

# The Effectiveness of Using the Palnaskar and Brown Method in the Achievement of the Fifth Literary Grade Students in Geography Subject

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## ABSTRACT

The research aims to know the effectiveness of using the Palnaskar and Brown method in the achievement of the fifth literary students in the subject of Geography, and to verify the objective of the study, the researcher formulated the following hypothesis: - There are no statistically significant variations in the average grades of the experimental group pupils studying Geography at the level of significance (0.05). The research sample included fifth grade literary students in Nebuchadnezzar High School for Boys affiliated with An Najaf General Directorate of Education for the academic year, using the Palnaskar and Brown method and students in the control group who study the same subject in the traditional way in the achievement test (2018-2019). The pupils were separated into two groups: those who participated in the experiment and those who did not. The experimental group received instruction utilizing the Palnaskar and Brown techniques, whereas the control group received instruction in the traditional manner. After formulating the behavioral goals, which totaled (291) goals, the researcher created 36 instructional programs for both groups. The researcher also prepared an achievement test consisting of (50) test items of the type of multiple choice and its validity, stability and difficulty factor and discrimination were confirmed, and then parity was made between the two groups in the variables of chronological age, previous academic achievement and intelligence, and after the researcher applied the experiment on 16/10/2018 and finished the experiment on 16/1/2019, then the researcher applied the post achievement test, and after correcting the answers, he came up with a number of results after analyzing them statistically using the T-test for two independent samples, and the findings displayed the superiority of the group's students Experimental on control group students. This is due to the positive effect of using the Palnaskar and Brown method in teaching Geography and its impact on students' academic achievement. The researcher also recommended the adoption of Palnaskar and Brown's strategy in teaching Geography for the fifth literary grade and the necessity of paying attention to teaching Geography. The researcher recommended that a study comparable to the case study be conducted in additional individuals, as well as a study to determine the impact of utilizing Panskar and Brown on creative thinking and concept acquisition.

## Keywords

Facebook, protest, persuasion, logical inducements and emotional inducements

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## Introduction

### (I) The Research Problem

The interest in teaching geography is a distinct sign of the progress and civilization of nations, because of the importance of this science in the daily life of man, as this science is concerned with studying all aspects of human activity in addition to its interest in the nature of geographical phenomena that affect that activity. The research problem crystallizes in addressing it to raise the level of academic achievement of fifth-grade literary students by teaching them according to the steps of modern teaching methods, as in the method of

Palnaskar and Brown, which is one of the modern and unused methods in our educational reality. Despite the progress made in the field of teaching methods, our education is still in an urgent need of developing a geographic teaching and learning process by examining the effectiveness of modern teaching methods, strategies and models, which undoubtedly will have a significant and tangible impact on achieving educational goals, including increasing the level of academic achievement among students, a goal that education seeks to achieve, and given our educational reality and comparing it with the tremendous development in societies and other countries, but education in

societies still depends on the theoretical side rather than the scientific aspects that depend on self-learning. In addition, to the knowledge of the researcher, the methods used in our schools are traditional teaching methods, in which the teacher is the center of the educational process, a transmitter of information. He deals with the minds of the learners as if they are empty containers that he fills with the study material without taking into account their inclinations, abilities and individual preparations, as the learner is passive, not Participant, a receiver of information based on memorization, memorization and retrieval of information during exams, as for the educational activities, they are few or no, so these methods are not able to excite the learners and do not contribute to the development of their scientific abilities and thus lead to suppressing the spirit of learning and wasting their abilities, which leads to a low level of their academic achievement. In order to keep pace with development and openness, and through the researcher's experience in the field of education and precise specialization, it must be emphasized the need to use modern teaching methods that lead to the achievement of important educational goals that make the learner an active and effective element in the learning process and thus prepare a generation capable of solving its problems creatively. And the endeavor of the researcher. And what was mentioned from the previous aspects and in line with the requirements of the times and an attempt by the researcher to improve and raise the level of academic achievement of students in the subject of geography, the researcher focused on defining a research problem according to the question below:

What is the impact of applying the Palnaskar and Brown approach on fifth-grade students' geography achievement?

## (II) The Significance of the Study

Geography is a dynamic, evolving, unstable science as a result of the influence of natural factors in addition to what humans do in the environment, all of these factors work to change the surface of the earth from time to time, and thus, Geography is not considered

descriptions of the earth's surface or abstract estimates of the population, but has become a topic based on analysis and explanation. It aims to take a positive role in serving the human being, and its study has become a necessity of life and an essential element of economic and social development. (Khidir, 2006, 42-43) and based on this importance, geography plays an important role in developing the student's memory and imagination and helps him to express his opinion and make decisions, arguments and proofs. It develops geographical thinking skills such as observation, analysis, conclusion, budgeting, knowing the causes of various phenomena, and developing his scientific trends. (Al-Ameen et al., 1997, 103) (Roberson, 1972, p5)

With the modern view of Geography and its curricula, interest in its teaching methods has become an essential place in the educational process, as it reduces environmental complexity, works to direct educational activity, and facilitates and simplifies the teaching process to become more dynamic and less rigid (Bruner, 1960, p85).

It is clear to us from the above the importance of Geography and its role in life of man and the development of his abilities, but the reality of teaching this subject is witnessing a significant decline due to the inability to use modern methods.

To advance the reality of the educational process, particularly in the teaching of geography, and to achieve high levels, it is necessary to develop educational programs and achieve goals by relying on modern teaching methods, approaches, and models that arouse learners' interest, give them self-confidence, and encourage them to seek knowledge in order to truly understand. As a result, modern teaching paradigms must be found.

Developing students' abilities to derive appropriate strategies and teaching methods for the learner is the way to improve students' level in the learning process, and how to activate previous knowledge and use it in current learning situations, focus attention on the points and elements visible in the content, practice methods of critical evaluation of ideas and meanings, and monitor mental and linguistic activities used to verify. From the extent to which understanding is reached, and it is the

essence of the Palnaskar and Brown method with its sub-stages. (Al-Fatayri, 1996: 223)

The Palnaskar and Brown method is an interactive teaching method developed to improve students' comprehension skills, and it develops thinking abilities, and the student's awareness of what he knows and what he does not know, including the organizational procedures through which the thinking process can be managed, which is linking the student's new information with the information he has (planning, monitoring, and Calendar ). (Hashey & Connors, 2003; 224)

### **The importance of the research can be summarized in the following:**

- Because it is one of the prerequisites of contemporary studies, which emphasize the need of employing contemporary teaching techniques that place the student at the center of the educational process.
- It plays a role in the development of Geography teaching in the preparatory stage, and teachers gain teaching plans and ideas, which improves students' communication in geography.
- It gives a realistic picture of the effectiveness of the Palnaskar and Brown method in the achievement of Geography for fifth-grade students.
- Researchers and scholars can benefit from the achievement test that will be built, the results of which give a picture of the effectiveness of the method in teaching.
- The research dealt with an important academic stage in the educational ladder, which is the preparatory stage, which is one of the important stages for students in developing their knowledge, experiences and skills in preparation for university studies.

### **(III):- Research Objective:-**

The following are the research's objectives:  
To identify the effectiveness of using the Palnaskar and Brown method in the achievement of fifth-grade literary students in the subject of Geography.

### **(IV):- Research Hypothesis:-**

To achieve the objective of the research, the researcher put the following hypothesis:  
There is no statistically significant

difference between the average scores of students who study Geography according to the Palnaskar and Brown approach and the average scores of students who study the same subject in the conventional manner at the 0.05 level of statistical significance (0.05).

### **(V): Limitations of the Research:**

This search is limited to:

- 1- For the academic year 2018-2019 AD.
- 2- The first three chapters of Geography for the fifth literary class.

### **(VI): Determining Terms**

#### **1- Efficiency:-**

Zeitoun (2001) as "the extent to which the outputs of the system coincide with its objectives" (Zeitoun: 2001:25).Kojak (2006) as "the degree or extent of congruence between the actual outputs of the system and the desired outputs in the sense of comparing the results with the goals" (Kojak, 2006: 230) Alkhelefati (2010) as "the ability to achieve the goal and reach the results that were previously determined"(Alkhelefati, 2010: 113)

And he defined it procedurally as: the amount of effectiveness caused by the John Zhorik model in the achievement of Geography for fourth-grade literary students, and that effectiveness can be measured through the average scores of the two research groups (control and experimental) in the achievement test in Geography.

#### **2- The Palnaskar and Brown method, which was defined by:**

- (Al-Saliti, 2012):

A four-step supportive discussion technique that good readers use in comprehending the reading text (predict, question, clarify, and summarize). (Al-Saliti, 2012: 78)

- (Zayer et al., 2014):

A method based on mutual learning and dialogue between the teacher and the student, and based on interaction and giving the students the opportunity to participate in the educational learning process. Students go through four steps (predict, question, clarify and summarize). (Zayer et al., 2014: 289)

### **Procedural Definition:**

Predicting, questioning, clarifying, and summarizing are some of the sub-steps that the researcher employs while teaching geography subjects to students. These activities and processes are founded on the idea of reciprocal

conversation and lead to increased academic success in the students.

### 3-Achievement, defined by the following:

- Al-Khayyat (2010):

The amount to which the learner has met the learning objectives in a given topic that he or she has previously studied through specific educational experiences or activities is measured (Al-Khayat, 2010).

- (Hamadna and Khaled, 2012):A coordinated procedure according to specific standards aimed at knowing what the learner has achieved and acquired in terms of concepts, facts and skills after studying a specific topic. (Hamadna and Khaled, 2012: 147)

### Procedural Definition:

Students in fifth-grade literature classes, both experimental and control groups, gained a significant amount of material on Geography, as evidenced by their scores on an accomplishment exam developed by the researcher.

## Section (2)

### The Theoretical Framework and Review of Literature

#### First, the theoretical framework

The Palnaskar and Brown method:

It is the method that is based on mutual education and dialogue between the teacher and students, and the students go through four steps, each step independently of itself, which are:

- Predicting the objective of the subject to be learned.
- Derive questions about the topic and answer them.
- Clarify ambiguous points on the subject.
- Summarize the topic of the students. (Zayer et al., 287, 2014)

#### Basic steps of the Palnaskar and Brown method:

- Forecasting: Forecasting is done according to the following steps:
- Recall and activate the previous information.
- Make guesses about the topic.
- Read some tables, headlines and questions on the subject.
- Linking the new information with the old information in the student's memory.

- Determine the purpose of reading.
- Formulating some questions and asking them to themselves and modifying them in light of the new information.(Abdul Bari, 2010: 178)
- Question: The researcher believes that the benefit of this step in studying Geography lies in the following:
- It is a way for students to measure themselves and ensure their understanding of the topic.
- Helps students focus on important information on the topic.
- Helps and participates in getting students to become proficient in formulating questions so that they can predict exam questions.
- It increases students' effectiveness in forming ideas and information related to the subject in order to benefit from them in asking questions about the topic of the lesson.
- It works on raising the students' ability to question by asking questions in a scientific and appropriate manner with the intermediate stage and developing their attitudes towards geography and its various sources and through which it can provide them with foundations and rules that help them face future challenges, develop their personal skills and develop their thinking.
- Good questions provoke students to answer them, and a good question raises another good question, which helps group performance, not just the individual answer from a particular student. (Camel, 327, 2005)

**Clarification:** In this step, the student inquiries about things that are not understood in the paragraph, whether these things are new, unclear vocabulary, unfamiliar terms or concepts, difficult, or expressions. This is done by asking the teacher questions to them such as: What is the unclear thing? in this paragraph? Then he directs them to formulate questions about him and then discusses them with the aim of finding out the ambiguous parts of the paragraph. (Aljamel,2005,329)

Summarizing: includes the following steps:

- Focus on the important ideas.
- Skip unimportant details.
- Using the learner's own language without quoting.
- Determine a time period for the summary.
- Linking between important ideas. (Taima and Al-Shuaibi, 2006, 207)

Applied procedures of the Palnaskar and Brown method in teaching:

### **The Palnaskar and Brown method is applied through the following stages:**

- During the first stage of text communication, the teacher is responsible for submitting a question by mentioning the title and asking the students to predict what ideas could be under this title or what issues that the writer could address.
- One of the students makes a prediction through the title of the text. If one cannot do that, the teacher reads the first sentence of the text and asks another student to predict what it contains.
- Another student may predict something, and then the teacher asks another student to verify the prediction of his colleague and to make sure that the ideas he presented are present in the text.
- After that, the teacher hands over the discussion to another student who trusts his ability to perform the dialogue. The student asks a question asking him to predict what is stated in the following paragraphs.
- Another student summarizes what the students have achieved.
- The students and the teacher exchange roles, the teacher reads a paragraph, the student predicts the main and secondary ideas, a student asks a question about an ambiguous idea or a difficult word or something else, using the clarification stage, another summarizes the paragraphs..... and so on until the text ends.(H, Lemiech, J,Hertzog,1999)

## **(II) Review of Literature**

### **Studies that dealt with the Palnaskar and Brown method:**

#### **• A Study by Al Janabi (2017):**

During this study, which was performed in Iraq, the researchers sought to learn more about the impact of the Palnaskar and Brown technique on the mathematical achievement of second intermediate grade children during the academic year (2016-2017). For the research, the researcher devised an accomplishment test with (40) test items, and in order to arrive at the findings, the researcher utilized both the Pearson correlation coefficient and a t-test to calculate the results (Al-Janabi, 2017, Z-S).

#### **• Study by (Al-Bahadli, 2018):**

The purpose of the research was to determine the efficiency of the Palsenkar approach in terms of academic success and the development of multiple intelligences among first-grade children in middle school chemistry classes.

An achievement test was prepared, and the data was processed utilizing the t-test for two independent samples, the chi-square test, the associated analysis of variance equation, the Pearson correlation coefficient, the Cronbach's alpha equation, the Uber equation, a kind test, the difficulty coefficient for the items of the objective achievement test and the essays, the discrimination lab for the subject and essay test, and the equation for the effectiveness of special alternatives for the test. Achievement and Holty Equation, (Al-Bahadli, 2018, Z-S).

### **Balance of the Previous Study:**

**The aim of the study:** - The two previous studies differed in terms of their objectives, so we find the study by Al-Janabi, 2017, which aimed to know the effect of the Palnskar and Brown method on the achievement of second-grade students in middle school in mathematics, while the Al-Bahadli study aimed to know the effectiveness of the Palsankar and Rawan method in achievement and the progress of multiple intelligences among Students of the first intermediate grade in chemistry, but the current study aimed to know the effect of the method of Palsankar and Brawan on the achievement of fifth grade literary students in the subject of Geography.

**The school stage:** The two previous studies were conducted in the middle stage, which are the study by (Al-Janabi, 2017) and (Al-Bahadli, 2018). The current study, on the other hand, was carried out during the preparation stage.

**Study Methodology:** All studies adopted the experimental method

**Sample size:** The two previous studies were similar in sample size, as it was (67) students in (Al-Janabi, 2017) and the study (Al-Bahadli, 2018). In the current study, there were a total of (60) students that participated as participants in the sample.

**The Gender of the Sample:** The two previous studies were conducted on males and thus agree with the current study that was conducted on males as well.

**Equivalence:** The two studies differed in the process of equivalence. (Al-Janabi, 2017)

conducted equivalence in the variables of chronological age, intelligence, and previous academic achievement, while the study (Al-Bahadli, 2018) conducted equivalence in the variables of chronological age, previous academic achievement, previous information test, and pre-test for multiple intelligences. As for the current study, only parity in the variables of chronological age, prior accomplishment, and IQ test were tested, and that was the extent of their investigation.

**Statistical Means:** The two previous studies varied in their statistical means between the t-test, chi-square, the associated analysis of variance equation, the Pearson correlation coefficient, the alpha-Cronbach equation and the Schiff test in a study (Al-Bahadli, 2018). (Al-Janabi, 2017) used the t-test for two independent samples, the difficulty coefficient of the paragraphs, the discrimination coefficient, the effectiveness of the wrong alternatives, and the Kewder-Richardson equation 20, while the current study employed the t-test for two independent samples, the Euphrates difficulty coefficient, the discrimination coefficient and the Kewder-Richardson equation 20.

**Aspects of benefiting from previous studies:** -

- 1- Determine the purpose of the current study
- 2- Adopting an experimental design commensurate with the current research conditions.
- 3Determining the sample size and its

method of determination.

4- Choosing the appropriate statistical means for the nature of the current research.

5- Analysis and interpretation of the results of the current research.

### **Section(3): Research Methodology and Procedures**

This section deals with a presentation of the methodological procedures used in the research

#### **(I) the research method**

In his research procedures, the researcher followed the experimental method, according to its suitability to the objectives of the research, as this type of research is one of the most effective types of research, and it is one of the most acceptable and detailed methods to reach the results of the research. (Al-Bakri and Nadia, 2007, 183)

#### **The Experimental Design**

The experimental design is a blueprint and a work program for the procedures and method of implementing the experiment, and its selection is the first step that falls on the shoulders of the researcher. The greater the degree to which the experimental design is chosen in accordance with the study objectives, its variables, and the conditions in which it will be carried out, the more accurate and objective the results will be in terms of accuracy and objectivity (Ibrahim, 2001, 179)

In order to do this, the researcher used a design that included experimental and control groups with partial control, as seen in Table (1).

Type of Test	The Dependent Variable	The Independent Variable	Group
Achievement Test	Academic Achievement	Palnaskar & Brown Method	Experimental
		Traditional Method	Control

**Table (1) The experimental design of the research**

**(III) - The Research Community and its Sample****1- Research community**

By society, we mean all the assets of the phenomenon under study or research (Al-Awadwa, 2002, 6), and the research community is defined by fifth-grade literary students in secondary and middle schools for the daytime school year 2018-2019 for boys, in the school city of Najaf.

**The Research Sample**

A representative of the research community is someone who is a member of the society in which the study is being done and who has been selected based on a set of criteria in order to be representative of that community (Dawood and Anwar, 1990, 67). The researcher must choose a representative sample of the research community in order to achieve its objectives and help it to overcome the problems it faces (Melhem, 2000, 125).

After the researcher determined the school of Nebuchadnezzar using the random drawing

method, he visited it, and it was found that the number of people in the fifth grade of middle school in the school is (3) people, and in the light of the experimental design, the researcher chose two divisions by the method of simple random drawing, so the choice fell on two sections (A, B). By random assignment, section (A) was also chosen to represent the experimental group that is taught by the Palnaskar and Brown method, and section (b) to represent the control group that is taught by the traditional method.

The number of students in the research divisions (A) and (B) reached (65) students, with (32) students in section (A) and (33) students in Section (B). The number of the research sample members (60) students distributed equally among the two research groups, note that the researcher excluded students who failed from the final results only, as he kept them in the classroom in order to preserve the school system, and Table (2) illustrates this.

Group	Section	Number of the Students before Exclusion	Number of the Filed students	Number of the Students after the Exclusion
Control	B	32	2	30
Experimental	A	33	3	30
Total		65	5	60

**(IV) - Control procedures****First: - Internal safety:**

When the experiment was first planned, the researcher was concerned about the statistical equivalence of the two groups (experimental and control) in several factors that may impact how accurate the results of the experiment were. These variables included the following:

**Chronological age (in months):**

The chronological age was obtained from the school card and from the students themselves.

The researcher asked the students of the two groups (experimental and control) to bring identification cards. The year of birth was recorded and the chronological age was calculated in months. After statistical analysis, the researcher found that the arithmetic mean of the experimental group was (217.30) months, while the arithmetic mean of the control group was (213.00) months and after using the t-test for two independent samples to find out the significance of the difference between the two groups.

\* The researcher put pieces of paper of equal sizes in a bag representing the sections, and two sections were chosen randomly.

It appeared that there was no statistically significant difference between the two research groups, as the calculated t-value amounted to (1.147), which is less than the

tabular t-value of (2) at the significance level (0.05) and the degree of freedom of that (the two variables are equal to (58) age). The timeline and table (3) show this

**Table (3) The arithmetic mean, standard deviation, and the calculated and tabular T-value for the ages of the two groups, calculated in months**

S.No.	Groups	Number	Arithmetic	Standard Deviation	Degree of freedom	Calculated T-value	Tabular T-value	Sig.at 0.05 . level
1	Experimental	30	217,30	14,64	5	1,147	2	No Significance
2	Control	30	213,00	14,962	8			

### 3- IQ Level: IQ.Test

For the purpose of knowing the level of intelligence of the research students, and achieving parity between the intelligence of the two groups and for the sake of accuracy in the research results, the researcher applied the Raven test for the successive and standardized matrices on the Iraqi environment (Al-Dabbagh et al., 1983:142), the researcher calculated the arithmetic mean of the students of the two research groups, and it was found that the arithmetic

mean of the experimental group was (35.57), while the arithmetic mean of the control group was (31.73), And when those data were statistically processed using the t-test for two independent samples, there was no statistically significant difference between the two research groups, as the calculated t-value amounted to (1.560), which is less than the tabular t-value (2) at the level of significance (0, 05) and with a degree of freedom (58), thus the two groups are equivalent in the intelligence variable as shown in Table (4)

**Table (4) The arithmetic mean, standard deviation, and the calculated and tabular T-value of the intelligence of the two groups**

S.No.	Groups	Number of the Sample	Arithmetic	Standard Deviation	degree of freedom	Calculated T-value	Tabular T-value	Sig.at 0.05 . level
1	Experimental	30	35,57	10,0,26	58	1,560	2	No Significance
2	Control	30	31,37	8,979				



#### 4-Geography grades for the previous year

The researcher obtained the marks of the previous achievement in the geography subject of the research sample from the students' school card, and after obtaining the scores, the researcher calculated the arithmetic mean and standard deviation for each of the two research groups. The arithmetic mean of the experimental group was (61.40), while the arithmetic mean of the control group was (63.17), and to find out the difference between the two groups, the researcher conducted the equivalence process using the t-test for two independent samples. It appeared that there was no

statistically significant difference between the two research groups, as the calculated T-value amounted to (0.757), which is less than the tabular T-value of (2) at the significance level (0.05) and the degree of freedom (58), and thus the two groups are equivalent in this variable and Table (5) illustrate this.

**Table (5) The arithmetic mean, standard deviation, and the calculated and tabular T-value of the Geography subject marks for the previous year for the students of the experimental and control groups.**

S.No.	Groups	Number of the Sample	Arithmetic	Standard Deviation	degree of freedom	Calculated T-value	Tabular T-value	Sig.at 0.05 . level
1	Experimental	30	61,40	9,346	58	0,575	2	No Significance
2	Control	30	63,17	8,772				

#### Second: The external safety of the experimental design:

Some extraneous variables believed to affect the experiment were controlled. In the interest of the researcher for the external safety of the design, the following variables were addressed:

- 1- The impact of experimental procedures on the teacher, teaching experience, educational material, organization of the weekly class schedule and their number.
- 2- Choosing the research sample and measuring instrument - the system for correcting examination papers.

#### (V): The Research Requirements

The research requirements are among the basic necessities that the researcher needs before applying the experiment, and the requirements can be explained in detail as follows:

##### 1. Determine the scientific material

In order to conduct the experiment, the researcher chose the scientific subject based on the syllabus of the textbook for the fifth literary grade students scheduled for the academic year 2018-2019, which included the first three chapters of the Geography book for the fifth literary grade. The researcher conducted the experiment in a controlled environment.

##### 2. Formulating behavioral goals

The researcher prepared behavioral goals in light of the material he identified within the three chapters of the human geography book for the fifth grade literary, based on Bloom's classification of its six levels. The total behavioral goals reached (291) behavioral goals. In order to verify the integrity of the formulation of behavioral goals, they were presented to a group of experts and specialists in geography, methods, measurement and evaluation, and in light of their opinions, the researcher modified some of the goals and reformulated

others.

### 3. Prepare teaching plans

The teaching plan is defined as a real translation of the objectives of the content and the objectives of the curriculum that the teacher must use in order for the activities he employs and the movements he makes to be deliberate and consistent with that content. (Aqilan, 2000, 209)

Since the preparation of teaching plans is one of the requirements for successful teaching, in light of the research objective, hypotheses and its variables, the researcher prepared typical daily teaching plans for teaching general Geography topics for fifth-grade literary students for members of the two groups (experimental and control), where

the researcher prepared in a teaching manner (36 teaching groups for each teaching group) in a linear manner. , and (control), which is taught in the traditional way. Samples of these plans were presented to a group of experts and specialists in geography and teaching methods, in order to express their opinions on their validity and suitability for teaching. In light of the experts' observations and directions, the researcher made a number of necessary amendments to them, and the plans were ready for implementation.

Preparing a table of descriptors: The exam map was prepared in light of the content of the study material for the first three semesters of the Geography book for the fifth grade literary, as shown in Table (6)

**Table (6) displays the test map of the research**

Chapters	Significance as	Knowledge	Understanding	Application	Analysis	Structure	Evaluation	Number of questions per chapter
	per Subject							
First	38%	14%	17%	14%	10%	2%	-	19%
Second	35%	6	4	3	2	2	-	17%
Third	27%	5	3	2	1	1	1	14%
Total	100	17	12	8	7	5	1	50%

### (VI): The Research Tool

The research tool is the means by which data is collected that answer the research questions or test its hypotheses, and it is called the means of measurement such as the questionnaire, interview, observation and tests (Abu Hawij, 2002, 65). To achieve the research objective and hypothesis, the researcher prepared a test to know the students' achievement in geography as follows:

#### (1) The Achievement Test

The test is one of the most common assessment methods used in measuring learning outcomes, and it can be used to improve learning methods, and contribute to evaluating results, mastering planning and controlling implementation, and it is still one of the most important assessment tools useful

to the educational process (Al-Baja, 2000, 160). For the purpose of measuring students' achievement, the researcher followed, in constructing the test items, one of the types of objective tests, which is (multiple choice), and based on the test map according to the following steps:

#### 2. Drafting the Items of the test

The researcher prepared a geographic achievement test of the type of multiple choice, which consists of (50) items, and this type of objective tests was chosen because it represents the best, most honest, stable and widely used types of objective tests and it covers the study material, i.e. comprehensive of the subject (Abu Saleh et al. , 2000, 189).

#### 3. The validity of the Test

What is meant by the honest test is "the extent to which the test measures the thing that was designed for its measurement." (Adams, 1966, p.83) or it is the test that

measures what was intended to be measured (Nabhan, 2004, 272), and the researcher relied on two types of honesty:

**a).** Apparent honesty: It is achieved if the test title and its appearance refer to measuring the content for which it was developed, i.e. apparently honest in the number of its pages and questions, which increases the student's confidence in the test (Al-Adwan and Al-Hawamdeh, 2011, 204-205) to achieve honesty, the researcher prepared an achievement test, the number of its paragraphs was (50), and presented it to a group of experts specialized in curricula, teaching methods, measurement, evaluation and Geography, in order to explore their views on the validity of the test items in measuring the content of geographical concepts. In light of this, some modifications were made to a section of the paragraphs, and the researcher did not delete any test item.

#### **B - Content validity**

which means the extent to which the test paragraphs represent the content of the material to be measured, or the extent to which the paragraph is related to the content of the goal you measure. (Al-Zahir et al., 1999, 419). To achieve content validity, the researcher presented the content of the study material and its test items to a group of experts in geography, teaching methods, measurement and evaluation, in order to take their opinions and observations about the test representation of the content of the material, and thus the content validity was reached.

#### **4. Applying the test to a Survey Sample**

For the purpose of knowing the clarity of the test paragraphs, their level of difficulty, the strength of their distinction, the stability coefficient, and the time taken to answer them, the researcher applied the test to an exploratory sample of fifth-grade literary students from Jawad Saleem Preparatory School for Boys, the number of its students was (100) students when he applied the test on Wednesday 12/29/2018. The time was calculated and the researcher got (50) minutes as the average time to answer the test items.

#### **5. Statistical analysis of test items**

After applying the test to the survey sample, the researcher determined the psychometric characteristics of the

paragraphs, which are the difficulty of the items, the strength of their distinction, and the effectiveness of the wrong alternatives, as follows:

#### **a) - Paragraph Ease/Difficulty Coefficient**

The coefficient (difficulty and ease) was calculated for the test items, as it was found to be between (0.66-0.38), and Bloom believes that the test items are acceptable if their difficulty rate is between (0.20-0.80). (Bloom, 1971, p66).

#### **b)- The power of distinguishing items**

Each of the test items had its discriminating power assessed by the researcher, and the researcher discovered that it ranged between (0.70-0.39), and (Ebel) suggests that the test items are good if their discriminatory power is (0.30) or higher (Ebel, 1972, p406).

#### **6-Test stability**

It indicates that if the test is repeated on the same sample and under identical conditions, the findings will be the same (Bergoman, 1979, p.153). To calculate the stability, Kewder-Richardson equation 20 was used, as the stability coefficient reached (0.84) and is considered a high stability coefficient.

#### **(VII) - Application of the experiment:**

The researcher identified the following processes and methods in order to fulfill the research's aim and obtain the desired findings.

#### **The researcher applied his experiment to the two research groups on Monday 16/10/2018, and followed the following procedures:**

1-Teaching the two groups (experimental and control) by the same researcher.  
2- Teaching the same first three chapters of the Geography book for both groups.  
3- Using the same maps, pictures and geographical models for both groups, After the researcher finished applying his experiment on Monday 16/1/2019, that is, three months after the date of the experiment, the researcher applied:

1-Geographical achievement test on the members of the two research groups on Wednesday 23/1/2019 at 8.45 am. The two

groups, the researcher supervised the application of the test in order to maintain its proper implementation, and after correcting the answers and obtaining scores, the researcher used some statistical methods to calculate the difference between the two groups.

#### (VIII) - Statistical Means:

Statistical approaches such as the ones listed below were used by the researcher in order to process the data:

1. The t-test for two independent samples, which was used between the two research groups in:

A - Conducting equivalence for the variables (intelligence level, chronological age, geographic grades for the previous year).

#### B - Achievement test.

Ease/difficulty coefficient: employed to calculate the ease and difficulty of each test item.

**Item discrimination coefficient:** The researcher employed this method to find the distinguishing power of each of the test items. Kewder-Richardson equation 20 to calculate the reliability of the test. (Imam et al., 1990, 112)

### Section Four: Research Results

After the researcher has completed the research experience and in light of the procedures adopted by the researcher in the previous chapter, the findings of the research are presented and analyzed.

#### (I) Showing the results:

##### 1- Results of the achievement test:

In order to identify the research hypothesis (there is no statistically significant difference in the achievement of students in Geography between the average scores of the experimental group students who study Geography in the Palnaskar method, and the average marks of the control group students who study the same subject in the traditional way). Following the application of the test, the average scores of the students in the two research groups were calculated, and the average scores of the experimental group were (59.13) degrees, as the calculated T-value amounted to (4.618), whereas the average scores of the control group students reached (51.80 degrees), in order to determine the significance of the statistical difference between the averages of the two groups were calculated. In order to demonstrate the results, the researcher utilized the T-test for two independent samples, as shown in Table (7).

Table (7) The arithmetic mean, standard deviation, and the calculated and tabular T-value for the scores of the students of the two research groups in the test of acquiring geographical concepts

S.No	Groups	Number of the Sample	Arithmetic	Standard Deviation	degree of freedom	Calculated T-value	Tabular T-value	Sig.at 0.05 . level
1	Experimental	30	59,13	3,288	5	4,68	2	Sig.In favor of the Experimental Group
2	Control	30	51,80	6,754	8			

As shown in the table, the calculated t-value was (4,618), which is greater than the tabulated t-value of (2) at the significance level (0.05) and the degree of freedom (58), indicating that there is a statistically significant difference between the results of the two research groups in the achievement test for the Geography subject in favor of the experimental group, and as a result of this finding, the null hypothesis was rejected.

### **Second - Interpretation of the results:**

Through the results of the research, it appeared that the students of the experimental group who were taught using the Palnaskar and Brown method were superior to the students of the control group who were taught by the traditional method in the achievement test,, and this result agrees with the studies of (Al-Janabi, 2017) and (Al-Bahadli, 2018).And this essential success is attributed to the following:

- 1- The Palnaskar and Brown method helped the students to increase their academic achievement better than the students who studied the traditional way by discovering what students have of ideas related to the new topic by recalling the previous information they have and helping them to link it with the new information and this leads to the expansion of activities and increase of discussions,thus, serious information is discovered completely and clearly, and the method also helped link that information to practical life, which means that it helped students build a coherent mental representation between what they have studied and what is related to his life.
- 2- The use of the Palnaskar and Brown method encouraged the students and allowed them to build their knowledge through interaction and harmony with the subject teacher by increasing cooperation between students, exchanging opinions, presenting ideas and appreciating opinions, which was reflected in increasing awareness and perception and contributed to raising the level of their academic achievement.
- 3- The use of the Palnaskar and Brown method

transformed the student from a mere recipient to being considered as a focus in the learning process by making him able to predict, question, summarize and propose solutions, which increases their academic achievement. 4-The use of the Palnaskar and Brown method led to the construction of the student's mental representation by linking the previous information with the following and between what was studied and his daily life.

### **The Conclusions:**

In light of the findings of the investigation, the researcher came to the following a few conclusions:

- The application of the stages of the Palnaskar and Brown method affected the students' acquisition of information and knowledge, and raised in them the spirit of cooperation and love of participation in the lesson compared to the usual method, which made them more interactive, interested in the lesson.
- Teaching according to the method of Palnaskar and Brown helps the teacher to prepare good teaching plans based on knowledge, comprehension and application.
- The use of the Palnaskar and Brown method in teaching helped in changing the students' behavior towards the Geography lesson, by paying attention to the lesson and paying attention to the Geography subject.
- The use of the Palnaskar and Brown method helped to learn more effectively, and this led to the development of thinking, knowledge and learning among students.

### **Recommendations:**

In light of the researcher's results, he makes the following recommendations:

- Guiding Geography teachers to the possibility of using the Palnaskar and Brown method to teach topics to Geography subjects in middle schools.
- Intensifying seminars and scientific courses for educational specialists and specialists to clarify the importance of the Palnaskar and Brown method in the classroom in teaching Geography and other academic subjects.
- Holding training courses for teachers of

Geography on how to prepare tests to measure multiple intelligences.

- The Ministry of Education has issued a guide for male and female teachers that includes a number of modern methods and approaches, including the method of Palnskar and Brown and distributing it to them for their use in the educational process.

### Suggestions:

As a continuation of this research, the researcher suggests the following:

- Conducting an investigation to detect the impact of the Palnaskar and Brown method on the achievement of Geography for other academic levels.
- Conducting a comparative study between Palnaskar and Brown's method and other structural models such as the structural analysis model.
- Conducting a study to find out the effect of the Palnaskar and Brown method on other variables, such as attitudes and tendencies towards geography.
- Conducting a comparative study between the current study model and other study models, to find out which is more effective in acquiring geographical concepts.
- Studying the effect of teaching using the Palnaskar and Brown method on developing creative and critical thinking skills.

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