

PRACTICE OF KINDERGARTEN TEACHERS IN CONSTRUCTIVIST TEACHING FROM THEIR PERSPECTIVE

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ABSTRACT

This study aimed to explore the degree to which kindergarten teachers engage in constructivist teaching, from the teachers' own perspectives. A descriptive methodology was employed. The sample consisted of 100 teachers randomly selected from public kindergartens in Baghdad Province. To achieve the study's goal, the Assaf questionnaire was developed, encompassing four domains: planning, preparation and introduction, classroom interaction, and assessment. The findings revealed that, according to their own assessments, the kindergarten teachers practiced constructivist teaching to a high degree. The results also indicated no statistically significant differences in the degree of constructivist teaching practice among kindergarten teachers attributed to years of experience. However, statistically significant differences were found based on the educational qualification variable, favouring teachers with a bachelor's degree. The study recommends that kindergarten curricula include practical examples of lessons based on constructivist theory strategies for educational use.

Keywords: Constructivist Teaching, Kindergarten Teachers

Introduction

Chapter One

General Framework of the Research

Research Problem: The kindergarten stage represents a foundational period in an individual's life, during which the initial seeds of their future personality are sown. These seeds gradually crystallize and become apparent in the child's future life. During this period, a child develops a clear concept of self, encompassing social, physical, and psychological aspects, which aids in their integration into society. This stage is considered the most critical as it lays the groundwork for anticipated behaviour (Abdul Wahab, 2002, p. 25). The success of kindergartens in fulfilling their noble mission heavily relies on the presence

of teachers with specialized educational qualifications for working at this sensitive stage of a child's life. Contemporary trends suggest that success in this profession hinges primarily on two conditions in the teacher: readiness and preparation (Amer, 2008, p. 64). With society's growing need for individuals capable of presenting new solutions to its problems and innovative ideas to advance life in this information age, all sectors of society require leaders with diverse capabilities to manage and develop their communities (Glasson et al., 1999, p. 277). The expansion in information, knowledge, the proliferation of education, the evolution of its institutions, the diversity of its levels, and the variety of its objectives compel those involved in education to seek modern teaching methods and strategies that center the learner in the educational process (Al Harithi, 2002, p. 1). For a kindergarten teacher to effectively teach children how to think and develop their cognitive abilities, it is crucial to adopt a teaching theory. Such a theory aids in organizing the teaching process, formulating clear visions around it, and assisting in the analysis of the learning process. Constructivism, one of the latest learning theories, emphasizes external factors (teacher, curriculum, peers) and highlights the significant role that developing the performance of kindergarten teachers plays in this regard. Achieving this role primarily depends on the teacher's ability to develop and practice constructivist teaching. The kindergarten teacher must be thoroughly familiar with the theory and practice of constructivist teaching to effectively apply it in classroom situations. From the researcher's perspective, kindergarten children face difficulties in meaningfully constructing information and linking it with their previous experiences. Therefore, the researcher conducted the current study to explore the extent to which kindergarten teachers engage in constructivist teaching from their own perspectives.

The Importance of the Research

The significance of the current study is twofold:

First, Theoretical Importance: The importance of this study stems from the significance of its subject matter, which investigates the degree to which kindergarten teachers practice constructivist teaching from their own perspectives. This study contributes by providing information on the extent of teachers' engagement in constructivist teaching, thereby offering a theoretical framework for teachers in general and kindergarten teachers in particular. This

framework aims to enhance their knowledge and understanding of constructivist teaching practices and guide kindergarten teachers towards adopting new educational methods for implementation in teaching. It is anticipated that the study will benefit the teachers themselves in developing their teaching practices in alignment with constructivist principles, ensuring more effective learning by connecting new knowledge with previously learned skills. Learning new information results from building upon existing knowledge and skills, and it is advisable to remind learners of their prior knowledge and skills before introducing new ones (Mohammed and others, 2010, pp. 5-6).

Second, Scientific Importance: Kindergartens serve as a foundational pillar that significantly influences a child's behaviour and traits throughout their life. The kindergarten teacher plays a crucial role in the effectiveness of the educational process, not merely as a conduit for educational experiences but also as a guide, facilitator, organizer, assistant, and educator. The teacher is central to managing the kindergarten and is responsible for creating an appropriate environment for experience and preparing the children psychologically and mentally (Jasim and others, 2022, p. 289). The current study's importance lies in its practical aspect, which represents a new approach in education. The results of this study can guide kindergarten teachers to familiarize themselves with constructivist teaching practices. It is hoped that the study's findings will assist educational supervisors in kindergartens in directing their evaluation of teachers towards adopting this approach. Additionally, the study may influence the Ministry of Education to embrace this teaching method due to its impact on the educational process. Furthermore, the findings are expected to aid curriculum designers and developers in creating textbooks and curricula based on constructivist teaching principles. They also underscore the need for professional development organizers to prepare training programs and courses that include constructivist teaching practices. The study could also encourage researchers and postgraduate students to conduct similar studies in the same field and at different educational stages.

Research Objectives

The study aims to identify:

1. The practice of kindergarten teachers in constructivist teaching from their perspectives.
2. The existence of statistically significant differences in kindergarten teachers' perceptions of their practice in constructivist teaching based on variables of (years of experience, academic qualification).

Research Scope:

- Human scope: Kindergarten teachers.
- Geographical scope: Baghdad Governorate, covering both Al-Karkh (first, second, third) and Al-Rusafa (first, second, third) sides.
- Temporal scope: (2023-2024).

Definition of Terms: The current study includes the following terms:

- ❖ **Practice:** A type of relatively organized experience, referring to the repetition of the same or similar overt responses in relatively structured environmental situations. (Samara and Al-Adili, 2008, p. 160)
- ❖ **Constructivist Teaching:** A set of actions, procedures, principles, ideas, and movements based on constructivist learning theory that places the learner at the center of the educational process. (Al-Zananin, 2015, p. 165)

Defined by McComas as "the educational means and decisions built on the applications of constructivist theory as a learning theory. Its simplest principles are that learners are active participants in developing and constructing their own knowledge." (Al-Balushi et al., 2021, p. 39)

Defined by Assaf as "a concept derived from constructivist theory, whereby the learner creates their own cognitive construction that enables them to understand the surrounding environment, leading to increased learner activity and effectiveness in achieving better learning." Its main domains are planning, preparation, classroom interaction, and evaluation. (Assaf, 2021, p. 20)

The theoretical definition of Constructivist Teaching: The researcher adopts Assaf's definition as it best suits the current research requirements.

The procedural definition of Constructivist Teaching is the degree to which the practice of kindergarten teachers in constructivist teaching can be judged through responses on the constructivist teaching scale.

- **Kindergarten Teacher:** The cornerstone of the educational process in kindergarten, bearing the greatest responsibility in fulfilling the kindergarten's mission. The success of a teacher in this critical and challenging stage of a child's life is considered a success for the kindergarten in achieving its goals. (Badr, 2009, p. 285)
- **Kindergarten:** An educational institution that accepts children aged 4-6 years aiming to develop their physical, mental, social, emotional, spiritual, national, and cultural aspects of their personalities. (Ministry of Education, 1990, p. 9)

Chapter Two

Theoretical Framework and Previous Studies

Concept of Constructivist Teaching

The term constructivism (Constructivism) is derived from "construction" or "structure", which in turn comes from the Latin root (Sturere), meaning the method by which a building is constructed. Constructivism is a learning theory, not merely a teaching or instructional style. Teachers can employ constructivist methods "when they are aware of them and teach in a manner that aligns with how students learn."

Constructivism is an educational philosophy emphasizing that learners construct their own knowledge stored within themselves. Everyone has their unique knowledge, and learners form their understanding either individually or collectively based on their current knowledge and previous experiences. Learners select, transform information, formulate hypotheses, and make decisions relying on the conceptual structure enabling them to do so. Constructivism focuses on the internal cognitive processes of the learner, i.e., what happens inside the learner's mind when exposed to educational situations, including their prior knowledge, willingness to learn, motivation, and information processing capability. Therefore, the teacher's role is to prepare a learning environment that enables learners to construct their knowledge independently (Al-Adwan and others, 2015, p. 34).

Ali (2009) mentions that teaching models rely on a set of skills that the teacher must transfer to execute them effectively and achieve the objectives. Each teaching strategy encompasses several teaching methods, and the teacher's mastery of the mechanics of each method and proficiency in dealing with its skills and understanding its techniques ensures the success of the chosen strategy in the educational situation (Ali, 2009, p. 13).

Khalaf (2009) observes that most modern projects in the United States rely on constructivism as a foundation for their practices, which has helped improve learning by changing teachers' practices. Its application in developed countries has become a basis for classroom learning and teaching. In contrast, developing countries, still increasingly using behaviourist theory in classroom learning and teaching, have not shown any movement of educational innovation based on this theory (Khalaf, 2009, p. 27).

Lorsbach and Tobin believe that constructivism can be defined as "a theory in epistemology that has been used to explain the process of how we know what we know" (Al-Momani, 2002, p. 23).

Mercer views constructivism as "a theory based on the idea that the student is an inherently active learner capable of constructing a cognitive structure by linking new information received with their prior knowledge."

Constructivism is also defined as "a process of searching for meanings, thus, it is a process of adapting mental schemas to accommodate new experiences, making it a continuous process of constructing meanings" (Al-Hashimi and Al-Azzawi, 2007, p. 35).

Theoretical Framework and Previous Studies

Concepts in Constructivist Teaching Theory

1. **Adaptation:** is an innate direction comprising two elements: assimilation and accommodation, resulting from a balance between these two processes. When an individual encounters an experience, they either assimilate it or adapt to it. If the individual integrates it with one of their existing mental models, they have assimilated it. Sometimes, the difficulty is such that they cannot assimilate it, leading to a change in their understanding of the world to adapt to this new experience. This process is accommodation (Mohamed, 1991, p. 50). For Piaget, intelligence is a form of adaptation between the human and life in general, analogous to biological adaptation, with its function being the

assimilation of the universe as the living organism assimilates its environment (Ghanem, 1973, p. 130).

2. **Assimilation:** The first element of the adaptation process, Flavell (1977) explains, assimilation refers to the adaptation of external stimuli to the individual's internal mental structures. It is an attempt to assimilate experiences from events, emotions, and behaviors into previous cognitive structures characterized by analysis and logical perception.
3. **Accommodation:** The second element of the adaptation process, accommodation is the opposite of assimilation, where an individual changes themselves to fit the external situation. Piaget sees accommodation as the adjustment of new structures so that information inconsistent with existing structures can be dealt with or understood (Mohamed, 1991, p. 50).
4. **Equilibrium:** Refers to the interaction between the individual and the environment, where there is a balance between the individual's activity on the environment (assimilation) and the environment's activity on the individual (accommodation). Cognitive adaptation is the result of a balance between assimilation and accommodation (Mohamed, 1991, p. 51).
5. **Organization:** An innate tendency that creates more efficient connections between images. The primary images in a child are linked and reorganized anew, resulting in an interconnected system of higher mental structures (Mohamed, 1991, p. 50).

Principles of Constructivist Teaching Theory

1. Prior Knowledge: The learner's prior knowledge is pivotal in the learning process as the learner constructs their knowledge based on their previous experiences.
2. Self-Constructed Meaning: Learners construct the meaning of what they learn autonomously, where meaning is formed within their cognitive structure through the interaction of their senses with the external world.
3. Cognitive Structure Change: Learning does not occur unless there is a change in the individual's cognitive structure, where existing thoughts and experiences are reorganized upon the introduction of new information.
4. Real-world Problems: Learning is most effective when learners encounter a real-world problem or situation.

5. Social Negotiation: Learners do not construct their knowledge in isolation but through social negotiation with others (Zeitoun, 2007, p. 44).

Key Foundations of the Constructivist Teaching Model:

The constructivist teaching model relies on several foundations that form its scientific basis. Wicklein (2005) identified a number of these foundations as follows:

1. Planning by the teacher to actively engage children in performing an activity, solving a specific problem, or discussing a particular phenomenon.
2. Relying on children's concepts, perceptions, and ideas in addressing questions posed to them, solving problems they encounter, and allowing them during learning to discuss their ideas, perceptions, and suggestions.
3. Providing opportunities for children to work in small groups in a cooperative atmosphere to foster team spirit, allowing sufficient time for research, exploration, thinking, and discussion of conclusions regarding the problem or issue presented to them.
4. Asking questions that require deep thinking and presenting open-ended problems that encourage children to research and think about appropriate solutions, referring to various sources to find evidence and support for their answers, explanations, and proposals.
5. Listening to children's proposals before they begin to solve and reach answers.
6. Teachers must consider children's alternative concepts and design lessons that challenge their misconceptions without confusing these concepts (Al-Musaif, 2018, p. 17).

Role of the Teacher, Learner, and Classroom Environment According to Constructivist Teaching:

The teaching and learning process does not occur in a vacuum but within a framework of material, human, and psychological factors that influence the course of the educational process. Among these factors, the teacher is the foundation of the educational process, the learner is the focus, and the classroom environment is the medium in which teaching and learning occur. Each element plays significant roles in facilitating the learning and teaching process, including:

Teacher's Role:

Constructivism has cast its influence on the teaching and learning process, introducing a new philosophy and, consequently, altering the roles of the teacher. The teacher is now required not only to fulfil the fundamental role of teaching but to do so in varied forms and patterns, embodying a new approach that facilitates and eases the learning process for the learner. This includes encouraging learners to innovate and inquire, recognizing the learner's natural ability to acquire knowledge and the capability to learn how to obtain it.

Furthermore, the teacher is tasked with selecting strategies, methods, and models that align with constructivist premises to achieve goals such as problem-solving, critical thinking, understanding, and acquiring skills that aid in the attainment of knowledge and experience. Since constructivism is a theory of learning rather than a theory of teaching or education, it does not prescribe specific teaching strategies. However, it provides criteria for effective teaching, placing another responsibility on the teacher to employ these criteria and derive various methods and strategies that embrace constructivist learning. An important role of the teacher is to provide a safe environment for the learner, allowing space for reflection and contemplation of their thoughts.

Theoretical Framework and Previous Studies

Roles Defined by Constructivist Theory

The roles of the teacher, as defined by constructivist theory, include:

- **The teacher as Planner:** Working on lesson planning, selecting educational goals, teaching methods, and activities, and choosing appropriate tools.
- **The teacher as Facilitator:** Preparing teaching materials that align with learners' needs and developmental characteristics.
- **The teacher as Organizer:** Managing the learning environment by providing various learning resources.
- **The teacher as Active Participant:** Selecting strategies and activities that match the nature of learners in parallel with the teaching material and intended goals.
- **The teacher as Guide and Facilitator:** Guiding the classroom interaction process among learners themselves and between learners and the teacher.

- **The teacher as Evaluator:** Assessing the educational process and ensuring the achievement of objectives (Assaf, 2021, p. 21).

Learner's Role: Perkins highlights three distinct and essential roles that the learner must assume during constructivist learning:

1. **The Active Learner:** Engages in searching, observing, and predicting throughout the learning process.
2. **The Social Learner:** Constructs knowledge within a peer group, exchanging information and ideas to reach solutions.
3. **The Creative Learner:** Reconstructs knowledge and reorganizes the educational situation anew to achieve new discoveries (Yousef and others, 2016, p. 330).

Role of the Classroom Environment:

1. A classroom environment that accepts and encourages the autonomy and independence of the learner.
2. A classroom environment where the teacher allows time for thinking to receive answers and suggestions.
3. A classroom environment that encourages higher levels of thinking.
4. A classroom where learners engage in dialogue, discussions, and scientific debates with the teacher and among themselves.
5. A classroom environment that challenges hypotheses and encourages discussions.
6. A classroom where learners use raw data, primary sources, and interactive materials to gain experience, rather than relying solely on others' data and information (Zeitoun, 2007, pp. 53-54).

Studies on Constructivist Teaching

1. **Assaf (2021) Study:** The study titled "The Degree of Practice of First Grade Teachers in Constructivist Teaching from the Perspective of Educational Supervisors and the Teachers Themselves" aimed to identify the degree of practice among first to third-grade teachers in constructivist teaching from the perspectives of supervisors and teachers. It also explored whether there were statistically significant differences in teachers' estimations of their practice in constructivist teaching based on the variables of (years of experience, academic qualification). The sample consisted of 227 teachers,

randomly selected from public schools in Amman, and 4 educational supervisors. Methods used included questionnaires and interviews. The results showed that the degree of constructivist teaching practice, from the perspectives of both first to third-grade teachers and educational supervisors, was high. There were no statistically significant differences in the degree of practice among first to third-grade teachers regarding academic qualification and years of experience (Assaf, 2021, p. 11).

2. **Salman (2021) Study:** The study titled "The Extent of Use of Constructivist Learning Strategies by Teachers of Quranic Sciences and Islamic Education in Iraqi Universities" aimed to determine the extent to which teachers of Quranic sciences and Islamic education use constructivist teaching strategies in Iraqi universities. It also examined if there were statistically significant differences at the (0.05) level in the use of constructivist teaching by teachers based on the variables of (gender, academic qualification, years of experience). The sample comprised 83 male and female teachers from public universities. The questionnaire was used for data collection. The findings indicated that the degree of use of constructivist learning strategies by teachers of Quranic sciences and Islamic education was high among both male and female teachers. There were statistically significant differences according to the gender variable in favor of female teachers, and no statistically significant differences were found according to the variables of academic qualification and years of experience in the use of constructivist learning strategies among male and female teachers (Salman, 2021, pp. 11-14).

Chapter Three

Research Methodology and Procedures

This chapter provides an overview of the research procedures in terms of the population and its sample, the method of selection, the identification of tools, implementation, and statistical methods as follows:

➤ First, Research Population:

The research population refers to the total group of elements to which the researcher aims to generalize the results related to the problem. The current study comprises kindergarten teachers from public kindergartens affiliated with

the General Directorates of Education in Baghdad (Al-Rusafa 1, Al-Rusafa 2, and Al-Rusafa 3), with the total research population being 1,070 for the academic year 2023-2024.

Table (1) illustrates this.

| No. | Directorate | Number of Kindergartens | Number of Teachers |
|--------------|-------------|-------------------------|--------------------|
| 1 | Rusafa 1 | 28 | 385 |
| 2 | Rusafa 2 | 57 | 496 |
| 3 | Rusafa 3 | 23 | 189 |
| Total | | 108 | 1,070 |

- **Second, Research Sample:** The sample is a subset of the original research population, selected by the researcher through various methods and comprising several individuals from the original population (Obeidat, 1984, p. 106). The researcher adopted a simple random sampling method, resulting in a current research sample of 100 kindergarten teachers.
- **Third, Research Tool:** To measure the practice of constructivist teaching among kindergarten teachers, the researcher developed the Assaf tool, consisting of a questionnaire on constructivist teaching with 46 items, distributed across four domains: 11 items for the first domain (Planning), 10 items for the second domain (Preparation), 14 items for the third domain (Classroom Interaction), and 11 items for the fourth domain (Evaluation). Each item was associated with five alternatives (Very High, High, Moderate, Low, Very Low), with the alternatives of the research tool calculated using weights (1,2,3,4,5).
- **Fourth, Statistical Analysis:** Validity is one of the most important characteristics of educational and psychological tests and measures. A valid test can measure the phenomenon for which it was designed, meaning its ability to measure the intended trait (Majid, 2013, p. 93). Ebel and Allen & Yen suggest that the best method to ascertain face validity is by presenting the scale items to experts for judgment on their suitability in measuring the desired characteristic (Allen & Yen, 1979, p. 96; Ebel, 1978, p. 55). The researcher verified the validity of the scale by adopting two types of validity:

Item Validity (Face Validity):

1. This type of validity is achieved by presenting the tool to a group of judges and specialists in kindergarten education and psychology, totalling 10 judges, to render their judgment on the appropriateness of the scale items for measuring constructivist teaching among kindergarten teachers. They were asked to assess each item's validity, determining whether it was valid or invalid for measuring constructivist teaching, and to suggest appropriate modifications if needed. The researcher requested placing a checkmark (✓) in the "valid" field if they deemed the item suitable for measuring the intended phenomenon and a cross (X) in the "invalid" field if they found the item unsuitable for measuring the characteristic or if the item was suitable but required clearer and more precise rephrasing to be clear and valid. Any suggestions for modifications were to be made in the proposed modification field. After compiling the judges' notes on the items, it was determined that all items were deemed valid, as shown in Table (2).

Table (2) Displays experts' opinions on the validity of the constructivist teaching scale items for kindergarten teachers.

| Items | Agreed | Percentage | Disagreed | Percentage |
|-------|--------|------------|-----------|------------|
| 1-46 | 10 | 100% | 0 | 0% |

2. **Construct Validity:** The researcher verified this type of validity by extracting the relationship of each item with the total score for each domain and the relationship of each item with the total score of the research tool using Pearson's correlation coefficient. It was found that all were statistically significant at a significance level of (0.05) and degrees of freedom (98) because they were greater than the table value of (0.20), as shown in Table (3).

Table (3) Illustrates the relationship of each item with the total score for each domain and the relationship of each item with the total score of the research tool.

| Item No. | Correlation of Item with Total Score for Domain 4 | Correlation of Item in Domain 4 with Total Research Tool Score | Correlation of Item with Total Score for Domain 3 | | | Correlation of Item in Domain 3 with Total Research Tool Score | Correlation of Item in Domain 3 with Total Research Tool Score | Item No. | Correlation of Item with Total Score for Domain 2 | Correlation of Item in Domain 2 with Total Research Tool Score | |
|----------|---|--|---|---|--|--|--|----------|---|--|------|
| | | | Item No. | Correlation of Item with Total Score for Domain 2 | Correlation of Item in Domain 2 with Total Research Tool Score | | | | | | |
| 1 | 0.46 | 0.52 | 1 | 0.60 | 0.70 | 1 | 0.46 | 0.51 | 1 | 0.46 | 0.52 |
| 2 | 0.44 | 0.57 | 2 | 0.53 | 0.62 | 2 | 0.61 | 0.62 | 2 | 0.58 | 0.67 |
| 3 | 0.46 | 0.47 | 3 | 0.39 | 0.51 | 3 | 0.64 | 0.67 | 3 | 0.65 | 0.71 |
| 4 | 0.46 | 0.68 | 4 | 0.66 | 0.74 | 4 | 0.66 | 0.74 | 4 | 0.53 | 0.65 |
| 5 | 0.42 | 0.63 | 5 | 0.63 | 0.64 | 5 | 0.71 | 0.78 | 5 | 0.57 | 0.67 |
| 6 | 0.44 | 0.58 | 6 | 0.68 | 0.70 | 6 | 0.65 | 0.69 | 6 | 0.59 | 0.58 |
| 7 | 0.39 | 0.58 | 7 | 0.64 | 0.73 | 7 | 0.60 | 0.69 | 7 | 0.66 | 0.73 |
| 8 | 0.46 | 0.48 | 8 | 0.39 | 0.53 | 8 | 0.67 | 0.72 | 8 | 0.61 | 0.68 |
| 9 | 0.58 | 0.64 | 9 | 0.63 | 0.52 | 9 | 0.63 | 0.74 | 9 | 0.57 | 0.69 |
| 10 | 0.55 | 0.66 | 10 | 0.56 | 0.57 | 10 | 0.57 | 0.72 | 10 | 0.61 | 0.63 |
| 11 | 0.52 | 0.54 | 11 | | | 11 | 0.65 | 0.66 | 11 | 0.37 | 0.54 |
| 12 | | | 12 | | | 12 | | | 12 | 0.66 | 0.77 |
| 13 | | | 13 | | | 13 | | | 13 | 0.66 | 0.75 |
| 14 | | | 14 | | | 14 | | | 14 | 0.58 | 0.61 |

Reliability of the Scale: Reliability is defined as the consistency among results, and a test is considered reliable if it yields the same results when reapplied to the same individuals under the same conditions (Ibrahim, 2000, p. 42). To calculate the reliability of constructivist teaching, the researcher relied on Cronbach's alpha method.

Cronbach's Alpha for Internal Consistency: Thorndike and Hagen have indicated that calculating reliability using this method depends on the consistency of an individual's responses to each item on the scale. It is based on the standard deviation of the entire scale and the standard deviation of each item on the scale (Saber and Khafaga, 2002, p. 116). To extract the reliability of the constructivist teaching questionnaire (reliability), the Cronbach's alpha equation was used, revealing that the reliability coefficient equals 0.95, indicating that it is statistically acceptable reliability. Table (4) illustrates this.

Table Number (4) Shows the reliability value for each domain in the research tool.

| Sequence | Domains | Cronbach's Alpha Reliability Value |
|--------------|-----------------------|------------------------------------|
| 1 | Planning | 0.80 |
| 2 | Preparation | 0.84 |
| 3 | Classroom Interaction | 0.92 |
| 4 | Evaluation | 0.86 |
| Total | | 0.95 |

From the table above, the reliability coefficients for the questionnaire domains were statistically acceptable.

Statistical Means: For analysing the current research data, appropriate statistical methods were utilized with the help of the Statistical Package for the Social Sciences (SPSS), as follows:

1. Pearson's correlation coefficient for calculating the relationship of each item with the total score for each domain and the relationship of each item with the total score of the research tool.
2. Cronbach's alpha equation for calculating the reliability of the research tool.
3. Frequencies, mean, standard deviation, and percentage weight.
4. Independent samples t-test to identify statistically significant differences according to the academic qualification variable (Bachelor's – Master's).
5. Analysis of variance (ANOVA).

Chapter Four

Presentation and Discussion of Results

This chapter includes the presentation and discussion of the research findings in conjunction with the results of previous studies and their interpretation within the theoretical framework and objectives. It also offers several recommendations and suggestions based on the research findings.

Objective One: To identify the degree of practice of kindergarten teachers in constructivist teaching.

To determine the degree of constructivist teaching practice among kindergarten teachers, the researcher calculated the mean, standard deviation, and ranks for the responses of kindergarten teachers to the domains of the research tool. Table Number (5) illustrates this.

Table Number (5), Shows the ranking of domains based on the mean, standard deviation, and percentage weight.

| Rank | Domains | Mean | Standard Deviation |
|--------------|------------------------------|----------------|--------------------|
| 1 | Classroom Interaction | 58.44 | 7.098 |
| 2 | Planning | 46.48 | 4.664 |
| 3 | Evaluation | 45.97 | 5.210 |
| 4 | Preparation and Introduction | 41.35 | 4.820 |
| Total | | 48.0569 | 5.448 |

The results of the table above indicate that the degree of practice of constructivist teaching by kindergarten teachers was high, with the overall mean for the research tool being 48.056 and a standard deviation of 5.448. The domain of Classroom Interaction ranked first with a mean of 58.44 and a standard deviation of 7.098. The domain of Planning ranked second with a mean of 46.48 and a standard deviation of 4.664. The domain of Evaluation ranked third with a mean of 45.97 and a standard deviation of 5.210, and the domain of Preparation and Introduction received the lowest rank with a mean of 41.35 and a standard deviation of 4.820.

In light of the above results, the researcher will present the findings of each domain based on the ranks, where the means, standard deviations, and ranks for the responses of kindergarten teachers to the four domains were extracted. Tables (6), (7), (8), and (9) illustrate these findings.

Domain One: Planning The researcher extracted the means, standard deviations, and ranks for the responses of kindergarten teachers to the Planning domain. Table Number (6) illustrates this.

Table (6) Shows the items of the first domain (Planning) ranked according to the mean, percentage weight, and standard deviation.

| Sequence in Research Tool | Item | Mean | Standard Deviation | Percentage Weight | Rank |
|---------------------------|---|------|--------------------|-------------------|------|
| 5 | I consider individual differences among children when planning the experience | 4.44 | 0.670 | 89 | 1 |
| 3 | I pay attention to children's needs when planning the experience | 4.40 | 0.649 | 88 | 2 |
| 7 | I provide educational tools to enrich the learning environment | 4.35 | 0.741 | 87 | 3 |
| 4 | I ensure that the content of the experience is formulated as educational problems related to children's lives | 4.32 | 0.720 | 86 | 4 |
| 6 | I formulate the goals of the experience clearly and specifically | 4.28 | 0.789 | 85 | 5 |
| 10 | I ensure that the goals of the experience are aligned with evaluation | 4.23 | 0.760 | 84 | 6 |
| 2 | I consider the integration and connection between concepts and ideas during the planning of the experience | 4.22 | 0.701 | 84 | 7 |
| 11 | I consider the division of class time to achieve educational goals | 4.17 | 0.801 | 83 | 8 |
| 8 | I involve children in establishing classroom discipline rules | 4.15 | 0.780 | 83 | 9 |
| 1 | I analyze the content of the experience into main elements and ideas | 4.02 | 0.616 | 80 | 10 |
| 9 | I involve children in planning the course of the experience | 3.92 | 0.845 | 78 | 11 |

The results of the table above indicate that items (7, 3, 5) ranked the highest in the first domain (Planning). Item number (5) ranked first with a mean of 4.44 and a percentage weight of 89%, item number (3) ranked second with a mean of 4.40 and a percentage weight of 88%, and item number (7) ranked third with a

mean of 4.35 and a percentage weight of 87%. Items (9, 1, 8) received the lowest three ranks in the first domain (Planning), where item number (8) ranked ninth with a weighted mean of 4.15 and a percentage weight of 83%, item number (1) ranked tenth with a mean of 4.02 and a percentage weight of 80%, and item number (9) held the last rank with a mean of 3.92 and a percentage weight of 78%.

Domain Two: (Preparation and Introduction) The researcher extracted the means, standard deviations, and ranks for the responses of kindergarten teachers to the domain of Preparation and Introduction.

Table Number (7) Shows the items of the second domain (Preparation and Introduction) ranked according to the mean, percentage weight, and standard deviation.

| Sequence in Research Tool | Item | Mean | Standard Deviation | Percentage Weight | Rank |
|---------------------------|---|------|--------------------|-------------------|------|
| 9 | I consider the accuracy and precision of information during the introduction and preparation | 4.41 | 0.650 | 88 | 1 |
| 10 | I ensure a gradual transition to the new experience topic | 4.31 | 0.731 | 86 | 2 |
| 2 | I prepare for the experience with an appropriate and engaging introduction such as stories, videos, games, and contests | 4.25 | 0.681 | 85 | 3 |
| 3 | I link the current material with other experience materials | 4.20 | 0.734 | 84 | 4 |
| 1 | I present real problems related to the experience | 4.14 | 0.718 | 83 | 5 |
| 6 | I focus on innovation and renewal in the methods of introduction and preparation, avoiding stereotypical approaches | 4.11 | 0.831 | 82 | 6 |
| 5 | I practice flexibility during the introduction and preparation according to children's responses | 4.08 | 0.767 | 81 | 7 |
| 4 | I stimulate children's prior experiences related to the new experience topic | 4.04 | 0.783 | 80 | 8 |
| 7 | I choose the introduction appropriate for the educational stage | 3.75 | 0.860 | 75 | 9 |
| 8 | I adhere to the suitable duration for the introduction and preparation | 3.72 | 0.916 | 74 | 10 |

The results of the table above indicate that items (9, 10, 2) ranked the highest in the second domain (Preparation and Introduction). Item number (9) ranked first with a mean of 4.41 and a percentage weight of 88%, item number (10) ranked second with a mean of 4.31 and a percentage weight of 86%, and item number (2) ranked third with a mean of 4.25 and a percentage weight of 85%. Items (4, 7, 8) received the lowest three ranks in the second domain (Preparation and Introduction), where item number (4) ranked eighth with a weighted mean of 4.04 and a percentage weight of 80%, item number (7) ranked ninth with a mean of 3.75 and a percentage weight of 75%, and item number (8) held the last rank with a mean of 3.72 and a percentage weight of 74%.

Domain Three: (Classroom Interaction) The researcher extracted the means, standard deviations, and ranks for the responses of kindergarten teachers to the domain of Classroom Interaction.

Table (8) Shows the items of the third domain (Classroom Interaction) ranked according to the mean, percentage weight, and standard deviation.

| Rank | Percentage Weight | Standard Deviation | Mean | Item | Sequence in Research Tool |
|------|-------------------|--------------------|------|---|---------------------------|
| 1 | 87 | 0.650 | 4.33 | I link previous and subsequent experiences of children | 2 |
| 2 | 86 | 0.703 | 4.31 | I stimulate children's motivation through situations related to their daily lives | 10 |
| 3 | 85 | 0.662 | 4.27 | I use verbal and non-verbal communication skills during class | 14 |
| 4 | 85 | 0.737 | 4.25 | I consider children's needs and interests through the proposed educational activities | 3 |
| 5 | 84 | 0.698 | 4.22 | I provide opportunities for active learning such as cooperative learning, brainstorming, problem-solving, inquiry | 1 |
| 6 | 84 | 0.763 | 4.18 | I use various and appropriate reinforcement techniques | 9 |
| 7 | 83 | 0.723 | 4.17 | I correct learners' errors to enhance the learning process | 6 |
| 8 | 83 | 0.785 | 4.16 | I consider different levels of thinking in children through | 11 |

| | | | | | |
|----|----|-------|------|---|----|
| | | | | various activities and assignments | |
| 9 | 82 | 0.723 | 4.13 | I provide children with immediate feedback | 7 |
| 10 | 81 | 0.733 | 4.09 | I monitor children's work in groups | 8 |
| 11 | 81 | 0.817 | 4.08 | I allow for multiple perspectives during discussions | 13 |
| 12 | 81 | 0.781 | 4.06 | I allow children to ask questions, inquire, and express opinions | 4 |
| 13 | 80 | 0.758 | 4.02 | I ensure children understand information through cognitive construction | 5 |
| 14 | 79 | 0.820 | 3.98 | I encourage children to self-reflect on their ideas | 12 |

The results of the table above indicate that items (2, 10, 14) ranked the highest in the third domain (Classroom Interaction). Item number (2) ranked first with a mean of 4.33 and a percentage weight of 87%, item number (10) ranked second with a mean of 4.31 and a percentage weight of 86%, and item number (14) ranked third with a mean of 4.27 and a percentage weight of 85%. Items (4, 5, 12) received the lowest three ranks in the third domain (Classroom Interaction), where item number (4) ranked twelfth with a weighted mean of 4.06 and a percentage weight of 81%, item number (5) ranked thirteenth with a mean of 4.02 and a percentage weight of 80%, and item number (12) held the last rank with a mean of 3.98 and a percentage weight of 79%.

Domain Four: (Evaluation) The researcher extracted the means, standard deviations, and ranks for the responses of kindergarten teachers to the domain of Evaluation.

Table Number (9) Shows the items of the fourth domain (Evaluation) ranked according to the mean, percentage weight, and standard deviation.

| Rank | Percentage Weight | Standard Deviation | Mean | Item | Sequence in Research Tool |
|------|-------------------|--------------------|------|--|---------------------------|
| 1 | 87 | 0.682 | 4.34 | I consider individual differences among children through diverse questioning | 2 |
| 2 | 86 | 0.796 | 4.31 | I use a portfolio to monitor children's performance | 11 |
| 3 | 85 | 0.757 | 4.26 | I reinforce children's strengths during the experience | 9 |

| | | | | | |
|----|----|-------|------|---|----|
| 4 | 84 | 0.757 | 4.23 | I vary the tests to suit the content of the educational material | 8 |
| 5 | 83 | 0.700 | 4.19 | I employ evaluation results to improve the learning process | 1 |
| 6 | 83 | 0.666 | 4.18 | I ensure to compare children's performance levels with themselves | 10 |
| 7 | 83 | 0.681 | 4.15 | I evaluate children's performance through various methods such as performance records, discussions, written tasks, and classroom activities | 3 |
| 8 | 82 | 0.782 | 4.11 | I link evaluation to educational objectives | 4 |
| 9 | 81 | 0.788 | 4.09 | I encourage children to self-evaluate | 5 |
| 10 | 80 | 0.820 | 4.04 | I use observations to assess children's performance during the experience | 7 |
| 11 | 79 | 0.832 | 3.96 | I use continuous evaluation during the class (formative assessment) | 6 |

The results of the table above indicate that items (2, 11, 9) achieved the top ranks in the fourth domain (Evaluation), with item number (2) occupying the first rank with a mean of (4.34) and a percentage weight of (87%). Item number (11) secured the second rank with a mean of (4.31) and a percentage weight of (86%), and item number (9) attained the third rank with a mean of (4.26) and a percentage weight of (85%). Items (5, 7, 6) were placed in the last three ranks in the fourth domain (Evaluation), where item number (5) was in the ninth rank with a weighted mean of (4.09) and a percentage weight of (81%), item number (7) was in the tenth rank with a mean of (4.04) and a percentage weight of (80%), and item number (6) was in the last rank with a mean of (3.96) and a percentage weight of (79%).

The second objective (Identifying the statistically significant differences in the degree of practice of kindergarten teachers in constructivist teaching according to the variable of educational qualification (Bachelor – Master) for each domain in the research tool) To identify the statistically significant differences in the degree of practice of kindergarten teachers in constructivist teaching according to the educational qualification variable (Bachelor – Master) for each domain in the research tool, the researcher used the independent samples t-test, and table number (10) clarifies this.

Table No. (10) Shows the results of the independent samples t-test to test the significance of the difference according to the educational qualification variable (Bachelor – Master) for each domain in the research tool.

| Domains | Sample | Academic Achievement | Mean | Standard Deviation | t-Value | Statistical Significance |
|------------------------------|--------|----------------------|-------|--------------------|---------|--------------------------|
| Planning | 66 | Bachelor | 49.05 | 3.274 | 11.587 | Significant |
| | 34 | Master | 41.88 | 2.086 | | |
| Preparation and Introduction | 66 | Bachelor | 43.98 | 3.648 | 11.248 | Significant |
| | 34 | Master | 36.53 | 1.768 | | |
| Classroom Interaction | 66 | Bachelor | 62.35 | 5.125 | 11.451 | Significant |
| | 34 | Master | 51.32 | 3.169 | | |
| Evaluation | 66 | Bachelor | 48.77 | 3.858 | 10.831 | Significant |
| | 34 | Master | 40.91 | 2.404 | | |

The results of the table above indicate the presence of statistically significant differences between the mean scores in the practice of kindergarten teachers' constructivist teaching according to the variable of academic qualification across all domains, with statistical significance favouring those with a bachelor's degree. The calculated t-values for the domains of Planning (11.587), Preparation and Introduction (11.248), Classroom Interaction (11.451), and Evaluation (10.831) are all greater than the critical t-value of 1.96 at a significance level of 0.05 and 98 degrees of freedom.

The third objective (Identifying statistically significant differences in the degree of practice of kindergarten teachers in constructivist teaching according to years of experience):

To achieve this goal, the researcher used one-way ANOVA to explore statistically significant differences in the degree of practice of kindergarten teachers in constructivist teaching based on the variable of years of service. Tables number (11) and (12) elucidate this.

Table number (11) shows the mean scores and standard deviations according to the years of service variable.

| Years of Service | Count | Arithmetic Mean | Standard Deviation |
|-------------------|-------|-----------------|--------------------|
| Less than 5 years | 36 | 195.83 | 18.920 |
| From 5-10 years | 29 | 186.66 | 14.085 |
| From 10-20 years | 35 | 194.86 | 20.438 |
| Total | 100 | 192.83 | 18.494 |

Table number (12) displays the results of the one-way ANOVA test to examine the significance of differences in the degree of practice of kindergarten teachers in constructivist teaching based on the variable of years of service.

| Variable | Sum of Squares | Degrees of Freedom | Mean Squares | P-value | Statistical Significance |
|------------------|----------------|--------------------|--------------|---------|--------------------------|
| Years of Service | 1574.273 | 2 | 787.136 | 2.365 | Not significant |
| Error | 32285.837 | 97 | 332.844 | | |
| Total | 33860.110 | 99 | | | |

The results from the table above indicate no statistically significant differences in the degree of practice among kindergarten teachers in constructivist teaching based on the variable of years of service. The calculated F-value (2.365) is smaller than the critical F-value of 3.07 at a significance level of 0.05 and degrees of freedom (2-97).

Discussion of Results

This segment deliberates upon the findings related to the first objective, which proposed an inquiry into the extent of kindergarten teachers' engagement with constructivist teaching practices from their perspective. The study reveals that the degree of involvement by kindergarten teachers in constructivist teaching was notably high. This assertion is substantiated by the arithmetic mean of the study sample's responses across all survey domains, which stood at 48.056, coupled with a standard deviation of 5.448. The domains were ranked in descending order, with classroom interaction leading at an arithmetic mean of 58.44 and a standard deviation of 7.098, indicating a high level of engagement. This was followed by planning, with a mean of 46.48 and a standard deviation of 4.664, and assessment, which recorded a mean of 45.97 and a standard deviation of 5.210. The domain of preparation and introduction also exhibited a high engagement level, with a mean of 41.35 and a standard deviation of 4.820. These results suggest that kindergarten teachers substantially implement constructivist teaching, attributed to their adherence to constructivist theory. Their practices in classroom interaction, planning, assessment, and preparatory activities reflect a significant alignment with the principles of constructivist learning, underscoring the teachers' awareness of the critical importance of the

kindergarten stage, which demands considerable attention. Kindergarten teachers are seen as playing pivotal roles as supervisors, guides, and facilitators in the learning process, in accordance with constructivist theory. The current study's findings align with those of Assaf and Salman (2021).

Regarding the second objective, concerning the variable of academic qualification, the results indicate statistically significant differences in the arithmetic means of kindergarten teachers' engagement in constructivist teaching across all domains, with the differences favoring those holding a bachelor's degree. The researcher attributes this to bachelor's degree holders possessing higher academic qualifications and experience, which positively influence their classroom practices. These practices are aligned with constructivist ideas, particularly in making the learner the central focus of the teaching process. As for the variable of years of experience, no statistically significant differences were found in the degree of engagement in constructivist teaching among kindergarten teachers, suggesting that all kindergarten teachers, regardless of their years of service, exhibit a high level of engagement in constructivist teaching. The researcher posits that kindergarten teachers generally apply constructivist teaching skills to the same extent, regardless of their years of experience. Furthermore, the provision of training courses by the Ministry of Education is designed to accommodate teachers' varying levels of experience, offering support for newer teachers and skill enhancement for more experienced ones. Integrating kindergarten teachers into these training courses facilitates the exchange of ideas and discussions of experiences among them.

Recommendations:

1. The Ministry of Education should organize training sessions on constructivist teaching strategies to enhance the pedagogical skills of educators.
2. Kindergarten teachers should be encouraged to employ teaching strategies that are rooted in the principles of constructivist theory, fostering a learning environment that is both engaging and effective.

Proposals for Further Research:

1. Investigate the challenges faced by kindergarten teachers in implementing constructivist teaching methodologies, exploring their perspectives to identify potential barriers and solutions.
2. Examine the attitudes of kindergarten teachers towards constructivist teaching strategies, assessing their willingness to adopt such approaches and the impact on their teaching practices.

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Appendices

Names of the Experts for the Constructivist Teaching Questionnaire among Kindergarten Teachers

| No. | Instructor Name | Academic Title | Specialty |
|-----|-------------------------|---------------------|---------------------------|
| 1 | Amal Dawood Salman | Professor | Kindergarten |
| 2 | Duha Adel Mahmoud | Professor | Educational Psychology |
| 3 | Kulthum Abdul Awn | Assistant Professor | Kindergarten |
| 4 | Anwar Fadel | Assistant Professor | Kindergarten |
| 5 | Kulthum Abdul Awn | Assistant Professor | Kindergarten |
| 6 | Marwa Adel Khalaf | Assistant Professor | Kindergarten |
| 7 | Baida Abdul Salam Mahdi | Assistant Professor | Kindergarten |
| 8 | Su'ad Mohsen | Assistant Professor | Kindergarten |
| 9 | Jouri Ali Mueen | Assistant Professor | Kindergarten |
| 10 | Ilham Fadel | Assistant Professor | Psychological Counselling |

Appendix No. (2) Final Version of the Constructivist Teaching Questionnaire

Dear Teacher, Greetings,

Subject: Constructivist Teaching Questionnaire for Kindergarten Teachers

The researcher aims to conduct her study titled "The Practice of Kindergarten Teachers in Constructivist Teaching from Their Perspective." Therefore, you are kindly requested to read the statements and select the appropriate option, noting that there are no right or wrong answers. All your responses will be respected and valued by the researcher and will only be accessed by her for scientific research purposes. Hence, there is no need to mention your name. What is required is to honestly answer these statements in a way that reflects your

personal impression. The researcher also requests that you do not leave any item unanswered by marking in front of each statement and under the option that you believe fully applies to you.

Academic Qualification:

- Intermediate
- Institute
- Bachelor's
- Master's
- Doctorate

Years of Service:

- Less than 5 years
- From 5 to 10 years
- 10 to 20 years
- More than 35 years

| No. | Statements | Very Highly Applies | Highly Applies | Moderately Applies | Slightly Applies | Very Slightly Applies |
|-----|--|---------------------|----------------|--------------------|------------------|-----------------------|
| 1 | I analyse the content of the experience into its main elements and ideas. | | | | | |
| 2 | I consider the coherence and integration between concepts and ideas when planning the experience. | | | | | |
| 3 | I pay attention to the children's needs when planning the experience. | | | | | |
| 4 | I ensure to formulate the content of the experience in the form of educational problems related to the children's lives. | | | | | |
| 5 | I consider the individual differences among children when planning the experience. | | | | | |
| 6 | I formulate the objectives of the experience clearly and specifically. | | | | | |
| 7 | I provide educational resources to enrich the learning environment. | | | | | |
| 8 | I involve children in setting classroom discipline rules. | | | | | |
| 9 | I involve children in planning the course of the experience. | | | | | |
| 10 | I ensure that the objectives of the experience are aligned with the assessment. | | | | | |
| 11 | I consider the division of class time to achieve educational objectives. | | | | | |
| 12 | I present real problems related to the experience. | | | | | |
| 13 | I prepare for the experience with an appropriate and interesting | | | | | |

| | | | | | | |
|----|---|--|--|--|--|--|
| | introduction, such as (presenting a collection of stories, videos, games, and competitions). | | | | | |
| 14 | I connect the current material with other experiences. | | | | | |
| 15 | I stimulate the child's previous experiences related to the new experience topic. | | | | | |
| 16 | I practice flexibility during preparation and introduction based on the children's responses. | | | | | |
| 17 | I focus on innovation and creativity in preparation and introduction methods, avoiding stereotypes. | | | | | |
| 18 | I choose preparation that is appropriate for the educational stage. | | | | | |
| 19 | I adhere to the appropriate time duration for preparation and introduction. | | | | | |
| 20 | I ensure the accuracy and correctness of information during preparation and introduction. | | | | | |
| 21 | I consider a gradual transition to the new experience topic. | | | | | |
| 22 | I provide opportunities for active learning for children such as (cooperative learning, brainstorming, problem-solving, inquiry, etc.). | | | | | |
| 23 | I connect between previous and subsequent experiences for children. | | | | | |
| 24 | I consider the children's needs and interests through the proposed learning activities. | | | | | |
| 25 | I allow children to ask questions, make inquiries, and express their opinions. | | | | | |
| 26 | I ensure children understand the information through cognitive construction. | | | | | |
| 27 | I correct learners' mistakes to enhance the learning process. | | | | | |
| 28 | I provide children with immediate feedback. | | | | | |
| 29 | I monitor children's work in groups and guide them during the activity. | | | | | |
| 30 | I use various and appropriate reinforcement methods. | | | | | |
| 31 | I stimulate children's motivation through presenting situations related to their daily lives. | | | | | |
| 32 | I consider different levels of thinking among children through various activities, tasks, duties, and questions. | | | | | |
| 33 | I encourage children to reflect introspectively on their thoughts. | | | | | |

| | | | | | | | |
|----|---|--|--|--|--|--|--|
| 34 | I allow for a diversity of viewpoints during discussions. | | | | | | |
| 35 | I use verbal and non-verbal communication skills during the session. | | | | | | |
| 36 | I employ assessment results to improve the learning process. | | | | | | |
| 37 | I consider the individual differences among children by presenting a variety of questions. | | | | | | |
| 38 | I assess children's performance through different methods such as (performance records, discussions, written work, classroom activities). | | | | | | |
| 39 | I connect between assessment and educational objectives. | | | | | | |
| 40 | I encourage children to self-assess. | | | | | | |
| 41 | I use continuous assessment during the session (formative assessment). | | | | | | |
| 42 | I use observations to assess children's performance during the session. | | | | | | |
| 43 | I diversify tests to match the content of the learning material. | | | | | | |
| 44 | I reinforce strengths in children during the experience. | | | | | | |
| 45 | I focus on comparing a child's performance level with themselves. | | | | | | |
| 46 | I use a portfolio to follow up on children's performance. | | | | | | |