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An Instructional Teaching- Learning Design Based On Integrative Approach And Its Impact On The Pivotal Thinking And Achievement Motivation Among Students Of The Fourth Stage In The College Of Basic Education

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Abstract
The aim of this research is to identify an educational design based on the integrative approach and its impact on the pivotal thinking and motivation of achievement among the students of the fourth stage in the College of Basic Education of the University of Anbar. To achieve this, the researcher followed the experimental approach, where the research sample consisted of (66) students from the fourth stage, distributed into two experimental and control groups and randomly, and the research tool consisted of a test built by the researcher to measure the pivotal thinking of the research sample and the test consists of (35) A paragraph of the type of multiple choice has been verified honesty and consistency and conduct statistical analyzes of the test paragraphs, and the researcher prepared a measure of motivation of achievement to measure the extent of their motivation towards the material and be (20) paragraph.

Un Diseño Didáctico De Enseñanza-Aprendizaje Basado En Un Enfoque Integrador Y Su Impacto En El Pensamiento Fundamental Y La Motivación De Logro Entre Los Estudiantes De La Cuarta Etapa En La Facultad De Educación Básica.

Resumen:

El objetivo de esta investigación es identificar un diseño educativo basado en el enfoque integrador y su impacto en el pensamiento fundamental y la motivación del logro entre los estudiantes de la cuarta etapa en la Facultad de Educación Básica de la Universidad de Anbar. Para lograr esto, el investigador siguió el enfoque experimental, donde la muestra de investigación consistió en (66) estudiantes de la cuarta etapa, distribuidos en dos grupos experimentales y de control y al azar, y la herramienta de investigación consistió en una prueba construida por el investigador para medir El pensamiento fundamental de la muestra de investigación y la prueba consiste en (35) Se ha verificado la honestidad y la coherencia de un párrafo del tipo de opción múltiple y se realizan análisis estadísticos de los párrafos de la prueba, y el investigador preparó una medida de la motivación del logro para medir el alcance de su motivación hacia el material y el párrafo (20).

Introduction:

Appropriate statistical methods were used to extract the results.

1. There is a statistically significant difference at the level of significance (0.05) between the mean scores of the fourth stage of the experimental group (who studied according to the instructional learning design) and the control (who did not study according to the educational instructional design) in the test of pivotal thinking and for the benefit of the experimental group.

2. There is a statistically significant difference at the level of significance (0.05) between the mean scores of the fourth stage of the experimental group (who studied according to the instructional learning design) and the control (who did not study according to the educational instructional design) in the motivation of achievement and for the benefit of the experimental group.

The research concluded with a set of recommendations and proposals.

Research problem: The problem of the current research is that our educational institutions are still relying on memorization in the teaching of

science for not using modern teaching methods in which teaching aids help the learner to understand the content of the teaching material offered by the teacher of the article, the researcher noted through his experience in teaching at the College Basic education for several years reduced the level of motivation of achievement, which led to their weakness in thinking, and the reduction in the content of the curriculum to be taught to students is not the prerogative of the teaching staff and so can in another way the teacher can participate in solving the problem through Dimm the subject in teaching methods and methods that take into account the characteristics of learners and the nature of the teaching material, or in the redesign of the course material and this is what the current research seeks, so the current research is the following question:

What is the effect of an instructional-learning design based on the integrative approach in the pivotal thinking and motivation of achievement among the students of the fourth stage in the College of Basic Education?

The importance of the research: The importance of the research can be clarified through the theoretical importance and practical importance as follows:

Theoretical importance: The theoretical importance of the current research lies in the following:

1. The current research within the limits of the researcher science builds an educational instructional design according to the integrated approach to develop pivotal thinking and raise the motivation of their achievement, as well as that the researcher did not find a local study on the research variables in society.

2. The current era is characterized by rapid cognitive progress, and that this cognitive development of the most important features of the current era, so that the research is an attempt to know the level of basic thinking skills they have.

3. Build an educational design based on the integrative curve to see how it affects the educational process, in terms of thinking and motivation of achievement.

Applied importance: can be clarified as follows:

1. Current research may benefit researchers and those interested in education to pay attention to the learner in all its aspects.

2. It may be useful in the present research results, recommendations and proposals to focus on the integrative approach, and its implementation and achievement by teachers in order to raise their level of thinking and on the other hand raise the level of motivation of students.

3. This research and its results can be useful for curriculum planners in building and improving the curriculum.

1. Building an instructional design based on the integrative curve of the fourth stage students.

2. Identify an instructional design based on the integrative curve on the thinking of the fourth stage students.

3. Identify the educational design of learning based on the integral curve on the motivation of achievement for students of the fourth stage.

Research Hypotheses: In the light of the research objectives, the following zero hypotheses were formulated:

1. There is no statistically significant difference at the level of significance (0.05) between the mean scores of the fourth stage students of the two experimental groups (who studied according to the instructional learning design) and the control (who did not study according to the educational instructional design) in the test of pivotal thinking.

2. There is no statistically significant difference at the level of significance (0.05) between the mean scores of the fourth stage of the experimental groups (who studied according to the instructional educational design) and the control (who did not study according to the educational instructional design) in the achievement motivation.

 search limits :

1. Time Limits: The research was applied in the first semester of the academic year 2018-2019.

2. Spatial limits: The research was applied to the students of the fourth stage in the College of Basic Education of the University of Anbar.

3. Objective limits The research was limited to the vocabulary of the methods of teaching science.

 Definition of terms: The following is a definition of the meanings of the terms contained in the body of this research:

First: Educational Design:

1. (Al-Hailah, 1999) as: "Science and technology seeks to describe the best educational methods that achieve the desired learning outcomes and development, according to certain conditions, and this science is a link between theoretical and applied sciences in the field of education" (Al-Hailah: 1999 , 27).

2. (Salama, 2001) as: "Science examines all appropriate procedures and methods to achieve desirable educational outcomes, and seeks to develop

them, under certain conditions" (Salama, 2001: 19).

The researcher adopted the definition (Salama, 2001) as a theoretical definition because it is closer to the design in the current research.

The researcher is defined as procedurally: "The process of creating the educational environment for students of the research sample depends on the organization of the educational content of the teaching methods of science scheduled for the fourth stage of the Department of Science in the Faculty of Basic Education.

Second: the integral curve defined by:

1. (Abu Harb, 2011) as: presenting knowledge and putting it in a structured context in a coherent concept and experience, covering different subjects, without any division or division of knowledge "(Abu Harb, 2011: 222)

2. Titi (2006) defines him as: Researching the relationship between curriculum experiences and content components, to help the learner in building a more unified view that guides his behavior and his dealing with life problems, by linking and integrating several subjects, around one particular axis aimed at building unity . (Al-Titi, 2006: 81)

The researcher defines the integral curve in theory: The researcher adopts the definition of (Abu Harb, 2011) as a theoretical definition.

The researcher knows it procedurally: It is an integrated system that provides knowledge in the form of concepts related to each other to help the learner to form an idea to solve the problems of life they face.

Third: Pivotal Thinking: Known by:

1. Mara zona & Other, 1988): "A set of mental processes that we call intelligence processes that address content within multiple processes, manifested in eight basic dimensions, including twenty-one sub-mental processes." Marazona & Others1988,32))

2. (Abu Jadu and Muhammad, 2007) as "the mental processes we undertake to collect and store information through analysis, planning, information organization, decision-making and evaluation procedures" (Abu Jadu and Muhammad, 2007: 77).

The theoretical definition of this thinking, the researcher adopts the definition of Mara zona & Other, 1988)) and adopts a theoretical definition of it, as it fits with the requirements of this research because it is the first to collect the classifications and identified eight basic dimensions.

The researcher defines the axial thinking procedurally as: the ability of students of the fourth stage to respond to the test paragraphs of the skills of axial thinking (concentration skills, information gathering skills (remembering skills, information organizing skills, analysis skills and generation

skills and integration skills and evaluation skill) that will be built by the researcher For the purposes of this research it is measured by the total score obtained by the research sample.

Fourth: Achievement Motivation:

- (Mackland, 1985)

"A virtual formation means a sense of evaluation of performance in terms of competition to attain the criteria of excellence. This feeling reflects two basic components: the desire to succeed and the fear of failure as the individual strives to make the utmost effort and strive for the best and superiority over others" (Shawashra, 2007: 3).

- (Saleh, 1988)

(It is a dynamic relationship between the individual and the environment and includes a certain type of response learned as a result of a state of tension and this situation is eliminated by saturation of this impulse or reduction) (Saleh, 1988: 335)

- Theoretical definition

  The researcher adopted the definition (Mackland, 1985)

- Procedural definition

This is the degree to which students get the fourth stage of learning mathematics on the measure of motivation of achievement prepared by the researcher for this purpose.

Theory Background:

 First: Educational Design:

The design of education is a science that emerged at the end of the twentieth century, and is known as the science of education design, is the one that describes and determines the procedures related to the selection of educational material in terms of (tools, materials, programs, curricula) to be designed (analysis, organization, development and evaluation) . In order to design curricula that help to learn better, and help the teacher to follow the best teaching methods in the least time and effort. (Resourcefulness, 2008: 30).

Stages of educational design

 Most of the design models of education in its construction is based on what is known as the general model (ADDIE), which is an abbreviation of the initials of the terms that constitute the five stages of the model, namely:

1 - Analyze)): It is an analysis of the needs and components of the system such as analysis of work, tasks, goals of students, community needs, place, time, materials, budget and students' abilities.

2 - Design or preparation (Design): It includes identifying the problem, whether training related to work or related to education and education, and then identify the objectives, strategies, and different educational methods necessary to achieve the goals.

3. Development: According to this skill, teaching design is translated into actual teaching materials and strategies, making sure that they are appropriate for learners.

4. Implementation: The beginning of the actual application of design using the materials and strategies that have been prepared, and harness all human staff, and educational learning resources to support and strengthen the educational process.

(Rawadi et al., 2011: 170) (Zeitoun, 2001: 483)

5. Evaluation: (Evaluation) includes three types of evaluation:

A - preliminary evaluation: It is carried out before the provision of educational design in order to evaluate the content and objectives of the rectifier through which the learner is ready on the subject.

(Kiswani et al., 2007: 198)

B - structural evaluation: a set of procedures carried out by the teacher and related to assess the effectiveness of the teaching material designed, and its quality during the learning process (resourceful, 2008: 210).

C - the final evaluation (the final): is the process of evaluation carried out by the teacher, after the end of the educational situation to evaluate the educational process after the end of learning and be a one-time (Jama, 2010: 182).

6 - Feedback: (Feedback) means information returned from the outputs, which refers to the level of achieving the objectives, leading to a review of all elements of the system in order to identify the shortcomings, and then adjusted (Rawadia et al., 2011: 147).

Types of feedback are as follows:

• Corrective feedback: Correcting errors in students' answers.

• Reinforcing feedback: providing students with reinforcing statements in order to continue and strengthen good performance, and to provide an opportunity to increase the probability of these performances in subsequent tests.

Formal feedback is to provide students with information about their performance with recommendations to improve subsequent achievement. (Katami et al., 2008: 251)

First: Integrative Approach:

 The world now lives in an era of accelerated scientific and technological progress, so it is necessary to quickly build a human learner to keep pace with this progress, and this is what made most countries are looking at how to prepare their learners scientific preparation and technology to meet this rapid progress, has emerged calls for the development of teaching methods from In order to make the desired change for learners, to be able to make a decision that is consistent with the requirements of the age in which they live, hence the emergence of thinking in teaching approaches starting from the learners and their interests and provide the teacher and the learner the opportunity to make a decision, with regard to the composition of the curriculum and how To deal with its content, and spread a new idea on the educational arena among specialists in education, the idea of linking science with technology and society, and defined (Jaji and Alhadabi, 2008) as: a system that provides knowledge, in a functional pattern, and in the form of interrelated concepts covering different topics, without the division of knowledge or Fragmentation, making it easier to understand and apply in everyday life (Al-Jajji and Al-Hadabi, 2008: 106)

 Therefore, in the mid-1970s, the STS movement began as a new entrance in scientific education and as a new entrance to the teaching of science. At the end of 1970, the STS trilogy remained a title and slogan for an entrance to the teaching of science (Fensham, 1988). , 346-347).

  In this way, it is essential to link the learner with the reality of his environment and society in which he lives, which helps him to face any problems and issues that may hinder his career and make appropriate decisions about them (Al-Naimi, 2016: 48).

Integration - oriented objectives

- For the teacher: aims to help him to use different methods in education and enrich the subjects of the book and the ability to plan and evaluate, for the work of students and interaction with their ideas.

- For students: aims to train them to take responsibility, and the ability to communicate with others, teamwork and evaluation of their work.

- For school management: aims to help the principal to work with teachers as a team, planning and evaluation of their work and improve communication and communication, with the local community, and meetings with parents to discuss matters of their children.

- For the educational environment: aims to show the work of students, to show their importance and value and design fun corners in the classroom and take advantage of the building of the school and in educational activities.

Characteristics of the Integrative Approach (Science, Technology and Society Entrance):

1. Where the learner identifies the problem he is facing that suits his interests so that he depends on the local sources he has obtained and that can be relied upon to solve the problem.

2. The active participation of the learner in the search for knowledge, which can be applied in solving real problems.

3. Extending learning beyond the classroom and school and focusing on the impact of science and technology on students themselves.

4. Consider the content of science as being beyond the concepts that students can learn to emphasize professional awareness, especially those related to science and technology (Zeitoun, 2002: 36).

The nature of the integration input (STS)

The integration approach is a modern trend in the development of science education and scientific education and includes the following:

1. STS Introduction: It is defined as a modern trend that is concerned with teaching the content of science in a realistic technological and social context.

2. Clarify the relationship between science and technology and society and the student: The American historian of technology expresses the relationship between science and technology and society that: (the common denominator between science and technology is society). (Abdul Salam 2009: 433-434).

Principles and principles of integration approach (STS)

Zidler (2003: 221) outlined the principles and principles of the integration approach:

1. Sustainable development: Education in accordance with the approach to integration involves a systematic study.

2. Decision-making: Includes a clear understanding of how decision-making is made at the national, regional and local government levels.

3. Integration of Science and Values: The approach of integration tries to interpret ethical and mental and this differs from traditional education.

4. Employment Skills: Works on the use of moral and intellectual skills in determining the pros and cons of any technological progress.

5. Nature of science: It is based on observation of what is happening in the world and it is subject to criticism and influence culturally, socially and environmentally.

(Al-Naimi 2016: 60-61)

Integration Portal Objectives (STS)

1. Education is to develop the learner's awareness of the nature of science and technology in addition to the mutual relations between them and society.

2. Helping the learner to make the decision, and achieve personal goals, learning science prepares the student to use science and technology, to develop his life and keep pace with global technological development.

3. Help the learner to participate in social issues and develop appropriate solutions (Ramsy, 1993: 235-238)

Qualities of individuals in the integration portal (STS)

• Characterize the values of scientific and technological research when solving the problems associated with them and understand the nature of science and the ability to follow it.

• Acquisition of science processes and scientific thinking skills and use them to solve the issues and problems faced and to take appropriate decisions in the situations of his daily life.

• Identify, collect, analyze and evaluate sources of scientific and technological knowledge.

• Understand the nature of technology and the most important features and the ability to deal with the tools and equipment that he needs in his working life and daily. (Capacity: 2008: 68-69)

Pivotal thinking:

Pivotal thinking skills are discrete cognitive processes that can be considered the building blocks of thinking and have a strong foundation in theoretical and research materials (Qawasmeh and Abu Isla, 2013: 243).

Key and sub-axial thinking skills

In the framework of research by Robert Marazona and his colleagues, the skills of pivotal thinking were identified as (8) key skills, including (21) sub-skills, including these skills (Marzano, 2000: 89).

First: Focusing Skills:

1 - Defining Problems Skill: This skill refers to the work to clarify the confusing or controversial situations by the learner.

• What is the problem in question? Who has the problem? When can a solution be found? -Is it important to solve this problem?

2 - Skill Setting Goals (Skill Setting Goals): Skill setting goals refers to the educational outcomes expected to be achieved by the learner after the passage of educational experience. (Razuki, 2013 :: 22)

Second: Information Gathering Skill: This skill refers to the ability to gather information, events and facts. It consists of two sub-skills:

Observing Skill This means the skill of collecting new information and data by using the five senses (sight, hearing, taste, smell, and touch).

2 - Formulating Questions Skill: This skill involves clarifying issues and meanings through the survey method. Well-formulated questions in turn guide learners to important information (Marzano, 112: 1995).

Third: Remember Skills: It consists of two sub-skills:

1. Encoding Skill: Encoding refers to the process of storing information In long-term memory, by attaching small pieces of information to one another, it is easily retained and retrieved (Abu Jadu and Muhammad, 2010: 87 -85).

2 - Recalling Skill: Is the process of retrieving or recalling information from long-term memory to short-term memory easily, and thus depends largely on the way adopted by the learner in the storage of information in terms of organization and coding. (Absi, 2009: 225).

Fourth: Organizing information skills)). These are:

1 - Skill Comparing: It is concerned with the organization of information and the development of knowledge, and requires comparison to identify similarities and differences between two or more things.

2. Skill Classifying: A mental process used to group things based on their qualities.

3 - Skill ordering (Skill Ordering): which in turn aims to subject objects and vocabulary and stimuli to the organization according to a certain standard.

4 - Representing Skill: The learner can change the form of information coming from the external environment through the formation of relationships between the elements (Abujado and Mohammed, 2007: 88-93).

Fifth: Analysis Skills (Analyzing Skills): The skill of analysis consists of four sub-skills, namely:

Identification of attributes and components It is possible to identify the characteristics, parts or something of the rules of knowledge experiences stored by him and then work to clarify the parts that make up all.

2. Identifying relationships and patterns Skill

This skill enables the learner to clarify internal relationships which in turn determine patterns and relationships. Relationships can be a vertical relationship, cause, result, partial, all-part relationship, or transformative.

3. Identifying Main Ideas Skill: The process of identifying key ideas is a case of identifying relationships and patterns.

Identification Errors Skill: This skill is based mainly on the detection of errors in logical presentation, which in turn includes a set of calculations,

information and procedures (Marazona et al., 2004: 16).

Sixth: Generation Skills)):

1. Inference skill: The skill of reasoning is the production of meanings, information, and new ideas, including:

A) Inductive proof: A process of mental reasoning aimed at reaching uncles, or conclusions thus exceed the limits of information provided by observations in different cases.

B) deductive proof: A process of logical reasoning aimed at reaching a new knowledge, or a conclusion based on the premises provided or hypotheses and information available.

 2 - Predicting Skill: This skill appears when the learner by predicting, or imagine certain results based on certain situations.

3 - skill expansion (Elaborating Skill): This skill is represented by the ability of the learner to give more explanation and information, and details that are relevant to previous knowledge in order to improve the understanding of learners.

 Seventh: Integrating Skills:

 Skill Summarizing: It is related to the abbreviation of a subject in a certain number of words in the language of the summary or a certain number of lines so that the summary appears in the ideas and the basic elements of the subject.

 12 - Reconstructing Skill: A process of modifying and changing the cognitive structure of the learner to include new information as it matures and interacts with the environment.

Eighth: Skills Evaluating: The skill of evaluation is represented by two sub-skills:

 Criteria Skill Establishing Criteria Skill: The skill of setting standards is the ability of the learner to develop things so that the standards are objective.

Verification Skill Verification is the ability of the learner to ascertain the accuracy and objectivity of the allegations. (Abu Jadu and Muhammad, 2010: -100-102)

Previous studies: The researcher presents in this section previous studies related to the subject of research, which contributed to enrich the research in a number of axes, namely:

The first axis: Studies dealing with the integrative trend:

1. Study (Anzi 2011):

This study was conducted in Saudi Arabia. The study aimed to reveal the degree of practitioners of the Arabic language for the integrated approach

in teaching the third grade students in Qurayyat province. The researcher adopted the descriptive analytical method. The sample of the study consisted of (15) teachers studying Arabic for the third grade in schools. The results showed that:

The absence of statistically significant differences between the mean estimates of the teachers of the Arabic language on the scale as a whole, and on all its fields due to variable (educational qualification, number of years of service).

2. Study (Osaimi 2013):

This study was conducted in the Kingdom of Saudi Arabia, and the study aimed to identify the training needs of Arabic language teachers in the field of (planning, implementation and evaluation) for the last three grades of the primary stage in the light of the integrative approach, the researcher used the descriptive analytical method, the sample of the study consisted of two groups reached the first group) 215) Arabic language teacher who study the last three grades of the primary stage, and the second group reached (61) educational supervisors distributed in three regions (Makkah, Jeddah, Taif) and after data processing statistically and the use of a number of means STATISTICAL, the results showed about:

- There are differences in the responses of the respondents according to the variable years of service in favor of those with experience (16 years and more).

- There are differences in the responses of the sample members according to the job variable, scientific qualification and training courses in the field of integrated lesson planning.

Axis II: Studies dealing with pivotal thinking:

1. (Hassan, 2014):

The study was conducted in Iraq. The aim of this study was to investigate the effect of PQ4R strategy on the achievement of biology and pivotal thinking skills in the second students. The sample size was (62) students and in the light of the results that were statistically processed. Biology and pivotal thinking skills for second graders in favor of the experimental group.

2. (Adhami, 2018): This study was conducted in Iraq, aimed at knowing the impact of a proposed strategy according to the model (Adi & Shire) in the achievement and pivotal thinking skills of the first grade students in the mathematics, the sample size was (63) In the light of the results that were statistically processed, the results indicated that there is a suggested strategy effect according to ADE & SHIRE model on the achievement

and pivotal thinking skills of the first grade middle school students for the experimental group.

The third axis: studies on the motivation of achievement:
1. (Alhashash, 2013): This study aims to build an educational program and measure its impact on the development of creative thinking skills and motivation of achievement and cognitive achievement of students with learning difficulties. The two groups were rewarded statistically in some variables, namely (the previous achievement of mathematics for sixth grade primary - intelligence - educational achievement of parents - diagnostic test - motivation of achievement) the researcher applied research tools on the two research groups and analyzed the results using statistical means and the results of the analysis resulted in a statistically significant impact of the strategic education model The achievement and motivation of achievement and problem solving were significant in favor of the experimental group.
2. (Zakzouk, 2007): This study was conducted in Egypt. This study aims to identify the impact of feedback using self-organized learning strategies on self-efficacy and achievement motivation for students with learning disabilities. The two groups were rewarded statistically in some variables, namely (previous achievement of mathematics for sixth grade primary - intelligence - educational achievement of parents - diagnostic test - achievement motivation) after the application of statistics resulted in the results of the experimental group studied according to the computer program and not self-organized education strategies on the scale of motivation Achievement.
Experimental design:
Building Design Tutorial: Integrative-Oriented Instructional Design:
Phase I: Analysis Phase:
1- The researcher reviewed several sources to obtain the required information, for that method and how to apply it.
2 - Determine the material: The researcher has chosen the curriculum and teaching methods for the vocabulary scheduled weeks (15) prescribed in the Department of Education in the Faculty of Education, which consisted of four chapters and was determined their educational content of weeks.
3- Analyzing the scientific environment and its educational needs: The students were identified the fourth stage in the College of Basic Education for the academic year (2018-2019) was the target group for the purpose of determining the needs of study, the researcher has reviewed the literature and

previous studies regarding the educational needs of students in design and orientation questionnaire open survey on A group of students of Science Department of the fourth stage College of Basic Education University of Anbar, who studied the general teaching methods in the previous stage, to express their views on the educational needs that they consider appropriate to teach curricula and methods of teaching science, and through To answer the open questionnaire, after analyzing the students 'answers to the questionnaire, the educational needs were summarized according to the students' point of view in terms of their importance. From the results of these responses, the researcher analyzed the environment and the educational needs of the students of the research sample as follows:

- Preparation of educational design in accordance with the new method based on the integration-oriented.
- Diversity in teaching methods and in the presentation of the lesson during the presentation of the subject.
- Sequential presentation of the content of the lesson (decision).
- Providing lectures, activities, teaching aids, videos and others to stimulate and excite to attract the attention of students and thus increase their interaction with the material.
- Preparation of various evaluation methods.
4. Present the theoretical design to experts from different disciplines.

Phase II: Planning and preparation:
The researcher built a test and developed a scale:
First: Pivotal Thinking Test
1. The purpose of the pivotal thinking test: The researcher built the pivotal thinking test, to measure the extent to which students of the fourth stage of pivotal thinking skills.
2. Formulation of the test Euphrates: The test was drafted and the number of paragraphs (35) paragraph of the type of test multiple, and formulated test items were:
- Take into account scientific and linguistic accuracy and suitability to the level of students.
- Specific, clear and ambiguous.
They were representative of pivotal thinking and the desired objectives measured, and were applied to a non-core sample (research), and the number of (35) students to analyze the paragraphs of the test statistically to find the coefficient of difficulty and ease and excellence and find the correlation coefficient and determine the response time on the test.

3. Preliminary picture of the test: The researcher built the test of pivotal thinking in the form of the initial consisting of (35) paragraphs of multiple choice, four alternatives, and after writing the test was presented to a number of experts for their opinion on the test, experts confirmed the validity The test paragraphs got a percentage (96%), and accordingly check the validity of the virtual test of the research.

4. Statistical Analysis: The test was applied to a sample of (35) male and female students for the purpose of statistical analysis in terms of:

A - Difficulty Coefficient: The difficulty coefficient was applied to each of the test items and ranged from (0.33-0.44) Table (1), (2006: 114) It is appropriate that the difficulty coefficient of the test items ranges between 0.85-0.15)).

B - The Coefficient of Discrimination: The Coefficient of Discrimination was applied to each of the test paragraphs and the value ranged from (0.44-0.81) Table (1), where (Dulaimi and Adnan 90: 2005), that the paragraph is good and acceptable if the coefficient of the discriminatory force (20 %) Or more .

C- Stability of the test was used (Koder Richard Son 20) and the degree of stability (87) which is high, which reassures the researcher on the application on the sample of the research.

5. Application of the test and correction: The test was applied to the research sample, where one grade for the correct answer and zero for the wrong answer was determined, and thus the test score ranges from (0-35).

Second: Motivation of achievement:

 The current research was adopted to measure the motivation of academic achievement among the students of the fourth stage, after the researcher reviewed the scales, where the scale prepared by the researcher in its final form consists of (20) paragraphs, where the scale obtained an agreement rate (89%) between the arbitrators, and that the scale includes five Responses (strongly agree, agree, unsure, do not agree too much, do not agree), the weight of the positive paragraph (1,2,3,4,5), the weight of the negative paragraph (5,4,3,2,1), and in these The present study the researcher presented the paragraphs of the scale to a number of experts and arbitrators to express their views on the suitability of the scale for students of the fourth stage, and rejected the paragraphs that do not suit the students of this Trip.

The first exploratory application of the measure of motivation of achievement

After presenting the scale to the arbitrators from the competent people

and making the appropriate adjustments according to the opinions of the arbitrators, the researcher applied it to a survey sample of (35) students from the fourth grade, to ensure the clarity of paragraphs and accuracy of paragraphs, and determine the time taken by answering the scale and time It took (28) minutes.

The second exploratory application of the measure of motivation of achievement

The aim is to find out the coefficient of stability of the motivation measure of achievement where the researcher applied it to a survey sample of (50) in the College of Education, University of Mustansiriya, and using the program (spss) and the use of the equation Alpha Kronbach where the coefficient of stability (87%), which is a high stability coefficient and became the scale in its final form The two groups were applied to measure the motivation of their achievement towards the material.

- The content of the article has been determined as mentioned earlier and how to present the subject in the new way in order to achieve the desired objectives of the integrative approach, and there are some conditions:

- Be linked to the objectives and content of the article.

- Enables active participation.

- To contribute to the achievement of the design objectives, which was developed for him, and the researcher has the following:

- Reproduction of the fees of the book and the text of the book device (Skinner).

- Provide instructional films about the material.

- Power point and Word program were used to display the material, charts, figures and drawings.

- Data show is equipped with the use of a laptop, and the desire of the researcher to achieve cooperative learning in the lesson and to think students in a cooperative way.

- Preparation of teaching plans The number of plans (30), divided into (15) lesson, provided to the experimental and control group.

The third stage: the use and implementation of the design: is one of the most important stages of the implementation of educational-learning design, effectively after more work and planning, and the researcher has implemented educational design on the research sample, including the provision of material according to the plans designed, and correct the course of students when doing a solution And evaluate their performance.

Experimental method :

Where the researcher followed this methodology to experiment with de-

sign on the research sample, to know the effectiveness it creates in the development of their pivotal thinking, because it is suitable for the nature and circumstances of the research, the experimental design was chosen after the test of two equivalents in a number of variables that may affect the experiment.

Research sample: The research community consisted of students of the College of Basic Education / Stage IV intentionally, because they are studying, the modalities of teaching science sample consisted of (66) students after excluding three students was hosting, where they were and distributed by branches randomly (32) students In the experimental group and (31) male and female students in the control group, the biology branch was randomly selected to be the experimental group, to be studied using the aforementioned design.

Parity of the two research groups: The researcher conducted the equivalence of the two groups to control the variables (age, intelligence, previous achievement).

Table (1) Equivalence of Research Sample Students in Age, Past Achievement and Intelligence

Statistic significanc at (0.05)	df	t-test for Equality Mean sig	Levene's Test Equality of Variance sig	Standar deviatio	Averag calculatio	Orde numbe	branc	grou	variabl
No sig	6	0.09	0.03	0.89	0.01	5.4	263.	3	biolog	Experiment	Chronologic
						5.4	263.	3	chemistr	Contro	ag
No sig	6	0.9	0.0	0.8	0.0	17.2	67.9	3	biolog	Experiment	Previous
						18.3	67.7	3	chemistr	Contro	collection
No sig	6	0.8	0.1	0.9	0.1	6.8	32.6	3	biology	Experiment	Intelligenc
						7.7	32.3	3	chemistr	Contro	otis lenno

Stage IV: Evaluation: The educational design was presented to the experts, giving their opinions in the design, with a copy of the scientific material was reproduced to see the suitability of the scientific material for the objectives and method of presentation and validity, and that it is appropriate according to the opinion of experts, and not to make any modification or change to the design so the design is ready For the application.

Application of the experiment: The instructional design was applied to the experimental group, the research tool represented by the test of pivotal thinking and achievement motivation.

Search results and discussion:

Here are the results of the results:

1. The zero hypothesis states that there is no statistically significant differ-

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ence at the significance level (0.05) between the mean scores of the fourth
stage of the experimental group (who studied according to the instruction-
al learning design) and the control (who did not study according to the
instructional learning design) in the test of pivotal thinking.

<div align="center">Table (2)</div>

Table 2: Statistical description of the experimental and control groups of
the pivotal thinking variable

Table2: A Statistical Description of the Experimental and Control Groups
with Reference to the Pivotal Thinking Variable

The application of (Levin test) for two independent samples to determine
the significance of the difference between the scores of the experimental
and control groups and the t value (t) (3.5) at the level of significance
(0.001), which is smaller than the level of significance (0.05) and degree
of freedom (61) This indicates The students of the experimental group
who studied according to the instructional design based on the integrative
erased learning were superior to those of the control group who studied
according to the usual method of testing the central thinking as in table (3).
Thus, the first zero hypothesis was rejected and the alternative hypothesis
accepted.

To determine the effect of the independent variable (instructional learning
design) on the dependent variable (pivotal thinking), the Eta-square test
($\eta 2$) was used to determine the magnitude of the effect of this independent
variable and for the purpose of ensuring that the size of the differences
using t-test are real differences due to The independent variable and not
other variables, and then calculate the value of (d), which is the magnitude
of this effect.

   It is clear that the impact of the independent variable on the thinking of
the fourth stage was significant for the benefit of the experimental group
who studied according to this variable as shown in the following table:

Table (3)

The value of ($\eta 2$) and (d) and the magnitude of the effect in the axial think-
ing of the experimental and control groups

Table3: The ($\eta 2$) and (d) Value and the Extent of the Effect of the Experimental and
Control Groups

The amount of effect	d values	η^2 values	df	values T	Depend variable	In depend variable
large	0.9	0.17	61	3.5	Pivotal Thinking	Instructional desin is based on an integrative approach

2. The second hypothesis states that there is no statistically significant difference at the level of significance (0.05) between the mean scores of the fourth stage of the experimental group (who studied according to the instructional educational design) and the control (who did not study according to the educational instructional design) in the motivation of achievement.

Table (4)
Statistical description of the experimental and control groups in variable (measure of achievement motivation)
Table 4: A Statistical Description of the Experimental and Control Groups with Reference to (the Scale of Achievement Motivation Variable)

Statistical significance at (0.05)		Df	t-test for Equality of Means		Levene's Test for Equality of Variance		95% Confidence Interval of the Difference		Arithmetic mean error	Standard deviation	Average calculation	Order number	The group
sign		61	Sig. (2-tailed)	t	sign	F	Lower	Upper					
							0.88	6.03	0.96	6.09	42.9	32	Experimental
			0.009	2.6	0.16	1.9	0.88	6.03	0.86	1.53	6.70	31	Control

The application of (Levin test) for two independent samples to determine the significance of the difference between the different degrees of students experimental and control groups and the t value (t) (2.6) at a level of (0.009), which is smaller than the level of significance (0.05) and a degree of freedom (61) This indicates The students of the experimental group who studied by adopting the educational design based on the integral curve were superior to the students of the control group who studied according to the usual method in the measure of achievement motivation as in table (5). Thus, the first zero hypothesis was rejected and the alternative hypothesis accepted.

To determine the extent of the effect of the independent variable (instructional learning design) on the dependent variable (measure of achievement motivation), the Eta square test (η2) was used to determine the magnitude of the impact of this independent variable and for the purpose of ensuring that the size of the differences using t-test are real differences To the independent variable and not to other variables, and then calculate the value of (d), which is the magnitude of this effect.

It is clear that the impact of the independent variable on the thinking of the fourth stage was significant for the benefit of the experimental group who studied according to this variable as shown in the following table:

Table (6)
The value of (η2) and (d) and the magnitude of the impact on the achieve-

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ment motivation of the experimental and control groups

Table 6: The ($\eta 2$) and (d) value and the Extent of the Effect of the Experimental and Control Groups

The amount of effect	values d	values η^2	df	t values	Depend variable	In depend variable
large	0.8	0.14	61	3.2	the Scale of Achievement Motivation	Instructional desin is based on an integrative approach

The results showed the following:

1. There is a clear impact of the educational design on the pivotal thinking of the fourth stage students.

2. There is a clear impact of the educational design on the measure of motivation of achievement among students of the fourth stage.

Recommendations:

1. Teachers of Mathematics: Directing teachers to use instructional design and modern strategies that encourage students to learn and think.

2. Directorate of Preparation and Training: Emphasis on giving teachers courses in modern teaching strategies and training to teach students thinking skills in general and pivotal thinking in particular.

3. Sectoral Committee for the development of university curricula in the faculties of education: by adding everything that would integrate the skills of pivotal thinking with the content of the methodological curriculum in the teaching methods.

Proposals:

In order to complement and develop this research, it was suggested that:

1. Conducting a similar study for secondary school students to know the results for males and females.

2. Conducting a study that uses the integrative approach and its effect in other types of thinking.

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