

# **The Influence of Democracy Scores Strategy on Achievement and Critical Thinking of The Fifth Primary Class Students in Social sciences Materials**

**By**

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## **Abstract**

The present study aims to identify the influence of democracy scores strategy on achievement and critical thinking of fifth primary class students in social subject s. The study sample consists of (62) students divided into two groups, one of them is the control group with (32) students and the experimental group with (30) students. Having chosen the experimental approach as a method to fulfill the research requirements, preparing the requirements of the experiment, such as plans, objectives, and tests for the two research groups, and choosing (democracy scores strategy) as an independent research variable and (achievement and critical thinking) as dependent variables, the two research groups are equalized in order that precise results are obtained in terms of variables such as Age in months, previous academic achievement for students in the (critical thinking) test, and completing the research requirements of plans, objectives, and tests for the two research groups after checking on the research tools that the researchers tried on the two study groups to obtain the results that were statistically processed using the SPSS program and (T-Test) for two independent samples. The results show that the experimental group students outperform over the control group students according to the strategy of democracy scores in achievement And critical thinking. After obtaining the results, the researchers recommended several recommendations and suggestions.

### ***First; Problem Statement***

Students live in rapid changes in the era of technological information. They are exposed to a huge amount of contradictory information. Therefore, teaching critical thinking has become necessary for them. Educational decision-makers must adopt a unified policy to encourage thinking and inquiry. Nowadays schools need a teacher who urges conclusion, analysis, and providing evidence and proofs which support the theory (Abu Jadu and Muhammad Bakr, 2010). Students often think that what they learn is specific to science and has nothing to do with life. It is also difficult for them to remember things according to their order and role in the book, as well as confusion after each educational situation (Al Rabat, 2015). Traditional methods alone are no longer sufficient to transfer the era's ideas and techniques from the minds of thinkers, inventors, and scientists to the minds of learners. Therefore, it has become necessary to produce more technical and more advanced teaching methods that suit the learning required in order to achieve a routine free teacher who trusts his/her knowledge and accumulated experience as students differ according to their personal levels and their way of thinking and learning (Al-Alusi, 2021). Several studies and research in educational literature indicated a decline in achievement in social materials in the primary stage, including the study of (Olkpinka, 2019) and the study of (Khalifa, 2010), which indicated the weak achievement resulting from the teachers' use of traditional

methods. They also urged the curriculum directorate in the Iraqi Ministry of Education to arouse the students' interest, reveal their abilities, and develop critical thinking skills by relying on strategies in which the student is the focus of the educational process. As a result of the above, there is a need to formulate the following question;

What is the influence of democracy scores strategy on the achievement and critical thinking of fifth primary class students in social subjects?

### ***Second; The Significance of The Present Study***

Social subjects are closely related to the reality of life and the various social phenomena in it. They also provide students with a wide scope for developing their awareness of the political, social, or economic problems surrounding them. They also help in the growth of the different aspects of their lives through the various activities included in their topics (Omran, 2012). They are among the main fields in the academic stages. They have a way in presenting issues with temporal and spatial dimensions. Therefore, they require human minds to interact with and feel. These materials aim to build the human being from specific angles that are consistent with their nature. Hence, they must be included Within the framework of school curricula (Al-Laqani et al., 2006).

Teaching social subjects is a non-specific educational field and hardly any other subject imposes very high requirements of knowledge and skills on teachers. Many school systems do not provide systematic training in this area. Teachers have a great role in creating successful curricula as well as they are mentors and role models With them. They provide guidance in an increasingly complex world (European Commission, (Olga Bombard Elli, Reinhold Hedtke, Birgit, 2021)). Students are able to teach themselves adopting the self-learning methods. They are also able to choose the appropriate way of learning, such as technological methods, sources of information, databases, or otherwise, without the need for a teacher to teach him/her directly. Self-education stems from several considerations and variables, perhaps the most important of which is that each student is able to choose the learning style that suits him/her, and that there are individual differences among students. It is logical that each student is allowed to start learning according to his/her abilities and mental capabilities without waiting for a student that is below his/her level to feel bored or to lag behind a student that is above his/her level and feel frustrated (Tu'mah, et al., 2011). Teachers help in managing the educational situation. The effectiveness of the teaching method as the means that helps achieve educational goals because of its positive effects in developing students' thinking and increasing their academic achievement and interaction among them leads to the growth of their personalities in their various aspects (Al-Hailah, 1999). Students can acquire a set of knowledge, information, concepts, and trends. Learning strategies have a role in taking responsibility for their own learning and providing them with a lifelong learning skill that helps them learn outside the traditional school (Shehadeh, 2009). This falls under the concept of active education, which derives its philosophy from contemporary global and local variables. In response to these variables, it requires a review of the roles of both the teacher and the learner and calls for shifting the focus of attention from the teacher to the learner and making him/her the focus of the educational process. This is a natural development of educational goals and a prerequisite for the radical development of the educational process. It uses strategies centered around students that are commensurate with their abilities, interests, learning styles and the types of intelligences they possess (Bakri, 2015).

Active education can Prepare students for lively educational situations and increase their involvement in the lesson while motivating them to be more productive as it is an opportunity to

reveal the students' tendencies and satisfy student and teacher to obtain knowledge. It develops their desire to think, search, and learn to the point of mastery. This learning also allows students to retrieve information from memory. With it, students learn self-confidently. Tasks are of greater value than what is accomplished within the group (Huda, 2016). Each teaching has its strategies that develop the teachers' abilities and encourage them to possess different types of thinking, including critical and contemplative thinking, which facilitates processes of reaching a judgment or making a decision in light of specific criteria. They encourage self-evaluation and the degree of sensitivity of the situation and its elements. By thinking, the student seeks to analyze and search for truthful evidence for the purpose of reaching a logical conclusion as it requires accuracy in observations or events, analyzing them, and drawing conclusions in a logical sequential manner. One of the purposes of critical thinking is to reach decisions. Students must slowdown in giving judgments and making decisions until the matter is verified after examining opinions, evaluating information, and looking at the different points of view (Atia, 2014).

### ***Third; The Objectives***

The present study aims to identify the influence of democracy scores strategy on achievement and critical thinking of fifth primary class students in the subject of social studies.

### ***Fourth; The two research hypotheses***

For the purpose of verifying the objective of the present study, two null hypotheses were developed as follows;

1. There is no statistically significant difference at the level of significance of (0.05) between the average scores of the students of the control group who study according to the experimental aspect (democracy scores strategy) and the average scores of the students of the group who study according to the usual method in the achievement test.
2. There is no statistically significant difference at the level of significance of (0.05) between the average scores of the experimental group students who study according to the (democracy scores strategy) and the average scores of the control group students who study according to the usual method in the critical thinking test.

### ***Fifth; The Limits***

1. The Spatial Limits; Primary schools in Al-Mahaweel District, affiliated to the Babylon Education Directorate.
2. The Temporal Limits; The first semester of the academic year (2021-2022).
3. The Human Limits; Fifth primary class students.
4. The Cognitive Limits; Chapters one and two of the social book for the fifth grade of primary school, seventh edition of 2019.

### ***Sixth; Definitions of Terms***

#### ***1. Influence***

It is the amount of change that occurs to the dependent variable after being exposed to the influence of the independent variable (Al-Hafni, 1991).

The researchers define it procedurally as a set of steps that the teacher uses in order to achieve the desired objectives in teaching social studies and to bring its topics to the minds of students.

#### ***2. Democracy Scores Strategy***

It is one of active learning strategies in agreeing on the most important terms, ideas, and concepts that affect students and have the ability to effect change and have benefit in their

lives (Ambo Saidi and Huda, 2016).

Procedurally, it is defined by the researchers as a strategy used by the researcher in teaching the fifth primary class students (the experimental group) in the subject of social studies to help them raise their achievement and critical thinking and provide them with information and skills that connect them to the topics of the lesson and solve the problem that the students suffer from.

### **3. Academic achievement**

It is an organized procedure to determine the amount of what students have learned in a subject in light of the specific objectives. It can be used to improve teaching methods and contribute to mastering planning, controlling implementation, and evaluating achievement (Abu Jadu, 2012).

The researchers procedurally define it as the students' behavior change as a result of acquiring information in the sociology subject to be taught as measured by the grades they obtained in the test prepared by the researchers.

### **4. The primary stage**

It is the first stage in the educational system in Iraq, whose duration is six years, starting from the sixth year and ending at the age of twelve. It consists of the first, second, third, fourth, fifth and sixth grades (Ministry of Education, 1985).

The researchers define the fifth primary grade procedurally as the fifth grade in the ladder of primary education, in which students are eleven years old, and through which students are provided with knowledge and skills..etc.

### **5. Social Subjects**

It is the material that presents topics on history, geography, and civic education for students in integrated and comprehensive forms. This subject focuses its attention on helping them to achieve the effective growth of preparing them as good citizens that are capable of serving their country with the formation of a strong knowledge of the variables and developments that occur in various fields (Suleiman and Saeed, 2001).

The researchers define it procedurally as the subject to be taught in the fifth grade of primary school for Iraqi schoolchildren, which provides them with topics, facts, historical, and geographical information about their country, as well as helping them to celebrate their national spirit.

### **6. Critical thinking**

It is a self-evaluative, inferential, reflective thinking that includes a set of strategies and overlapping cognitive processes with the aim of examining performance, beliefs, evidence, proofs, concepts and claims that are relied upon when making a judgment while taking into account the viewpoints of others (Abu Jadu and Muhammad Bakr, 2010).

The researchers define it procedurally as the thinking that enables fifth-grade students to contemplate evaluative reasoning for social topics as they have the ability to examine performance, beliefs, evidence, proofs, concepts and claims when providing an answer to the questions, taking into account the viewpoint of the others.

## **Theoretical framework and previous studies**

### **First, The theoretical framework**

The constructivist theory is an epistemological vision that sees that reality is formed by

the human self through the interaction of mental processes of previous knowledge with the reorganization or modification of the cognitive structure of the learner using the knowledge formed in other situations (Atia, 2015). Knowledge does not exist outside the individual, but it is based on reality, and its occurrence is in the positive mental construction. This theory stems from a basic rule that the individual builds or invents his/her own understanding or knowledge based on his/her own experiences using experiences to reveal the ambiguity of the surrounding environment or a solution to a problem (Al-Masoudi and Sanabel, 2018).

#### Foundations of active learning

1. Learning related to the student's life, event, needs, and interests is beneficial.
2. Learning occurs through the interaction and communication of the student with his/her colleagues, family, and the society in which he/she lives.
3. The student's learning is of great benefit when taking into account his/her abilities, speed of growth, rhythm, and learning style.
4. Learning is effective for the student when he/she is the center of the educational process (Khalifa and Sarbanas, 2014).

#### The student's role in active learning

Active learning depends on the positive role of the student.

1. Active participation of the student in educational experiences, with pride in the value of exchanging ideas and opinions with others.
2. The effort made for regular meetings with the psychological counselor in the school requires the allocation of time.
3. Clarifying the needs, guidance, hopes, and aspirations of the teacher and psychological counselor.
4. The student must realize his/her growth and development as an individual that is characterized by affection and friendship in accepting advice and suggestions from teachers, interested parties, and specialists.
5. The student has abilities to trust in dealing successfully with the educational learning environment surrounding him/her (Assaad, Farah, 2017).

#### Characteristics of Active Learning

1. The activities center around solving problems that lead to meaningful educational results.
2. Focus is on starting as an actionable principle with adequate support and high expectations.
3. Emphasis is on feedback that is derived from educational experiences.
4. Focus is on building knowledge of the student.
5. Focusing on real and realistic skills that can be achieved using reliable assessment strategies (Al-Araydah, 2016).

#### ***Democracy Scores Strategy***

The idea of the strategy is based on democracy in agreeing on the most important terms, ideas, and concepts that affect students and have the ability to make change and that are useful in the students' academic and public life. Its goal is to evaluate the most important terms and concepts acquired by students in a lesson or educational unit. That is, after completing a particular lesson or unit.

#### ***Strategy implementation steps***

1. The teacher arranges his/her students in cooperative groups of 5 students.
2. Each group is asked to write a list of the most important 10 terms or concepts from the unit or lesson with the definition of each term or concept in their own language.



3. The teacher explains to the students the purpose of the activity with defining the roles of the recorder, writer, reporter, and tool manager. Responsibilities are determined for each individual in the group.
4. Each student is given 3 stars to vote on the three most important terms from their point of view by sticking the stars next to these terms. After the students in each group finish sticking their stars and voting for the most important concepts from their point of view, they are asked to choose the three most important concepts from among the concepts that have been selected, Where five stars are attached to their concept, three stars for the second, less important concept, and one star for the third, least important concept of the two previous concepts. Then, there will be a group discussion at the class level about the 3 most important concepts from the point of view of the whole class (Ambo Saidi, Huda, 2016).

**Second; Previous studies**

1. (Olkpinka 2019); The Influence of computer-assisted educational strategy on the social skills of school children

The study aimed to identify the influence of computer on the social skills of primary school children in rural Nigeria. The researcher used the semi-experimental approach. The study was applied to a sample consisting of (64) male students divided into four rural schools. The pre-test was presented to the control group based on the constructivist theory. The results of the study revealed that there is no significant effect of the computer-assisted teaching strategy on the life skills of schoolchildren (Olugbenga A.IGE, 2019).

2. (Khalifa, 2010); The Influence of Applying Two Strategies in Active Learning in The Achievement and Development of Critical Thinking Among Ninth Grade Students in The History Subject

The study aimed to investigate the effect of applying two strategies for active learning in the achievement of ninth grade students in history and in developing their critical thinking in Jordan. The study sample included three schools, which were chosen in a cluster random manner. The data was analyzed using the analysis of variance. The results revealed that the two experimental groups outperformed the control group. One of the most important recommendations of the study was the emphasis on training history teachers using active education strategies and activating them in their study plans (Al-Astal, 2010).

**Methodology and Procedures**

**First; Experimental design**

The researchers adopted the experimental method to obtain the objectives of the present study as it is an appropriate approach to obtain the procedures and reach the results (Tabaja, 2011).

**First, The Research Methodology**

The two researchers adopted the experimental method, which relies on two groups (control and experimental) in which the effect of one or more independent variables on one or more dependent variables is addressed. They chose the experimental design with partial control as in Figure (1).

Research instrument	Dependent variable	Independent variable	Group
Academic achievement test	Academic achievement	Democracy scores strategy	Experimental
+Critical thinking scale	+Critical thinking	Normal method	Control

**Figure (1).** Experimental design.

## *Second, The Research Population and Sample*

### *1. The research population*

The research population consisted of morning primary schools for boys only affiliated to the Directorate of Education of Babylon, Department of Education of Al-Mahaweel.

**Table (1).** Primary schools for boys that contain two divisions for the fifth grade of primary school, Al-Mahaweel Education Department, Babylon Education for the academic year (2021-2022)

Number of sections	Number of students	School name	No.
2	62	Al-Hijaz primary school for boys	1
2	54	Al-Eathar primary school for boys	2
2	68	Al-Bahrain primary school for boys	3
2	95	Al-Faw primary school for boys	4
2	72	Al-Sufaraa primary school for boys	5
2	57	Fath primary school for boys	6
3	100	Al-Baraka primary school for boys	7

### *The research samples*

The researchers chose Al-Hijaz Primary School in the center of Al-Mahaweel District, Babylon Province, in a deliberate choice to conduct this study for the following reasons:

1. The school director cooperated and believed in the principle of using modern teaching methods and he was eager to know the results of the present study.
2. Availability of educational aids in the school.
3. It is the school in which the researchers teach.

### *Sample of students*

The researchers chose Al-Hijaz Primary School to apply the experiment according to a task facilitating letter issued by the General Directorate of Education in Babylon (Directorate of Preparation and Training, Division of Educational Research and Studies) No. / 41/3/4/719 on 2/3/ 2022, noting that the school contains two sections for the fifth primary grade, with (32) students for section (A) and (30) students for section (B). One of the sections was chosen as a control group and the other was randomly tested as shown in [Table \(2\)](#).

**Table (2).** The distribution of the research sample to the experimental and control groups

Number of students after exclusion	Number of excluded students	Number of students before exclusion	Group	No.
30	-	32	Experimental	1
32	-	30	Control	2
62	-	62	Total	

### *Third; Equality of the two research groups*

The researchers were convinced to conduct equivalence for the chronological age of the students calculated in months, the previous academic achievement of the students, the

previous information, a test of intelligence, and critical thinking skills as shown in [Table \(3\)](#).

**Table (3)** The arithmetic mean, standard deviation, and the two T-Values of the variables (the chronological age of the students in months, the students' previous academic achievement, the previous information, the intelligence test, and the critical thinking skills) for the two research groups

Statistical significance	Tabular Calculated freedom Degree of deviation Standard Mean Arithmetic Number	The group	The variable			
Insignificant 2.000	1.202	3.14	125.53	30	Experimental	Chronological age
		3.01	124.59	32	Control	
		2.53	10.53	30	Experimental	Previous academic achievement
	0.658	2.67	10.97	32	Control	
		3.68	21.3	30	Experimental	Intelligence test
	0.875	4.32	20.41	32	Control	
		2.02	12.1	30	Experimental	Critical thinking test
	0.664	1.75	11.78	32	Control	

#### ***Fourth; Controlling extraneous variables***

The variables that cause a change in the dependent variable and the researcher does not have control over them and they are unknown by the researcher must be controlled and taken into consideration when discussing and interpreting the results ([Atia, 2010](#)). In summary, it can affect the validity of the experiment, the degree of reliability of its results, and the possibility of generalizing the results to the community from which the sample was taken. Extraneous variables must be controlled before conducting the experiment, that is, all variables except for the independent variable in the experiment were controlled. All the extraneous variables were adjusted to the experiment including (accidents accompanying the experiment). Experimental extinction, sample selection, maturity, measurement tool, the effect of experimental procedures).

#### ***Fifth; Research requirements***

To obtain the objectives and hypotheses of the present study, the researchers ought to fulfill the following requirements:

#### ***Determining the scientific material***

The researchers determined the material that the students will study. The scientific material included the first and second units, dividing the material into nine lessons of social material for the fifth grade of primary school, the seventh edition of the book for 2019 by Falah Hassan Al-Asadi, et al. Unit one (The Geography of Our Home Iraq Chapter One Our country location Iraq (globally, regionally, and locally) and the second chapter (the geography of Iraq



(natural phenomena and human phenomena).

### ***Formulation of behavioral goals***

The researchers formulated (100) behavioral goals based on the content in the social book for the primary stage, which was studied in the experiment, distributed on three levels (remembering, understanding, and application). The researchers presented it to a group of experts specialized in the field of education and psychology and methods of teaching them to determine their validity and clarity. The number of experts who participated in the evaluation was (20) experts. The arbitrators made their observations about them and the researchers took them. In light of their opinions, some goals were omitted after analyzing their responses, calculating the value of the square  $(K_a)^2$  for each behavioral purpose, and comparing it with the tabular value of (3.84) with a degree of freedom of (1) and at the level of significance of (0.05). The results showed the validity of the behavioral goals, which the researchers were able to reach in conducting the experiment by (100) goals. The level of remembering consisted of (45) goals, the level of understanding consisted of (30), and the level of application consisted of (25) goals.

### ***Preparing teaching plans***

The researchers prepared a preconception of the teaching process in the classroom in light of the content of the classes to be taught according to the democracy scores strategy of the experimental group, while the control group was taught according to the traditional method. The researchers presented the samples to a group of experts in the field of teaching methods, measurement, and evaluation. In light of their opinions, the researchers made the necessary modifications to them and then adopted them in the experiment.

### ***The Research Tool***

The present study aims to identify the influence of democracy scores strategy on the achievement of fifth grade students and their critical thinking skills in Babylon Province. The researchers prepared the critical thinking scale as follows;

A review of the educational literature related to the topic of study. The researchers reviewed a number of related sources, references, books, and studies.

The researchers prepared an achievement test consisting of (40) items from a multiple test.

### ***Preparing a table of specifications***

The researchers designed a table of specifications to obtain the objectives of the present study as follows;

Determining the relative weight of the content of each of the topics that reached (8) according to the following equation:

$$\text{Content weight per topic} = (\text{number of topic pages}) / (\text{topics for total pages}) \times 100\%$$

Determining the relative weight of the behavioral goal at each level and for each of the eight topics according to the following equation:

$$\text{Weight of the goal in the level} = (\text{the one level in the behavioral goals number}) / (\text{the behavioral goals in the total total}) \times 100\%$$

Determining 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 in each level. (Return, 2005: 149)

**Table (5)** Specifications table for the achievement test

Total	Percentage of behavioral goals			Relative importance	Number of pages	Topics
	Application	Understanding	Rememberance			
	%25	%30	%45			
5	1.25	1.5	2.25	13	4	Importance of Iraq's location
6	1.5	1.8	2.7	16	5	Astronomical and relative location of Iraq
2	0.5	0.6	0.9	6	2	Landforms
5	1.25	1.5	2.25	13	4	Alluvial plain and western plateau
4	1	1.2	1.8	9	3	Climate, natural plants, and climate elements
4	1	1.2	1.8	9	3	Climatic regions and natural plants
4	1	1.2	1.8	9	3	Water materials
4	1	1.2	1.8	9	3	Population, agriculture, and livestock
6	1.5	1.8	2.7	16	5	Underground resources, transportation, and tourism
40	10	12	18	%100	32	

### ***Drafting the paragraphs for the test***

The researchers prepared an achievement test, which is a questionnaire of (40) paragraphs of multiple choice. When preparing the achievement test paragraphs, the researchers took into account their clarity and the ability of the paragraph to measure a specific goal.

Instructions for answering and correcting paragraphs of the achievement test

The researchers give one point for the paragraph with a correct answer and zero for the wrong paragraph. As for the left and repeated answer, it is treated as a wrong answer.

Validity of the test

The researchers relied on two types of validity:

### ***Apparent Validity***

The achievement test and the behavioral goals that represented the material and its specification table were presented to professors in the specialization of social teaching methods. The experts expressed their opinions and suggestions. The paragraphs and alternatives that needed modification were modified after finding the calculated chi-square value and comparing it with the tabular value of (3.84) at the level of significance of (0.05). And the degree of freedom of (1). The results showed the validity of the test in measuring what it was designed to measure. Percentages ranged between (85%-100%), while the values of the chi-square ranged between (7.12-17) as the researchers adopted it and kept the test items (40) items.

### ***Content validity***

It is sometimes called logical validity as it refers to the degree to which it measures what is intended to be measured in the content through logical analysis of the content and achieves a high degree of honesty for the test to indicate its paragraphs.

The exploratory application of the achievement test  
It was carried out in two stages

The first application; The test was applied to a group of fifth-grade students of (Al-Baraka) school, and the number of students in the sample was (36) students. The purpose of this test was to control clarity of instructions, measure the level of students' understanding of the test paragraphs, and measure the average time for answering the test paragraphs. The researchers measure the average time by calculating the average of the students' answers by recording the time on each student's answer when he finished answering. So, the average of the time taken by the students reached (38) minutes. The researchers used the following equation to extract the answer time:

Average time = (for all students for total answers, total time)/(for total students)

The test was applied to a sample of (100) fifth grade students for the purpose of analyzing the achievement test statistically from the difficulty level of the paragraph, the strength of paragraph discrimination, the effectiveness of the wrong alternatives, and the stability of the test.

### ***Statistical analysis of the achievement test paragraphs***

The researchers analyzed the test paragraphs in order to improve the test, identify weaknesses in its paragraphs, treat them, or exclude them. The researchers corrected the (100) students' answers and arranged them starting from (4) and ending up at (36) in order to find the following;

### ***The difficulty level of the item***

The difficulty coefficient of the test items is multiple. If it is (0.37-0.69), it is an acceptable difficulty coefficient that can be relied upon. Previous studies indicated that it is valid in terms of the difficulty of its items if it is between (20%-80%).

### **Paragraph Discrimination Power**

The researchers calculated the discriminatory power to test it for each of its paragraphs. It became clear that it ranges between (0.33-0.52) which is consistent with (Ebel) criteria as it is considered good if its discriminating power is (0.30) or more.

### ***The effectiveness of the wrong alternatives***

When the researchers calculated the correct test alternatives for the test items from multiple times, they found that they bear all the negative sign. Thus, the incorrect alternatives were able to attract more students of the lower group to it than the students of the upper group. The researchers found that the incorrect alternatives were kept as they are in the test (Allam, 2014).

### ***The stability of the test***

The researchers used the split-half method for the stability of the test relying on the in-kind reconnaissance scores in the test that was applied in the (Al-Sufara) School, which yielded (100) students. The individual items for each student and the paired items were collected on the one hand. Using Pearson correlation coefficients, the stability was (0.84). Then, it was corrected by the Spearman-Brown equation so that it reached (0.91) as it was considered a fixed test.

### ***critical thinking test***

One of the requirements of the present study is to identify the influence of democracy

scores strategy on the achievement of students in the subject of social studies and their critical thinking. The researchers sought to prepare a test for critical thinking and did the following procedures:

**1. Determining the objective of the test**

The objective of the test is to measure the level of critical thinking among fifth grade students.

**2. The test included (30) items distributed on the information of the social subject.**

**3. The type of test**

The researchers relied on multiple choice in building critical thinking.

**4. Preparation of test instructions and correction method**

The researchers developed a set of instructions explaining how to answer the test.

**5. The validity of the test**

The researchers relied on two types of validity:

- A. Apparent validity; The researchers calculated the apparent validity of the test by presenting it to a group of arbitrators with expertise in the field of teaching methods and educational psychology to find out its suitability for fifth grade students. It was agreed upon by (80%).

**B. Content validity**

The researchers calculated the content validity by finding the value of the chi-square and identifying the significance of the difference between the arbitrators. The calculated value of chi was (7.12-17), which is greater than the tabular value of the chi-square of (3.84) at the level of significance of (0.05). Therefore, the coordination thinking tests are all statistically significant.

**6. The exploratory application of the test**

The coordination thinking test was applied to an exploratory sample from (FAO) school for a sample of (33) students. The researchers put instructions explaining to the students how to answer the test and then find the arithmetic mean of time to answer the test by all students. As it was found that the test needs (45) minutes.

**7. Statistical analysis of the test**

It was analyzed by applying it to an exploratory sample consisting of (100) to extract the psychometric characteristics as follows:

**A. The difficulty level of the paragraph**

The difficulty of the paragraph was found by applying the equation of finding the difficulty of the paragraph in the paragraphs of the critical thinking test. It was between (0.42-0.69). Thus, all the paragraphs are considered to have a good difficulty coefficient.

**B. Paragraph discrimination power**

The researchers applied the paragraph discrimination equation to the critical thinking test paragraphs after taking the highest 27% and lowest 27% of the scores.

**C. Effectiveness of wrong alternatives**

All alternatives to the critical thinking test are attractive and highly camouflaged because they all had a negative sign.

#### ***D. Test reliability***

The researchers used the split-half method to test the stability of the test adopting the critical thinking test scores in particular which amounted to (100) students. (0.90) as a fixed test.

#### ***Seventh; Statistical Means***

The researchers used the (T-test equation, chi-square, item difficulty coefficient, item discrimination coefficient, effectiveness of wrong alternatives, Spearman-Brown equation, and Pearson correlation coefficient).

Presentation and interpretation of results

#### ***First; The results***

1. The results of the first hypothesis, which states that there is no statistically significant difference at the level of significance of (0.05) between the average scores of the experimental group students who studied the social subject using the democracy scores strategy and the average scores of the control group who studied the same subject in the traditional method. After correcting the papers, the researchers calculated the arithmetic mean of the scores of the two groups of research and the standard deviation and used the (T-test) as in [Table \(6\)](#)

**Table (6).** The arithmetic mean, standard deviation, variance, and the two T-values for the scores of the students of the two research groups in the achievement test in social sciences

Statistical significance	The two T values		Degree of freedom	Standard deviation	Arithmetic mean	Number	Group
	Tabular	Calculated					
Significant	2.000	3.546	60	6.53	30.19	30	Experimental
				6.55	24.87	32	Control

It is noted from [Table \(6\)](#) that the mean of calculating the scores of the experimental group students is (30.19) the standard deviation (6.53), the mean of calculating the students of the control group is (24.87) the standard deviation is (6.55), and the calculated t-test value is (3.546), which is larger than the tabular t-value of (2) at a degree of freedom of (60). The observed difference between the two groups is calculated in favor of the experimental group and this indicates the superiority of its students who studied according to the democracy scores strategy over the students of the control group who studied according to the traditional method.

2. Results of the second hypothesis, which states that there is no statistically significant difference at the level of significance of (0.05) between the mean scores of the control group students who studied social subjects using the traditional method. To verify the hypothesis, the arithmetic mean, standard deviation, and the T-test were calculated for two independent samples as in [Table \(7\)](#).

**Table (7).** The arithmetic mean, the standard deviation, the variance, and the two T-values for the scores of the students of the two research groups in the critical thinking test

Statistical significance	T-values		Degree of freedom	Standard deviation	Arithmetic mean	Number	Group
	Tabular	Calculated					
Significant	2.000	4.444	60	4.48	19.63	30	Experimental
				4.80	14.37	32	Control

It is noted from [Table \(7\)](#) that the arithmetic mean of the scores of the experimental group students is (19.63), the standard deviation is (4.48), the arithmetic mean of the scores of the control group is (14.37) and the standard deviation is (4.80). The (T-test) is (4.444), which is greater than the tabular value of (2), which shows the superiority of the experimental group over the control group.

#### ***Effect size***



To identify the effect of democracy scores strategy on achievement and critical thinking in social studies for fifth grade students, the researchers calculated the effect size using the Cohen method equation as in [Table \(8\)](#).

**Table (8).** The effect size of the independent variable on the variable of achievement and critical thinking in social subjects

Amount of effect size	Value of effect size	Dependent variable	Independent variable
Small	0,92	Achievement	Democracy scores strategy
Large	1,15	Critical thinking	

### ***Second; Interpretation of the results***

Interpretation of the results related to the first null hypothesis

Teaching according to Democracy scores strategy had the effect of mentally arousing students in accepting information and geographical facts. The method of teaching according to groups drew the students' attention towards the lesson and worked to increase participation and create a spirit of competition among them and worked to consolidate the material in their minds.

Interpretation of the results related to the second null hypothesis

It encouraged the students to think critically through the test that was prepared for this thinking and encouraged them to rationalize and reject ambiguous ideas and supported the impact of the transfer of learning and made them thinkers and critics.

## **Conclusions**

1. There is an effect of democracy scores strategy on increasing the achievement of fifth grade students in social sciences and increasing their abilities to understand geographical and historical information and facts.
2. Democracy Scores Strategy worked to increase the level of critical thinking among fifth grade students.

### ***Recommendations***

1. Accrediting primary school teachers to the subject of social teaching according to democracy scores strategy.
2. Urging the Directorate of Preparation and Training in Babylon to set up training courses for social subjects teachers for the purpose of providing them with modern methods in teaching.
3. Urging social subjects teachers who hold higher degrees to train their fellow teachers according to Democracy scores strategy.

### ***Suggestions***

1. Conducting a similar study using Democracy scores Strategy in other subjects.
2. Conducting a similar study using democracy scores strategy for female schools with the use of divergent thinking skills.

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