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Instructional Design According to Strategies for Improving Remembering and Its Impact on Achievement and Analytical Thinking of Second-Grade Students in The Intermediate School in Social Sciences Lesson

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Abstract

The research aims to identify an educational design according to strategies for improving remembering and its impact on achievement and analytical thinking among students of the second intermediate grade in the subject of social studies. B) Division (A) was chosen randomly to represent the experimental group, and in the same way Division (B) was chosen to represent the control group, and the researcher was statistically rewarded between the members of the two groups in the following variables: (chronological age calculated in months, previous information test, and intelligence test , analytical thinking), and the researcher selected the study material from the sociology book for the second intermediate grade, then the researcher formulated behavioral objectives, as their number reached (120) behavioral objectives representing the first four cognitive levels of Bloom's classification in the cognitive domain. As for the two research tools, the researcher built The achievement test, which consisted of (40) objective test items of the type of multiple-choice, four-alternative, according to (the specification table), and the analytical thinking test consisted of (36) items, Validity, discrimination coefficient, difficulty, effectiveness of alternatives, and stability were checked; Their stability was verified by split-half method; The researcher used the appropriate statistical methods to extract the data, and the results showed that the experimental group outperformed the control group.

Key Words: Instructional Design, Strategies for Improving Remembering, Academic Achievement, Analytical Thinking, Social Studi

Introduction

Despite the importance of the social lesson, its teaching still faces many problems, issues and challenges, including the control of methods and styles of the theoretical and traditional nature, the absence of modern means and methods in its teaching, as well as the lack of student interaction, with limiting of his participation in the classroom, which had a clear negative impact on the educational process and the level of academic achievement of students in that subject or lesson (Ajrash, 2016: 93).

This was confirmed by most of the supervisors of this subject through an interview which was conducted by the researcher with them. They attributed the reasons for the decline in achievement to many things, the most important of which is the adherence of social studies teachers to methods that rely on indoctrination and

memorization in teaching, which led to the freezing of the students' memory, and their failure to stimulate their thinking about the facts and information they received in the classroom, as a result, this led to a decrease in the level of their academic achievement.

The researcher found that the largest sample of teachers confirmed that there is a decrease in the level of achievement of second-grade students in the subject of social studies, in addition to the fact that the methods they use in teaching do not develop the analytical thinking, therefore, the researcher decided to use the instructional design in accordance with the strategies for improving remembering in the field of social studies, which may help students to increase their academic achievement in the subject of social studies and their analytical thinking. Thus, the research problem is to answer the following question:

(What is the effect of an educational design according to strategies for improving remembering on the achievement and analytical thinking of second-grade students in the Intermediate schools in social sciences lesson?)

Secondly: The Importance of the Research

We live in the era of development and the advancement of nations in the field of science. The technical application of the various results of science has a clear impact on the increase of knowledge dramatically in all fields, as the world is passing through a revolution of information in the branches of science until science and its applications are associated with contemporary society, as it has become that the country which owns the reins of science and technology is undoubtedly the developed country (Sa'ada, 2018: 29). In light of this scientific development that the world is witnessing, it is necessary to prepare students who are able to keep pace with this rapid scientific progress (Al-Arnosi and Majd, 2019: 85), in order to prepare them to keep pace with this progress, attention must be paid to education, because education is a purposeful organized process that seeks to bring about clear and tangible positive changes in students' behavior in a way that helps in the growth and development of their personalities mentally, socially, emotionally, linguistically and kinesthetically (Spencer, 2018: 13),

In addition, it helps them to become familiar with knowledge and its secrets by teaching students to each other because their education is reflected in the development and progress of society (Al-Nashef, 2018: 56), this makes education not a fixed process, but rather a changing process that is affected by multiple changes in life, in order for education to be as a variable and multiple process, it must constantly develop and renew in its objectives and content, bearing in mind the continuous transformations imposed by the logic of the age, changing its methods and work on a rapid multiplication of scientific knowledge, so that it becomes a comprehensive preparation process in the present and the future so that students can adapt to various new developments (Al-Dulaimi, 2020:49).

Several Arab conferences were also held, most notably: (Conferences of the Egyptian Society for Curricula and Methods of Teaching History), which presented many studies and researches during its conferences in the field of history teaching and practical education (Ibrahim, 2018: 90). All this distinguishes the history curriculum from other subjects; The purpose of teaching history in the academic stages is to provide the student with basic information that helps to understand historical events, as well as to give him the accuracy of observation and the behavior of the scientific method that links results with causes and reality with theories that depend on induction, comprehension and conclusion. Therefore, it is necessary to apply modern teaching strategies and methods in

presenting concepts to students to keep pace with the developments that occur in this era characterized by the spread of knowledge and the accumulation of various life problems (Al Butti, 2020: 37), so there was a need to adopt strategies more related to the student's life, interests and abilities to reduce the gap between what students get within the classroom walls and the experiences gained from their surrounding environment, the student today needs strategies that enable him to transfer scientific information, experiences and skills outside the confines of the classroom and the school environment (Al Kaabi, 2018: 19), in addition, it is of great importance in translating the content of the educational material into the concepts and directions that the school aspires to achieve, and determine the type of learning and the degree of ease and difficulty in which it takes place, also it has a clear impact on students' attitudes and attitudes towards the subject and towards their teachers, so teaching strategies have become part of the school curriculum and not just an activity that takes place next to it (Abdul-Majid, 2019: 34).

The educational design constitutes the appropriate model theoretical framework that, if followed, will facilitate the activation of the educational process represented by its various tasks, and it is the science that describes the procedures and processes that work on selecting the educational material (tools, materials, programs, curricula), to be designed, analyzed, organised, developed and evaluated; This is in order to design educational materials and provide the teacher with better and faster strategies to help the teacher follow the best strategies in the shortest possible time and effort. Thus, instructional design is one of the techniques that lead to the development of educational environments that enable them to improve educational activities and make them have a positive impact (Abdul Moneim and Hamdi, 2019). : 26).

Memory works through three processes (encoding, storage, and retrieval), meaning that information must first be encoded and then stored in the brain for later recall, and this process is affected by the level of students' interest in the material, as some psychological variables such as (motivation, anxiety, depression, fatigue), and this also affects the process of retrieving the stored information (Davidoff, 2015: 92).

Then the researcher believes that there is an important factor in the process of remembering is the time between the stages of re-learning or what we call repetition during learning, and we find that it is recognized that the best way is the gradual spacing between the stages of recall (i.e. memorization and the actual time of learning).

(Al-Arnoussi, 2018) considered the need to adopt strategies to improve memory, and organized strategies to improve memory. When information has little meaning, it creates meaning for this information, by linking what should be learned with words or images (Al-Arnoussi, 2018: 33), that, it enables the information to be organized into Memory aids in multiple ways and retrieve them when needed, maintaining impressions in memory by forming connections between them to form units of meanings. Different procedures that the individual resorts to help him learn and remember information effectively which help him in the process of retaining information in the long-term memory in a way that facilitates the process of remembering it later (Abdul Hafeez, 2019: 78).

The aim of these strategies is to link the new material that should be learned with well-known information, as well as being of great benefit when the nature of the material to be learned and memorized is linked to a weak relationship. It transfers information and experiences from routine to use exciting and tempting ways to remember (Jassim, 2018:

123), as it depends on mental visualization, whereby the individual resorts to imagining some kind of connections between what he wants to memorize and retrieve, its importance lies in its ability to limit students' attention and direct them towards the learning process, which makes their learning more deeply and firmly rooted in memory, in addition to helping them focus on the necessary ideas and points in the subject being studied and linking new information with previous information, that helps them to absorb and store it in long-term memory and then retrieve it when needed (Abdul Wahed, 2015: 73).

Raising the level of academic achievement is considering one of the important educational goals in the life of the student, which the educational system works to improve for students, rather, he uses what he has learned and absorbed from the information and experiences in facing challenges and problems in daily life (Al-Anzi, 2019: 38), in addition to being a basic criterion by which the student's progress in his studies is measured, and it is an approved basis in making educational decisions (Al-Fakhri, 2019: 109).

Analytical thinking is one of the most complex cognitive activities, and it results from the student's ability to segment or analyze the problem and enable him to be able to solve the situations and problems he faces in different aspects of his life, that it is a cognitive activity that refers to internal processes such as the process of information processing, which is a process that cannot be directly observed and measured, but rather can be inferred from the student's apparent behavior (Nashwati, 2005: 51).

From the foregoing, the importance of the research is reflected in the following:

1) The scarcity of local and Arab research and studies (to the researcher's knowledge) that dealt with the impact of an educational design according to strategies to improve remembering in the achievement and analytical thinking of second-intermediate students.
2) The importance of sociology in general and history in particular in the scientific development taking place in various fields of life, and in helping teachers to clarify the results and causes.

Third: Research Objectives: The research aims to achieve the following

1) Constructing an educational design according to strategies for improving remembering and its impact on the achievement and analytical thinking of second-grade students in the middle school in social sciences.
2) Knowing the effect of instructional design on:
1) Academic achievement of students in the subject of social studies.
2) Analytical thinking.

Fourth: The Research Hypotheses

In order to achieve the goal of the research, the researcher put the following two null hypotheses:

1) There is no statistically significant difference at the level of significance (0.05) between the average scores of the experimental group students who study according to the instructional design of strategies for improving remembering in the social subject and the average scores of the control group students who will study the same subject according to the usual method in the academic achievement test.

2) There is no statistically significant difference at the level of significance (0.05) between the average scores of the experimental group students who study according to the educational design of strategies for improving remembering in the social subject and the average scores of the control group students who will study the same subject according to the usual method in the analytical thinking test.

Fifthly: The Limits of Research

The limits of the search are united by the following:

1) Human limits: second-grade intermediate students.
2) Spatial boundaries: the middle and secondary schools of the Directorate of Education of Babylon / the Center.
3) Time limits: the second semester of the academic year (2021-2022) AD.
4) Cognitive Limits: Part Two of the Sociology Book (History).

Sixth: Define terms

1) Instructional Design Was Defined By

1) (Al-Laqani and Ali) as: "a logical process that deals with necessary procedures for organizing, developing, implementing and evaluating learning in accordance with the cognitive characteristics of the learner" (Al-Laqani and Ali, 2013: 30).

Procedural definition of instructional design: Determining the best procedures for the process of teaching social studies for second-grade intermediate students, by following the following sequential and interrelated stages: (analysis, planning, implementation, and evaluation), according to strategies to improve remembering in order to help the researcher and student achieve the goals set in terms of time and effort.

2) Strategies To Improve Memory Were Known By

1. (Al-Saadi) as: "a set of sequential ideas to understand human behavior when he makes the best use of his mental and cognitive capabilities. When providing information to the individual, he must select the applicable information" (Al-Saadi, 2021: 90).

Procedural definition of strategies for improving remembering: a set of successive procedures, practices and ideas that the researcher undertakes to teach social studies (history) to second-grade students in order to achieve the educational objectives of the subject by creating an appropriate educational environment and positively occupying second-grade students in the process of teaching sociology (history) that allows them to speak and listen carefully to what the teacher is saying, through the strategies to improve remembering that were prepared for this purpose to increase their role in learning and to provide their academic achievement and analytical thinking.

3) Academic achievement defined by

2. (Al-Fakhiri) as: "That specific level of performance, achievement, or proficiency in education that the student receives in school and which is measured by the teacher or through tests" (Al-Fakhiri, 2018: 23).

Procedural definition of academic achievement: the sum of the scores obtained by each student of the second intermediate grade of the two research groups in the achievement test prepared by the researcher for the purposes of this research.

4) Analytical Thinking Was Defined By:

1) Gregory)) as: "the student's ability to face problems by dismantling its parts carefully and systematically, paying attention to details and planning carefully before making a decision, as well as collecting as much information as possible and the ability to participate in clarifying things to reach rational conclusions through facts." (Gregory, 1992:101).

The procedural definition of the analytical thinking test: a form of thinking that depends on a set of mental processes that are represented in the ability of second-grade intermediate students to carry out a set of special activities when facing problems, and their fragmentation.

Chapter Two

Theoretical framework and previous studies

Part one: Theoretical framework

The theoretical framework for any scientific research is as a basic necessity, because it represents the natural limits of research and the foundations on which the researcher chooses and implements his research procedures. It expresses the theoretical philosophy on which the idea of research is based, as a certain good for the researcher in interpreting his results (Al-Tamimi, 2018: 23), this chapter includes literature and writings that dealt with the search terms, which are:

First Axis: Instructional Design

Design means engineering something in a specific way according to criteria; In education, we can draw an integrated knowledge map that guides the student on how to implement and move forward with flexible steps towards achieving the goal, as instructional design is a science that is summarized in describing procedures related to selecting the educational material to be designed, analysed, organized, developed, implemented and evaluated, in order to help the student learn faster and better. Helping the teacher choose the best educational strategies with the least time and effort (Abdel-Moneim and Hamdi, 2019: 32).

Among the modern sciences that have emerged in recent years in the field of learning, which depicts the procedures related to identifying the educational material (materials, tools, curricula, programs) to be analyzed, organized, developed, implemented and evaluated, with the aim of designing educational curricula that work on learning in an optimal and faster manner and help the teacher follow the best educational methods in the least possible time and effort, that the educational design constitutes the theoretical framework that, if followed, will facilitate and do the educational process with its various tasks of smoothly transferring knowledge, acquiring various skills, and the quality of the educational situation. (Using technology and technology in learning), with the acceleration of technologies in our time, the gap has become widening between educational and educational theories, and here is the need to take care of educational design to transfer education from the theoretical framework based on remembering, memorization and indoctrination, to the applied field in which students feel the effectiveness of what they have learned through Apply it in their lives (Peschorich, 2020: 35).

The second axis: the memory

Memory plays an important role in various fields of human behavior in speaking, reading, writing, listening, doing business and various skills, even walking in the streets and between roads. To direct our behavior in the right direction (Zidane, 2006: 122).

Salim (2003) points out that without memory, human thinking becomes very limited, as it is linked only to the process of direct perceptual perception, as memory is a prerequisite for psychological life. As the cornerstone of psychological development, without which the individual perceives the feelings that are repeated on him, as he realized them the first time, thus learning does not occur and without memory we cannot plan for the future based on past experience (Saleem, 2004: 66), and a number of other cognitive processes participate in the structure of the mind such as Perception, perception, thinking, and memory control many of the individual's apparent and implicit performances, which prompted some scholars and thinkers to consider that civilization is transmitted from one generation to another through memory (Zaidan, 2006: 43).

Memory has a profound impact on the psychological life of a person. Without memory, personality would not be formed, perception would not be completed, habits would not be acquired, and it was not possible to imagine, judge, and infer, and the stronger the memory, the broader and richer the mind would be (Saliba, 1981: 17).

The third axis: Strategies to improve memory

Research and study in the process of improving memory is, in fact, a study and research on the most important factors that contribute to the learning process, because memory is a human characteristic that is linked to human mental activity, to confront his present and treat it with a greater degree and greater skill (Al-Sayed, 2000:66).

Remembering is one of the main mental operations practiced by the learner in every situation he encounters, as remembrance means the stock that can be used in similar situations, and remembering is an intentional, optional process, not a random process, it is linked to learning processes, because when the individual practices a specific activity in a special situation, He either memorizes what he does or forgets, remembrance expresses the person’s ability in his current state to use his previous experiences in solving the problems he encounters (Al-Anani, 2005: 44), and Groom (1999) considers the ability to improve memory and retrieve information as the basis for all forms of knowledge. Our memory allows us to store information about the world around us so that we can understand and deal with future situations based on past experiences (Hassan, 2006:30); He also indicates that the strategies for improving memory include storing what has been learned for a period of time, and remembering includes memorization and retrieval. This is through the coding process that the individual conducts for each experience (Adas and Katami, 2003:90), as the most important strategies for improving memory are: (the strategy of activating previous knowledge, the strategy of M.U.R.D.E.R, the strategy of keys to knowledge).

Fourth Axis: Academic Achievement

Academic achievement is one of the concepts commonly used in the field of education and educational psychology in particular, because of its importance in evaluating the student’s academic performance, as it is seen as a basic test in the light of which it is possible to determine the student’s academic level, and to judge the size of educational production in quantity and quality. (Al-Jedani, 2020: 42).

Our concept of achievement measured by tests must be clear, this depends of course on defining the objectives set for organized groups of educational situations that are usually put in the form of curricula and courses. We were developing curricula to achieve other goals that are more general and broader than this limited purpose. Achievement tests should aim to measure these matters. In fact, achievement includes everything that is acquired and learned, as since the school's function is the organizing effect on the behavior of its students to bring about certain changes, everything that these include changes are the subject of collection (Al-Fakhri, 2018: 78).

Fifth Axis: Analytical Thinking:

Psychologists differed that the problem is a situation or question that causes confusion and confusion and requires a solution, analytical thinking is one of the skills of the mentor and is usually related to the mental processes of the student and the strategies he adopts in the solution, that thinking usually includes simple mental processes (such as matching between two things) and also mental processes difficult as analytical thinking, as analytical thinking is characterized by identifying and fragmenting the problem, imposing hypotheses, choosing the correct hypothesis to reach the correct solution. (Jarwan, 1999: 34)

Analytical thinking is one of the most complex cognitive activities, it results from the human being's ability to segment or analyze the problem that the student faces in different aspects of his life. It is a cognitive activity that refers to internal processes such as the process of information processing. (Nashwati, 1985: 451)

Although the researcher made several attempts to obtain studies similar to the title of his study through scanning operations of computer systems and the Internet and visiting scientific research centers and libraries, he did not obtain a single Arab study, not even a foreign one, that dealt with the independent variable (designed according to strategies for improving memory), in addition to the fact that the second dependent variable (analytical thinking) was previously studied in the field of social sciences (history, geography), so the researcher dealt with previous studies that dealt with analytical thinking as a second dependent variable, as follows:

1) The Study (Al-Afoun and Al-Khafaji, 2012)

(The effectiveness of instructional-learning design according to the seven-year learning cycle and the realistic teaching model in the acquisition and development of thinking skills among second-intermediate female students at the Teachers' Preparation Institute and their scientific attitudes)

Aim of the study: This study aimed to know the effectiveness of an instructional-learning design according to the seven-cycle learning cycle also the realistic teaching model in the acquisition and development of thinking skills among second-intermediate female students. The research consisted of (107) female students from the second grade of the Teachers Preparation Institute, the sample was divided into two experimental and control groups. There were (35) female students in the first experimental group who

studied science according to the seven-cycle learning model, and (36) female students of the second experimental group, studied using a model. Realistic teaching and (36) female students of the control group studied in the usual way.

1) Study (Al-Atwani, 2011)

(Mental arithmetic and its relationship to analytical thinking among university students)

The current study aims to: measuring the mental arithmetic among university students in general and according to the gender variable (males-females), measuring the analytical thinking among university students in general and according to the gender variable (males-females), the significant difference between males and females in both mental arithmetic and thinking Analytical, knowing the relationship between mental arithmetic and analytical thinking according to the gender variable (males - females), knowing the differences in the relationship between mental arithmetic and analytical thinking according to the gender variable (males - females). According to the theory (Ryes & Ryes, 1995).

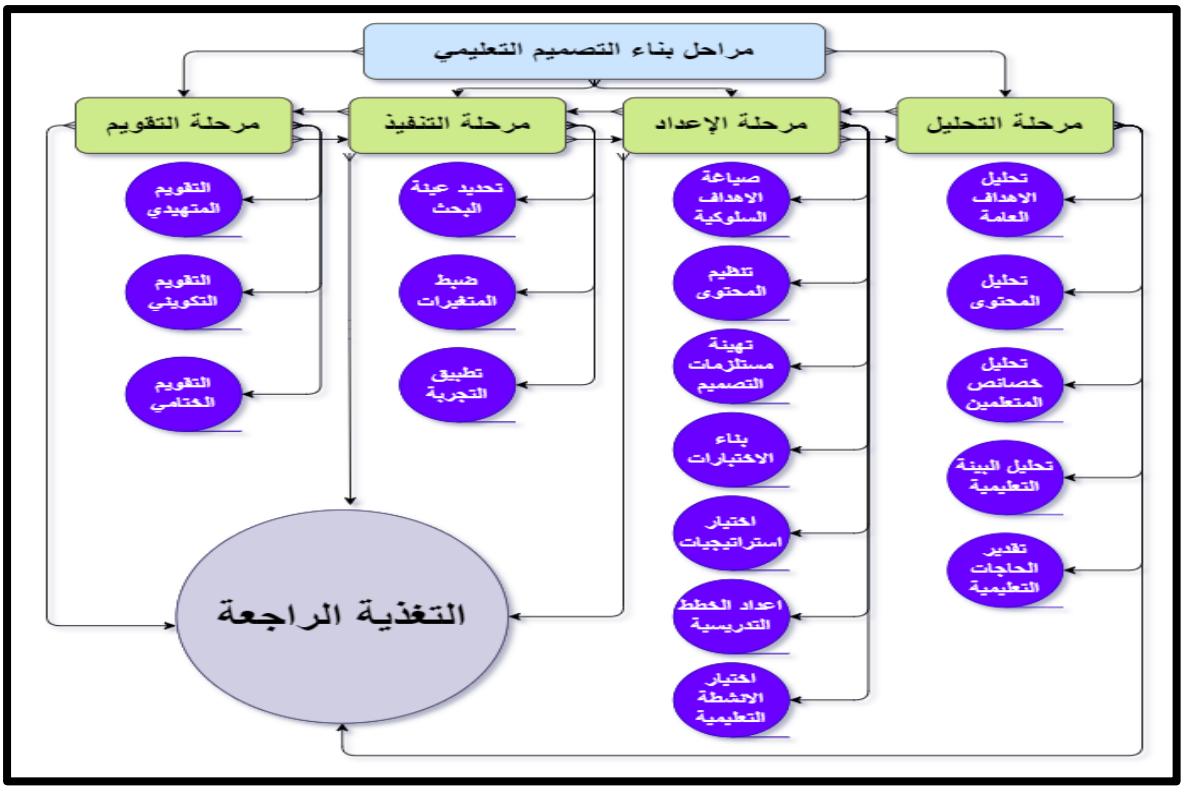
Methodology

The first axis: the stages of building an educational design

To achieve the first objective of the research, which is "Instructional design according to strategies for improving remembering and its impact on achievement and analytical thinking of second-grade students in the Intermediate school in social sciences Lesson", after reviewing the theoretical and educational literature on educational design, as on the foundations adopted in that, as well as a number of Previous studies and research conducted in this regard, which adopted ready-made models of educational design and showed the positive impact after testing them in the educational field, or whose goal was to build an educational design and reveal its impact on different variables through experimentation. Four stages in addition to the following feedback stage:

The first stage	Second stage	Third stage	Fourth stage	Fifth stage
Analysis	Preparation	Implementation	Evaluation	Feedback

The following is a statement of the procedures followed in each stage of the proposed design under consideration and the foundations on which it was adopted, as shown in Scheme (1).



Scheme (1): *The stages of building the proposed instructional design prepared by the researcher*

The first stage: Analysis

The researcher conducted the analysis phase according to the following steps:

First: Determining the educational goals: The researcher derives the educational goals from the general goals of teaching social studies in the middle school curricula, which are approved by the Ministry of Education, as well as the content of the scientific material from the social book for the second intermediate grade/second semester to be taught, Appendix (4). It was presented to a group of arbitrators and specialists in the field of education and its teaching methods to demonstrate its safety and validity Appendix (5), and in light of the observations and suggestions of arbitrators and specialists, the final version was taken.

Second: Study content analysis: The researcher included it in the teaching plans, and the plans were presented to the arbitrators, Appendix (5), to indicate their validity and coverage of the content, that Appendix (6) showing the steps of content analysis.

Third: Analysis of the characteristics of students: By conducting the process of parity between the two research groups in some variables, the researcher revealed**:**

1) Chronological age: the research sample is from a similar age group between (13-15) years.
2) The level of intelligence: an equivalence was made between the two research groups, and it was found that the two groups are equivalent.
3) Gender: the members of the research sample are of one gender/males.
4) Analytical thinking: convergence in the level of analytical thinking owned by students, and this was demonstrated by conducting the equivalence process in the application of the Analytical Thinking Scale.

Fourth: Analysis of the educational environment: To analyze the educational environment in which the educational design will be applied, a number of secondary and middle schools affiliated to the Directorate of Education of the Governorate of Babylon / the Center were visited, then (Al-Karar Secondary School for Boys) was chosen.

Fifth: Assessment of educational needs: The educational needs of students were estimated through:

1. Assessing the needs from the students' point of view: An exploratory questionnaire, Appendix (7), was directed to (40) students of the second intermediate grade who completed the study of the scientific content / the first semester of the academic year (2021-2022) AD, to identify the most important difficulties, the researcher chose that time period (the end of the first semester), because the time period is close to studying the subject, then the students' answers are more honest, expressive of the actual difficulties they faced in learning the scientific material, as the questionnaire included: Six areas, divided into (21) items.
2. Analysis of needs from the teachers' point of view: The researcher directed an exploratory questionnaire (Appendix 8) to five teachers specialized in teaching social studies for the second intermediate grade, to determine the most important needs they faced in teaching the subject, which were taken into account in building the proposed instructional design.

The second stage / preparation stage:

This stage includes:

First: Defining and organizing the academic content: The social subject / part two was identified as an area of educational design, as the researcher committed to all the semesters (four semesters) scheduled for students of the second intermediate grade, specified for this stage for the second semester of the academic year (2021/2022 AD).

Second: Formulation of behavioral objectives: In light of the general objectives, the vocabulary of the educational content, that the analysis tables for the content to be taught during the duration of the second semester, the researcher formulated (120) behavioral objectives, distributed among the four levels of Bloom's classification: (remembering, understanding, application, analysis).

Third: Determining Teaching Strategies: In order to identify strategies for improving remembering that are appropriate for instructional design, including: (Strategy of Activating Prior Knowledge, Strategy of Knowledge Keys, Murder Strategy), also there is a common factor between these strategies, in which the student is the center of the educational process, which is active in acquiring knowledge, skills, trends, and analytical thinking.

Fourth: Defining educational activities and techniques: According to the analysis of the educational environment, the researcher did the following:

1) Prepare the whiteboard and colored pens.
2) Providing pictures, charts, models and posters to suit each topic.
3) Create note cards for each group of students.
4) Create videos of the course material to be shown to students.

Fifth: Preparation of study plans: The researcher formulated model plans for each of these strategies and a plan for the control group and presented them to a group of experts in the field of education and teaching methods Appendix (5) after making the amendments to them, they are ready for implementation.

Sixth: Preparing the evaluation tools: The evaluation process was carried out based on the information obtained from the measurement tools that had been prepared, the researcher has prepared a test of the previous information, which was applied to the experimental and control group, to identify what the students possess of previous information in the social sciences about the content of the educational design.

The third stage: the implementation stage: This stage includes the following steps:

1) Implementation of the instructional design by the researcher himself, because he is the most knowledgeable and understandable of the instructional design and is able to apply the design in all its steps.
2) Implementation of the teaching plans according to the schedule allocated to them, with three lessons per week.

Fourth stage: The Evaluation: It includes the following stages

1. Introductory assessment: The introductory assessment of the educational design was carried out by presenting its components, steps and content to a group of arbitrators and specialists in education and its teaching methods, Appendix (5), with the aim of verifying the validity of its objectives, steps and content, and its suitability for the target group, safety and accuracy of the scientific material from a scientific and educational point of view, as well as the appropriateness of evaluation methods. The arbitrators and specialists unanimously agreed on the validity of the design after making some modifications to its items. Therefore, the design has been validated by the arbitrators and is ready for implementation.
2. Formative evaluation: It is used to verify the course of the design process and correct and address the negatives that may appear during the application period, that is, during the implementation phase, leading to the improvement of the education process. For this purpose, the researcher prepared oral and written tests.
3. Final evaluation: the evaluation that measures learning outcomes at the end of the application of the instructional design according to strategies for improving remembering, indicating the extent to which educational goals have been achieved after the completion of teaching the subject, through the achievement test prepared by the researcher and the analytical thinking scale.

Fifth stage: Feedback: The feedback is part of a strategy used by the teacher to improve the learning process by introducing the student to his progress in the right path by providing him with systematic and continuous information about his responses also helping him to establish the correct responses and modify the wrong responses. The importance of feedback lies in encouraging Students are encouraged to continue when they are doing well and to motivate them to make extra efforts when they are doing poorly (Piskurich, 2020:23).

The second axis: research procedures:

To achieve the second objective of the research and verify the hypotheses, the researcher followed the following procedures:

First: Choosing the experimental design: The researcher adopted the quasi-experimental design with two equal groups with a final test to measure achievement and analytical thinking, as this design is compatible with the conditions of the research, and the design consists of two groups, the first is experimental, and the other is control, as the experimental group studies based on the educational design on According to the strategies for improving remembering and choosing the appropriate teaching strategies for the educational situation, the control group studies in the usual way, table 1 shows the independent and dependent variables and how to measure them.

Table (1): *The experimental design adopted in the research.*

N	Group	equivalence	independent variable	dependent variable	test
1	Experimental	**.1** The chronological age of the students in months. 2. The educational attainment of the parents. 3. Daniels' intelligence test. 4. Social studies test scores for the first semester. **5**Analytical thinking scale**.**	Instructional design according to strategies to improve memory	Academic achievement + Analytical thinking	achievement test + Analytical Thinking Scale
2	control		the usual way		

Second: The research community and its sample:

1. Research community: The researcher divided the research community into two parts:

1. School community: The research community is represented by secondary and middle schools for boys in the center of Babylon Governorate / the center for the academic year (2021 AD - 2022 AD), in which the number of divisions of the second intermediate class is not less than two divisions, for the purpose of determining the sample of the research from the original community that the researcher identified to conduct his study on**.**

2. Research sample: The current research sample is divided into two parts:

1. School sample: After the researcher identified the 26 schools included in the research, the researcher chose the intentional method (Al Karar High School for Boys).

2. Sample of students: The researcher visited (Al-Karar High School for Boys) according to the book issued by the General Directorate of Education in the Babylon Governorate, the Department of Preparation and Training. About 31, 33 students in each section respectively, the researcher chose section (A) randomly to represent the experimental group that will study the social subject according to the educational design, as section (B) to represent the control group that will study the same subject in the usual manner. The total number of students reached in the two groups is (64) students, the researcher did not exclude any student because there were no repeaters in both groups.

Third: Control procedures: In order to control these factors, the researcher divided them into:

1. The variables associated with the research community (the internal integrity of the research design):

1) The chronological age of students in months:

The researcher conducted a statistical equivalence in the chronological age calculated in months for the students of the two research groups, Appendix (11), to find out the significance of the difference between the mean chronological age of the students of the two groups, the researcher used the t-test for two independent samples, and the results were as in Table (2).

Table (2): *The results of the equivalence of the two research groups for the chronological age variable calculated in months*

Group	N.	Arithmetic Average	Standard Deviation	Variance	Degree Of Freedom	T Value		Statistical Significance
						Calculation	Tabular	
Experimental	31	166,45	6.22	38,81	62	0.431	2.000	Non-Significance
control	33	165,85	4.92	24,21				

2) The social studies test scores for the first semester of the academic year (2021 – 2022 AD):

In the equivalence of the two groups, the researcher relied on the social studies subject scores for the first semester of the academic year (2021 - 2022 AD) appendix (11), using the T-test for two independent samples to determine the significance of the statistical difference, it became clear that the two groups are statistically equivalent and Table (3) shows that:

Table (3): *The results of the equivalence of the two research groups for the variable of the social subject test for the first semester From the academic year (2021 AD - 2022 AD)*

group	N.	Arithmetic average	standard deviation	variance	degree of freedom	T value		Statistical significance
						Calculation	Tabular	
Experimental	31	61,19	14.78	218,45	62	0,282	2.000	not significant
control	33	62,3	16.6	275,56				

3) IQ test (Danleys): The researcher followed the instructions for applying the test accurately, and for the purpose of verifying the equivalence of the two research groups in the degree of intelligence, the researcher conducted the test on the control and experimental groups on Wednesday (9/3/2022 AD), after correcting the students' answers for each group separately, Appendix (11) using the t-test for two independent samples to find out the significance of the statistical difference, it became clear that the two groups are statistically equivalent in this variable, Table (4) shows that**:**

Table (4): *The results of the equivalence of the two research groups for the (Danleys) variable of intelligence level for the students of the two research groups*

Group	N.	Arithmetic Average	Standard Deviation	Variance	Degree Of Freedom	T Value		Statistical Significance
						Calculation	Tabular	
Experimental	31	29,03	6	36,00	62	0.869	2.000	not significant
control	33	27,67	6.52	42,64				

4) Analytical Thinking Scale: The researcher conducted a statistical equivalence for the two research groups in the Analytical Thinking Scale which he prepared on Saturday (12/3/2022 AD), after correcting the papers of each group separately and recording the data in Appendix (11), by using the t-test for two independent samples to find out the significance of the statistical difference, it became clear that the two groups are statistically equivalent in this variable and table (5) shows that:

Table (5): *The results of the equivalence of the two research groups for the Analytical Thinking Scale variable for the students of the two research groups:*

group	N.	Arithmetic average	standard deviation	variance	degree of freedom	T value		Statistical significance
						Calculation	Tabular	
Experimental	31	23.25	5.039	25.39	62	1.592	2.000	not significant
control	33	21.36	4.641	21.53				

2. Variables associated with experimental procedures and external variables (external safety of research design)

1) Selection of sample members: the researcher tried to avoid this variable in the research results, by conducting statistical equivalence between the two groups in the variables: (chronological age calculated in months, academic achievement of parents, as social studies grades for the first semester of the academic year (2021-2022), the Danleys intelligence test, and the Analytical Thinking Scale.

2) Associated Accidents: The research experiment was not exposed to any accident that hindered its functioning, so this factor could be avoided.

2) Associated Accidents: The research experiment was not exposed to any accident that hindered its functioning, so this factor could be avoided.

3) Experimental extinction: the members of the experiment sample were not exposed to leaving or interruption, except for some individual absences, which are a normal and equal condition in the two research groups.

4) Processes related to maturity: The effect of this factor was not important because the duration of the experiment was uniform between the two research groups.

5) Measuring tools: The researcher set this variable by adopting the same two measurement tools on the two research groups.

Fourth: The two research tools: The following are the steps for building the two tools

1) The achievement test: according to the following steps:

1) Determining the objective of the test: The achievement test aims to measure the achievement of the students of the second intermediate grade (the research sample) in the

four semesters, the second part of the social book to be taught for the academic year (2021-2022 AD)

2) Determining the number and type of test items: The researcher adopted objective tests of the type (multiple choice) to measure the levels of Bloom's classification (knowledge, understanding, application, analysis), as the number of items for the total achievement test was (40) multiple-choice test items.

3) Preparing the specification table: The researcher prepared a specification table for the achievement test, according to the levels of behavioral objectives for the four levels of the cognitive domain of Bloom's classification. The following points illustrate the steps that the researcher followed in building the specification table:

➢ Determining the relative weight (relative importance) of the content: each chapter of the subject was determined by the number of lessons it takes to teach that content, the number of lessons was calculated by the number of lessons fixed in the book's methodology,

Thus, the importance of the topics content for these chapters were calculated as in the following equation:

The relative weight of the content of each unit = (per chapter number of pages) / (for total chapter number of pages) x 100%

➢ Determine the number of questions for one content using the following equation: Number of questions in each cell = Total number of questions x percentage of content x percentage of goals at each level.

Table (6): *Table of Specifications for the Achievement Test*

chapters	**Pages N.**	**Relative importance**	**percentage of behavioral goals**						**Total 100%**
			Knowledge	**Understanding**	**Application**	**Analysis**	**Struction**	**Evaluation**	
			32%	**23%**	**17%**	**13%**	**8%**	**7%**	
Third	17	26%	3	2	2	1	1	1	10
Fourth	9	14%	2	1	1	1	0	0	5
Fifth	19	29%	4	3	2	1	1	1	12
sixth	21	31%	4	3	2	2	1	1	13
Total	66	100%	13	9	7	5	3	3	40

1) Correction of the test answers: After the test items have been formulated, the type of test has been selected, and the test has been developed in its initial form, consisting of (40) test items, a standard has been set for correcting the answers, giving that (one point for each correct test item), zero for the wrong answer, the item that was left out and not answered, as the item for which more than one choice was given), therefore, the final score is from (zero - 40).

2) The validity of the test: To verify the validity of the achievement test, the researcher adopted two types of validity:

1) Apparent validity: After verifying the apparent validity of the test, the researcher distributed the achievement test, accompanied by the behavioral objectives and the table of specifications, to a group of specialists in education and teaching methods, in light of

their opinions and suggestions, the items or alternatives that need to be modified were modified, therefore the test items were kept (40) items.

2) Content validity: The researcher adopted the specification table (Table 6) in constructing the test items in order to ensure that the items represented the content of the study material and for behavioral purposes, thus the test was considered honest in terms of content.

3) The exploratory application of the test: The achievement test was applied to two survey samples, as follows:

1) The first exploratory application: After verifying the validity of the test, the achievement test was applied in its first exploratory stage on Sunday (8/5/2022 AD) on a group of second-grade intermediate students at (Riyadh Secondary School for Boys) and the number of students was (30) students. Its purpose is to know the clarity of the test instructions as well as the clarity of its items, and students' understanding of answer alternatives, and to know the appropriate time to answer.

2) The second exploratory application: After the researcher has made sure that the test instructions and items are clear, and the time required to answer, in order to extract the psychometric properties of the test, the researcher applied the test to a second exploratory sample of (100) students of the second intermediate grade in (Tareeq Al-Iman intermediate school) on Monday (9/5/2022 AD), for the morning shift, the researcher personally supervised the application and in cooperation with the subject teacher in this school.

1. Statistical analysis of items: In order to conduct the following statistical analyzes

1) Difficulty coefficient for the items: The researcher applied the difficulty coefficient law for each item of the achievement test and found that its value ranges between (0.41-0.70).

2) Discrimination coefficient: The discrimination coefficient was calculated for each of the test items, and the researcher found that it ranges between (0.33-0.52).

3) The effectiveness of the wrong alternatives: When calculating the effectiveness of the correct alternatives for the test items, the researcher found that it is limited to (- 0.04 - - 0.26).

2. The stability of the test: The researcher verified the reliability of the test in two ways

1) Half-segmentation method: The test stability was reached using the Pearson correlation coefficient (0.81), then it was corrected by the Saberman-Brown equation, as it reached (0.90), the test is considered to be stable.

2) Kewder-Richardson 20: The stability coefficient according to the Kewder-Richardson equation is 20 (0.80), this indicates that the test is stable.

1) Preparing the Analytical Thinking Skills Scale: The researcher followed the following steps

1. Preparing the items of the scale: It is a measure of the analytical thinking skills of second-grade intermediate students.

2. Formulation of the scale items: The researcher prepared a scale for analytical thinking skills, which consisted of (4) skills, by (9) items for the skill (determining features and components), (9) items (for the skill of determining relationships), also (9) items for the skill (identifying the main ideas), (9) items for the skill (identifying errors), so that the total of the items became (36) one.

➢ Scale validity: The researcher relied to verify the validity of the Analytical Thinking Skills Scale on two indicators (apparent validity and construct validity), which are as follows:

❖ Apparent validity: The researcher presented the scale in its initial form to a group of experts in the field of social teaching methods, measurement and evaluation in order to ensure the integrity, comprehensiveness and clarity of the wording of the paragraphs; The experts made their observations on the paragraphs of the scale, and thus the apparent validity of the scale was achieved.

❖ Construction validity: Pearson's correlation coefficient was used between the degree of each item and the total score of the respondent, after extracting the results and balancing the calculated correlation coefficients with the critical and tabular value of the correlation coefficient, it was found that all items were statistically significant at the level (0.05).

8) Statistical analysis of the items: After the scale was applied to the students of the statistical analysis sample, the scores were calculated for each student and for each item of the scale, that they were arranged from the highest to the lowest score.

9) Relationship of the item with the field to which it belongs: The relationship of the item with the field to which it belongs has been extracted by using the Pearson correlation coefficient between the scores of the students of the survey sample (the statistical analysis sample), as the correlation coefficients ranged between the items and the total score, the results showed that all the items of the scale acceptable.

10) The discriminatory power of the items: For the purpose of identifying the discriminatory power of the items of the Analytical Thinking Skills Scale, the grades of the items analysis sample were arranged in descending order from highest to lowest, then degrees were taken (50) high and (50) low, the number of students in both groups reached (60 students).), when using the t-test for two independent samples, it became clear that all the items were distinct because their calculated t-value is greater than the tabular t-value of (2) with a degree of freedom (58) and a significance level of (0.05).

11) Scale stability: Using the Pearson correlation coefficient, between the degrees of the two applications, the correlation reached (0.82).

Ninth: Statistical Means: The researcher used the appropriate statistical means for the research

Chapter Four: Presenting and Interpreting the Results

First: **Presenting and Interpreting** and discussing of the results: The results will be presented according to the objectives of the research and my agencies:

The first goal: which states: (Instructive design according to strategies for improving remembering for teaching social sciences among students of the second intermediate grade); The details of achieving this goal were presented through the procedures and steps included in the stages of instructional design, according to strategies for improving remembering, which were detailed in Chapter Three, Item Two.

The second goal: which states: To identify the effect of an educational design according to strategies for improving remembering and its impact on achievement and analytical thinking among second-grade students in the intermediate class in social sciences, this goal was verified by testing the first null hypothesis, which states that: (there is no difference Statistically significant at the level of significance (0.05) between

the average scores of the experimental group students who study according to the instructional design strategies for improving remembering in the social subject and the average scores of the control group students who will study the same subject according to the usual method in the academic achievement test prepared for the purposes of this research), The table (7) shows that:

Table (7): *The results of the equivalence of the two research groups to the scores of the students of my group in the achievement test*

The Group	N.	Arithmetic Mean	Standard Deviation	Variance	Degree Of Freedom	T Value Calculated	Tubler	Statistical Significance
Experimental	31	28,35	5.029	25,30	62	4,122	2.000	not significant
control	33	22,42	6.349	40,32				

Statement of the effect volume of the independent variable in the first dependent variable (achievement): The researcher used Cohen's equation to extract the effect size (d) of the independent variable in the dependent variable, The effect size (d) was (1.05), which is an appropriate value to explain the effect size and a large amount for the teaching variable, the instructional design, according to strategies for improving remembering in the achievement test and in favor of the experimental group, and table (8) shows that:

Table (8): *The effect volume of the independent variable on the achievement variable*

independent variable	dependent variable	Impact size value (d)	Amount of effect size
Instructional design according to mental strategies	achievement	1.05	big

The third objective: which states: (Identifying the effect of educational design according to strategies for improving remembering on the scale of analytical thinking for second-grade intermediate students) through testing the second null hypothesis, which states that (there is no statistically significant difference at the level of significance (0.05) Between the mean scores of the experimental group students who study according to the instructional design of strategies for improving remembering in the social subject and the mean scores of the students of the control group who will study the same subject according to the usual method in the analytical thinking scale prepared for the purposes of this research), in order to verify the validity of the previous hypothesis, the researcher extracted the arithmetic mean, variance and standard deviation of the students of the two research groups. It appeared that the average scores of the experimental group who studied according to the educational design amounted to (27,677) that the variance amounted to (15.952), the standard deviation was (3.994), that the average scores of the students of the control group Those who studied in the usual way amounted to (23,000), the variance amounted to (23.746), as the standard deviation was (4.873), When using the t-test for two independent samples, the statistical results showed that there was a statistically significant difference, that the calculated T-value (4.184) was greater than the tabular value of (2,000) at the significance level (0.05) and the degree of freedom (62) Supplement (19). Table (9) shows that:

Table (9): *The results of the equivalence of the two research groups in the final analytical thinking scale*

the group	N.	Arithmetic mean	standard deviation	variance	degree of freedom	T Value Calculated	Tabular	Statistical significance
Experimental	31	27.677	3.994	15.952	62	4.184	2.000	not significant
control	33	23.000	4.873	23.746				

Statement of the effect size of the independent variable in the second dependent variable (analytical thinking): The researcher used Cohen's equation to extract the effect size (d) of the independent variable in the dependent variable, as the effect size was (d) (0.959), which is an appropriate value to explain the effect size and in a large amount for the teaching variable, the instructional design, according to the strategies for improving remembering in the analytical thinking scale and in favor of the experimental group, and table (10) shows this:

Table (10): *The effect size of the independent variable in the analytical thinking variable*

independent variable	dependent variable	Impact size value (d)	Amount of effect size
Instructional design according to mental strategies	Analytical thinking	0.959	big

Second: Interpretation of the results:

Interpretation of the result related to the first hypothesis: The researcher attributes this to several interacting reasons, including:

1. The instructional design according to strategies for improving the memory by presenting or presenting information is compatible with students' learning thinking, and thus learning is more effective and easier, which may increase students' achievement.
2. That the instructional design follows systematic, organized steps, thus these steps are important as they work to bridge and address the gaps in any aspect, whether in objectives, content or teaching strategies.

Interpretation of the results related to the second hypothesis: The researcher attributes this to several interacting reasons, including:

1. The strategies for improving memory enabled students to use their senses to achieve a deeper understanding of the problems or situations they are exposed to by forming groups through which they listen to the opinions of others and ask questions about the problems to obtain information that is not available about them and link it with their previous information to get a picture complete solution to these problems.
2. The strategies to improve memory have contributed to raising students' perseverance by using more than one method to reach a solution to the problem or situation they are exposed to, not to rush to give solutions to problems and review solutions before presenting them to address the problem by challenging the traditional assumptions of the problem at hand, which increased their analytical thinking.

Conclusions:

In light of the findings of the current research, the following can be concluded:

1. The educational design prepared according to the strategies for improving remembering suits the age and mental level of middle school students in general and middle school students in particular, and has an effective impact in raising the level of achievement and analytical thinking, and it can be applied within the possibilities available to our schools.
2. The adoption of the various activities contributed to the understanding, discovery and consolidation of the relationships between the different information concepts among the students of the experimental sample.

Recommendations:

In light of the results and conclusions of the current research, the researcher reached the following:

1. Holding courses to qualify and train social studies teachers on how to build educational designs and the procedures for implementing them, because of their high efficiency in giving good results and helping teachers achieve educational goals with the least time, effort and expenses.
2. The necessity of organizing courses and workshops, issuing a guide for middle school teachers during the service, including a full explanation of strategies for improving remembering and indicating their importance in learning, also preparing programs to train social teachers during service to reveal their students' learning styles, identifying appropriate strategies for improving remembering.

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