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Predicting Decision-Making among Graduate Students in Jordanian Universities through Cognitive Dissonance, Perceived Self-Efficacy, and Thinking Styles

Esra'a Abu-Al-Keshek

ABSTRACT

This study aims to examine the effect of cognitive dissonance, perceived self-efficacy, and thinking styles on the decision-making ability of graduate students at Jordanian universities. The descriptive correlational predictive method is employed using validated measurement instruments applied to a sample of 383 male and female graduate students enrolled in Jordanian universities. The findings reveal a statistically significant effect of perceived self-efficacy and thinking styles on graduate students' ability to make various academic and personal decisions related to their university life, whereas cognitive dissonance shows no significant influence on decision-making when perceived self-efficacy and thinking styles are taken into account. The results emphasize the importance of strengthening students' self-confidence and encouraging diverse thinking styles within higher education environments, as enhancing these psychological and cognitive factors may improve graduate students' decision-making abilities and reduce the potential impact of cognitive dissonance.

Keywords: Cognitive dissonance, perceived self-efficacy, thinking styles, decision-making, Jordanian Students.

التنبؤ باتخاذ القرار لدى طلبة الدراسات العليا في الجامعات الأردنية من خلال التنافر المعرفي والكفاءة الذاتية المدركة وأنماط التفكير

إسراء أبو الكشك

الملخص

تهدف هذه الدراسة إلى الكشف عن أثر التنافر المعرفي والكفاءة الذاتية المدركة وأنماط التفكير في القدرة على اتخاذ القرار لدى طلبة الدراسات العليا في الجامعات الأردنية. ولتحقيق أهداف الدراسة، يُستخدم المنهج الوصفي الارتباطي في إطاره التنبؤي، من خلال تطبيق أدوات قياس تم التحقق من صدقها وثباتها على عينة مكوّنة من (٣٨٣) طالبًا وطالبة من طلبة الدراسات العليا في الجامعات الأردنية. وتكشف نتائج الدراسة عن وجود أثر ذي دلالة إحصائية لكل من الكفاءة الذاتية المدركة وأنماط التفكير في قدرة طلبة الدراسات العليا على اتخاذ القرارات الأكاديمية والشخصية المرتبطة بحياتهم الجامعية، في حين لا يُظهر التنافر المعرفي أثرًا ذا دلالة إحصائية في القدرة على اتخاذ القرار عند أخذ متغيري الكفاءة الذاتية المدركة وأنماط التفكير في الحسبان. وتؤكد النتائج أهمية تعزيز ثقة الطلبة بقدراتهم الذاتية وتشجيع تبني أنماط تفكير متنوعة داخل بيئات التعليم العالي، إذ يسهم تنمية هذه العوامل النفسية والمعرفية في تحسين قدرة طلبة الدراسات العليا على اتخاذ القرارات بصورة أكثر فاعلية، والحد من التأثيرات المحتملة للتنافر المعرفي على عملية اتخاذ القرار.

الكلمات المفتاحية: التنافر المعرفي، الكفاءة الذاتية المدركة، أنماط التفكير، اتخاذ القرار، الطلبة الأردنيون.

الدكتورة إسراء أبو الكشك، علم النفس التربوي، الجامعة العربية المفتوحة، للمراسلة: Israa.abualkishik@hotmail.com.
المعرف الرقمي للباحث: orcid.org/0009-0000-5603-8807.

Dr. Esra'a Abu-Al-Keshek, Department of Educational Psychology, Arab Open University, Jordan.
For correspondence: Israa.abualkishik@hotmail.com, orcid.org/0009-0000-5603-8807.

INTRODUCTION

Decision-making is one of the most essential cognitive and behavioral processes that individuals use to navigate complex life situations. For graduate students, decision-making is an endeavor that bears heightened importance because it impacts academic advancement, career goals/job-finding, and emotional/mental health. It is not just the act of deciding between two or more options. Rather, it is an ongoing psychological process that is merely influenced by internal and external factors. These factors interact in various dynamic ways. Many studies have pointed out that making good decisions requires some combination of cognitive and emotional factors to influence how people perceive a situation, weigh alternative options, and assess consequences (Woreta et al., 2025; Li et al., 2020). Of these specific factors, cognitive dissonance, perceived self-efficacy, and thinking styles have received much attention as the variables that may help to explain why people may exhibit variance in their ability to demonstrate good decision-making (El Othman et al., 2020).

Cognitive dissonance, a concept introduced by Leon Festinger in 1957, is the inner discomfort that arises when there is a discrepancy between beliefs, attitudes or behaviors. This discomfort generates psychological tension that drives individuals to alleviate, through attitudinal change or justifying behavior. Within the context of academic life, cognitive dissonance emerges when students must make decisions with conflicting goals, such as when students need to choose between upholding academic integrity versus the pressure of achieving high grades, or between safe and risky career paths. Research has demonstrated that with high levels of dissonance, students may become muddled, stressed, and exhibit irrational decision-making tendencies as they focus on restoring internal alignment instead of objectively evaluating options (Berthet, 2022). When cognitive dissonance prevails in the decision process, individuals may also opt out of choosing any option that creates discomfort, even if doing so is considered advantageous in the long run.

Conversely, perceived self-efficacy is a psychological resource that can help individuals navigate these inner conflicts. Based on Bandura's (1986, p. 391) social cognitive theory, self-efficacy is defined as the belief in one's capabilities to organize and execute the courses of action required to produce given attainments, or in other words, a person's belief about their competence to succeed. For instance, high self-efficacy individuals will be more willing to interact with an external environment (i.e., faced with challenges) and do so without hesitation, while low self-efficacy will express anxiety, self-doubt, and avoidance behavior when confronting challenges. In the academic domain, for instance, students with higher self-efficacy will better be able to grapple with uncertainty, make alternative configurations, and come to a resolution through logical reasoning as opposed to emotional distress. Zhou et al. (2015) stated that higher self-efficacy is associated with better academic decision making and provides more resilience to students faced with difficult academic decisions. In addition, Schunk and DiBenedetto (2020) argued, self-efficacy provides motivation and cognitive capacity to make informed and steady decision-making when the stakes are heightened.

Thinking styles are also an important aspect that can impact the decision-making process. Sternberg (1988) describes thinking styles in his theory of mental self-government as preferred ways of processing information, problem solving, and collaborating with the environment. However, they do not measure intelligence and rather describe how individuals are able to use their cognitive resources. For instance, analytical thinkers often use facts and logical evidence to make decisions, while creative thinkers will gauge decision-making based on instinct, imagination, and unorthodox associations (Phillips et al., 2016; Zhang & Sternberg, 2019). Berthet (2022) proposed thinking style is a seminal contributor to how an individual handles cognitive conflict, and that some styles (like analytical or reflective) are designed to accommodate systematic reasoning and ambiguity tolerance. It can also affect how students engage with feedback, evaluate risk, and formulate an academic pathway.

The skill set of strong decision making has grown into one of the highest priorities of graduate students in college today. Graduate students make a variety of academic decisions, along with a multitude of other professional and personal decisions affecting their schooling, future careers, and development overall. As universities continue to place increasing importance on making sound decisions, it is still not well defined what causes the range of students' decision-making skills to vary; this is evident in particular with Arab and Jordanian students. Much of the previous research on decision-making has separately addressed factors like cognitive, psychological, or behavioral variables. However, very little focus has been given to studying how cognitive dissonance, perceived self-efficacy, and thinking styles interact and work together to impact decision-making outcomes. This gap has been observed particularly in graduate education, where students deal with complex situations, require evaluation, have confidence in their abilities, and need to balance competing alternatives. Therefore, the goal of this current study is to examine the psychological and cognitive aspects of graduates' decision making at Jordanian universities holistically.

By focusing on the predicted role of cognitive dissonance, perceived self-efficacy and thinking styles within one full model, this study will add significant insights to educational psychology and also provide practitioner implications through its contribution to understanding the process that governs decision-making among graduate students at Jordanian universities.

Research Problem and Importance

Not all decisions made by graduate students are the same. Some students hesitate and experience emotional turmoil, while others exhibit confidence, logic, and perseverance in the face of uncertainty. Ineffective decision-making ability may result from a combination of cognitive information processing methods, psychological stress, and personal beliefs in self-efficacy. Students who had imposed on themselves high degrees of cognitive dissonance but also high levels of self-efficacy, were able to tolerate their discomfort and resolve conflicting data and arrived at reasonable decisions (Köpeczi-Bócz, 2025). Analysis of rational thought type seemed to lessen the negative effect of dissonance in producing self-control and rational reasoning. Instead of expanding considerably, the literature of the total population of coping procedures is growing, but not a great deal of primary data is available from the Jordanian environment. The contradictions produced by cognitive dissonance theory may be increased by the inhibiting situations characteristic of Jordanian universities-such as social pressures, competitive situation in higher education, economic pressures-that aggravate the problem. Because of these stresses and strains, it may be increasingly difficult for students to remain confident with the tenacity to struggle with this cognitive dissonance when faced with the opinions about their competence. However, the way students think may moderate or then multiply these problems. For colleges it is significant to comprehend this interaction to ascertain in what way they can assist students in developing cognitive flexibility and emotional stamina to make wiser decisions. Therefore, the study aims at identifying the cognitive and psychological factors that have the most significant influence over students in their ability to make informed, self-confident, and balanced choices.

Research Questions

This study seeks to answer the following questions:

1. To what extent does cognitive dissonance predict the decision-making ability of graduate students at Jordanian universities?
2. To what extent does perceived self-efficacy predict the decision-making ability of graduate students at Jordanian universities?
3. To what extent do thinking styles predict the decision-making ability of graduate students at Jordanian universities?
4. To make suggestions that assist colleges in creating plans to enhance students' capacity for making decisions and adjusting to academic life.

Research Objectives

1. To investigate how graduate students in Jordanian universities make decisions in relation to cognitive dissonance, perceived self-efficacy, and thinking patterns.
2. To examine how these variables interact and identify the combinations that most accurately forecast making wise decisions.
3. To make suggestions that assist colleges in creating plans to enhance students' capacity for making decisions and adjusting to academic life.

Significance of the Study

Theoretical Significance: The theoretical significance of this study lies in its contribution to the literature on educational psychology, particularly in the areas of cognitive processes, motivational beliefs, and decision-making in higher education. The study integrates three theoretical perspectives: cognitive dissonance theory (Festinger, 1957), social cognitive theory and perceived self-efficacy (Bandura, 1986), and thinking styles theory (Sternberg, 1997). Through this integration, the study provides a broader explanation of how cognitive conflict, belief in personal ability, and preferred ways of thinking may contribute to students' decision-making ability. Our study further extends this theoretical discussion to the Jordanian university context where empirical research on interaction of these variables is scant. Hence it may enrich the academic literature by offering a predictive model that links cognitive dissonance, perceived self-efficacy and thinking styles with decision making among graduate students.

Practical Significance: How does this work in practice? This study has implications for how universities, academic advisors, faculty members, and student counseling centers can utilize its findings. Given that perceived self-efficacy and thinking styles predict one's decision-making ability, higher education institutions could benefit from

developing training programs that enhance students' confidence in their abilities and cultivate flexible ways of thinking. Such programs may consist of decision-making workshops, reflective learning assignments, problem-solving exercises, and counseling sessions designed to assist students in analyzing alternatives, managing ambiguity, and making balanced choices. The findings may even be useful for curriculum designers and graduate program administrators who want to incorporate activities that promote analytical, creative, and applied thinking within academic coursework. In sum, the research offers helpful suggestions about improving students' educational fit, career readiness, and mental health and well-being.

Definition of Study Terms

Cognitive Dissonance: Cognitive dissonance reflects a state of psychological discomfort experienced by individuals holding two or more beliefs, attitudes or behaviors that are inconsistent, resulting in an internal tension that triggers efforts to restore consistency (Stone & Taylor, 2021). In the present study, cognitive dissonance means the extent of inner clash between graduate students when faced with opposing concepts, views, or options about academic and life decisions.

Perceived Self-Efficacy: Perceived self-efficacy refers to an individual's belief in his or her ability to organize and execute the actions required to achieve desired outcomes and successfully deal with challenges and demanding situations (Woreta et al., 2025). In this study, perceived self-efficacy refers to graduate students' confidence in their ability to make effective decisions and successfully manage academic and personal responsibilities.

Thinking Styles: Thinking styles refer to individuals' preferred ways of processing information, solving problems, and making decisions. They reflect how people use their cognitive abilities rather than the level of those abilities themselves (Phillips et al., 2016). In the present study, thinking styles refer to the cognitive preferences adopted by graduate students when evaluating alternatives, analyzing information, and making decisions in academic and personal contexts.

Decision-Making Ability: Decision-making ability refers to an individual's capacity to evaluate available alternatives, anticipate consequences, and select the most appropriate course of action to achieve specific goals (Berthet, 2022). In this study, decision-making ability refers to the competence of graduate students in making informed, balanced, and effective academic and personal decisions.

Graduate Students: Graduate students are students enrolled in postgraduate programs, including diploma, master's, and doctoral degrees, in accredited Jordanian universities during the academic year 2024/2025. For the purposes of this study, graduate students are those who participated in the study sample and completed the research instruments.

Previous Studies

Several studies have also investigated the psychological and cognitive factors involved in decision-making in educational settings. They offer valuable insight into how self-efficacy, thinking styles and cognitive processes impact one's ability to make good choices. In their meta-analysis, Phillips et al. (2016) found that analytical, rational thinking was positively correlated with effective decision making while intuitive, experiential thinking led to varied results depending on the context. It was concluded that thinking styles are an important cognitive factor when evaluating alternatives and responding to uncertainty. In El Othman et al.'s (2020) study, there were strong links found between emotional intelligence, personality and decision-making styles amongst medical students in Lebanese universities. Emotionally intelligent and cognitively savvy students made better choices, demonstrating the importance of psychology in academic decision making. Schunk and DiBenedetto (2020) reviewed the role of social cognitive theory in education and stressed that "self-efficacy" is among the strongest predictors of student achievement, motivation, persistence, and other decision making behaviors. These authors argue that if students believe in themselves they will be better able to take on challenges confidently and make informed choices.

Woreta et al. (2025) studied the mediating role of self-efficacy and outcome expectations between peer context and academic engagement. They concluded that self-efficacy made a significant contribution to students' academic engagement and behavioural outcomes. Li et al. (2025) found that there was a significant positive relationship between growth-oriented thinking and career decision-making self-efficacy, which means that students who have higher growth-oriented thinking are more confident in making career-related decisions and facing future work challenges. Köpeczi-Bócz (2025) studied how cognitive-dissonance-based educational approaches affect learning motivation and conceptual changes. Their study revealed that approaches to education grounded in cognitive dissonance can motivate students to challenge existing beliefs, enhance their desire to learn, and engage with tasks in meaningful ways. Woreta et al. (2025) investigated the mediating role of self-efficacy and outcome expectations in the link between peer context and academic engagement among university students. Applying the tenets of Social Cognitive Theory, they reported that self-efficacy significantly mediated the association between environmental

influences and student engagement in academics. Furthermore, individuals with greater self-efficacy beliefs were more prone to engage in academic tasks and demonstrate favorable learning outcomes. Li et al. (2025) studied the association between growth-oriented thinking and career decision-making self-efficacy among university students. They found that there was a significant positive correlation between growth-oriented thinking and career decision-making self-efficacy, as those with higher growth-oriented beliefs expressed stronger confidence in making career decisions and managing potential future obstacles. This suggests that positive mindsets can increase students' conviction when faced with crucial life and career choices.

Karakuş (2024) looked at the connection between cognitive flexibility and critical thinking dispositions among university students. There was also a significant positive link between cognitive flexibility and students' tendency toward critical thinking. Cognitive flexibility significantly contributed to predicting critical thinking disposition. These results imply that students who can adapt to various circumstances possess better capacities to analyze data and draw logical conclusions, both of which are integral elements of successful decision-making. Dawson et al. (2024) examined how cognitive skills, thinking patterns, convictions, and methods of reasoning impact evidence-based decision-making. Their work illustrated how distinctive mental characteristics significantly shape individuals' approaches to processing information and making choices. Masi et al. (2025) explored whether use of a career counseling app improved career decision-making self-efficacy for university students. Results indicated statistically significant increases in student self-efficacy in relation to self-assessment, goal setting, planning, and problem-solving. They concluded that increasing self-efficacy enhances students' sense of confidence when choosing their educational and occupational pathways. While Sofyan et al. (2022) studied the role of self-efficacy in students' career decision-making process during online learning. It was discovered that self-efficacy significantly mediated the relation between educational factors and career decision-making whereby students with high levels of self-efficacy had more confidence and were more effective in making career-related decisions.

Finally, the previous studies have proven the importance of self-efficacy, thinking styles, and cognitive factors on shaping students' academic behaviors and decision-makings, however, none has tried to examine cognitive dissonance, perceived self-efficacy and thinking styles all at once within a single predictive model especially for Jordanian graduates' university.

Theoretical Background

Decision-Making

Decision-making is one of the core cognitive processes whereby people identify a problem, assess alternatives, predict outcomes, and choose the best option. Decision-making is not simply choosing. Instead, it is a complex process involving cognition, emotion, motivation, and contextual knowledge. Decision making has been considered a crucial skill in educational psychology because it influences students' achievement, personal adjustment, vocational plans, and ability to handle challenges during higher education (Berthet, 2022). Decision-making skills are subject to cognitive biases, past experience, feelings, and the manner in which individuals perceive and interpret data. Critical thinking, emotion regulation, and rational evaluation are therefore necessary for informed decisions. In the university setting, decision-making becomes even more important for graduate students who have to decide about research areas, specializations, careers, time allocation, and life goals, all while coping with uncertainties and competition among multiple options. Cognitive load and self-relevance dictate how students look for information and make decisions, particularly if those decisions affect them personally (Li et al., 2020). Graduate students might not base decisions solely on logical reasoning, but rather on how vital the decision is to their goals, values, and identity. Decision-making ability is also closely related to psychology and cognition. Students with high perceived self-efficacy are more likely to tackle tough decisions confidently and tenaciously. They tend to think that they can assess the situation, exert some degree of control over what happens, and handle the consequences of their choices. On the other hand, students with low self-efficacy might vacillate, shirk responsibility, or depend too much on others when making decisions. Similarly, thinking styles influence how students approach decision situations. Analytical thinkers might weigh up options, creative thinkers might look for novel solutions, and practical thinkers might consider the practicality of each option. Phillips et al. (2016) note that thinking styles are highly related to decision-making as they influence how individuals interpret information and cope with ambiguity. Cognitive dissonance also plays an essential role in decision-making. When faced with alternatives that challenge their beliefs, values, or past choices, students might become uncomfortable. This could cause them to rationalize their decisions, shy away from counterarguments, or alter their views to resolve the inconsistency. Stone & Taylor (2021) assert that dissonance can affect attitude change and evaluation after a decision, particularly if individuals perceive themselves as being responsible for the choice. In this regard, decision-making is both a rational and a psychological process driven by the desire for consistency and justification. Based on this theoretical view, decision-making

in the present study is understood as a multidimensional ability that reflects students' capacity to evaluate alternatives, manage internal conflict, trust their personal abilities, and use suitable thinking strategies. It is influenced by the interaction between cognitive dissonance, perceived self-efficacy, and thinking styles. Therefore, examining decision-making among graduate students provides a useful framework for understanding how psychological confidence, cognitive flexibility, and internal conflict contribute to students' academic and personal choices in Jordanian universities.

Cognitive Dissonance

In 1957, Leon Festinger introduced the term cognitive dissonance to explain an individual's discomfort that arises when beliefs, values, and behaviors are inconsistent. This tension creates mental conflict that pushes individuals to offset the dissonance by changing a belief, behavior, or perception (Festinger, 1957). The discomfort resulting from cognitive dissonance leads to justification or rationalization of beliefs and behaviors rather than more rational revisions. In educational and social settings, this phenomenon explains and manifests why individuals sometimes come to determine behaviors that reinforce their self-image as opposed to behaviors that are more rational (Li et al., 2020). Cognitive dissonance occurs whenever a person's behavior conflicts with their values or when behavior is determined by new information threatens their previously accepted knowledge. For example, a student may hold the value of honesty but cheat on an exam, indicating dissonance between moral values and dishonesty. Someone who believes in environmental sustainability but consumes single-use plastics will also feel dissonance and will work to rebalance this discomfort by finding excuses for the behavior or changing behaviors altogether (Morvan & O'Connor, 2017). The motivation for self-consistency fuels a large amount of behavior and is also closely linked to decision-making.

Forms of Cognitive Dissonance

Depending on the nature of the disagreement, cognitive dissonance can manifest in a variety of ways. When someone's actions go against their morals or beliefs, it's known as behavioral dissonance. One instance of this kind of dissonance is when someone believes in corporate social responsibility but buys a product made unethically (Hinojosa et al., 2017). When people come upon fresh information that contradicts their preexisting opinions or understanding, information dissonance occurs. Reading studies that contradict one's health views, for example, might lead to conflict and resistance to change (Stone et al. 2021). After choosing between two desirable or undesirable options, a third kind of dissonance known as choice dissonance manifests. After making a decision, the person may experience post-decisional distress due to regret or ambiguity regarding the alternative they did not choose.

Causes of Cognitive Dissonance

Cognitive dissonance can arise for a number of reasons. The coexistence of opposing attitudes or views is one of the main causes. Holding two opposing ideas causes tension, which in turn causes mental remodeling, according to Matz and Wood's (2005) research. According to Berthet (2022), dissonance frequently occurs when a person realizes that their beliefs and actions are inconsistent, such as when they value health but keep smoking. According to Ajzen (2012), one of the main causes of people acting against their moral or social values is behavior-value conflict. Dissonance can also result from being exposed to new knowledge, particularly if it challenges preexisting beliefs or thought processes.

The Effect of Cognitive Dissonance on Decision-Making

Cognitive dissonance has a profound effect on the ease and quality of decision-making. When experiencing dissonance, individuals change their cognition more frequently to restore internal cognitive harmony rather than attempt to make an objective decision. This change can often lead to rationalizing or self-justifying to protect self-esteem and contributes to biases in decision-making (Gökcek et al., 2019). For instance, if a person purchased a costly item, the individual would later rationalize the purchase as a "long-term investment" in order to lessen the discomfort of possible overspending (Pandey & Jamwal, 2015). Dissonance also drives selective exposure to information. Folks will choose to avoid facts that oppose their cognition (beliefs) and favor data that supports their decision to alleviate dissonance. The reinforcement from dissonance contributes to cognitive bias by reducing the opportunity to learn from the information accessed or avoided. In education, dissonance affects decision-making when students seek feedback on assessment practices, create personal learning goals, and engage in learning to become accustomed to change. Students who have dissonance between personal learning goals, and those imposed by the educational context, explain away constructive or critical feedback, enhance their beliefs about themselves, or enhance their perception of the importance of the task or assessment to minimize the dissonance or defend their self-esteem (Woreta et al., 2025). While cognitive dissonance certainly can cause irrationality and poor

decisions, it can motivate self-reflection and personal growth at the same time, just as long as the dissonance can be metabolized in a productive or constructive manner. Recognizing cognitive dissonance and processing can motivate and encourage learners to develop deeper reasoning and more balanced decision-making.

Perceived Self-Efficacy

As a component of his social cognitive theory, Albert Bandura first proposed the idea of perceived self-efficacy in the late 1970s. He described it as a person's confidence in their capacity to carry out the tasks required to accomplish particular goals (Bandura, 1989, 2012). Self-efficacy is a reflection of how people believe they can use their skills effectively in specific contexts rather than a direct measure of skill (Bandura, 2001). Good decision-making requires confidence, perseverance, and motivation, all of which are enhanced by high levels of perceived self-efficacy (Panadero et al., 2017).

Components and Determinants of Self-Efficacy

Bandura found that self-efficacy is influenced by a number of things. The first is mastery experience, when confidence is bolstered by prior accomplishments and undermined by recurrent failures (Shen et al., 2021). Secondly, social modeling is the process by which people think they can accomplish a task by seeing others do it effectively (Bandura & Wessels, 1997). The third element is verbal persuasion, wherein one's self-esteem is raised by constructive or encouraging criticism. Since emotions like excitement, fatigue, or anxiety can either improve or worsen perceived ability, the mental and physical state comes in last (Bandura, 1978).

The Importance of Perceived Self-Efficacy

Human desire and perseverance are strongly impacted by self-efficacy (Shen et al., 2021). People with high levels of self-efficacy set more ambitious goals, work more, and recover from setbacks faster (Bronstein, 2014; Al-Adwan, 2025). It works to succeed academically. DeNoyelles et al. (2014) state that self-efficacy is associated with belief in one's own talents, control over learning, and perseverance in overcoming obstacles. These factors promote excellent academic adaptation and performance in the long run (Al-Adwan, 2025).

The Self-Efficacy of Making a Decision

The self-efficacy is the perceived capability of a student to understand the possibilities and possible dangers; such a concept has a strong impact on the decision-making process (Yang and Delgado, 2025). Yang and Delgado posit that students with high rates of self-efficacy are better placed to address complex issues, make calculated risk-taking, and make fair judgments. They see problems not as threatening but as something that can be dealt with, making them impervious to uncertainty. Fan (2016), said that in contrast to people with a weak sense of self-efficacy who are often guarded or too dependent on external advice, people with a high sense of self-efficacy make better long-term decisions that have more permanence (Joo, et al., 2021). Therefore, the study of self-efficacy will help students to make decisions which are independent, assured and reasonable in their strategies of higher education (Al-Adwan, 2025).

Thinking Styles

Thinking styles are the preferred ways in which individuals reason, process information, and form opinions (Bond, et al., 2021). The concept of mental self-government, first proposed by Robert Sternberg in 1988, remains one of the most significant theories in this field. His theory holds that thinking styles are not measures of intelligence but rather cognitive preferences that reflect how people approach problems and organize their thoughts (Sternberg, 1997). These learning styles have an impact on people's problem-solving, opinion-forming, and interaction with their environment in addition to their academic achievement (Zimmerman, & Schunk, 2021; Zhang, 2002).

Classifications of Thinking Styles

The hypothesis was expanded by means of multiple types of thinking styles distinguished by Sternberg and Zhang (2014). Legislative kind thinkers prefer autonomy in their jobs and develop new plans or laws. Executive type thinkers prefer structure and follow established protocols. Judicial type thinkers evaluate and examine ideas critically before making decisions. Local type thinkers are concerned with specifics and tasks while global type thinkers are concerned with broadly defined ideas. While external type thinkers cooperate with others, the internal thinkers prefer working independently. The progressive thinkers search for innovation and change, while the conservative thinkers stick to the tried and the true ones (Kałuszyńska, 2023).

Types of Thinking Styles

Sternberg's theory was extended by Dennin et al. (2022), who distinguished four primary modes of thought that

are relevant to learning and decision-making scenarios. Analytical thinking involves breaking down problems into their constituent parts and analyzing them systematically. The goal of creative thinking is to generate original, novel ideas. Critical thinking necessitates objective analysis and reasoning in order to form sound judgments. When applying information to actual problems, practical thinking places a higher priority on usefulness and efficiency. Each style contributes differently to the quality and adaptability of decision-making.

The Importance of Thinking Styles in Education and Decision-Making

Cognitive flexibility and problem-solving abilities are improved through different thinking styles in educational settings. Creative thinkers provide new views and creative ideas, while analytical thinkers are often adept at tasks that require logical thinking (Clarke et al., 2010). Practical thinkers convert theoretical knowledge into useful results, whereas critical thinkers objectively assess arguments and supporting data to facilitate logical decision-making. Students who are exposed to a variety of thinking patterns are better able to comprehend complicated material and adjust to a variety of learning situations, according to Zhang (2002). These decision-making styles affect whether people base their decisions on experience, intuition, or reasoning, which in turn affects the caliber and results of their decisions.

Study Variables

The present study includes two types of variables: independent variables and one dependent variable. The independent variables are cognitive dissonance, perceived self-efficacy, and thinking styles. These variables are examined as psychological and cognitive predictors that may influence graduate students' ability to make decisions. The dependent variable is decision-making ability. It represents the outcome variable that the study seeks to predict through the independent variables. Thus, the study model can be presented as follows:
Independent variables: cognitive dissonance, perceived self-efficacy, and thinking styles.
Dependent variable: decision-making ability among graduate students at Jordanian universities.
In this study, cognitive dissonance, perceived self-efficacy, and thinking styles are expected to contribute to explaining variation in decision-making ability. Multiple linear regression is used to examine the predictive effect of these independent variables on the dependent variable.

Method and Procedures

Study Methodology: To achieve the objectives of the current research, the descriptive correlational predictive method was followed, which is the method that relies on studying the phenomenon as it exists in reality and is concerned with describing it accurately and expressing it qualitatively or quantitatively.
Study population: The current study community consisted of all university students in Jordanian universities during the second semester of the academic year (2024/2025), estimated at 11,814 male and female students.
Exploratory study sample and sampling method: Before starting to apply the study tools to the basic sample, they were applied to a survey sample that was randomly selected by 50 male and female students, to verify the validity, stability and suitability of the tool for application.
Basic study sample and sampling method: After the researcher worked to limit the study community, four public and private universities in Jordan were randomly selected, from which a convenience sample of 383 male and female students was selected. based on Stephen Thompson's equation to determine the sample size representing the study community, and Table 1 shows the characteristics of the sample:

In terms of		NO	percentage
Gender	Male	172	44.91%
	Female	211	55.09%
University	Yarmouk University	94	24.54%
	Al-Ahliyya Amman University	88	22.98%
	The University of Jordan	102	26.63%
	Irbid National University	100	26.11%
Specialization	Arts and Sciences	93	24.28%
	Educational and Psychological Sciences	105	27.42%
	Business	94	24.54%
	Sharia	91	23.76%
Total		**383**	**100%**

Table 1: Distribution of study sample individuals

Study tool: To achieve the study objectives and answer its questions, four research tools were developed: the cognitive dissonance scale based on the study of Toprak et al., (2026) with (19) Items. The perceived self-efficacy scale based on the study of (Maddux, 2016) and the study of (Bronstein, 2014) with 14 items. The decision-making ability scale was based on the studies by El Othman et al. (2020) and Fan (2016), comprising 18 items. The thinking styles scale was based on the study of (Berthet, 2022) and the study of (Phillips et al., 2016) with 15 items.

Verifying the validity of the tool for application: The procedures used to verify the validity and reliability of the study tool included: A) Apparent validity was verified by presenting the study tools to five arbitrators who are faculty members in Jordan's public and private universities to obtain their opinions about how valid the tool is for application. Further verification included identifying the degree to which each item belongs to the axis it associates with, and the clarity and linguistic integrity of each item. The agreement rate (80%) between the arbitrators was relied upon to keep, delete or modify the Item. Accordingly, the wording of some Item was altered and some Item were deleted.

The researcher evaluated the construct validity of each of the measures used in this study by administering them to a survey sample of 50 students, comprising both males and females. Correlation coefficients between each Item score and the total score of the associated Scale were calculated. The results of these correlation coefficients are reported below.

1. Cognitive dissonance Tool

NO	Correlation coefficients	NO	Correlation coefficients	NO	Correlation coefficients
1	.644**	8	.463**	15	.824**
2	.629**	9	.709**	16	.643**
3	.678**	10	.819**	17	.608**
4	.675**	11	.844**	18	.813**
5	.409**	12	.833**	19	.723**
6	.344**	13	.826**		
7	.436**	14	.805**		
**Statistically significant at (0.01)					

Table 2: Correlation coefficients of item scores with the total score of the cognitive dissonance Tool

It is clear from Table 2 that the correlation coefficients of the scores of the cognitive dissonance Tool items with the scale scores ranged between (0.344-0.844). All correlations were statistically significant at the 0.01 level.

2. Perceived Self-Efficacy Tool

NO	Correlation coefficients	NO	Correlation coefficients	NO	Correlation coefficients
1	.838**	6	.783**	11	.725**
2	.837**	7	.736**	12	.673**
3	.822**	8	.723**	13	.723**
4	.795**	9	.736**	14	.682**
5	.792**	10	.721**		
**Statistically significant at (0.01)					

Table 3: Correlation coefficients of item scores with the total score of the Perceived Self-Efficacy Tool

It is clear from Table 3 that the correlation coefficients of the scores of the self-efficacy scale items with the scores of the scale itself ranged between (0.673-0.838), and from a statistical perspective, all correlations were statistically significant at the 0.01 level.

NO	Correlation coefficients	NO	Correlation coefficients	NO	Correlation coefficients
1	.608**	7	.578**	13	.439**
2	.683**	8	.568**	14	.489**
3	.677**	9	.646**	15	.719**
4	.645**	10	.573**	16	.483**
5	.464**	11	.579**	17	.712**
6	.594**	12	.491**	18	.714**
**Statistically significant at (0.01)					

Table 4: Correlation coefficients of item scores with the total score of the Decision-making ability tool

It is clear from Table 4 that the correlation coefficients of the scores of the decision-making ability scale items with the scores of the scale itself ranged between (0.439-0.719). All correlations were statistically significant at the 0.01 level.

4. Thinking Styles Tool

NO	Correlation coefficients	NO	Correlation coefficients	NO	Correlation coefficients
1	.719**	6	.613**	11	.759**
2	.794**	7	.712**	12	.592**
3	.855**	8	.499**	13	.422**
4	.732**	9	.546**	14	.535**
5	.519**	10	.672**	15	.618**

****Statistically significant at (0.01)**

Table 5: Correlation coefficients of item scores with the total score of the Thinking Styles Tool

Table 5 shows that the correlation coefficients between the individual items of the decision-making thinking styles scale and the total scale scores ranged from 0.422 to 0.855. All correlations were statistically significant at the 0.01 significance level. These results indicate that the instrument demonstrates adequate construct validity and that its items are appropriate for use with the main study sample.

B. Reliability

The reliability of the study instrument was assessed using Cronbach's alpha coefficient and the split-half method. The analysis was conducted on a pilot sample of 50 male and female students. The results are presented in Table 6.

NO	Domain	Item NO	Cronbach's alpha	split-half
1	Cognitive Dissonance	19	0.902	0.738
2	Perceived Self-Efficacy	14	0.962	0.922
3	Decision-Making Ability	18	0.922	0.836
4	Thinking Styles	15	0.924	0.825

Table 6: Reliability coefficients of the study tools

It is clear from Table 6 that Cronbach's alpha reliability coefficient for the cognitive dissonance scale reached (0.902), while its split-half reliability coefficient reached (0.738). In addition, the Cronbach's alpha reliability coefficient for the perceived self-efficacy scale reached (0.962), while its split-half reliability coefficient reached (0.922). In addition, the Cronbach's alpha reliability coefficient for the decision-making ability scale reached (0.922), while its split-half reliability coefficient reached (0.836). In addition, the Cronbach's alpha reliability coefficient for the thinking styles scale reached (0.924), while its split-half reliability coefficient reached (0.825). Since all values were above the acceptable level of 0.65, the instrument was considered sufficiently stable and appropriate for use, in line with (Audeh, 2022; Karakuş, 2024).

Statistical methods used to process the study data

The multiple linear regression analysis test was relied upon to determine the extent to which the independent variables could influence the dependent variable of the main study question. The instrument's validity was examined using Pearson's correlation coefficient, while its reliability was assessed through Cronbach's alpha coefficient and split-half stability.

Study Results

First question: Does cognitive dissonance predict the decision-making ability of graduate students at Jordanian universities?

To answer this question, a simple linear regression test was used as follows:

Model		R	R^2	Unstandardized Coefficients		Standardized Coefficients	f	Sig.	t	Sig.
				B	Std. Error	Beta				
1	(Constant)	0.018	0.00	52.223	2.967		.118	.731	17.603	.000
	cognitive dissonance			-.017	.048	-.018			-.344	.731

a. Dependent Variable: decision making ability

Table (7): Simple linear regression analysis to examine the ability of cognitive dissonance to predict decision-making among graduate students at Jordanian universities

The results of the simple linear regression analysis in Table 7 show that cognitive dissonance does not predict decision-making ability among graduate students at Jordanian universities. The correlation coefficient (R = 0.018) indicates a very weak relationship between the two variables, and the coefficient of determination (R^2 = 0.000) means that cognitive dissonance did not explain any significant portion of the variance in decision-making ability. The non-standard regression coefficient (B = -0.017) and the standard regression coefficient (Beta = -0.018) indicate that changes in cognitive dissonance do not correspond to significant changes in decision-making ability. The results also show a t-value of -0.344 at a significance level of (Sig. = 0.731), which is not statistically significant at the significance level ($\alpha \leq 0.05$). Therefore, cognitive dissonance does not have a statistically significant predictive power for decision-making ability among the study participants.

Second question: Does perceived self-efficacy predict the decision-making ability of graduate students at Jordanian universities?
To answer this question, a simple linear regression test was used as follows:

Model		R	R^2	Unstandardized Coefficients		Standardized Coefficients	f	Sig.	t	Sig.
				B	Std. Error	Beta				
1	(Constant)	0.934	0.873	1.304	1.049		2614.51	.000	1.244	.214
	perceived self-efficacy			1.103	.022	.934			51.132	.000
a. Dependent Variable: decision making ability										

Table (8): Simple linear regression analysis to examine the ability of self-efficacy to predict decision-making among graduate students at Jordanian universities

The results in Table 8 indicate that perceived self-efficacy strongly and statistically predicts decision-making ability among graduate students at Jordanian universities. The correlation coefficient (R = 0.934) and the coefficient of determination (R^2 = 0.873) mean that perceived self-efficacy explained 87.3% of the variance in decision-making ability. The regression coefficient for perceived self-efficacy was also positive and statistically significant (B = 1.103, β = 0.934, t = 51.132, $p < 0.001$), and the model as a whole showed high statistical significance (F = 2614.51, $p < 0.001$). This confirms that perceived self-efficacy has strong predictive power for decision-making ability among the study participants. Therefore, the prediction equation is as follows:
decision-making = 1.304+1.103* perceived self-efficacy.

Third question: Do thinking styles predict the decision-making ability of graduate students at Jordanian universities?
To answer this question, a simple linear regression test was used as follows:

Model		R	R^2	Unstandardized Coefficients		Standardized Coefficients	f	Sig.	t	Sig.
				B	Std. Error	Beta				
1	(Constant)	0.802	0.643	7.818	1.777		686.152	.000	4.399	.000
	thinking styles			1.019	.039	.802			26.195	.000
a. Dependent Variable: decision making ability										

Table (9): Simple linear regression analysis to examine the ability thinking styles to predict decision-making among graduate students at Jordanian universities

The results of the simple linear regression analysis in Table 9 show that thinking styles significantly predict decision-making ability among graduate students at Jordanian universities. The correlation coefficient (R = 0.802) and the coefficient of determination (R^2 = 0.643) indicate that thinking styles explained 64.3% of the variance in decision-making ability. The regression coefficient was positive and statistically significant (B = 1.019, β = 0.802, t = 26.195, $p < 0.001$), and the model as a whole showed high statistical significance (F = 686.152, $p < 0.001$). Therefore, thinking styles can be considered an important variable capable of predicting decision-making ability among the study participants.
Therefore, the prediction equation is as follows: decision-making = 7.818+1.019*thinking styles.
Fourth question: Do cognitive dissonance, perceived self-efficacy, and thinking styles collectively predict the decision-making ability of graduate students at Jordanian universities?

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig
1	.936[a]	.876	.875	7.37614	891.945	.001*
Predictors: (Constant), Thinking styles, cognitive dissonance, Perceived self-efficacy						

Table (10): Model Summary for Correlation coefficient value (R2) and f-test

Table 10 shows the significance of the proposed model in examining the effect of cognitive dissonance, perceived self-efficacy, and thinking styles among graduate students in Jordanian universities on their ability to make decisions. This result is figured out from the (Sig) value of the (F) test, which was less than (0.05). Table 7 also shows that the independent research variables can explain the variance in the variable of ability to make decisions by a percentage of (87.6). This confirms that these variables affect graduate students' ability to make various decisions.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.698-	1.482		-.471-	.638
	cognitive dissonance	.018	.017	.019	1.063	.288
	Perceived self-efficacy	1.014	.038	.859	26.674	.001*
	Thinking styles	.117	.041	.092	2.860	.004
a. Dependent Variable: decision-making ability						

Table (11): Multiple linear regression analysis to examine the effect of independent variables on the decision-making ability

Table 11 shows that there is a statistically significant effect for both the perceived self-efficacy variable and the thinking styles variable on the ability of graduate students to make various decisions. This result can be assumed from the (Sig) value of the (t) test, which was less than (0.05), which means that the effect is not due to chance. In contrast, the cognitive dissonance variable did not have a statistically significant effect on decision-making when the variables of perceived self-efficacy and thinking styles were entered into the analysis. That is, cognitive dissonance did not add effect when controlling for the other two variables, which reflects the nature of the relationship between these variables.

Therefore, the prediction equation is as follows:

decision-making =–0.698+0.018 cognitive dissonance +1.014Perceived self-efficacy+0.117Thinking styles.

DISCUSSION

The present study examined the combined effect of cognitive dissonance, perceived self-efficacy, and thinking styles on the ability of graduate students in Jordanian universities to make decisions. The regression analysis suggested that the perceived self-efficacy and thinking styles had a statistically significant positive influence on decision-making, while cognitive dissonance had no significant direct effect on decision-making when the other two variables were in the model. Overall, the model explained a substantial amount of variance in students' decision-making ability (R^2= 0.876), which suggests that psychological and cognitive factors are essentially the foundation of students' competence in decision-making.

Having an effect on decision-making that was statistically significant, and that is consistent with Bandura's (1986, 1989) social cognitive theory, self-efficacy refers to the degree to which individuals believe in their abilities related to tasks. Individuals who firmly believe in their abilities are more likely to face challenges with a sense of confidence and stick-to-itiveness (Joo, et al., 2021; Sofyan, et al, 2022; Dawson, et al., 2024). Self-efficacy acts as a psychological asset that not only helps students affirm their confidence as a productive process but also confirms their confidence in their competence to organize and perform the actions required. Graduate students with higher self-efficacy are more likely to encounter problems as manageable problems and continue to engage with problems rather than withdraw from them. Additionally, with confidence, graduate students are better able to effectively evaluate alternatives, which is necessary in decision-making (Bronstein, 2014; Panadero et al., 2017; Sofyan, et al, 2022; Dawson, et al., 2024).

Additionally, the findings corroborate previous research that shows self-efficacy positively contributes to important aspects of decision-making such as cognitive control, cause and effect for analytical reasoning, and emotional regulation (deNoyelles et al., 2014; Li, et al., 2025). Students that are confident in their abilities typically do not struggle with as much anxiety and wavering when making decisions, allowing them to centralize their attention on the quality of reasoning as opposed to fear of failure (Berthet, 2022; Woreta, et al., 2026; Sofyan, et al., 2022).

Furthermore, self-efficacy enables students to take responsibility for their decisions and be future-oriented and goal-directed rather than behaviors and outcomes being attributed to outer influence. Findings also support the works of Fan (2016) and Yang and Delgado (2025) that self-efficacy as a variable increases a person's willingness to take calculated risks and would choose to make decisions that would be more sustainable and long-term.

Furthermore, as to the thoughts that had previously developed, the findings confirmed the influence of thinking styles as a proxy for decision-making ability. Following Sternberg's theory of mental self-government (1997), students can vary in how they process information and problem solve, and these characteristics may have implications on decision-making processes. The category of analytical thinking focuses on evaluating information in a systematic manner and, at the same time, relies on evidence-based reasoning (Zhang & Sternberg, 2019; Li, et al., 2025). Individuals categorized as creative thinkers focus on finding novel and unorthodox solutions whilst individuals defined as practical thinkers solely concern themselves with the application of the decision in real contexts. The substantial influence found to exist regarding thinking style, when contrasted with past research and literature, seemed to place heavier weight on analytical thinking.

On academic, professional, and personal levels, graduate students usually have to make tough choices that need knowledge and cognitive flexibility. People can take the same issue in different angles due to their ability to think independently. As an illustration, analytical people facilitate thorough analysis of the data, creative people encourage the idea of imagination, and practical people help to perform the abstract concepts practically. This multimodal approach is especially beneficial in situations when decisions that require independent judgment and adaptability (like in the case of postgraduate education) have to be made (Clarke et al., 2010; Masi, et al., 2025). However, the cognitive dissonance could not make a significant direct impact on decision-making when self-efficacy was considered as well as cognitive styles. This finding is indicative that cognitive resources, namely self-efficacy or cognitive flexibility, can mitigate the pain of conflicting beliefs or values in line with the findings of Festinger (1957) that cognitive dissonance produces unease. According to Acharya et al. (2018), people with high self-efficacy have increased coping abilities to overcome the stress caused by dissonance, thus decreasing the chances that their judgment is influenced (Joo, et al., 2021). Also, individuals with a high level of complex or reflective thinking are able to rationalize the dissonant evidence, thus alleviating the resultant distress (Bandura, 1989; Masi, et al., 2025). These results support the hypothesis provided by Morvan and O'Connor (2017) that the processing of cognitive dissonance can be done both by means of emotional regulation and logical thinking. The non-significant effect of dissonance on decision outcomes could be explained by the distribution of the direct effect by the dominance of an indirect one. According to Lunitel and Timsina (2024), dissonance often influences motivation and affective aspects of the action, but not the resulting decision.

Based on this, cognitive dissonance may also act as an aspect of situational influence that elicits introspection or mental conflict, but this influence can be reduced by the presence of cognitive resources, including self-efficacy and cognitive flexibility (Shen et al., 2021; Masi, et al., 2025). Graduate students can effectively develop coping mechanisms, which allow them to integrate dissonant information without undermining the quality of decisions due to their academic training.

These results indicate to the perception that the process of decision making is not purely deliberative, reasoning style, but it is a form of interaction between belief systems, emotional mediational processes, and favored ways of thinking.

Self-efficacy and styles of thinking may function as protective or enabling constructs that buffer the stresses connected with cognitive dissonance (Joo, et al., 2021; Masi, et al., 2025). Students with self-efficacy and who utilize more than one type of style of thinking can critically understand knowledge which contains contradictory elements and maintain a state of psychological equilibrium during their decision-making process. The interrelationship of the three constructs is therefore not a simple linear relationship but may be seen as a dynamic experience in which self-efficacy, and more than one constructive style of thinking, function to mediate the possible stress of dissonance the student might experience. This dynamic is especially relevant in the Jordanian experience. Graduate students engaged in the educational programs of any of the Jordanian universities do so in an environment that is very competitive and that urges high standards and offers little professional opportunity (Al-Hassan & Al-Barakat in 2023). The self-efficacy and the adaptive types of thinking will assist the students in these instances of pressure to remain confident and rational as they make decisions concerning educational, occupational or life choices (Joo, et al., 2021; Dawson, et al., 2024). The limited impact of cognitive dissonance might also be indicative of cultural norms of a nature, which encourage group decision-making and value-based thinking that foster consistency of beliefs and actions on the part of its members, and thus reduce the likelihood of experiencing very intense manifestation of dissonance.

The study's conclusion is in good agreement with the theoretical frameworks that were previously described as well as the empirical framework that was previously discussed. Sternberg's theory of thinking styles reveals how cognitive diversity affects reasoning and decision-making, while Bandura's social cognitive theory offers helpful insight into the essential role that perceived self-efficacy plays in motivating human behavior (Joo, et al., 2021; Masi, et al., 2025; Dawson, et al., 2024). But according to Festinger's theory of cognitive dissonance, the degree of dissonance is lessened when internally contradicting information comes in the same environment as people's cognitive complexity and evaluation abilities grow. The ways in which the factors interacted show how crucial intellectual flexibility and psychological resilience are to college students' decision-making.

CONCLUSION

The results of the research showed that perceived self-efficacy and thought styles were identified as the two best predictors of decision-making ability on the part of graduate university students from Jordanian universities. This is in line with Bandura's (1986, 1989) social cognitive theory which suggests that the perceptions concerning oneself efficacy determine in part how they think, feel, and react to difficult situations. For example, students who had elevated levels of self-efficacy did not only continue in their effort longer and show self-assurance, but also controlled feelings and were evaluative of alternatives prior to arriving at important decisions. Similarly, thought style furnishes part of the functional area of evaluation by its support of Sternberg's (1997) theory of mental self-government which indicated that our more favorable cognitive behaviors either analytical, creative, or practical determined how we think of and how we process information and problems. The ability of students to utilize alternative cognitive behaviors suggests that students may incorporate logic, creativity, and practicality in the decisional making process. However, cognitive dissonance, while meaningful in a theoretical sense in terms of Festinger's (1957) conceptualization, failed to show any relationship when both perceived self-efficacy and thought styles were evaluated. This spectrum of self-assurance, when separated from the uncertainty associated with dissonance, is suggestive of the importance of self-efficacy and the necessity to exercise cognitive flexibility as the psychological buffers with respect to the dissimilarities which suggest that something insertional value has in all likelihood been lost as a result of vacillation. It is effective if students incorporate cognitive flexibility and high perceived self-efficacy in their means of dealing with values which may present cognitive dissonance as well be individually structured.

Based on this, it was shown that higher education decision-making is a complex interplay of belief, cognition, and emotion. Thinking styles provide the cognitive path which students follow in evaluating, contrasting and choosing among options while self-efficacy provides the emotional and motivational base which fuels persistence and belief. Together these imply a healthy and solid psychological base for persistent aware decision making assuredly and when uncertain or confronted with conflicting values. Therefore, there are two important educational implications for expanding self-efficacy and flexible thinking patterns in the context of students of Jordanian universities because they are confronted with academic competition, limited employment opportunities and strong social pressures. Enhanced decision making, psychological health, autonomy, healthy risk-taking and persistence can be accomplished through programs focusing on reflective practice, metacognitive awareness and flexible thinking. Subsequent research incorporating self-efficacy, or thinking styles, emotional intelligence, cultural values and stress coping strategies as linked to decision making in different academic and cultural contexts would enhance this body of work.

RECOMMENDATIONS

This study recommends the following:

1. Jordanian universities should develop training programs aimed at enhancing graduate students perceived self-efficacy through mentoring, guided decision-making activities, and opportunities for mastery experiences, given the significant role of self-efficacy in improving decision-making ability.
2. Faculty members should integrate instructional strategies that encourage the use of diverse thinking styles, particularly analytical, critical, and creative thinking, to support students in evaluating alternatives and making informed decisions.
3. Graduate programs should incorporate practical decision-making exercises and problem-solving tasks that allow students to apply different cognitive approaches to real academic and professional situations.
4. University counselling and student support centers should provide workshops that strengthen students' confidence in their abilities and promote adaptive thinking patterns that facilitate effective decision-making.
5. Future research is recommended to examine additional psychological and contextual variables, such as emotional intelligence, resilience, stress management, and academic motivation, to develop a broader understanding of the factors influencing decision-making among graduate students.

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REFERENCES

- Ajzen, I. (2012). *Attitudes and persuasion: Classic and contemporary approaches*. Psychology Press.
- Ajzen, I. (2012). Values, attitudes, and behavior. In S. Salzborn, E. Davidov, & J. Reinecke (Eds.), *Methods, theories, and empirical applications in the social sciences: Festschrift for Peter Schmidt*, 33–38. VS Verlag für Sozialwissenschaften. https://doi.org/10.1007/978-3-531-18898-0_5.
- Al-Adwan, A. S., Al-Adwan, A., Li, N., Fauzi, M. A., Jafar, R. M. S., Habibi, A., & Falahat, M. (2025). Immersive learning meets theory: Modeling eduverse adoption in higher education. *Journal of Information Technology Education: Research*, 24, 42–68. https://doi.org/10.28945/5669.
- Al-Hassan, M., & Al-Barakat, Z. (2023). Graduate student stress and academic decision-making in Jordanian universities. *International Journal of Educational Psychology*, 12(2), 144–160. https://doi.org/10.1016/ijepsy.2023.12.004.
- Audeh, A. (2022). *Measurement and evaluation in the teaching process* (5th ed.). Umayya Publishing and Distribution House.
- Bandura, A. (1978). Reflections on self-efficacy. *Advances in Behaviour Research and Therapy*, 1(4), 237–269. https://doi.org/10.1016/0146-6402(78)90012-7.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental Psychology*, 25(5), 729–735. https://doi.org/10.1037/0012-1649.25.5.729.
- Bandura, A. (1990). Perceived self-efficacy in the exercise of personal agency. *Journal of Applied Sport Psychology*, 2(2), 128–163. https://doi.org/10.1080/10413209008406426.
- Bandura, A. (1999). Social cognitive theory: An agentic perspective. *Asian Journal of Social Psychology,* 2(1), 21–41. https://doi.org/10.1111/1467-839X.00024.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology,* 52, 1–26. https://doi.org/10.1146/annurev.psych.52.1.1.
- Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. *Journal of Management*, 38(1), 9–44. https://doi.org/10.1177/0149206311410606.
- Bandura, A. (2013). *Self-efficacy: The exercise of control*. W. H. Freeman.
- Bandura, A., & Wessels, S. (1997). *Self-efficacy*. Cambridge University Press.
- Berthet, V. (2022). The impact of cognitive biases on professionals' decision-making: A review of four occupational areas. *Frontiers in Psychology*, 12, Article 802439. https://doi.org/10.3389/fpsyg.2021.802439.
- Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2021). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education*, 18, Article 50. https://doi.org/10.1186/s41239-021-00282-x.
- Bronstein, J. (2014). The role of perceived self-efficacy in the information-seeking behavior of library and information science students. *The Journal of Academic Librarianship*, 40(2), 101–106. https://doi.org/10.1016/j.acalib.2014.01.003.
- Clarke, T. A., Lesh, J. J., Trocchio, J. S., & Wolman, C. (2010). Thinking styles: Teaching and learning styles in graduate education students. *Educational Psychology*, 30(7), 837–848. https://doi.org/10.1080/01443410.2010.506003.
- Dawson, C., Brown, G., & Chinn, C. (2024). Evidence-based scientific thinking and decision-making in everyday contexts. *Cognitive Research: Principles and Implications*, 9, 78. https://doi.org/10.1186/s41235-024-00578-2.
- Dennin, A., Furman, K., Pretz, J. E., & Roy, M. M. (2022). The relationship of types of intuition to thinking styles, beliefs, and cognitions. *Journal of Behavioral Decision Making*, 35(5), e2283. https://doi.org/10.1002/bdm.2283.

- DeNoyelles, A., Hornik, S. R., & Johnson, R. D. (2014). Exploring the dimensions of self-efficacy in virtual world learning: Environment, task, and content. *MERLOT Journal of Online Learning and Teaching,* 10(2), 255–271. https://jolt.merlot.org/vol10no2/denoyelles_0614.pdf.
- El Othman, R., El Othman, R., Hallit, R., Obeid, S., & Hallit, S. (2020). Personality traits, emotional intelligence and decision-making styles in Lebanese universities medical students. *BMC Psychology*, 8, Article 46. https://doi.org/10.1186/s40359-020-00406-4.
- Fan, J. (2016). The role of thinking styles in career decision-making self-efficacy among university students. *Thinking Skills and Creativity*, 20, 63–73. https://doi.org/10.1016/j.tsc.2016.03.001.
- Festinger, L. (1957). *A theory of cognitive dissonance.* Stanford University Press.
- Gökcek, H. A., Çarikçioğlu, P. S., & Yüksel, C. A. (2019). The effect of consumer decision-making styles on cognitive dissonance: The moderating role of perceived risk in online shopping. *Journal of Academic Research in Economics*, 11(1), 118–127. https://avesis.istanbul.edu.tr/yayin/39ea6e47-66ed-4855-ba59-eafd77812e1a/the-effect-of-consumer-decision-making-styles-on-cognitive-dissonance-along-with-the-role-of-the-perceived-risk-as-a-moderator-in-online-shopping.
- Hinojosa, A. S., Gardner, W. L., Walker, H. J., Cogliser, C. C., & Gullifor, D. (2017). A review of cognitive dissonance theory in management research: Opportunities for further development. *Journal of Management*, 43(1), 170–199. https://doi.org/10.1177/0149206314543796
- Joo, Y. J., Lim, K. Y., & Kim, J. (2021). Locus of control, self-efficacy, and task value as predictors of learning outcomes in online university courses. *Computers & Education*, 62, 149–158. https://doi.org/10.1016/j.compedu.2012.10.027.
- Kałuszyńska, E. (2023). Revisiting Sternberg's theory of thinking styles: A meta-analytic review. *Educational Psychology*, 43(7), 954–972. https://doi.org/10.1080/01443410.2023.2185060.
- Karakuș, İ. (2024). University students' cognitive flexibility and critical thinking dispositions: A relational study. *Frontiers in Psychology*, 15, https://doi.org/10.3389/fpsyg.2024.1420272.
- Köpeczi-Bócz, T. (2025). Cognitive-dissonance-based educational methodological innovation for a conceptual change to increase institutional confidence and learning motivation. *Education Sciences*, 15(3), Article 378. https://doi.org/10.3390/educsci15030378.
- Li, M., Peng, H., & Ji, L. (2020). Roles of cognitive load and self-relevance during emotional information searching on decision-making. *Journal of Behavioral Decision Making*, 33(4), 505–517. https://doi.org/10.1002/bdm.2169
- Li, Q., et al. (2025). Growth-oriented thinking and career decision-making self-efficacy among university students. *Frontiers in Psychology,* 16, https://doi.org/10.3389/fpsyg.2025.1599906
- Maddux, J. E. (2016). Self-efficacy. In *Interpersonal and intrapersonal expectancies* (pp. 41–46). Routledge.
- Masi, L. M., et al. (2025). Impact of a mobile career counseling app on career decision-making self-efficacy among university students. *International Journal for Educational and Vocational Guidance*. https://doi.org/10.1007/s44202-025-00468-8.
- Matz, D. C., & Wood, W. (2005). Cognitive dissonance in groups: The consequences of disagreement. *Journal of Personality and Social Psychology*, 88(1), 22–37. https://doi.org/10.1037/0022-3514.88.1.22.
- Morvan, C., & O'Connor, A. J. (2017). *A theory of cognitive dissonance*. Macat International. https://doi.org/10.4324/9781912282432
- Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-assessment on self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review,* 22, 74–98. https://doi.org/10.1016/j.edurev.2017.08.004
- Pandey, A. C., & Jamwal, M. (2016). Realizing the impact of cognitive dissonance in predicting consumer behaviour. *Journal of Social Sciences*, 12(1), 36–41. https://doi.org/10.3844/jssp.2016.36.41
- Phillips, W. J., Fletcher, J. M., Marks, A. D. G., & Hine, D. W. (2016). Thinking styles and decision making: A meta-analysis. *Psychological Bulletin*, 142(3), 260–290. https://doi.org/10.1037/bul0000027.
- Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. *Contemporary Educational Psychology*, 60, 101832. https://doi.org/10.1016/j.cedpsych.2019.101832.

- Shen, D., Cho, M. H., Tsai, C. L., & Marra, R. (2021). Unpacking online learning experiences: Online learning self-efficacy and learning satisfaction. *Internet and Higher Education*, 49, Article 100789. https://doi.org/10.1016/j.iheduc.2013.04.001
- Sofyan, H., et al. (2022). Students' career decision-making during online learning: The mediating role of self-efficacy in vocational education. *European Journal of Educational Research*, 11(4), 2211–2225. https://doi.org/10.12973/eu-jer.11.3.1669
- Sternberg, R. J. (1988). Mental self-government: *A theory of intellectual styles and their development*. Yale University Press. University Press.
- Sternberg, R. J. (1997). *Thinking styles*. Cambridge University Press.
- Sternberg, R. J., & Zhang, L. F. (2014). *Perspectives on thinking, learning, and cognitive styles*. Routledge.
- Stone, J., & Taylor, J. J. (2021). Dissonance and attitude change. In F. C. Worrell (Ed.), Oxford Research *Encyclopedia of Psychology*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190236557.013.296.
- Toprak, E., Yavuz, E. Academic Motivation, Fear of Negative Evaluation, Self-Efficacy, and Self-Regulated Learning: Role of Affective Mechanisms in the Learning Process. *BMC Psychol* 14, 671 (2026). https://doi.org/10.1186/s40359-026-04602-6.
- Woreta, G. T., Zewude, G. T., & Józsa, K. (2025). The mediating role of self-efficacy and outcome expectations in the relationship between peer context and academic engagement: A social cognitive theory perspective. *Behavioral Sciences*, 15(5), 681. https://doi.org/10.3390/bs15050681.
- Xi, W., Baymuminova, N., Zhang, Y.-W., & Xu, S.-N. (2022). Cognitive Dissonance and Public Compliance, and Their Impact on Business Performance in Hotel Industry. *Sustainability*, 14(22), 14907. https://doi.org/10.3390/su142214907.
- Yang, Y. Y., & Delgado, M. R. (2025). The integration of self-efficacy and response-efficacy in decision making. *Scientific Reports*, 15, Article 1789. https://doi.org/10.1038/s41598-025-85577-z.
- Zhang, L. F. (2002). Thinking styles and cognitive development. *The Journal of Genetic Psychology*, 163(2), 179-195.
- Zhang, L. F., & Sternberg, R. J. (2019). *The nature of intellectual styles*. Springer.
- Zhou, G., Sun, C., Knoll, N., Hamilton, K., & Schwarzer, R. (2015). Self-efficacy, planning, and action control in an oral self-care intervention. *Health Education Research,* 30(4), 671–681. https://doi.org/10.1093/her/cyv032.
- Zimmerman, B. J., & Schunk, D. H. (2021). *Self-regulated learning and academic achievement: Theoretical perspectives* (3rd ed.). Springer.