

## Research Self-Efficacy Among Postgraduate Students

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### *Abstract:*

The current research aims to identify the research self-efficacy of postgraduate students, to achieve the objectives of this research, the researcher built a measure of research self-efficacy, which was in the final form of 37 paragraphs. The paragraphs were divided into 6 fields, was the self-efficacy related to the definition of the research, the theoretical framework, previous studies, research methodology and procedures, the presentation, interpretation and discussion of the results, conclusions, recommendations, suggestions and documentation. It have allocated the following alternatives that always apply to me, often apply to me, sometimes apply to me, rarely apply to me, never apply to me, give it weighs 1, 2, 3, 4 and 5 respectively. After confirming the validity of the tool through validity and reliability indicators, the researcher applied the research tool to a sample of 200 postgraduate students at the University of Wasit, after data collection and statistical processing, using the one-sample T-test, post-test for two independent samples, pearson Correlation Coefficient, Cronbach's Alpha reliability coefficient, Z-test, Chi-square, multiple regression coefficient, a set of equations for descriptive measures, the arithmetic mean, the median, the mode, the standard deviation, the variance, the skewness, the kurtosis, the range. The researcher concluded that postgraduate students have a good degree of research self-efficacy.

Keywords: Research self-efficacy, postgraduate students.

### **Introduction:**

**The Problem of the Research:** The difficulties faced by postgraduate students in universities, prevents students from feeling reassured is the difficulties, related to the completion of aspects of scientific research from the design and implementation of their research plans, as well as the weakness of the ability to identify the problem and express it, the inability to distinguish between its variables and the relationships between them,

poor ability to choose the measurement tools used in data collection that are suitable for the research sample. Difficulty proposing appropriate research hypotheses to solve the problem, difficulty choosing appropriate statistical methods, poor statistical analysis skills for data, difficulty interpreting the results, although they have studied many courses dealing with these aspects, however, they find it difficult to apply this information and previous experience, when faced with a new problem or a new set of data, which is reflected in a decrease in their research self-efficacy (Ahmed, 2019: 79). In recent years, it has been noted that the number of graduate students has increased, in line with the requirements of local and global reality, which differentiates between graduates based on their academic qualifications, however, it was also noted that some postgraduate students were late in completing the study marathon, may be due to several academic, social, personal, and economic reasons, it was also found that some students have concerns about their inability to develop a clear vision of how to start the research plan, or the steps to complete it, which negatively affects their research self-efficacy, and leads to an increase in their research anxiety. (Sayed, 2020: 285).

Graduate students in various disciplines, whether scientific or literary, are also considered, they have many concerns about their ability to learn the basic research concepts needed to prepare their research and future studies, this anxiety and fear can greatly interfere with and affect their research self-efficacy and their ability to learn basic research concepts. (320: Love & Nilsson, 2007).

At a time when the importance of adhering to research skills and ethical principles among postgraduate students is becoming increasingly important, postgraduate students frequently complain about their feeling and suffering from low research self-efficacy while preparing their theses, especially master's students, due to their recent experience and lack of training in scientific research skills (Ahmed, 2019: 80). It can be said that low research self-efficacy, leads to weak self-confidence, weak ability to make the appropriate decision, lack of motivation, weak ability to organize time, and weak ability to positively confront research problems, which is reflected in the completion of aspects of research among postgraduate students (Sayed, 286: 2020). Based on what has been presented of opinions related to students' weakness in research self-efficacy, therefore, the main research problem is determined by the following question: What is the level of research self-efficacy among postgraduate students? This is what the research will try to answer.

**The importance of the Research:** The importance of scientific research and the urgent need for it have become clear in recent times, especially with the increasing problems facing our society in its various institutions and individuals. The need to reach solutions to these problems, by

conducting solid scientific research in its methodology and procedures, this requires the necessity of preparing and developing a generation of distinguished productive thinkers and researchers who are able to conduct distinguished and targeted research, in order to achieve knowledge and scientific leadership, and benefit from the knowledge economy in its development and renaissance. The progress of nations lies in the optimal exploitation of the energies and intellectual and scientific capabilities of their children. Therefore, scientific research is the solid foundation and the strong nerve of academic work in educational institutions to employ science and its applications in the service of society, and bring it to the ranks of developed nations (Arnaut, 2017: 3).

Self-efficacy is one of the most important mechanisms of personal power, as it represents an important center in the student's motivation to carry out any work or academic activity, it helps the student to face the various academic pressures that hinder his achievement performance. Students' self-efficacy levels increase through practice and continuous training on some skills of academic activity (Badawi, 2001: 170). During recent decades, the subject of self-efficacy has received increasing attention in educational research, as the concept of self-efficacy has been applied recently in the field of research, research self-efficacy refers to an individual's abilities to carry out certain research tasks, accurate evaluation of research self-efficacy helps postgraduate students to identify strengths and weaknesses, and thus contribute to facilitating the research process for them. (Arnaut, 2017: 7).

According to the literature on self-efficacy research, the findings of the studies of Bishop & Bieschke (1998); Kahn & Scott (1997); Phillips & Russell (1994), that self-efficacy can predict the research interests and conduct of research among postgraduate students, also, the high level of self-efficacy helps the student to overcome obstacles and deal with any events that may arise during the implementation of his research. Research self-efficacy is one of the most important goals that we seek to achieve among students, because they are engines for the student's behavior towards scientific research, ensuring proper scientific behavior by students in various different life situations, in addition to its importance in shaping the student's practical personality, directing and predicting his behavior, it also pushes him to use a scientific methodology in scientific research and to form a sound scientific mentality (Radwan, 20:2021).

Since self-efficacy is a good indicator of behavior, and research self-efficacy is especially useful in identifying the forces influencing the decision-making of postgraduate students, about whether or not they can participate or not in the research process formally in their work (2007: 370, Mulikin & Betz).

The importance of adhering to research skills and ethical principles is increasing among postgraduate students, as they are the rising educational group in society, as they provide educational production with societal influence (Al-Ustadh, 2004: 35).

Research self-efficacy refers to the ability of graduate students to carry out tasks related to conducting scientific research, and is an important factor in relation to the ability of graduate students to conduct and follow up their research successfully. (322: Love & Nilsson, 2007), and students with high research self-efficacy are characterized by being more confident in their competence, showing greater mental flexibility in searching for solutions, achieving higher intellectual performance, more accurate in changing their performance, and maintaining high levels of science-oriented motivation. Achievement and perseverance in facing difficulties, solving research problems and controlling skills, as they are less prone to disturbances than others, and they are distinguished by their ability to organize themselves and perform research skills in an organized manner, while students with low research self-efficacy are characterized by being more avoidant to perform difficult research skills that require mental challenge. They cannot practice strategies that require higher mental processes (Melhem, 2015: 237).

Research self-efficacy is a requirement imposed by the nature of what the world is witnessing today in terms of developments and serious challenges. Learners who have high beliefs in their academic and research effectiveness define for themselves lofty aspirations and achieve high-level cognitive achievements, and they are more accurate in assessing the quality of their achievements compared to their peer learners with the same cognitive abilities. And those who pushed them to believe that they lacked such capabilities. (Al-Zayyat, 2001: 230). The concept of research self-efficacy is also one of the most important determinants of performance in research processes, as individuals with research self-efficacy search for valid and reliable solutions to research problems and access to information and knowledge systematically, and this effectiveness is measured by evaluating the researcher's beliefs in his ability to implement tasks, stages and basic aspects To search successfully from the problem to write the results. (, Buyukozturk, et al., 2011: 23). Forester et al. (2004) see that research self-efficacy represents the individual's belief in his ability to conduct research with high efficiency in many aspects, including: choosing the research topic and appropriate research design, as well as collecting data and appropriate statistical processing, and designating research sources and references and drawing conclusions. And interpreting it and coming up with proposals and recommendations, leading to writing and publishing the research. (Forester, et al., 2004: 8).

Buyukozturk, & Kebapçl (2011) agreed that research self-efficacy represents one of the determinants of performance in the field of scientific research looking for solutions to problems and accessing information systematically, and it refers to the individual's belief and confidence in his abilities to carry out or complete research tasks successfully such as reviews Literature and data analysis (Buyukozturk & Kebapcil, 2011:25). and some academic literature has emphasized that individuals' opinions about research self-efficacy affect participation or choice of topic in projects.

Phillips & Russell (1994: 143), as research self-efficacy helps to give confidence to the researcher's ability to carry out research activities from organizing the research plan, searching for information sources, reading, writing, and publishing. Lei (2008:128) works to identify the forces affecting decision-making among postgraduate students. (Mullikin et al., 2007:377). High research self-efficacy is an important factor in the ability of postgraduate students to conduct and follow up their research efficiently and successfully. (Love et al., 2007:320) contribute to the successful completion of research tasks such as: collecting the theoretical framework and previous studies, and analyzing data. The topic of research projects, the amount of research experience, the optimal use of available resources, and research writing skills (Buyukozturk & Kebapcil, 2011: 23).

**Research objectives:** The current research aims to identify the research self-efficacy of postgraduate students.

**Research limits:** The researcher applied the study at the University of Wasit and the scientific and humanities colleges and for both sexes (males and females), for the academic year 2022/2023, and was limited to postgraduate students (Masters)

#### **Define Terminology:**

**Research self-efficacy** (Mathematical Thinking) was defined by:

**Lane et al. (2003):** It is the researcher's beliefs in his ability to perform specific research tasks that are required for research achievement and are characterized by quality. (Lane, et al., 2003: 62).

**Unrau & Beek (2005):** It is confidence in the implementation of research activities from organizing a research plan to implementing the research process from library research and reading to writing and publishing. (Unrau & Beck, 2005:195).

**Mullikin et al. (2007):** It is the confidence of the researcher in his ability to perform research tasks and activities efficiently and effectively (Mullikin et al, 2007: 377).

**Bieschke (2006):** They are judgments about an individual's ability to conduct specific research. (Bieschke, 2006: 270).

**Garnacier et al., (2017):** It is an individual's assessment of his self-confidence associated with his ability to conduct research activities from research planning to publication (Garnasih, et al., 2017: 21).

**Seraji et al. (2017):** It is the individual's awareness and belief in his ability to organize and implement a series of actions to achieve certain research functions (Seraji, et al., 2017: 2).

**Muhammad (2018):** It is the student's expectation and confidence that he has the ability to conduct scientific research to achieve specific results (Muhammad, 2018: 6).

#### **Theoretical definition:**

The researcher relied on a definition that was derived from Bandura's theory (Bandura, 1987). The researcher defines research self-efficacy as: expectations and confidence of the student in his ability to conduct an integrated research that includes the definition of the research, the theoretical framework, previous studies, research methodology and procedures, presentation and interpretation of results. Discussion, conclusions, recommendations, proposals and documentation.

#### **Theoretical framework**

##### **The concept of research self-efficacy**

The concept of research self-efficacy is based on Albert (Bandura) theory of social cognitive learning, as it indicates that there is nothing more influential in daily life than individuals' belief in their self-efficacy. skills and that the individual is able to implement them (2: 2002 plourd). Research self-efficacy refers to the researcher's confidence in his ability to complete research tasks successfully, such as: collecting the theoretical framework and previous studies, and analyzing data. It is also the individual's perceptions of his ability to implement a specific thing related to scientific research, which may affect participation or choice of topic in research projects. The amount of research experience, the optimal use of available resources, and research writing skills. (Buyukozturk & Kebapci, 2011:23). Research self-efficacy includes postgraduate students' expectation of their capabilities and abilities to perform the tasks, duties, and activities required of them during the master's and doctoral studies, whether they expect to succeed in the required courses, their choice of research problem, and the preparation of a research proposal according to the model approved by the university, and their expectation of their ability to present the research proposal in The seminar and responding to the questions of the discussants, and their ability to carry out the steps of

scientific research, observing ethics, collecting the theoretical framework and previous studies, choosing the methodological design and appropriate procedures from using sound methods to select the research sample, choosing the appropriate tools for data collection, and their expectation of their ability to apply the field part of the research and the sound method To analyze it and answer the research questions and verify its hypotheses, then interpret the results of the research and write recommendations and proposals, as well as their expectations of their leaders in the scientific discussion of their messages (Arnout, 2017: 34 ). It is also the expectations and perceptions of the individual about his preparations and capabilities to accomplish the tasks related to the field of scientific research, and his bearing the responsibility to continue to implement the research procedures to the fullest, and his expectations about how to face the difficulties, planning and perseverance to complete the scientific research on time (Ahmed, 2019: 84). Mullikin, Betz, and Betz (2007) indicate that research self-efficacy is evident in the researcher's confidence in his ability to perform research tasks and activities. In his ability to integrate research ideas with theoretical literature, the subject of research, and data collection, that is, the researcher's confidence in his ability to complete data collection and keep accurate records, and writing techniques means the researcher's ability to write research articles for publication (Mullikin & Betz, 2007: 370).

Eam (2015) also indicates that research self-efficacy is the research confidence or belief of researchers that they have the ability to obtain knowledge and acquire research skill so that they can successfully complete all tasks related to research (Eam, 2015: 208). It is also the ability and desire to use real-time data and information and design an appropriate research methodology to identify problems, define them, formulate questions and reach conclusions based on existing facts, in addition to practical applications as an integral part of this competence (Prokhorchuk, 2014:24). While Belyanina (2018) presented several points of view after reviewing many studies written in this field, including; Research self-efficacy is the complementary and dynamic characteristics of a person, expressed in the unity of psychological, scientific, educational and practical readiness for diagnostic, analysis and design activities, implementation of research activities and the introduction of research results into practical application. The ability to implement the proposed research topic and identify the student's activity that begins with acquiring the necessary skills for creative research, and culminates in solving a future problem (Belyanina, 2018:24). Bard & Eberz, (2000) indicates that training students in scientific research skills can create an effective research environment to stimulate student motivation and invest in research, which increases the levels of research self-efficacy among students (Bard & Eberz, 2000:58). Shivy & Wallis (2003) also concluded in

their study that the educational environment in which students are frequently trained on how to design and implement research, the support provided to them, and high levels of self-efficacy are among the most important variables to stimulate students' abilities to design and carry out research effectively (Shivy & Wallis, 2003:47). He agrees with this Pidkasisty (2010), as he believes that research self-efficacy can be developed and improved by training students in scientific research skills and providing them with new experiences regarding how to conduct scientific research, and developing their self-preparation to improve their desire to conduct theoretical and applied scientific research, as it constitutes Preparation is part of developing the student's research effectiveness, in addition to developing research behavior skills (Pidkasisty, 2010:35).

### **Sources of research self-efficacy**

1. Performance Achievements: It indicates that the successes that graduate students will achieve, which builds a strong belief in their self-efficacy, which generates in them a positive feeling about their ability to complete similar tasks successfully. For example, researchers completing their dissertation or research may increase their motivation. To obtain the degree, while a research or article may be rejected for publication within the requirements for obtaining the degree that reduces their motivation to obtain that degree, (Niehaus & Reading, 2018:15) and vice versa, repeated failure may undermine their awareness of self-efficacy as research students, especially if this failure occurs in The first school stages before crystallizing have a strong and steady sense of self-efficacy.

2. Alternative experiences: It is what postgraduate students derive from social models and the vision of other postgraduate students in the same specialty, whether during the discussion of their research plan or in the public discussion of their dissertation, or through the exchanges between postgraduate students of stories and attitudes about their academic experiences in masters and doctoral degrees. For example, their failure and declining grades, or the difficulty of discussion despite their efforts, which may reduce the research self-efficacy of new postgraduate students and cause them to become discouraged and frustrated, and increase anxiety, tension, and expectation of failure instead of success and excellence.

3. Verbal persuasion: It is represented in the process of encouragement from others, and social persuasion of advice and warnings to postgraduate students about studying, research, supervision, etc., from trusted colleagues that has a great impact on their research self-efficacy.

4. The physiological and emotional state: It refers to the effect of realizing the physical and emotional changes of postgraduate students on their self-



efficacy. Those with research self-efficacy perceive these changes as an organizing factor and facilitate their performance, while those with low research self-efficacy perceive these changes as hindering their performance and success and causing the failure of their ability. On success and achievement, the postgraduate student may feel excited to conduct the research when receiving positive feedback, or he may feel weak when receiving negative feedback (Radwan, 2021: 22-23).

### **Theories explaining research self-efficacy:**

**1. The theory of self-efficacy by Albert Bandura (1977):** The theory of self-efficacy is one of the theoretical constructs that Bandura referred to for the first time in his book entitled Social Learning Theory, which in recent years has received increasing attention in various fields and branches, including The field of educational psychology, because it is considered one of the most prominent concepts and variables, which is considered as a mediator in interpreting students' behavior, as (Bandura) sees self-efficacy as the initiative and persistent behavior of a person, as this depends on the individual's judgments and expectations about his skills, behavioral capabilities, and their adequacy in Execute the various tasks entrusted to him successfully with the challenges of the environment and the circumstances surrounding him. (Bandura, 1977: 79). The individual's perception of his self-efficacy depends on the extent of his assessment of achieving the required level of achievement, and his ability to control and control multiple events and situations. Judging the level of self-efficacy greatly affects the nature of the work that the individual aims to achieve, as well as the level of effort. What the individual exerts, the extent of his perseverance and persistence in facing the difficulties and obstacles that he may encounter, his way and style of thinking, and the amount of stress that the individual will suffer in adapting to the requirements of life that he faces (Bandura et al., 1997: 563). Bandura (1977) believes that people have a self-system through which they can control and control their thoughts and feelings, and that this system includes the ability to coding, and that the person learns from others, and also works to develop alternative strategies that work to regulate his personal behavior, and for this it is considered effective The self is one of the most important determinants of learning, as it expresses a set of judgments that are not only related to what the individual accomplishes; But also by judging what can be accomplished, and it is a product of self-capacity, as it represents a cognitive mirror for the individual, sensitizing him to his ability to control the environment (Bandura, 1983: 464).

Bandura states that the individual's expectations of high and low self-efficacy are linked to environmental determinants. When self-efficacy is high and the environment is appropriate, the results are often successful. Whereas, when the low self-efficacy is associated with the inappropriate

environment, the person becomes depressed when he notices that other individuals succeed in difficult work for them, and when the highly effective individuals face inappropriate environmental situations, they seek with their efforts to change the conditioned environment for them, through protest or force and interaction. Social to provoke change, but if their efforts fail, they will use new methods and strategies, while if low self-efficacy is associated with an inappropriate environment, then the prediction is that people will resort to indifference, despair, and surrender to the situation without working to change it. (Bandura, 1982:123)

According to (Bandura) theory, there is an important source of motivation, based on a cognitive basis through which interpersonal processes are intertwined, especially in defining the goal and purpose of self-evaluating actions, and this is done by evaluating performance by making conditional self-conviction within a certain level of control and control over performance This is in order to create personal self-motivators to perform the performance required to be performed, and that the best way to enhance self-motivation is by relying on measurable and achievable secondary stimuli, which lead to larger goals and objectives in the future, and that the process of achieving secondary goals is a milestone for development and progress towards feeling A sense of self-efficacy. (Bandura, 1982:134), and (Bandura) believes that self-efficacy is a cognitive mirror that reflects the individual's ability and control over his own actions and actions. life obstacles, setting high-level goals and the ability to make right decisions; While individuals who have a low level of self-efficacy are associated with anxiety, helplessness, depression, low self-esteem, and pessimistic thoughts dominating the individual's ability to achieve and personal self-growth (Bandura, 1997: 20).

**The main methodological assumptions on which Bandura's theory is based are as follows:**

1. Individuals have the ability to code, which makes them able to create internal models, to verify the effectiveness of experiments before performing them by predicting the results, and to communicate experiences and ideas to others.
2. Most types of behaviors are directed or purposeful, with a specific goal or purpose, through the ability to think, anticipate, plan and predict the future, and this ability depends mainly on coding (Maddux, 1993:119).
3. Most individuals have the ability to control and self-regulate, by directly controlling and controlling their behavior, by changing or choosing appropriate environmental conditions that affect their behavior, and individuals also set a set of personal criteria through which they evaluate their behavior according to those criteria, and this is what They can build self-motivation that guides behaviour.

4. People have strong abilities to analyze and evaluate ideas, self-experiences, and the ability to self-reflect, which allows these abilities and skills to self-control and regulate behavior in the manner required to be done. (Bandura, 1986: 21-22)

5. Individuals learn by observing the behavior of others, and this type of learning greatly reduces reliance on learning by trial and error and allows for the rapid acquisition of complex skills that cannot be acquired only through practice (Al Rawahiyah, 2016: 31).

7. That the reinforcement must be consistent or consistent with the cognitive direction; That is, (Bandura) does not understand reinforcement in the way presented by (Skinner), but made it a direct, bilateral relationship between reinforcement and behavior automatically, and reinforcement is understood through cognitive processes, as it is affected by cognitive processes and intermediates before it transforms and affects behavior (Al-Alusi, 2014: 65).

8. Environmental events and self-personal factors (cognitive, emotional, biological changes, and behavior) interact mutually and interact with each other, in order for individuals to respond cognitively, behaviorally, and emotionally effectively towards the environment, through cognitive skills through which they exercise control and control over their personal self-behavior, which affects not only the environment; Rather, it depends on cognitive, biological and emotional states, and this is what (Bandura) calls it the principle of mutual inevitability, and cognitive processes play an important role in behavior, as (Bandura) believes that the actual function of ideas lies through enabling the individual to anticipate and predict future events and develop methods and strategies that Help him control and control what affects his life (Bandura, 1986:63).

## **2. Gelso's research training environment theory (1979):**

Gelso (1979, Gelso) indicates in his theory the research training environment that it includes all those forces in graduate training programs and universities that embrace those programs that reflect tendencies towards research and science, as the research environment is important in developing researchers (18: Gelso, 1979), Gelso (1979) proposed a model for the research training environment that would allow students to explore their options and gain interest and understanding in their research endeavors. as follows:

1. Modeling faculty members for appropriate scientific behavior.
2. Promoting practical activity positively in the environment, both formally and informally.
3. Student participation and early training.

4. It is emphasized during training that all research studies are limited in one way or another.

5. Training students on a variety of research methods and how to evaluate them.

6. Explaining to students how science and practice can be linked to faculty members' modeling of scientific positions.

These basic components are presented to the research training environment with the aim of influencing the levels of motivation and anxiety experienced by students at an academic stage, as well as increasing their interest and effectiveness in research and thus increasing their research productivity. (Gelso, 2006: 6-7),

Khan (2001) confirmed that the research training environment, which was measured by the research training environment, includes research productivity for students, and this effective environment can motivate students and invest in research. It is believed that research training environments increase students' levels of research self-efficacy. And that the relationship between the self-efficacy of research and students' perceptions of the research environment, which was supported in female writers, indicated that there is an indirect effect of the research training environment on scientific activity through the self-efficacy of research and research interest (Kahn, 2001, 316). Gelso also counted that the guidance signals contributed to the research training environment and increased the scientific productivity of the faculty members, and as Gelso indicated that the guidance of faculty members continuously provides an important framework in the research training environment and building results based on previous literature, and that research guidance if it was particularly effective in motivating students to pursue research. Gelso, 2006: 12). Gelso & Lent (2000) indicated that research training is crucial for two main reasons:

1. Research enhances the knowledge base in the field of counseling, as well as ensuring that there is a basis for future knowledge in this field
2. Research is key to providing guidance to clinicians regarding therapeutic interventions.

Gelso & Lent (2000:115), Gelso et al. (1988), recommended that one of the best ways to improve the quality of research in a training environment is to provide students with the opportunity to interact with well-known scholars. Gelso and his colleagues also recommend that encouraging students in training To conduct their own research facilitates their development as researchers. (Gelso, et al.,1988:390).

### **3.Vaccaro's research self-efficacy theory (Vaccaro, 2009):**

Vaccaro indicated that research self-efficacy is the extent of an individual's confidence in his ability to succeed in completing the various aspects of the research process (Vaccaro, 2009:22).

**Theoretical areas:**

1. Conducting and caring for research: It is the ability and confidence of the individual (the researcher) to conduct research and participate in research-related activities such as publishing in peer-reviewed journals with impact factors, conferences and seminars.

2. Increasing research productivity: It is the ability of the individual (the researcher) to generate new research ideas and produce research based on the literature and theories on which the practitioner relies in scientific research and to create an appropriate research environment.

3. The quality of research performance: It is the ability of the individual (the researcher) to develop research performance by supporting research activities, securing its tools, benefiting from modern techniques for analyzing research data, as well as benefiting from research in successful projects and providing moral and material support for that (Vaccaro, 2009: 25).

The production and dissemination of research is important in the field of counseling, not only because research supports and encourages the scientist-practitioner model, but it also contributes to the body of literature (findings and theories) upon which practitioners base their services. CACREP (2009, CACREP) provided criteria for counselors to ensure that they are able to conduct both research and evaluation effectively, as the following guidelines are provided with regard to research and evaluation of programs within the curriculum as follows:

1. The importance of research and the opportunities and difficulties in conducting research in the counseling profession.
2. Research methods such as qualitative designs, case studies, action research, and results-based research.
3. Using technology and statistical methods in conducting research and evaluating programs.
4. Principles, forms and applications of needs assessment, program evaluation, and the use of results to bring about program modifications.
5. Use the research to improve the effectiveness of counseling.
6. Ethical and legal considerations. (CACREP, 2009:12).

The experiences provided by the training environment (for example, early research training, encouragement and modeling of faculty members, and related training courses) not only help build necessary research competencies but may also promote effective and robust research and self-efficacy beliefs which in turn lead to greater research productivity (Vaccaro, 2009: 46). Vaccaro also indicated that there are many faculty members with limited research publications due to a number of reasons, including the following: insufficient time, lack of interest in conducting research, lack of proper guidance during the research process, repetitive manuscript writing problems, distractions and fatigue. general writing (Petko 2012:5). Also, the publication of articles by faculty members or postgraduate students in refereed journals at the local, Arab, or international level not only improves the ranking of the individual researcher, but also leads to improving the credibility and image of the university as well (Vaccaro, 2009:4). Bishop & Bieschke (1998) note that research self-efficacy refers to one's beliefs about one's ability to complete and implement the steps and tasks associated with the research process (Vaccaro,2009: 14).

### **Previous studies**

#### **1. Ahmed's study (2019):**

(The causal model of the relationships between the ability to solve statistical problems, research self-efficacy, cognitive dissonance, and the point of control among graduate students), this study was conducted in Egypt, and aimed to identify the differences in the ability to solve statistical problems, and to identify the best causal model that explains the relationships between The ability to solve statistical problems, dimensions of cognitive dissonance, and dimensions of research self-efficacy among postgraduate students. The study sample consisted of (110) male and female postgraduate students at the Faculty of Education at Suez Canal University. Validity, reliability and statistical analysis, the researcher used the following statistical methods: (arithmetic mean, Cronbach's alpha equation, standard deviation, t-test, and one-way analysis of variance). Private, master's, and PhD), and the presence of significant causal effects of the dimensions of research self-efficacy on the ability to solve statistical problems, and the presence of a direct, negative, statistically significant effect of cognitive dissonance on the ability to solve statistical problems, and the presence of a negative, statistically significant causal effect of the direction of control on the dimensions of self-efficacy research among postgraduate students (Ahmed, 2019).

#### **2. The study of Chestnut et al. (2015)**

(Research training environment and its relationship to research experiences and research self-efficacy among postgraduate students). This

study was conducted in the United States of America. It aimed to identify the relationship between research training environment, research experiences and research self-efficacy for postgraduate students. The study sample consisted of (161) male and female postgraduate students in colleges of education in the southwestern region of the United States of America, and the researcher adopted the research self-efficacy scale prepared by / researcher Siwatu & Pasupathy (2012). After verifying its validity, reliability and statistical analysis, the researcher used the following statistical methods: (Pearson's correlation coefficient, Cronbach's alpha equation, standard deviation, arithmetic mean, standard deviation, and binary analysis of variance). Research training, research experiences, and research self-efficacy among postgraduate students (Chesnut, et al, 2015).

#### **Research methodology and procedures:**

**First: Research Methodology:** The research method used in this research is the descriptive method.

**Second: Research Community:** The current research community consisted of postgraduate students (Masters) at the University of Wasit (2022-2023), whose number is (443) male and female students, distributed over (12) colleges, with (168) students, of whom (65) are in the humanities major. And (103) in the scientific major, and (275) students, of whom (129) in the humanitarian major, and (146) in the scientific major.

**Third: The research sample:** The research sample consisted of (200) male and female students who were chosen in a stratified random way from the original community of (443) male and female students distributed among (6) humanities and scientific colleges, and according to the variables of gender (male, female), and specialization (humanitarian, scientific).

**Fourth: The research tool:** To achieve the research objectives and for the purpose of measuring the research variable, it was necessary to build a measure of research self-efficacy.

**The standard psychometric characteristics of the scale: The researcher calculated them according to the following steps:**

**First: the validity of the scale:** the researcher extracted two types of validity for the current scale:

**A. Virtual honesty:** To verify the validity of the items of the research self-efficacy scale, the researcher presented the items of the scale in its initial form, consisting of 37 items, to a group of 20 arbitrators specialized in educational and psychological sciences, measurement and evaluation, and the researcher relied on the value of The calculated chi-square and its comparison with the tabular value of (3.84) at the level of significance

(0.05), which is equivalent to (80%) and higher than the opinions of the arbitrators as a percentage of approval of the paragraphs. Which was referred to by the gentlemen of the arbitrators on the paragraphs of the scale, and all the paragraphs were approved.

- A sample of the clarity of the scale's instructions and its paragraphs (exploratory application): The researcher conducted an exploratory application of the scale on a sample of (40) male and female students. The researcher found that the items of the scale and its instructions were clear to the sample, and with regard to the time taken to answer the items of the scale in general, it ranged between (5-15) minutes, with an average of (10) minutes.

B - The validity of the construction: the researcher relied on measuring the validity of the construction using two methods: the discriminatory power using the two extreme samples method (external consistency), and the method (internal consistency).

**Second: Reliability: The current test was calculated in two ways:**

**1. Re-test:** To calculate the stability coefficient according to this method, the scale was applied to a sample of (40) students from the humanities and scientific faculties of the University of Wasit, and using the Pearson correlation coefficient between the students' scores for the first and second application, the correlation coefficient in this way reached (0.91). The scale is considered a good and acceptable value and indicates the stability of students' answers to the test over time.

**2. Cronbach's alpha equation:** The researcher extracted the stability of the scale on a sample of (200) male and female students, and using the Cronbach's alpha stability equation, the alpha coefficient reached (0.87).

**Statistical analysis of the items of the research self-efficacy scale:**

**A. The sample of the statistical analysis of the paragraphs:** The researcher applied the test to a sample consisting of (200) male and female students who were chosen by the stratified random method of equal choice.

**B. The discriminatory power of the items of the research self-efficacy scale:** The researcher extracted the discriminatory power coefficients of the items of the research self-efficacy scale, and in order to find the discriminatory power of the scale items, the researcher followed the method:

**First: The method of the two extreme groups (external consistency):** The researcher used the t-test for two independent samples in calculating the significance of the differences between the averages of the two groups in the scores of each paragraph of the scale, on the basis that the calculated



t-value represents the discriminatory power of the paragraph, and through this The procedure shows that all paragraphs are distinguished because they are statistically significant, because the calculated t-value is greater than the tabular t-value of (1.98) with degrees of freedom (106) and at the level of significance (0.05).

**Second: internal consistency (paragraph validity): The researcher verified the internal consistency (paragraph validity) through the following:**

**1. The relationship of the paragraph score with the total score of the research self-efficacy scale:** In calculating the validity of the paragraph, the researcher relied on the "Pearson" correlation coefficient between the scores of each paragraph and the total score, because the paragraph scores are continuous and progressive, noting that the sample of the validity of the paragraphs consists of (200) male and female students in The current research shows that all correlation coefficients are statistically significant when compared to the critical value of the correlation coefficient of (0.139) at the level of significance (0.05) and a degree of freedom (198).

**2. The relationship of the degree of the paragraph with the degree of the dimension to which it belongs:** After the researcher used the Pearson correlation coefficient, it became clear that all correlation coefficients are statistically significant when compared to the critical value of (0.139) at the level of significance (0.05) and with a degree of freedom (198). Through this indicator, it became clear that all Paragraphs of the scale express its dimensions

**3. The matrix of internal correlations for the independence of the main components:** The researcher used the Pearson correlation coefficient, and it was statistically significant at the level of significance (0.05) and with a degree of freedom (198), where the critical value is equal to (0.139), and this indicates that the dimensions are interrelated and measure one thing and are dealt with as a single college degree.

### **Presentation, interpretation and discussion of results**

#### **Identify the research self-efficacy of postgraduate students.**

To achieve this goal, the researcher applied the research self-efficacy scale consisting of (37) items on the research sample consisting of (200) male and female students. The results of the research showed that the arithmetic mean of the scores of this sample on the scale reached (120,510) degrees, with a standard deviation of (19,653) degrees, and when knowing the significance of the difference between the arithmetic mean and the hypothetical mean, which amounted to (111) degrees, it

was found that the difference is statistically significant at the level of significance (0.05), as the calculated t-value was (6.843), which is greater than the tabular t-value of (1.96), with a degree of freedom (199), and this means that the research sample possesses research self-efficacy to a good degree.

This result indicates that postgraduate students have positive beliefs and expectations about their research self-efficacy and their potential and confidence to conduct an integrated research that includes the definition of research, the theoretical framework, previous studies, research methodology and procedures, presentation, interpretation and discussion of results, conclusions, recommendations, proposals and documentation, as well as their ability to bear Research responsibility and their positive perceptions of facing difficulties, and perseverance to complete scientific research on time. They have high beliefs about their effectiveness and self-efficacy, they are more able to identify effective strategies to deal with the situation, more able to effectively influence the environment, and more able to diversify methods and strategies. He also stressed that individuals need self-efficacy in order to be able to reach the desired results even if They were fully aware that what they were doing and choosing represented the best options for dealing with the situation.

**Conclusions:** In light of the research results that the researcher reached, he concluded that postgraduate students have a good degree of research self-efficacy.

**Recommendations:** In the light of the results of the study that the researcher reached, the following recommendations were made:

1. Benefiting from the research self-efficacy scale in diagnosing the students' research self-efficacy level.
2. Holding awareness-raising seminars within the university through the scientific and counseling centers that deal with the development of the subject of research self-efficacy, indicating the extent of its dimensions and examining its importance, in order to help them in promoting and developing it for them.
3. Confirmation and the Ministry of Higher Education of the importance of research self-efficacy, and the development of this ability for them through holding seminars and opening courses.

**Suggestions:** Complementing the aspects related to this study, the researcher suggested conducting subsequent studies:

1. Conducting similar studies at different stages of study, and comparing their results with the results of the current study

2. Conducting correlational studies between research self-efficacy and other variables such as (research performance, research anxiety, organizational conflict, and professional compatibility).

3. Conducting studies on the impact of the professional characteristics of faculty members in study programs on the research self-efficacy of postgraduate students.

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