégico. Hábitos produtivos de mente. Estudantes universitários.

1. Introduction

The era of globalization is characterized by rapid changes, which encompass informational, environmental, and complex human interactions in all aspects. These changes arise from the flow of knowledge and the continuous discoveries of modern times. As a result, university students face various personal and academic challenges in their lives. In order to enhance the educational, pedagogical, and academic development of individuals, it becomes imperative to prioritize academic efficacy. This focus aims to improve the quality of educational effectiveness within institutions, particularly in recent times when there is a pressing need to address the state of academic stagnation that has affected students.

The presence of computers, the Internet, and other factors has been attributed to the stagnation in academic progress, as they can be time-wasting and impede academic efficiency. Conversely, students who possess high academic efficacy exhibit greater academic achievement. They excel and thrive in their academic pursuits (Finne & Frone, 2004), and are also less prone to experiencing academic stress and anxiety (Nie et al., 2011).

Academic efficacy refers to the skills that enable students to effectively utilize their abilities and knowledge in an organized manner, ultimately leading to the attainment of a distinguished academic level (Al Hawary & Mansour, 2014). Academic efficacy significantly influences the learning process and the successful completion of academic tasks. It plays a crucial role in determining the level of effort exerted by learners to accomplish these tasks, as it depends on their belief in their ability to execute the necessary actions to achieve success. Artino (2012) supports this notion and states that academic self-efficacy contributes to enhanced performance across a range of academic tasks, resulting in better academic outcomes for learners with higher levels of academic self-efficacy compared to their peers with lower levels of academic self-efficacy.

Academic efficacy is widely recognized as a crucial factor for student success in achieving academic compatibility and effectively navigating the problems and challenges they encounter (Karamash, 2016). Academic proficiency plays a pivotal role by enabling students to excel and demonstrate creativity in fulfilling their diverse roles within the educational environment. It equips them with the necessary skills, preparedness, talents, and abilities to adapt to constant changes and challenges that arise during the learning process. Moreover, academic efficacy fosters the development of student's capabilities and empowers them to make scientific advancements that contribute to the overall improvement of the educational and pedagogical processes (Al-Harasi, 2020).

Bandura (1994) asserts that academic self-efficacy beliefs play a fundamental role in motivating learners and driving their achievements. When students believe in their capability to accomplish assigned educational tasks, they develop a strong motivation to actively engage in those tasks and overcome obstacles encountered during the learning process. However, Shalol(2021) has indicated that university students typically demonstrate a moderate level of academic proficiency.

Indeed, it is essential to identify the factors that contribute to the development of academic efficacy, and strategic thinking is one such factor. Strategic

thinking involves a series of mental activities in which individuals organize their experiences in novel ways, employing dynamic cognitive processes. By cultivating strategic thinking skills, students can become more capable and empowered in their academic performance. This enables them to achieve better results and develop mental habits that facilitate their ability to effectively confront academic challenges. Strategic thinking equips students with the tools and strategies necessary to approach tasks, solve problems, and adapt to various learning situations, ultimately enhancing their academic efficacy.

Numerous studies have emphasized the importance of developing academic programs that specifically focus on equipping students with strategic thinking skills. For instance, Park and Lee (2021) and the First National Conference on Strategies to Address the Challenges of Education and Scientific Research in Egyptian Universities (2014) have recommended the incorporation of strategic thinking skills within academic curricula. Such skills are considered vital in achieving academic performance, particularly in private universities (El Sheikh & Abdelbagi, 2021). Furthermore, Ahmed and Al Asal (2015) have highlighted a positive relationship between strategic planning, self-efficacy, and academic efficacy among university students. Glick-Cuenot (2014) has also emphasized the importance for university students to master strategic thinking skills such as reframing, reflection, and systematic and organized thinking. These skills enable students to approach academic tasks and challenges thoughtfully and effectively.

Strategic thinking is a cognitive process that involves a series of mental activities through which individuals reorganize their experiences in novel ways. It encompasses dynamic mental activities and manipulation aimed at empowering students and enhancing their performance, leading to optimal results. This process also helps students develop habits of mind that enable them to effectively confront various challenges they may encounter (Park & Lee, 2021).

Recognizing the significance of strategic thinking, the First National Conference on Strategies for Facing the Challenges of Education and Scientific Research in Egyptian Universities (2014) recommended the development of student

education systems and academic programs that incorporate strategic thinking skills. This emphasizes the need to provide students with the necessary tools and approaches to enhance their strategic thinking abilities, enabling them to navigate the complexities of their academic work more effectively.

In the era of globalization, strategic thinking has emerged as a crucial factor for achieving excellence. It is recognized as one of the most significant contemporary methods because it serves as a tool for shaping the future. In today's fast-paced world, the ability to anticipate and shape the future has become an essential and inevitable human endeavor. Individuals who cannot predict the future often face difficulties in adapting to the rapid changes and complexities of the modern world (Al Ashi, 2013).

Strategic thinking is a comprehensive framework that encompasses a set of concepts, procedures, and tools designed to help individuals plan, implement, and learn strategically in alignment with the evolving dynamics of the current era (Tavakoli & Lawton, 2005; Collis, 2010). By adopting strategic thinking, individuals can navigate the challenges and uncertainties of the global landscape more effectively, enabling them to make informed decisions and take purposeful actions to achieve their goals.

The importance of strategic thinking lies in its ability to provide individuals with the mindset and skills necessary for proactively addressing the complexities and rapid changes of the contemporary world. It fosters the ability to analyze situations, identify opportunities, and make strategic choices that lead to success and competitiveness in various domains, including academia, business, and personal development.

Strategic thinking involves analyzing opportunities and problems from a broader perspective and understanding the potential impact of one's actions on others. It goes beyond a narrow focus and encourages individuals to envision possible future scenarios and their implications. Strategic thinkers adopt a holistic approach when dealing with daily issues and challenges, recognizing that strategic thinking is an ongoing process rather than a one-time event (Al Gharbia, 2017).

Furthermore, strategic thinking is characterized by a consistent, unified, and integrated approach to decision-making that is directed toward goals. It involves studying various action alternatives and allowing freedom of thinking and inspiration to generate innovative solutions (Targhini, 2015). By taking into account a wide range of factors and considering long-term consequences, strategic thinkers are better equipped to make informed decisions and take effective actions.

The essence of strategic thinking lies in its ability to transcend immediate circumstances and embrace a forward-thinking mindset. It encourages individuals to consider the bigger picture, anticipate potential challenges, and identify opportunities for growth and success. Through strategic thinking, individuals can enhance their problem-solving abilities and navigate complex situations with a proactive and insightful approach.

The Center for Strategic Studies (2012) has identified two types of skills that are essential components of strategic thinking: basic skills and composite skills. Basic strategic thinking skills encompass abilities such as memory, imagination, empathy, numerical thinking, and verbal expression. These skills form the foundation for strategic thinking by enabling individuals to process information and communicate effectively. On the other hand, composite skills are more advanced and include the ability to predict the future, think about alternatives, think critically, think creatively, reflect, and exercise foresight. These composite skills allow individuals to engage in strategic thinking at a higher level, considering multiple possibilities and envisioning future scenarios.

Additionally, Pisapia et al. (2011) have highlighted that strategic thinking involves several specific skills, including systematic thinking skills, reflection skills, and reformulation skills. Systematic thinking skills enable individuals to approach problems or situations in a structured and organized manner, considering all relevant factors and analyzing them systematically. Reflection skills involve introspection and thoughtful consideration of experiences, allowing individuals to learn from past actions and improve future decision-making. Reformulation skills

refer to the ability to reframe problems, questions, or situations in a different context or perspective, fostering innovative thinking and generating new insights.

In summary, strategic thinking encompasses a range of skills, both basic and composite, that enable individuals to think critically, creatively, and systematically. It involves abilities such as memory, imagination, empathy, numerical thinking, verbal expression, prediction, alternative thinking, critical thinking, creative thinking, reflection, and foresight. Developing these skills can enhance one's strategic thinking capabilities and contribute to more effective decision-making and problem-solving.

In the current research, strategic thinking is defined as a cognitive process exhibited by female students at Prince Sattam bin Abdulaziz University. It encompasses several dimensions, including anticipation, systems thinking, academic motivation, academic partnership, and academic creativity. These dimensions collectively enable students to gather the necessary information, understand the educational environment, monitor its variables, and engage in effective planning for the future. By employing strategic thinking, students can generate new and productive knowledge, as well as develop solutions to the challenges they encounter within the academic setting. This highlights the importance of strategic thinking in empowering students to navigate the complexities of their educational journey and contribute to the advancement of knowledge.

Strategic thinkers typically follow a series of steps in their thinking process. These steps, as outlined by Mahdi and Refeeq (2017) and Al Gharbia (2017), include:

1. Collecting strategic information: Gathering relevant data and information from various sources to gain a comprehensive understanding of the current situation and external environment.
2. Evaluating strategic capabilities: Assessing the organization's internal strengths and weaknesses, as well as analyzing external opportunities and threats to identify competitive advantages and potential challenges.

3. Analyzing the current situation: Examining the existing conditions and dynamics within the organization and its external environment to identify key factors and trends.
4. Formulating strategic predictions: Forecasting and anticipating future scenarios and developments based on the analysis of the current situation and trends.
5. Defining the desired strategic directions: Clearly articulating the desired outcomes and objectives that the organization aims to achieve through strategic thinking and planning.
6. Identifying strategic options: Generating a range of possible strategies and courses of action that align with the desired strategic directions.
7. Arranging strategic options: Prioritizing and organizing the identified strategic options based on their feasibility, potential impact, and alignment with organizational goals.
8. Making decisions: Select the most appropriate strategic options based on a thorough evaluation of their potential benefits, risks, and resource requirements.
9. Mobilizing efforts and managing implementation activities: Allocating resources, coordinating activities, and ensuring effective execution of the chosen strategies.
10. Reshaping feedback processes: Continuously monitoring the implementation of strategies, collecting feedback, and adjusting plans as needed to align with environmental changes and improve strategic outcomes.

These ten steps form a comprehensive framework for strategic thinking, guiding individuals and organizations in their decision-making and planning processes.

According to Mohamed (2015), strategic thinkers possess specific skills and characteristics, which include:

1. Skill in identifying available resources and capabilities: Strategic thinkers are adept at recognizing the resources and capabilities at their disposal and effectively utilizing them. This skill is supported by their curiosity, as they maintain an interest in the happenings of their environment.
2. Formulating long-term goals and deriving sub-objectives: Strategic thinkers can establish overarching long-term goals and derive sub-objectives from them. They are future-focused, constantly adapting to changing conditions, and keenly aware of opportunities and threats that may arise.
3. Analyzing and interpreting data and information: Strategic thinkers possess the skill of analyzing data and information, allowing them to accurately interpret it. They maintain an open-minded approach and continually seek to expand their knowledge and experience. This enables them to identify connections and patterns across seemingly unrelated fields.
4. Strategic selection from available alternatives: Strategic thinkers excel at selecting the most appropriate strategies from the available alternatives. They are flexible in their approach, adapting their methods and ideas as needed based on the situation.
5. Keeping up with intellectual globalization: Strategic thinkers actively engage in intellectual globalization by staying informed about global trends, advancements, and ideas. They embrace the interconnectedness of the world and incorporate diverse perspectives into their strategic thinking.
6. Insight, physiognomy, and a positive outlook: Strategic thinkers possess insight and intuition, enabling them to perceive underlying patterns and make informed decisions. They have the ability to recognize challenges as opportunities for success and maintain a positive view of the future.

Through strategic thinking, individuals gain a competitive edge in effectively navigating complex situations, developing comprehensive strategies, and achieving

desired outcomes. They possess the foresight, analytical skills, and ability to align resources with goals, ultimately contributing to their success and the advancement of society. Indeed, strategic thinking sets individuals apart by equipping them with insightful vision and the capacity to formulate and articulate long-term goals and objectives. It enables individuals to analyze, study, and evaluate data, facilitating informed decision-making and optimizing the utilization of available resources. Strategic thinking also emphasizes the pursuit of the highest possible quality in one's actions and outcomes (Awad, 2012).

Good strategic thinkers excel in defining goals and policies, devising plans and programs, designing organizational structures, assigning roles and responsibilities, maximizing the utilization of capabilities and resources, rationalizing their use, and conducting work in a manner that benefits both the individual and society as a whole (Obaid, 2009).

Previous research and studies have underscored the importance of strategic thinking. Al Nuaimi (2013) emphasized that the objective of strategic thinking is to cultivate a vision of strategies and envision potential futures. According to Al Nuaimi, today's youth must possess exceptional intellectual capabilities that enable them to visualize, contemplate, intuit, anticipate, and comprehend the unknown. He stated that the youth of today must have unusual intellectual dimensions that allow visualization, meditation, intuition, foresight, and realization to penetrate the unknown, and almost to pictures of the future to make strategic decisions.

Larson and Hansen (2005) further support the notion that the application of strategic thinking has a significant impact on the success of young individuals in their lives. Strategic thinking is considered one of the most important types of thinking as it encompasses creative thinking, critical thinking, and analytical thinking simultaneously (Pisapia et al., 2009; Han & Ryan, 2017). Additionally, the research conducted by Yehya (2018) and Al Magali & Al Zogbi (2022) confirms that strategic intelligence development enhances students' problem-solving abilities in private universities. Furthermore, Zsiga (2007) affirms that strategic thinking contributes to the enhancement of self-learning skills.

Strategic thinking plays a crucial role in organizing and prioritizing tasks, which helps reduce errors in decision-making and handling situations. It also facilitates the development of the ability to shape the future and fosters clarity of vision. Strategic thinking entails continuous improvement and modernization, which in turn leads to enhanced performance. It involves effectively dealing with events and facts by leveraging the element of time (Al Janabi, 2018). Issa & Al Sayed (2018) believe that the importance of strategic thinking is that it is creative and developmental thinking in which the learner starts from the present to draw a picture of the future by developing the actual reality in which he lives and tries to look at any topic from above to understand all its aspects and analyze them to understand the reality of things realistically and insightfully.

When the mind glows with thinking, the march of human civilization begins and its flame goes forth. When its luster fades, this civilization begins to fall, fall apart, and collapse; and when a nation wants to build its civilization, it appeals to the mind, is inspired by it, and guides it in its goal, because the mind is the beginning and the experience of human civilization. Therefore, the researchers paid attention to the field of developing productive habits of mind among university students, as they are the main nerve in the process of development and societal development. Strategic thinking is one of the essential ingredients that activate productive habits of mind to meet challenges. The more students engage in mental habits, the higher their estimation of their academic proficiency becomes (Gaber, 2013). Additionally, the development of academic proficiency among university students contributes to the proper utilization of their mental habits (Abdullah, 2017).

Habits of mind are patterns of mental and intellectual performance that regulate the work of the mind when a student encounters a specific problem (Mohamed, 2019). It is the intellectual behaviors that manage, organize, and arrange the mental processes and set the proper system of priorities for these processes. They are learned or acquired and chosen by the individual at certain times to practice thinking so that they lead him to productive action and become a habitual way towards more intelligent actions. Those who possess these mental habits strive

constantly for improvement, growth, and self-development (Mamdouh & Mamdouh, 2021).

Habits of mind indicate patterns of mental and intellectual behaviors that regulate the mind's functioning when a student encounters a specific problem (Gameel, 2019). Learning is not achieved by chance; rather it must be sought, by using girls who stimulate the mind in certain ways in various fields for self-enrichment and mental development (Al Asar et al., 2005). Marzane et al. (1997) also indicated that good education is not about filling the mind with information and skills, but rather it is about raising questions, deepening understanding with information and skills, and reformulating them. Besides, Costa & Kallick (2009) pointed to the significance of developing habits of mind for all learners. They stated that habits of mind are more evident when we ask students to control or manage their learning (self-regulated learning).

Despite the importance of acquiring information, deepening it, and using it in a meaningful way, acquiring mental habits is an important goal of the learning process. It helps them to learn any experience they need in the future. The habits of the productive mind are the most important factor for the success of people and their excellence in various aspects of life (Nofal, 2010).

The researchers identified the habits of the mind according to the theoretical foundations from which they proceeded. Marzano's model of learning identified that habits of mind include the ability to self-regulate (thinking awareness - good planning - awareness of available resources - working with maximum efficiency - sensitivity to feedback), critical thinking (persisting accuracy- searching for clarity- mental openness- curbing impulsiveness - sensitivity to others feelings), and creative thinking (perseverance in expanding the scope of knowledge and capabilities - the production of new methods that expand the field of vision of the production of special standards for judging the quality and authenticity of the product) (Marzano et al., 1992).

The Queen Elizabeth project also pointed out that to develop mental habits, the specialists emphasized the development of the following productive mental

habits: flexible thinking, listening to others, striving for accuracy, persistence (perseverance), curiosity and pleasure in solving problems, and seeing the situation unconventionally (Queen Elizabeth School Staff, 2004). Furthermore, Mamdouh & Mahmoud (2021) see that habits of mind include perseverance - meta-cognitive thinking - applying previous knowledge to new situations - thinking flexibly.

Developing habits of mind can be developed through different approaches and methodologies such as using stories, setting personal goals, using academic problems and puzzles, Socratic dialogue, debates and discussion, and questioning approach (El Din, 2008). Habits of mind can be trained and practiced through the following steps (Qatami, 2005):

- Determine the goal of learning the mental habit
- Consciously train practice, and repeat.
- Determine the features of the mental habit.
- Perfection.
- Defining and increasing the awareness of the habit.
- Stimulate the habit of metacognition.

The educational reality indicates that female students memorize terminology and scientific skills without comprehension and they lack the use of strategic thinking in various educational activities. In this context, various studies indicated that university students have a low strategic intelligence level (45%) (Mohamed & Sharaf, 2020; Abo Al Ftouh & Mabrouk, 2020). Therefore, curriculum planners emphasized the need to include strategic thinking in school curricula to produce productive habits of mind. Strategic intelligence has contributed to improving institutional performance as a whole because strategic thinking is not possessing information, but rather knowing how to work on it and use it as well (Al Majali & Al Zoubi, 2021).

The Kingdom of Saudi Arabia's 2030 vision seeks a creative, innovative, and productive society for science and knowledge. It seeks a society with an integrated system that guarantees the development value of innovation and knowledge and links learning outcomes and knowledge applications to the major challenges in

Saudi society. One of the most important goals of that vision was to maximize creative knowledge production. Therefore, those in charge of preparing the teacher must prepare him scientifically, culturally, and educationally to keep pace with this development as developing thinking skills has become a necessity in a rapidly changing era. Developing thinking makes learners able to acquire, use and employ new information and skills to enable them to study and comprehend academic courses. Besides, students must learn how to think. Today's teacher requires to know the strategic thinking processes that employ the mental abilities of the individual flexibly and skillfully in solving the problems that he faces in different life situations through creating several alternatives (solutions for each problem) that may appear in the long term (Yahya, 2018).

Accordingly, modern education trends call for strategic thinking to be a major goal in all stages of education to produce mental habits among female Saudi university students. Therefore, the current research sought to identify the level of strategic thinking among university students and examine the correlation between university students' strategic thinking skills and productive habits of mind. According to the above-mentioned, the research problem stimulated the following sub-questions:

1. What is the level of strategic thinking of female university students?
2. What is the relationship between strategic thinking and productive habits of mind among female university students?
3. What are the mean scores of students with high and low academic efficacy in strategic thinking and mental habits?

2. Method

2.1. Research Design

This research utilized the descriptive research design due to its suitability to the research objectives to reveal the relationship between strategic thinking and productive habits of mind.

2.2. Participants

The pilot study sample consisted of (45) students from the College of Education, Wadi Al-Dawasir, Prince Sattam bin Abdulaziz University who were enrolled in the seventh (n=17) and eighth (n=28) academic levels (mean age= 21.046, SD=0.843). They were selected to verify the research tools' validity and reliability.

The basic study sample consisted of (126) female students from the College of Education, Wadi Al-Dawasir, Prince Sattam bin Abdulaziz University (mean age= 21.029, SD= 0.813) in the seventh (n=58) and eighth (n=68) academic levels.

2.3. Data Collection Tools

2.3.1 The Academic Efficacy Scale

The academic efficacy scale was developed by the researcher to identify the level of academic self-efficacy among university students. The scale in its initial form consisted of (12) items. Participants are asked to rate on a 5-point Likert scale ranging from strongly agree to strongly disagree. A high score indicated a high level of students' academic efficacy.

The scale was validated by presenting it to (5) jury members of mental health and psychology professors to judge the items' suitability to its objectives and to modify or add. The arbitrators recommended not to delete any of the scale phrases, but to paraphrase some of them.

To verify the scale validity, it was applied to the sample of the pilot study (n=45) at Prince Sattam bin Abdulaziz University. The internal consistency validity was verified by calculating the degree of each item with the scale's overall degree. After omitting the item degree. All correlation coefficients were statistically significant at the level (0.01).

Table 1 – Correlation Coefficients between Scale Items and the Overall Score of the Scale

N	Correlation Coefficients	Sig.	N.	Correlation Coefficient	Sig.
1	0.58	0.01	7	0.54	0.05
2	0.68	0.01	8	0.66	0.01
3	0.59	0.01	9	0.64	0.01
4	0.62	0.01	10	0.72	0.01
5	0.63	0.01	11	0.67	0.01
6	0.61	0.01	12	0.58	0.01

To verify the scale reliability of the strategic thinking scale for university students Cronbach's Alpha internal consistency and the Split-half analysis were administrated on the pilot study sampling (n=45) as indicated in Table 2.

Table 2 – Cronbach's Alpha internal consistency

Dimension	Overall Degree
Correlation Coefficient	0.86
Item Numbers	13
Sig.	0.01

2.3.2 The Strategic Thinking Scale

The strategic thinking scale was developed by the researcher to identify the level of strategic thinking among university students after reviewing literature and related studies. The scale in its initial form consisted of (37) items. Participants are asked to rate on a 5-point Likert scale ranging from strongly agree to strongly disagree. A high score indicated a high level of students' strategic thinking.

The scale was validated by presenting it to (5) jury members of mental health and psychology professors to judge the items' suitability to its objectives and to modify or add. The arbitrators recommended not to delete any of the scale phrases, but to paraphrase some of them.

To verify the scale validity, it was applied to the sample of the pilot study (n=45) at Prince Sattam bin Abdulaziz University. The construct validity was

verified by calculating the degree of each item with the scale's overall degree. All correlation coefficients were statistically significant at the level (0.01), except for items (4, 26), which were not statistically significant and were excluded.

The scale factorial validity was also verified after confirming the suitability of the research sample and the nature of this statistical method with (KMO) Kalser-Meyer-Olkin and Bartlett's Test as illustrated in Table 1. The factor analysis of the scale (35) items was carried out using the basic components method of Hoteling. The researcher followed the "Getman" criterion to determine the number of factors, where the factor is considered essential if its latent root is one or more valid, then the factors were rotated orthogonally in the Varimax method. The total score on the scale ranged from (35 and 175).

Table 3 – Kalser-Meyer-Olkin Results

Dimension	Kalser, Meyer-Olkin	Sig.	Bartlett's Test	Sig.
Strategic Thinking	0.598	0.01	1571.41	0.01

It is clear from the previous table that the number of the sample is appropriate to complete the factor analysis, as well as the appropriate responses of the sample members on the scale to complete the factor analysis, as the level of significance at the level of (0.01).

To verify the scale reliability of the strategic thinking scale for university students Cronbach's Alpha internal consistency and the Split-half analysis were administrated on the pilot study sampling (n=45) as indicated in Table 4.

Table 4 – C ronbach's Alpha internal consistency and the Split-half analysis results

Dimension	Item Numbers	Cronbach's Alpha	Split-half	
			Spearman-Brown equation	Gutman's equation
Strategic thinking	35	0.955	0.886	0.448

Thus, it is clear that the strategic thinking scale has a high degree of validity and reliability that enables it to be used in the basic study.

2.3.3 Productive Habits of Mind Scale

The productive habits of mind scale were developed by Sayed& Azmi (2022). The scale aimed at measuring the habits of mind level among university students. The scale consisted of (35) items on a 5-point Likert-type scale. In addition to the well-documented evidence of the scale validity and reliability, the researcher applied it to the sample of the pilot study (n=45) at Prince Sattam bin Abdulaziz University. The construct validity was verified through calculating the degree of each item with the scale's overall degree. All correlation coefficients were statistically significant at the level of (0.01).

To verify the scale reliability of the strategic thinking scale for university students Cronbach's Alpha internal consistency and the Split-half analysis were administrated on the pilot study sampling (n=45) as indicated in Table 5.

Table 5 – Cronbach's Alpha internal consistency and the Split-half analysis results

Dimension	Item Numbers	Cronbach's Alpha	Split-half	
Strategic thinking	35	0.969	Spearman-Brown equation 0.936	Gutman's equation 0.936

Thus, it is clear that the strategic thinking scale has a high degree of validity and reliability that enables it to be used in the basic study.

2.4. Data Analysis

The researcher used the following statistical methods to obtain the study results: mean, percentages, and the t-test for differences between independent samples.

3. Results

3.1. The First hypothesis validation results

Female students of the College of Education in Wadi Al-Dawasir have a statistically significant high level of strategic thinking'. To validate this hypothesis, the hypothetical and statistical means of the student's scores on the strategic thinking scale were calculated. Besides, the t value for the differences between the two means was calculated as indicated in Table 6.

Table 6 – Hypothetical and statistical means and the significance of the difference between them on the scale of strategic thinking

Variable	Mean	T	Sig.
Statistical	84.35	16.044	0.01
Hypothetical	105		

Table 4 illustrated that the calculated statistical mean of the strategic thinking scale is lower than the hypothetical mean, where the t-test value between the two means was (16.044), which was a statistically significant value and thus the first hypothesis was not achieved statistically.

3.2. The second hypothesis validation results

There is a statistically significant correlation between strategic thinking and habits of mind among female university students'. To validate this hypothesis, the researcher used the Pearson correlation coefficient, as indicated in Table 7.

Table 7 – Correlation between strategic thinking and productive habits of mind among female university students

Variable	Correlation Coefficient	Sig.
Strategic Thinking Productive habits	0.817	0.01

It is clear from Table (8) that there is a statistically significant positive correlation between strategic thinking and productive habits of mind produced

among university students, Which indicates that the second hypothesis was achieved statistically.

3.3. The third hypothesis validation results

There are statistically significant differences between students with high and low academic efficacy in strategic thinking and productive habits of mind' To verify the validity of this hypothesis, the researcher utilized the t-test to calculate the differences between students of high and low academic efficacy in strategic thinking and productive habits of mind as indicated in table 8.

Table 8 – The mean scores of high and low academic proficiency in strategic thinking and mental habits

Variable	Low academic efficacy n=37		High academic efficacy n=45		t-value	Sig
	M	SD	M	SD		
Strategic Thinking	133.16	17.05	165.51	6.78	10.85	0.01
Habits of mind	133.11	29.17	163.90	10.82	6.08	0.01

The previous table indicates the presence of differences between the average scores of high and low academic proficiency in strategic thinking and mental habits. These differences favor those with high academic efficacy in both strategic thinking and mental habits.

4. Discussion

In this research, the level of strategic thinking among female students in the College of Education at the Prince Sattam bin Abdulaziz University students was investigated and the correlation between strategic thinking and productive habits of mind among female university students was explored. In addition, significant

differences between those with high and low academic efficacy in strategic thinking and productive habits of mind among female university students were investigated.

Results of the first hypothesis stating that ' Female students of the College of Education in Wadi Al-Dawasir have a statistically significant high level of strategic thinking' was not achieved. The low level of strategic thinking skills among the research sample can be attributed to the nature of the presented courses and curricula. In addition, the educational environment does not support the use of strategic thinking skills sufficiently as it depends mainly on the automatic memorization of information and paying the greatest attention to success in exams.

Moreover, the university does not present any training courses and workshops that focus on developing strategic thinking skills, the students tend mostly to memorize and then avoid using strategic thinking skills. The result of this hypothesis agrees with various study results indicating that university students in South Korea suffer from a weak level of strategic thinking (Park & Lee, 2021; Al Azzawi, 2008; Yehia, 2018).

Abo Al Ftouh & Mabrouk (2020) illustrated also that the level of strategic thinking among university students was low (45%). Some of these studies attributed this low level to the teaching methods common in our educational institutions do not care much about the development of mental abilities, but rather they are so far concerned with the automatic memorization of information (Mohamed & Shraf, 2020). Many studies have recommended the necessity of developing this type of intelligence among university students. For example, Al Azzawi's study (2008) highlighted the limited presence of strategic intelligence in colleges, with only 25% of the sample demonstrating strategic intelligence, while 71% exhibited some of its components. There is a deficiency in this type of intelligence.

The results of the second hypothesis confirmed that there was a positive correlation between strategic thinking skills and productive habits of mind among the study sample. This result can be explained because the availability of strategic thinking increases the opportunity for the students to enjoy habits of mind.

Therefore, it has become an urgent need to liberate educational institutions from the traditional mentality that focuses on abilities only, so that its students can live productive lives that achieve strategic thinking. Besides, the term habits of mind have become one of the basic terms included in the skills of the twenty-first century.

Strategic thinking increases the ability of female students to crystallize the intellectual and cognitive framework to employ it in various situations, which helps academic adaptation (Reshed, 2022) and achievement motivation in the educational process (Tawfieq& Farag, 2020; Soliman, 2021). In addition, strategic thinking is not limited to helping students to think deeply but also extends to helping students to compare their options, visualize and understand the meanings of things and concepts and their relationships with each other to reach decision-making (Pellegrino, 1996; Dehgahi, 2015), and solving problems (Yehia, 2018; Larson & Hansen,2005). Strategic thinking makes students feel their ability to change, innovate, and create (Abo Al Ftouh & Mabrouk, 2020; Ahmed & Eid, 2018). This result is consistent with the results of previous studies indicating that developing habits of mind in writing contributes to the development of critical thinking skills among postgraduate students (Alhamlan et al., 2018).

The results of the third hypothesis confirmed that there were statistically significant differences between students with high and low academic efficacy in strategic thinking and productive habits of mind in favor of those with high academic efficacy. The results of this hypothesis are attributed to the fact that academic proficiency is one of the most significant dimensions of a student's personality, as it significantly influences their behaviors, development of abilities, and skills. Academic efficacy encompasses self-confidence, academic proficiency, planning, organization, determination, and perseverance. Therefore, it plays a crucial role in directing behavior toward strategic thinking.

In this regard, El Sheikh & Abdelbagi (2021) indicated that there was a positive correlation between strategic capabilities and academic performance. In addition, the study conducted by Ahmed and Al Asal (2015) indicated that there was a positive relationship between perceived self-efficacy and strategic planning

among university students. In addition, Abdullah (2017) affirmed the presence of a positive relationship between mental habits and self-perceived academic competence. Academic efficacy also influences learners in selecting educational tasks, their perseverance, and their flexibility in thinking to overcome obstacles. In turn, this provides an opportunity for learners to develop their abilities through thinking and problem-solving, which become daily behaviors practiced by individuals in various aspects of their lives, commonly referred to as mental habits. Iskandar (2020) pointed out that developing mental habits significantly contributes to improving academic competence.

5. Conclusion

Based on the previous, it becomes clear to us that the study findings indicate that academically competent female university students possess strategic thinking and intellectual habits. These factors are among the main reasons that contribute to their current and future success. It is no longer a matter of choice but has become a reality experienced by contemporary societies. Arab societies should embrace it and provide all the requirements for its development, especially in light of the growing information revolution, its increasing quantity, and rapid dissemination. Therefore, the current study focused on examining the average grades of academically high-achieving and low-achieving individuals in terms of strategic thinking and intellectual habits. Young people in general, and students and university graduates in particular, are the greatest asset of society. Thus, progress and advancement for society can be achieved through the sincere determination and willingness of students to shape their future and the diligent pursuit of goals and their achievements. Strategic thinking and its skills are important for every student, but they are particularly crucial for teachers and graduates of education colleges. This stage represents a crucial point in determining the academic career path through future aspirations. The aim is for them to become capable of strategic thinking, building their future in a distinctive and precise manner, and instilling and

developing leadership qualities in students, so that they can become successful visionary leaders in various fields in the future. This is the long and short-term goal that the current research seeks to achieve.

6. Recommendations and Further Research

Based on the study's results and the importance of strategic thinking, the study recommends the following:

- Incorporate the application of strategic thinking within the curriculum and practical exercises and continue to emphasize its importance due to its positive impact.
- Encourage faculty members at Saudi and Arab universities to expand the implementation of strategic thinking in educational curricula.
- Conduct similar studies with different research samples, including postgraduate students, students at various academic levels, faculty members, and kindergarten teachers.
- Provide necessary training courses for teachers and students to enhance their knowledge of strategic thinking, its goals, and methods.

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REFERENCES

Abdel Latif, M., & Zaki, M. (2020). Modeling the relationships between habits of mind, problem-solving skills, higher-order thinking, and psychological hardiness of university students. *The Educational Journal, College of Education*, 74 (25), 587-653. https://edusohag.journals.ekb.eg/article_90117.html

Abdullah, E. (2017). The effectiveness of some brain-based learning strategies in developing some habits of mind and academic self-efficacy among general diploma students in education. *Journal of the College of Education, 174* (2), 6-19.

Abo Al Ftouh, F., & Mabrouk, A. (2020). A counseling program based on neuro-linguistic programming techniques to develop strategic thinking and change management for university youth in light of the requirements of the age of intelligence. *Journal of research in the fields of specific education*, 6(11), 1-83. https://search.mandumah.com/Record/1109073

Ahmed, E., & Al Asal, H. (2015). Self-Efficacy Perceived & its Relationship with Personal Strategic Planning and Decision-Making Capacity among University Female Students. *Journal of Specific Education Research of Mansoura University*, 37(10), 68-101.

Ahmed, S., & Eid, A. (2018). *The effectiveness of an educational program based on the principles of governance in developing creative teaching skills and strategic thinking skills among vocational education students at Al-Balqa Applied University in Jordan*. Doctoral Thesis, College of Graduate Studies, University of Jordan.

Al Asar, A., Al Sherif, N., & Khalil, A. (2005). *The mind and its magic trees*. Cairo, Dar Al-Fikr Al-Arabi.

Al Ashi, A. (2013). *The impact of strategic thinking on the performance of senior management in non-governmental organizations working in the field of rehabilitation in the Gaza Strip*. Master Thesis, Islamic University of Gaza.

Al Azzawi, B. (2008). *The impact of the relationship between strategic intelligence and service operations decisions on strategic success, an experimental and analytical study of the opinions of a sample of heads and members of the councils of a number of colleges of the University of Baghdad.* Doctoral Dissertation, College of Administration and Economics, University of Baghdad, Iraq.

Al Gharbia, K. (2017). *Thinking strategically: expert solutions to everybody's challenges*. Obeikan Publishing in Saudi Arabia.

Al Hawary, F. & Mansour, W. (2014). Problem-solving behavior in light of the variables of academic competence and mental representation of information among a sample of university students. *Journal of Environmental Behavior*, 2(3), 15-60.

Al Janabi, S. (2018). *Leadership and supervision strategies*. Kingdom of Saudi Arabia, Al-Yazuri Scientific House.

Al Magali, R., & Al Zogbi, K. (2022). The Effect of Strategic Intelligence on Enhancing the Performance of Higher Education Institutions: A Field Study of Mutah University. *Humanities and Social Sciences Series*, *36*(2). https://ejournal.mutah.edu.jo/index.php/hsss/article/view/1663

Al Majali, R., & Al Zoubi, A. (2021). The impact of strategic intelligence on improving the performance of higher education institutions: a field study on Mutah University. *Mu'tah Journal of Research and Studies, Humanities and Social Sciences Series*, 36(2), 1-225. https://search.mandumah.com/Record/1096616

Al Nuaimi, S. (2013). Characteristics of the strategic thinker in the organization. Arab Journal of Management. *Arab Journal of Management*, 23(1), 43-79. http://search.mandumah.com/Record/49778/Details

Alhamlan, S., Aljasser, H., Almajed, A., Almansour, H., & Alahmad, N. (2018). A Systematic Review: Using Habits of Mind to Improve Student's Thinking in Class. *Higher Education Studies*, *8*(1), 25-35. https://eric.ed.gov/?id=EJ1169373

Al-Harasi, S. (2020). *The role of emotional intelligence, spatial intelligence, and self-sufficiency in academic achievement in the subject of social studies for students of the second cycle of basic education in the Al-Batinah South Governorate in the Sultanate of Oman* (doctoral dissertation). University of Malaysian Islamic Sciences.

Artino, A. (2012): Academic self-efficacy: from educational theory to instructional practice. *Perspectives on Medical Education*, (1)1, 76-85. https://doi.org/10.1007/s40037-012-0012-5 https://doi.org/10.1007/s40037-012-0012-5.

Awad, F. (2012*). Business administration and manager functions in contemporary institutions.* Dar Safaa for Publishing and Distribution, Amman, Jordan.

Bandura, A. (1994). *Self-efficacy.* Retrieved April 20. 2005 from http: //www. emory. edu. /Education/bancy. Html,19-1- 2003

Center of Strategic Studies. (2012). *Leadership and Strategic Thinking*. King Abdulaziz University, Saudi Arabia.

Collis, D. (2010). *Strategic Thinking: Expert Solutions to Everyday Challenges.* Translated by Kholoud Al Gharabia (2017), Dar Al Obeikan.

Costa, A. L., & Kallick, B. (2009). *Habits of mind across the curriculum: Practical and creative strategies for teachers*. ASCD.

Dehgahi, A., Salari Nahand, E., & Moghni, H. (2015). Identifying components of strategic thinking and their role in improving the decision-making process for managers (case study: organization for the protection of consumers and producers). World Essays Journal, *3*(2), 150-160.

El Din, L. (2008). *Effectiveness of the strategy "Beginning - Response - Evaluation" in developing achievement and habits of mind among first-grade middle school students in science*. Egyptian Society for Practical Education, Twelfth Scientific Conference: Scientific Education, Reality and Society. https://search.mandumah.com/Record/30684

El Sheikh, A., & Abdelbagi, Y. (2021). The Relationship between Strategic Capabilities and Academic Performance: An Empirical Evidence from Sudan. *International Journal of Higher Education,* 10(3), 55-90.

Finn, K. V., & Frone, M. R. (2004). Academic performance and cheating: The moderating role of school identification and self-efficacy. *The Journal of educational research*, 97(3), 115-121. https://psycnet.apa.org/doi/10.3200/JOER.97.3.115-1213

First National Conference. (2014). *Strategies for facing the challenges of education and scientific research in Egyptian universities*. https://www.damanhour.edu.eg/PGSR/Pages/Page.aspx?id=3033

Gaber, F. (2013). Habits of mind predictive of academic self-efficacy among students of the College of Education at Kuwait University. *The Childhood and Education Journal of Alexandria University*, 5(15), 437-478.

Gameel, A. (2019). The Impact of the WACS Strategy on Acquiring Psychological Concepts and Productive Habits of Mind among Students of the College of Education. *Educational Psychology Journal*, 16(60), 203-228.

Glick – Cuenot, S. (2014). *Predictors of undergraduate academic success*. Doctoral Thesis, Florida Atlantic University.

Han, Y., & Ryan, M. (2017). Teaching Strategic Thinking on Oligopoly: Classroom Activity and Theoretic Analysis. *e-Journal of Business Education and scholarship of teaching*, *11*(1), 127-139. https://eric.ed.gov/?id=EJ1167334

Ibrahim, M., & Darwish, H. (2015): Perceived self-efficacy and its relationship to personal strategic planning and decision-making ability among university students. *Specific Education Research Journal,* 37(10), 22-50.

Iskandar, A. (2020) The effectiveness of a program based on habits of mind in improving the level of academic self-efficacy for gifted female students in the intermediate stage Makkah Al-Mukarramah. *Journal of the College of Education*, 188 (4), 100-150.

Issa, M., & El Sayed, W. (2018). The effect of a training program based on metacognitive skills on creative reading and strategic thinking among students of the Department of Special Education at Taif University. *Journal of the College of Education in Al-Azhar*, 1 (187), 12-74. https://dx.doi.org/10.21608/jsrep.2018.39513

Karamash, A. (2016). The perceived academic competence of the students of the College of Basic Education. *Basic Education for Educational and Human Sciences* (29)10, 1-15.

Larson, R., & Hansen, D. (2005). The development of strategic thinking: Learning to impact human systems in a youth activism program. *Human Development*, *48*(6), 327-349. http://dx.doi.org/10.1159/000088251

Mahdi, R., & Rafeeq, N. (2016). *Chain of thinking and its patterns*. Lebanon, Scientific Books House.

Mahmoud, R., & Mamdouh, A. (2021). The effectiveness of using a knowledge journey via the "Web-Quest" to develop change management in the field of establishing small projects and the habits of the productive mind for university students with hearing disabilities. *Journal of research in the fields of specific education*, 7(33), 979- 1064. https://doi.org/10.21608/jedu.2021.60181.1230

Marzano, R. J. (1992). *A different kind of classroom: Teaching with dimensions of learning*. Association for Supervision and Curriculum Development, 1250 North Pitt Street, Alexandria, VA 22314. https://eric.ed.gov/?id=ED350086

Marzano, R. J., Pickering, D., Arredondo, D. E., Blackburn, G. J., Brandt, R. S., & Moffett, C. A. (1992). *Dimensions of learning*. Alexandria, VA: Association for Supervision and Curriculum Development. Mid-continent Regional Educational Laboratory. Aurora, Colorado USA.

Mohamed, A. (2019). The impact of the WACS strategy on the acquisition of psychological concepts and productive habits of mind among students of the Faculty of Education in educational psychology. *Journal of Educational and*

Psychological Research, 16(60), 228- 203. http://search.shamaa.org/FullRecord?ID=248319

Mohamed, G., & Shraf, S. (2020). The effect of an educational program on developing strategic intelligence among Duhok University students. *Duhok University Journal (Humanities and Social Sciences)*, 2(3), 622- 642. https://journal.uod.ac/index.php/uodjournal/article/view/982

Mohamed, M. (2015). *Elements of excellent planning and strategic thinking*. The Arab Group for Training and Publishing, Cairo.

Nie, Y. Lau, S. & Liau A (2011). Role of academic self-efficacy in moderating the relation between task importance and test anxiety. *Learning and Individual Differences*, 21 (6), 736-741. https://Oi.is/won

Nofal, M. (2010). *Practical applications in developing thinking using habits of mind*. Al Masirah House, 2nd ed., Amman, Jordan.

Obaid, A. (2009). *The reality of change management and its impact on the performance of workers in the Palestinian Ministry of Health / a case study of Al-Shifa Medical Complex*. The Islamic University of Palestine.

Park, W., & Lee, H. K. (2021). Creative integration of design thinking and strategic thinking in a design education framework. *Creativity Studies*, *14*(1), 160-174. https://doi.org/10.3846/cs.2021.13700

Pellegrino, K. C. (1996). *Strategic thinking ability: cognitive and personality effects*. Doctoral Dissertation, Louisiana Tech University.

Pisapia, J., Morris, J., Cavanaugh, G., & Ellington, L. (2011). The strategic thinking questionnaire: Validation and confirmation of constructs. In *The 31st SMS Annual International Conference, Miami, Florida November* (Vol. 17).

Pisapia, J., Pang, N. S. K., Hee, T. F., Lin, Y., & Morris, J. D. (2009). A Comparison of the Use of Strategic Thinking Skills of Aspiring School Leaders in Hong Kong, Malaysia, Shanghai, and the United States: An Exploratory Study. *International Education Studies*, *2*(2), 46-58.

Qatami, Y. (2005). *Thirty habits of mind*. Jordan, Amman, Dar de Bono for printing, publishing, and distribution.

Queen Elizabeth School Staff (2004). *Project Q.E Encouraging Habits of Mind: Phase (1).* London: Foundation for Research into Teaching.

Reshed, Z. (2022). Strategic intelligence and its relationship to academic social adjustment among kindergarten students. *Journal of the College of Basic Education*, 27(111), 755-783. https://doi.org/10.35950/cbej.v27i111.5358

Shalol, E. (2021). The Academic self-efficacy and its relationship with emotional intelligence among Jordanian University students in Jordan. *Journal of Al-Quds Open University: for educational and psychological research and studies*, 12(34), 184-197.

Shapira, H., Ketchie, A., & Nehe, M. (2017). The integration of design thinking and strategic sustainable development. *Journal of Cleaner Production*, *140*, 277-287. https://doi.org/10.1016/j.jclepro.2015.10.092

Soliman, M. (2021). A proposed program based on the engineering design process to develop strategic thinking and motivation for achievement among STEM students at the College of Education. *Educational Journal*, 2(15), 88-150.

Targhini, S. (2015). *The role of strategic thinking in activating the creative capabilities of the institution, a case study of Saidal complex*. Doctoral thesis, Faculty of Economic and Commercial Sciences, University of Mohamed Kheidar Biskra.

Tavakoli, I., & Lawton, J. (2005). Strategic thinking and knowledge management. *Handbook of business strategy*, *6*(1), 155-160.

Tawfieq, T., & Farag, A. (2020). Achievement motivation and its relationship to strategic intelligence among students of Prince Faisal University in the Kingdom of Saudi Arabia. *Journal of the Islamic University for Educational and Psychological Studies*, 28(3), 260- 289. https://journals.iugaza.edu.ps/index.php/IUGJEPS/article/view/5627

Yehya, M. (2018). Strategic intelligence and its relationship to solving problems among students of private colleges. *Journal of Psychological and Educational Sciences, University of Mosul*, 5(1), 15-30.

Zsiga, P. L. (2007). *Self-directed learning readiness, strategic thinking and leader effectiveness in directors of a national nonprofit organization* (Doctoral dissertation, Florida Atlantic University).