The effectiveness of an instructional design based on transformational learning theory in the achievement of students in faculties of education

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ABSTRACT
Summary
The current study aimed to determine the effectiveness of an instructional design based on the transformational learning theory in the achievement of students in faculties of education. It is taught according to the educational design that has been built, and an officer is studying according to the usual method, and the educational design has been built according to the specified stages, parity between groups, controlling extraneous variables, deviating from the scientific material of the design, formulating behavioral goals according to Bloom's classification of the field of knowledge, preparing teaching plans, and activities The educational tool, and building the research tools represented by the achievement test, and its validity and stability were verified, the coefficients of ease and difficulty, and the discriminatory power, and the experiment was applied to the students and the statistical analysis of the test scores, which proved the effectiveness of the educational design, and the presence of statistically significant differences at the level (0.05) between the mean The scores of the experimental group and the average scores of the control group in achievement and in favor of the experimental group.

Keywords: instructional design, transformational learning theory, achievement

CHAPTER-1
INTRODUCING THE SEARCH
First: The problem of the research: Problem Of The Research
The current era is witnessing a huge revolution in the field of technology and information that has greatly affected all areas of life, especially in the field of education. To simplify science and encouraged the need to pay attention to the scientific activities that the learner must practice by providing an open educational environment that works on developing all aspects of the learner's personality (cognitive, emotional, skill) that educators emphasized in their scientific research, and to refer to the importance of education, which is considered the first and main responsible factor On the development of thinkers and learners who are proud of their principles and values, and education exercises its role through special institutions represented in schools, institutes and universities, which work on educating individuals and developing their scientific thinking, but these institutions are not integrated in terms of preparation and development in order to face the rapid development witnessed by science in The current era, it suffers from some shortcomings with regard to the method of providing knowledge to the learner, some of them still suffer from the difficulty of transformation. From philosophies based on tradition to philosophies based on innovations to advance the reality of education (Atiya, 2018: 19), the issue of education is the issue of the entire nation, where the future of the nation depends on the quality of education and the competence of individuals provided by educational institutions, so all educational institutions must It strives to solve this problem and advance the educational reality and get out of the framework of tradition and move to the level of creativity, innovation, focus and development of scientific thinking among students and make them thinkers and rely on self-learning methods in their learning and focus on developing all aspects of the learner's personality (cognitive, emotional, and skill (psychomotor) instead of Focusing on the cognitive aspect only, which is concerned with the available information within the syllabus and works to transfer it to the learner in a traditional manner that depends on memorization and does not take into account the needs and tendencies of students (Nazal et al., 2015, p. 17), and through the researcher's review of a number of results Previous studies and literature, which concluded that university students suffer from difficulties in their learning process resulting from the use of some cadres. Teaching traditional methods and methods based on memorization and memorization in the education process and not focusing on activating the process of self-learning, which is confirmed by the results of Iraqi research conducted in this field and reviewed by the researcher, including the study (Al-Hassan, 1987), and the study (Suhaila and Abbas, 2019), and based on the Therefore, the problem of the current research was identified in answering the following question: What is the effectiveness of an

educational design based on the transformational learning theory in the achievement of students in faculties of education?

Second, the importance of research
In view of the scientific and technical development and acceleration witnessed by the current world, which necessitated us to keep pace with it, in order to confront and realize the components of life in all its aspects, whether scientific or practical. Knowledge and not receiving it ready from the teacher, through independence in their knowledge, and their dependence on themselves in building their scientific expertise, through the teacher's focus on adding teaching strategies that stimulate scientific thinking among students, and encourage self-learning, in which the learner seeks to add His skills and experiences in order to acquire knowledge, values and skills, and to practice mental activities and mental processing of the information he receives, for the events of the learning process and in a manner that takes into account the experiences of learners and the individual differences between them, (Al-Saadi and Al-Tamimi, 2020: 12), the transformational learning theory provides a different perspective from those special theories With today's prevailing approaches to adult education, which emphasize information storage and retrieval, older theories have not been centrally concerned with the structure and process of interpretation and reorganization of learning. In contrast to modern theories that pay attention to knowledge resulting from self-reflection, including attention to the way we express ourselves, our assumptions about learning and the nature of knowledge, freedom from the constraints of traditional learning, and the activation of our roles And our expectations that influence the nature of the learning process, emancipatory knowledge is knowledge gained through self-reflection based on critical reflection, which is different from knowledge gained through memorization. (Mezirow, 1991:20), and transformative learning differs from traditional learning in that the first (transformational learning) works to bring about a shift in the learner's understanding and view of the experiences and events he is going through, as it represents a deep stage in the learning process in which knowledge is translated from many new angles and creating A change in the vision of things, transformative learning aims to achieve the learner's autonomy and encourages him to think based on contemplation and criticism through the use of the method of dialogue and discussion, and to encourage the learner to be creative and innovative, and this is confirmed by modern education, which aims to build a learner able to understand how the occurrence of The learning process, through a deep understanding of knowledge and the formation of a new and distinctive point of view and making appropriate decisions. (Al-Maloudh, 2019: 101)

Third: Research Objectives:
The current research aims to:
1- Building an instructional design according to the transformational learning theory.
2- Recognizing the effectiveness of instructional design in the achievement of students of the College of Education.

Fourth: Research Hypotheses:-
1. There are statistically significant differences at the level (0.05) between the average scores of the experimental group students and the average scores of the control group students in the pre-test in achievement.
2. There are statistically significant differences between the average scores of the experimental group students and the average scores of the control group in the post test in achievement.

Fifth: Limitations of Research
1. **Human limits:** undergraduate students.
2. **Spatial boundaries:** Karbala University / College of Education.
3. **Time limits:** the academic year (2022-2023)
4. **Scientific Frontiers:** Teaching Methods

Sixth: Define terms
1- Instructional Design: Known by:
A. **(Saraya, 2007):** "An organized process that aims to set standards and specifications to choose the most appropriate educational methods and resources, and to determine the appropriate educational environments that work to achieve the best educational outcomes for students, in accordance with their cognitive characteristics, and to translate these methods in the form of diagrams and guides." It guides teachers in the learning process, to achieve the desired goals of the learning process. (Saraya, 2007: 24)
Procedural definition: a set of educational lessons prepared according to the transformational learning theory, and according to the educational objectives, activities and pre-defined methods, which aim to improve academic achievement and develop reflective thinking among students.
Transformative Learning: Known by:

(Thomas R. Bosbro, 2019): "A redefinition of education to become an education for the sake of thinking and understanding, in a way that enables the learner not to look and think about what he invents today or recognize it today through the eyes of the past, meaning that it is education that leads to real change, and it is the opposite of what education has produced." The traditional mind consists of minds that repeat themselves and have the ability to memorize information, not to process and interpret it and produce meaning that is translated into practices in his life" (Thomas R. Bosbro, 2019)

4. Achierement defined by:
A. (Shehata and Al-Najjar, 2003): It is the amount of information, knowledge or skills that the student obtains, expressed in grades in the test prepared in a way that can measure the specified levels. (Shehata and Al-Najjar, 2003, p. 89)
B - (Aiken, 2007) as: "The degree of success or achievement of an individual in a specific field or project" (Aiken, 2007, p. 411).

Chapter II
Theoretical basis
Transformational Learning Theory:
The transformational theory developed by Jack Mezirou in North America in the late 1970s gained widespread acclaim and resulted in a flowering of diverse achievements after forty years, and became the dominant theory in the field of adult education at the international level, which led to an increase in interest in transformative learning, emphasizing its importance In international conferences and the gradual building up of a research community dedicated to developing this learning, Mezirow identified some basic concepts which he subsequently corrected or modified The syntax was formulated over an expanding period of time between the end of the 1970s and early 1990s rather than being constructed in a deductive fashion, that the massive spread Due to its attractiveness as a major key to transformation, its ease of application and its highly adaptability seem to have helped and allowed the independent development of transformational theory, which is based on the construction of two components of learning events that form part of its frame of reference: meaning schemas and meaning perspectives, which are as Explained by Mezirow are two terms that include the following: Meaning schemes mean how something works, and how The way to do something, how to understand something, or how to understand oneself. Perspectives of meaning are a more basic belief than a schema of meaning, which is the structure of assumptions through which one can experience the past, assimilate it, and transform it into a new experience. (Howie& Bagnall, 2013:6)

Essential Elements of Transformational Learning Theory
1. Critical Thinking: Individuals need to think critically about their experiences, which in turn leads to a change of perspective. This process enhances the learner's self-awareness and promotes a deeper level of self-understanding.
2. Rational Disclosure: This component of TLT refers to experiences that can lead to TLP, basically, Rational Disclosure is presented in theory under some form of discussion with other people focusing on personal and social beliefs and assumptions, which are made In a logical and rational way to identify any biases, weaknesses, or inconsistencies that allow the individual to consciously address them.
3. Centralization of Experience: The final component of Mezirow's Transformational Learning Theory includes what people do, what they believe in, what they can tolerate, the way they react to particular situations, their desires and their point of view. (Al-Shalawi, 2021: 18)

Transformational learning
Is a relatively new view of the learning process formulated by Jacques Mezzero in the early 1970s, referring to how learners interpret their experiences and thus create meaning from new information. Transformative learning focuses primarily on adult and youth learning and the idea that learners can change their thinking based on New information, Mezirow's theory emphasized that students have good learning and teaching opportunities resulting from their past experiences, and found that reflecting on and reviewing these experiences can lead to a shift or change in their understanding and assimilation of knowledge. (Cranton, 1997:24), Mezirow found in the transferable learning theory that transformative learning is based on taking the things that students have already learned during their previous experiences and allowing new information resulting from critical thinking, and reflecting on things to transform our thinking into what we believe and understand at the time The present and that there are two main pillars in transformative learning: active learning (active learning) and communicative learning (40 Badara, 2011): The term active learning refers to the learner being the center of the learning process, working to stimulate learning to meet his different needs, and providing Supporting him to develop his competencies, by allowing him to apply what he learned from previous experiences in new situations, while providing him with full readiness to participate in the lesson (Joel & Harold, 2003:63). There are many ways

through which active learning is applied, such as, Using the element of competition among students, or investing the students' talents in classroom activities appropriate to the objectives of the lesson, or assigning them to scientific projects or reports aimed at activating their scientific thinking, and motivating their creative abilities, (Liujian et al., D.T., 51) Education, 2003 AD: "Students exercise an active role in the learning process by interacting with what they see, hear or read in the classroom, through reading, observing, generating ideas, making judgments, and examining hypotheses to solve problems, through the method of teamwork and under the guidance of and guidance from the teacher" (Shehata and Al-Najjar, 2003: 115), while the term communicative learning refers to the way or how people communicate their desires, needs and feelings, enhance their personal experiences, and social cooperation, which are conditions for effective participation in criticism-based learning, both of these focus They are important in transformative learning where students need to be able to focus on different types of understanding and be able to form new perspectives that are logical and meaningful to them. (Talor, 2017:32) (Osher et al, 2020:19)

The importance of transformative learning:
Transferable learning can bring a range of different benefits to adults who want to be successful in their field. Transferable learning can help an individual to be more important, independent, and ultimately responsible. The importance of transformative learning can be determined by the following points:
1. Better problem-solving apps
2. Critical thinking and experiences are very important when it comes to providing core scientific competencies.
3. The competencies gained through transformative learning are strong enough to accelerate scientific investigations in terms of providing the competencies required in the workplace.
4. Change the usual views about the learning process and about the learner himself, to be the one who is always admired by his colleagues for a set of different personal and behavioral characteristics, to the work ethic.
5. Such type of learning can have a significant impact in areas other than education, extending its benefits to the field of work and affecting the usual views of employees, and thus transformational learning theory is often needed to train this role model.
6. Developmental transformation problems are combated through critical thinking and perspective shift method, thus, life can be reconstructed.
7. Adaptation to work and the workplace, as there are many transitional points in work and social life that may not be ended by traditional thoughts and actions.
8. Overcoming many problems such as adapting to the job and the workplace.
9. Social education projects, transformative learning may be useful for applications in which contemporary individuals are more effective, critical and creative such as adaptation, participation in civil society.
10. Transformational learning is essential for professional educators, as it cannot happen as long as learning, understanding and application do not change. (LARSON,2016:7)

The stages of transformative learning
According to Mezirow: Jack Mezirow describes ten stages that are considered essential to achieve transformative learning, and these stages are determined by the following points:
1. The existence of a problem, or as miseru called it (a confusing dilemma).
2. Self-examination
3. Critical evaluation of assumptions.
4. Linking or sharing.
5. Explore new roles.
6. Development of the action plan.
7. Acquisition of knowledge and skills.
8. Experimenting with and evaluating plans.
9. Developing competence and self-confidence in new roles.
10. Reintegration into life based on new horizons (Al-Shalawi, 2021: 19) (BIASIN, 2018: 13)

Environments That Promote Transformational Learning
❖ Encourage students to think about and share their feelings and thoughts.
❖ Be holistically oriented and think of the entire student in the learning process.
❖ Raising awareness of alternative ways of learning.
❖ Promote a safe place for exploration through trust and care.
❖ Help students question reality in ways that promote shifts in worldview.
❖ Facilitating relationships between students and others. (Badara, 2011:33) (Said, 2021: 474)

Dimensions of Transformational Learning Theory
1. Psychological dimensions (changes in self-understanding): Students change their view or perception of themselves, based on transformative learning theory, individuals must be able to think independently to truly learn, rather than being dictated by society or culture what people should think And they feel it, they must develop their own meanings and interpretations.
2. Social Dimensions (Review of Social Systems and Beliefs): Shifts in beliefs such as personal values and assumptions, rather than accepting the status quo, students change their perception based on their personal experience.
3. Behavioral dimensions (lifestyle changes): Transformational learning also helps students change their lifestyle, for example, they may change certain habits based on the information they have received, and it may also change their behavior and affect their actions. (Cranton & King, 2003: 34) (Taylor, 2008: 6)

The teacher's roles in transformative learning:
1. Transformational teachers create learning environments in which teaching is both an art and a science, which means that students are exposed to an important topic in a way that taps into their emotions and past experiences.
2. It provides different learning opportunities for students through their practice of educational activities.
3. The transformational teacher plays different roles, including: a guide, a guide, and a motivator for students towards the learning process.
4. Providing students with opportunities to practice critical thinking and benefit from their practical experiences, which enhances their confidence in themselves and their abilities.
5. Teachers allow students to construct new meaning and perspectives that may be different from what they have previously learned.(2015: 11, Christie et al)

Learner roles in transformative learning:
➤ Learners construct their own meanings by asking questions, validating assumptions, adding, and critical thinking.
➤ Learners should set standards in the classroom that include civility, respect, and responsibility to help each other learn.
➤ Learners welcome diversity within the learning environment and aim for peer collaboration.
➤ Learners criticize their own assumptions in order to transform their indisputable frame of reference through communicative learning.
➤ Learners should work to think critically about the assumptions that underlie intentions, values, beliefs, and feelings.
➤ Learners engage in an objective reframing of their frames of reference when they think critically about others' assumptions.
➤ Actively participate in dialogue and discussion, through which learners are able to validate what is being communicated to them. Dialogue provides the opportunity to critically examine evidence, arguments, and alternative viewpoints, thus promoting collaborative learning.
➤ The Rational and Emotional Role Both rational and emotional play a role in transformative learning. (Elliris, 2001: 82-83)

Design Instructional
Instructional design represents the most important components of the modern educational technology system, in addition to the importance of design, development, use, management, and evaluation. The term instructional design, in terms of its methodology and mechanism of application, is synonymous with the term instructional engineering, where the instructional designer is considered an architect of the learning process and its output, in addition to the need for the educational process to have organized foundations, scientific expertise and high skill, so that the results are based on correct foundations, as is the case for science Engineering (Saraya, 2007: 21), and instructional design represents the process of using our knowledge of how people learn to guide our choices and instructional strategies to meet learners' needs and desired learning outcomes. This science is the procedures concerned with choosing the educational material, which is represented in (programs, tools, materials, and curricula) in it It aims to design, analyze, organize and work on developing it up to the evaluation stage, with the aim of facilitating the learning process, in addition to its role in helping the teacher to select the best learning methods that require less time and effort. Psychology and education, which led to the emergence of many different theories in the field of learning, which aimed to explain how the learning process occurs. (The Resource, 2016:30)

Define instructional design:

There are many and varied definitions of educational design, as it was defined by (Darwaza, 1986) mentioned in (Al-Heila, 2016) as "a science and technology that cares and researches in describing the best learning methods that aim to achieve the best required educational outcomes and work to develop them according to certain conditions" (Al-Hela, 2016). : 33), and the Association for Educational Communications and Technology (AECT) defined it as "a process aimed at defining the conditions for learning and drawing the elements and procedures of the educational process in light of the specific objectives" (Association for Educational Communications and Technology, AECT), while (Saraya, 2007) defined instructional design as "An organized process that aims to set specifications and criteria for choosing the most appropriate environments, methods and educational resources, to achieve desirable educational outcomes based on specific conditions for students and in accordance with their cognitive characteristics, and to translate these methods into the forms of guides and schemes to guide the learning process" (Saraya, 2007: 24).

Chapter III
Research Methodology and Procedures
Building instructional design:

To achieve this goal (building instructional design) according to the transformational learning theory, and after reviewing the literature and previous studies concerned with instructional design, the foundations and steps used to achieve that goal, which showed its positive impact in the field of education, and based on that, the researcher adopted the design that is theoretically based In its construction to the following stages:

First: the planning stage
Second: the implementation phase
Third: the calendar stage

The first stage: Planning,
which includes the following steps:

1.Analysis of students' needs:

This step includes a set of survey studies and procedures carried out by the designer, aimed at identifying the needs of students whose absence may affect the learning process. It is mentioned (Al-Hilah, 2003: 118) that it is necessary to satisfy the students' important needs before Begin to fulfill the less important needs.

In order to identify the students' needs, the researcher prepared an exploratory questionnaire for the third stage students that includes an open-ended question to determine their needs, in addition to preparing another questionnaire that was directed to the teachers of the third stage students to determine their needs from the teachers' point of view. The two questionnaires were presented to a group of experts and specialists to show their validity. After that, it was presented to students and teachers, and based on that, the needs that must be provided when teaching the teaching methods subject to third-year students were identified.

2. Content analysis:

This step included analyzing the content based on the vocabulary of the teaching methods material specified by the sectoral committee of the faculties of education, and distributed among various sources, so the researcher decided to define the educational material, taking into account the logical sequence in the presentation of the scientific material, and in light of the needs and characteristics of Students, specific goals.

3. Determining educational goals:

educational goals are defined as a set of phrases that clarify what the students' behavior will be after they acquire educational experiences, whether inside or outside educational institutions. Educational goals are an essential element of the educational process, in the light of which educational strategies and activities are determined. And in a manner that suits the educational content, abilities and characteristics of the learner, and the possibilities available to apply them, so it constitutes an essential and important step in the instructional design.

The researcher derived the educational objectives of educational design from the general objectives of the teaching methods subject to be taught to students of the third stage in the faculties of education, which were determined by the sectoral committee of the faculties of education. Their opinions on its validity, and its representation of the educational design content, and their observations and scientific opinions were taken to become the final version.

4. Analysis of the educational environment:

the educational environment includes the place in which students are located, in addition to the social and psychological factors that affect the educational environment, in terms of students' interaction with the teacher and with each other, and what may affect the events of the learning process, and what hinders the implementation of the learning process . (Qatami et al., 2009: 133)

Therefore, it is necessary to work on analyzing the learning environment in which the educational design will be applied, which is represented in the College of Education - University of Karbala, and because the researcher is

a lecturer in the mentioned college, she was able to see the college building and its scientific departments, the number of students for the third stage, and the availability of appropriate educational means to apply the design In addition to making sure that there is a special library for the department to provide scientific resources and references related to the subject of teaching methods, and the lectures were determined based on the weekly lecture schedule, with one lecture per week at a rate of (two hours) for each group of research, in addition to the researcher verifying the extent of The classrooms are suitable for the number of students, which helps in providing an appropriate learning environment for the application of instructional design strategies.

5.Determining the input behavior:

the learner is the center of the learning process, so the instructional designer needs to determine the input behavior of the learner by identifying the characteristics of the students (the research sample) that will be applied to the educational design, and their willingness to learn and gain experience, in addition to the importance of this stage as being It gives an important indicator indicating the extent to which the design, materials, and methods used in it are compatible with the students' tendencies and common characteristics. The entrance behavior was determined by conducting a pre-test for students to identify what information they possess about the teaching methods subject.

6. Determining Teaching Strategies:

Teaching strategies are represented by a set of procedures, methods and techniques that are determined by the teacher in order to bring about the learning process, and these procedures are characterized by sequence and sequence in order to achieve the desired goals, and teaching strategies vary and vary according to the prevailing philosophies (Al-Hilah, 2016: 150), In order to determine the teaching strategies adopted in the current study, and to identify their suitability for the scientific material, and the levels of students, the researcher prepared a questionnaire that includes a set of teaching strategies that were presented to a group of experts and arbitrators in the field of curricula and teaching methods. To find out the validity and suitability of the study material and sample, and based on their opinions and observations, the strategies of the current study were identified.

7. Determining and selecting educational aids:

This step includes preparing the appropriate educational materials and techniques, from materials devices that the teacher uses in facilitating the delivery of the scientific material to the students, and achieving the objectives of the lesson.

8: Determining the educational activities:

The activities include the set of actions and actions practiced by students, whether they are inside or outside the classroom, and include the mental or physical effort exerted by students in order to achieve the objectives of the lesson, so it is an essential element of the learning process, as it helps students To learn faster and more and keep an impact on the learner's cognitive structure, by involving them in the lesson and leaving them from the role of the recipient of knowledge to the role of the seeker of knowledge, in addition to its role in attracting the students' attention and exciting them to the learning process. (Al-Laqani, 1995,: 6), the educational design included a set of scientific activities that the researcher used in order to activate the role of students, including assigning students to prepare scientific reports in light of the vocabulary of the study material, making models of annual and daily plans for certain topics, and activating the role of seminars Scientific discussion on the topics of the lesson, whether it is between the students and the professor or between the students themselves.

The second stage: Execution,

which includes the following steps:

1. Organizing the educational content:

the content includes a set of facts, concepts and information, in addition to the skills that must be developed for students. The process of defining the content is important to achieve the objectives of the educational design. The researcher worked on defining the content based on the content's validity, its relation to behavioral objectives, and its suitability. Due to the nature and culture of society, taking into account the students' previous experiences and their future needs, the educational content is represented in the vocabulary approved by the sectoral committees of the College of Education for the academic year (2022-2023), where the researcher worked on preparing the study material by referring to the *special sources and references. The vocabulary of the material, and these terms were distributed over the time period specified for the implementation of the educational design, taking into account the number of lessons and weekly hours.

2. Determining the learning resources:

The learning resources include all that the teacher uses from scientific resources, educational materials, devices and tools that help in presenting the lesson in a better way. Therefore, the researcher used some of those sources and tools in presenting and clarifying the vocabulary of the scientific material, to facilitate its better and more effective delivery to students. .

3. Formulating behavioral objectives:

A behavioral objective is a linguistic formulation that aims to describe a specific behavior of students that is characterized by the possibility of observing and measuring it, and the student is expected to be able to perform

it at the end of the educational situation, and it is precisely defined, and it deals with behaviors or responses, whether mental or emotional, They can be observed in the behavior of the learner, and they are necessary, as achieving them in the lesson leads to the achievement of broader goals, which are educational goals, which in turn lead to the achievement of educational goals. Without behavioral goals, the teacher cannot direct the learning process towards the right path.

Behavioral goals were determined and formulated in light of the vocabulary of the specific study material, which amounted to (125) behavioral goals according to Bloom's levels (remembering - understanding - application - analysis - installation - evaluation) in the cognitive field, and a questionnaire of behavioral goals was presented to a group of experts and specialists in the field of knowledge. Methods of teaching, measurement and evaluation, to get to know their views on their validity and the soundness of their linguistic formulation, and their representation of the vocabulary of the study material.

4. Building the reference spoken tests:

they are tests designed to measure the educational goals that have been achieved, measure the extent of students' learning, and identify the effectiveness of the learning methods adopted by the teacher. Therefore, the researcher worked on preparing a set of tests such as the entrance behavior test to identify the experiences and information that the students possess Precedent, and implicit tests (daily - monthly) aimed at providing feedback to the learner during the learning process, in addition to the post-graduate preparation, which is applied at the end of the implementation of the instructional design, and this test aims to judge the effectiveness of the instructional design prepared by the researcher.

5.Preparation of teaching plans:

The researcher worked on preparing a set of teaching plans for the subject, where the number of teaching plans reached (13) for the experimental group, including the steps of the specific strategies, and (13) for the control group, which were prepared in light of the steps of the usual method. So that the total of study plans is (26) plans, and the plans were presented to a group of experts and arbitrators, specializing in curricula, teaching methods, measurement and evaluation, Annex (4) to identify their validity and suitability for the content.

6. Preparing educational activities:

The activities that were identified included a set of class discussions and thought-provoking questions, activating the role of dialogue between groups, and assigning students to extra-curricular activities represented in preparing scientific reports according to the vocabulary of the subject.

The third stage: Evaluation

This stage includes the following steps:

Introductory evaluation: The formative or introductory evaluation begins at the beginning of the process of constructing the instructional design, to identify the apparent validity of the design, by presenting it to a group of experts and arbitrators to determine its suitability for the specific objectives and its suitability for the application.

1. Formative evaluation:

This type of evaluation accompanies the process of constructing the educational design, in all its stages, up to the final image of the design, in order to identify the positive points of the design and the flawed weaknesses that may affect the safety of its construction. It can be addressed through the information provided by the designer's feedback, which can be enhanced by conducting daily and monthly tests for students to determine their understanding of the subject's topics.

2. Final (final) evaluation:

The formative evaluation aims to judge the extent to which the educational goals that were previously determined have been achieved, in order to identify the effectiveness of the educational design prepared by the researcher in the subject of teaching methods, in reflective thinking and achievement among third-year students, by During the implementation of the design, the application of the reflective thinking scale and the achievement test.

3. Feedback:

Feedback is an important element because it works on evaluating and developing the inputs of the teaching process, with the aim of improving its outputs and ensuring the achievement of the learning process goals. The elements of feedback were the results of the evaluation process for the study tools, the equalization of groups, and the daily and monthly formative tests conducted, in addition to To the questions raised by students during the teaching process and the practice of educational activities, in addition to the directions and instructions of some specialists.

Instructional Design Experiment:
First: Research Methodology:
In her current research, the researcher relied on:

1- The descriptive approach: the researcher used the descriptive approach in constructing the instructional design.

2- The experimental approach: to achieve the research objective, hypotheses and procedures represented by the following:

1. Experimental design:

Experimental design is defined as "the research structure or plan through which answers are reached about the research questions and hypotheses, or it is the researcher's thinking and planning for what he will do with the data he has collected about a phenomenon in order to be able to answer the questions and hypotheses of his research" (Matthews and Ross, 2016, p. 148), so the researcher should choose the experimental design that fits with the research problem, its objectives and hypotheses, and be suitable for testing the validity of the hypotheses, and the characteristics of the sample. The experimental design is one of the best designs and the most efficient research methods. In terms of accuracy, it can be considered as a benchmark for comparison with the rest of other research designs because it is characterized by internal validity.

The researcher adopted the design of equivalent groups with partial control with two groups, experimental and control.

2. The research community:

It represents all the elements, individuals, and things, who have the same characteristics and distinguish them from others that can be observed and measured, so the researcher must be familiar with the characteristics of his research community. (Abu Allam, 2006, p. 154)

The current research community included the students of the third stage of the history department in the faculties of education in Iraqi universities for the academic year (2022-2023), the morning study.

3.The research sample:

Sample The research is a group of individuals, things or elements, derived from the original society, and representing it in real terms. Experimental random drawing.

4. Equality of research groups:

The current research requires working to achieve parity between the students of the research groups (experimental and control) in terms of matters that may affect the results of the experiment and their treatment, because of this of great importance, as well as being a prerequisite for experimental research, with the aim of obtaining Correct and accurate results. (Abu Allam, 2006: 207)

The chronological age calculated in months:

The researcher distributed forms to the students, the research sample, which included a set of information to identify the level of differences between their ages, Annex (9), as well as using the registration department at the college to verify the students' information, in order to ensure its accuracy. Parity among students in the age variable, and after conducting the statistical analysis process using the t-test for two independent samples, it was found that there are no individual differences between the students in the age variable.

Academic level of students:

The researcher relied on the students' scores (experimental group and control group) for the second stage in identifying the differences between students at the academic level, and after conducting the statistical analysis process using the T-test for two independent samples, it was found that the students are equivalent in the academic level.

Intelligence:

To achieve equivalence between the research sample students in the variable of intelligence, the researcher worked on applying the Philip Carter test of intelligence designed for university students, which he adapted to university students (Al-Khadrawi, 2012), and the test consisted of 30 paragraphs containing different forms and alternatives. To answer them, the researcher applied the intelligence test to the research sample and the statistical analysis was conducted, and it was found that the students are equal in the level of intelligence.

5.Adjusting for extraneous variables (external safety of the experiment):

❖ Processes related to maturity: The exudation factor is the physical, mental, or psychological changes that occur to students during the period of application of the experiment, which may affect the degree of their response if the experiment takes a long time to reach the results (Abbas et al. 2007, p. 177), and this did not affect The factor is based on the results of the experiment, because the experiment was applied in the same school year, and it did not take long.

❖ Students' dropout (experimental extinction): During the period of its application, the experiment was not exposed to cases of dropouts by students, except for some individual cases that occurred as a result of students' absence due to special circumstances.

❖ Confidentiality of the experiment: As a result of the researcher's work as a lecturer in the department, the students did not doubt that they were exposed to an experiment, which affects its results.

Teaching students: The researcher worked on teaching students herself to ensure that the results of the experiment were not affected by the individual differences between the teachers.

❖ Study subject: The two research groups studied the same teaching material, which is the content of the teaching methods subject that was previously identified.

❖ Class distribution: The researcher worked on teaching students according to the weekly schedule prepared by the department, at a rate of two hours for the experimental group and two hours per week for the control group.

6. Research requirements:

The research requirements were as follows:

❖ Identification of the scientific subject: The scientific subject, as defined by the researcher, represented all the content of the teaching methods subject.

❖ Defining behavioral objectives: Al-Baha formulated (125) behavioral objectives within the topics of teaching methods, which included all levels of Bloom (remembering - understanding - application - analysis - synthesis - evaluation), and their validity and safety of formulation were confirmed after being presented to a group of specialists in the methods of teaching. Teaching, measurement and evaluation.

❖ Preparing teaching plans: The plan represents a preconceived notion of what the teacher will do during the teaching process of sequential and sequential steps in order to achieve the lesson objectives that were identified (Jaber, 2005, p. 302). Therefore, the researcher worked on preparing (26) study plans according to the strategies that It was previously neutralized, presented to the experts and validated.

7. Search tools:

1. Preparation of the achievement test

The objective of the test: The test aims to measure the achievement of the third stage students in the history department in the content of Teaching Methods for the academic year (2022-2023).

Determining the content of the test: The researcher determined the scientific content of the test, which is the content of the teaching methods subject.

Determining test levels: The researcher committed to measuring the six levels of the (Bloom) classification included in the content of the material.

Preparing a table of test specifications:

The specification table is a two-dimensional outline, one of its dimensions represents a list of objectives or learning outcomes to be achieved, and the second dimension represents the main and sub-exam content elements. It includes all the objectives that have been identified, and to save the effort and time spent in the correction process by the teacher (Sulaiman and Abu Allam, 2010, p. 239)

The researcher worked on preparing a table of specifications for the content of the material and for the specified levels (Table 13), and the test was prepared for students according to the results of the table and the relative importance specified for each level, and the validity and extent of its representation of the content and its coverage of the specified levels were verified.

Formulation of test items:

The researcher prepared an achievement test consisting of a set of objective items of the type of choice from multiple and with four alternatives, in order to reduce the guessing effect that students may resort to, with a number of essay items to measure the higher levels of students (analysis, synthesis, evaluation), which amounted to a number of The achievement test items are (50) items, with (40) objective items and (10) essay items, as shown in Appendix (15)

The validity of the test

The honesty indicator is one of the important things that must be taken into account in the test, as it indicates the extent of its validity in performing its function, and that the test that is not honest will eventually lead to wrong results about the characteristics of the students on whom the test was applied (Omar et al., 2010, p. 190), and the researcher worked to verify the validity of the test by relying on two types of validity:

❖ First: Content validity : This type is one of the most important types of honesty that the achievement test must possess, and it means the ability of the test to measure what it was designed for. according to its relative importance.

❖ Second: Face Validity**:** It is the general appearance of the test, i.e. the test's occasion with the purpose for which it was prepared. To ensure this type of honesty, the researcher worked on presenting the test to a number of specialists in curricula and teaching methods to show its validity, safety of formulation and suitability for the purpose for which it was prepared. The percentage of experts' agreement on the validity of the test came (85%), and the researcher worked on taking their observations and amending some of the test paragraphs that need to be modified.

Clarity of the test instructions:

To ensure the clarity of the test instructions, the researcher prepared a set of instructions attached to the test questions, in which the method of answering the test was clarified, with the students' notice of the need to answer all the paragraphs.

Preparation of the test correction key:
The researcher prepared the achievement test correction key Annex (14) in order to refer to it in the correction process because it provides accuracy, speed and fairness in distributing scores to students, where the test scores were distributed as follows:

Multiple-choice items: It included (40) grade items and assigned one point for the correct answer, and zero for the incorrect answer.

The article paragraphs: included (10) questions and were assigned two marks for each correct answer, so that the total score for the test was (60) degrees.

6- The exploratory application of the test:
The researcher aimed by applying the achievement test on an exploratory sample to achieve the following:

1. Ensure that the test instructions are clear.

2. Indicate the time that students need to answer the test items.

The researcher applied the test to a random exploratory sample consisting of (30) male and female students from the third stage - College of Education for Human Sciences at the University of Babylon, who had studied the same scientific material that was studied by the experimental group and the control group at Karbala University. For the purpose of determining the time that students need to answer the test, the researcher used the following equation:

The total time of the students
average response time =
The total number of students

The average response time was (65) minutes, and it became clear that all of its paragraphs were clear.

Statistical analysis of the test items:
The test was applied to another sample that consisted of (130) male and female students from the History Department at the College of Education - University of Baghdad, in order to identify the coefficients of ease and difficulty, the strength of paragraph discrimination, and the effectiveness of the wrong alternatives. The researcher herself corrected the test papers, taking into account the exclusion The answers left unanswered, and the students' scores were arranged from the highest degree to the lowest degree, with the adoption of 27% for the upper group, and 27% for the lower group.

Difficulty Coefficient: The difficulty coefficient of the objective test items was calculated, where the value of the difficulty coefficient ranged between (0.38-0.66) Appendix (16), and for the essay items its value ranged between (0.42-0.52) Appendix (17), and accordingly the test items are good and acceptable.

The discriminatory power of paragraphs
The discriminatory power of substantive paragraphs ranged between (0.29-0.75) Supplement (16), while the discriminatory power of article paragraphs reached (0.29-0.39) Supplement (17), it represents an acceptable percentage and falls within the specified range.

The effectiveness of the wrong alternative
was identified by arranging and dividing the students' answers into two groups, upper and lower, and calculating their effectiveness. Those with higher levels, and their values for all paragraphs were appendix (18), which indicates that the alternatives are effective and acceptable.

The stability of the test: The used the half-split researcher to calculate the stability of the objective questions, which is done by dividing the students' test papers into two halves according to the even and odd paragraphs of the test and their correction. The value of the correlation coefficient (0.84) was corrected by the Spearman-Brown equation, so the value of the reliability coefficient was (0.91), which indicates that the test is characterized by stability and valid for application to research groups.

In order to verify the stability of the correction for the article paragraphs, the researcher used two types of agreement:

The corrector itself, the researcher used the Pearson correlation coefficient to ensure the stability of the paragraphs, and the coefficient of the stability of the article items reached (0.93)

Stability with another corrector: The researcher relied on this type of stability by agreeing with another teacher to correct the article paragraphs, according to the correction criteria that the researcher used, and after applying the Pearson correlation coefficient between the researcher's correction and the correction of the other corrector, the reliability coefficient reached (0.87).), which indicates that the vertebrae are characterized by stability.

the fourth chapter
Presentation and interpretation of results
First: Presentation and interpretation of the results:
1. The results of the first goal (building an educational design based on the theory of transformational learning in reflective thinking and achievement among students of faculties of education).

This goal was verified according to what was presented in the research methodology and procedures, through the procedures for building instructional design, which were addressed in the third chapter.

2. The results of the second objective (recognizing the effectiveness of instructional design based on the theory of transformational learning in reflective thinking and achievement among students of faculties of education), the researcher reached the results of this goal with answer sheets (research sample) for third-stage students, the experimental group and the control group for the achievement test that - There are statistically significant differences at the level (0.05) between the average scores of the experimental group and the average scores of the control group in achievement, in favor of the experimental group.

CONCLUSIONS:

In light of the research, the researcher reached a number of conclusions, as follows:
- ❖ The effectiveness of instructional design based on transformational learning theory in the achievement of experimental group students.
- ❖ The possibility of adopting the current educational design by teachers of Teaching Methods in Iraqi universities.
- ❖ The strategies adopted in the instructional design that were applied to the students of the experimental group had a greater impact on their understanding and assimilation of the scientific material, through the practice of classroom activities and discussions, more than the students of the control group.

Recommendations:
- ❖ Adopting the instructional design based on the transformational learning theory in teaching Teaching Methods to the third stage students, because of its role in raising the level of their academic achievement.
- ❖ Working to provide educational environments based on students' practice of activities by involving them in the education process and developing their own abilities.
- ❖ Orienting those concerned with curriculum affairs with information on the importance of transformative learning in order to take this into consideration in curriculum design.

Suggestions:
- ❖ Conducting other studies to identify the effectiveness of instructional design based on transformational learning theory with other variables such as motivation and concept acquisition.
- ❖ Conducting other studies to identify the effectiveness of instructional design based on the transformational learning theory for other school stages and in different subjects.
- ❖ A comparison between the current design based on transformational learning theory and other designs.

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