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The Effect of Academic Psychotropic stimulants on Improving Second Grade Female Students Reading Comprehension in English

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ABSTRACT

Educational institutions are of importance in the progress of peoples and nations and the organization of the educational situation requires methods and methods of teaching that lead to the development of the ability to learn among the learners. Students have links to storage and retrieval of the educational task. The research aims to identify the effect of mental stimulants on reading comprehension among second-grade intermediate students in the subject of the English language, as well as the rate of development in reading comprehension between the two research groups (experimental, control). The educational program was applied to a sample of 20 students, and the means were used Statistical analysis of the research sample responses, and the results were that the educational curriculum according to mental stimulants (cognition strategies) is able to improve the level of reading comprehension for female students, and the experimental group and the control group outperformed the post tests in reading comprehension, and the experimental group outperformed the control group in the post tests, and the experimental group outperformed the control group in the level Development.

1. Introduction

Reading is composed of two main processes: decoding and comprehension. Decoding involves the process of recognizing letters, relating them to speech sounds, and then connecting those sounds to make words. Children are explicitly taught that letters represent the sounds of spoken words and they practice those relationships. Then they connect those sounds to make words. Comprehension, the second of reading's main processes, involves understanding the written word, and specifically connecting information within the context of a particular text. Students must also learn to relate what they are reading to prior knowledge. And they must learn to read fluently. The frontal lobes of the brain are called upon to coordinate thought processes in more complex ways as those processes begin to become more expansive. As a child becomes a proficient reader, he or she uses both decoding and comprehending so that both skills become more interdependent upon each other. That is, the context and meaning of the text aid in the decoding process, as the child predicts what words will appear, just as the decoding process gives rise to additional meaning. .

Mental stimulants have a great educational importance that can be achieved at different ages, specializations, and in many educational fields. A number of researchers have found that mental stimulants provide students with links for storage and retrieval of the educational task (Abdel Majeed: 2000.p. 13).

Darwazah advises the teacher, especially beginners, to use mental stimulants in order to make his teaching method richer and more interesting, and the subject he teaches clearer and more meaningful (Darwazah: 1990, p. 137).

Comprehension leads to the development of the teacher's performance in the educational process. If teachers are able to absorb the material read through different texts and teach students different means, they will have the foundations upon which the process of evaluating, developing, and improving the learning process is based (Shehata: 2008. p. 88)

Comprehension is a guarantee for improving the students' language, providing them with rich ideas, providing them with useful information, issuing readable judgments, helping them to notice the new, to confront the problems they encounter, and providing them with what helps them to be creative (Fadlallah: 2012, p. 64).

In order for comprehension to be achieved, it is necessary to focus on the mental processes (perception) while reading, because perception enables the reader to comprehend the importance of the subject, to grasp its reflections, to turn to its impressions and causes, and to obtain the meaning behind it, in addition to being the last step (Salman: 2008. p120).

Problem of the study

The development of learning strategies has become an educational necessity for the learning process and one of the important factors that contribute and help in the development of the educational process. So, it was necessary to think and discover new methods to reach excellence, among these methods is the use of cognitive stimulants as a means that serves development, besides, and upgrading as cognitive means that urge the learner to employ mental processes during learning and leave him the freedom to employ what he wants of the processes that lead him to comprehension and understanding and then to better learning because comprehension is the essence and focus of the reading process, and reading is a mental process.

Questions of the study

The researcher was able to formulate the study questions as follows:

1. Are there any statistically significant differences between the mean scores of the experimental and control groups students' reading comprehension due to using the academic mental stimulants vs. regular instruction?
2. What types of reading comprehension (lexical, literal, interpretive, applied and affective.) do the experimental group students improved the most?

3. What is the effect of using cognitive stimulants on the reading comprehension of second year intermediate female students in the English Language?
4. What are the students' motivations and attitudes toward using the mental stimulants in reading comprehension?

-The effect of the use of psychotropic stimulants on the motivation of second year intermediate students in the English Language.

Objectives of the study:

1. TO build an educational program using psychotropic stimulants in learning reading comprehension for second grade intermediate students in an English language subject.
2. To identify the effect of psychotropic stimulants on reading comprehension among second-grade female students in the English subject in the experimental and control groups
3. to identify the rate of development in reading comprehension between the two research groups (experimental and control groups)
4. Identifying the motivation of second grade students towards the use of psychotropic stimulants in learning.

Limitations of the Study

1. Female students of the second intermediate grade in Al-Istabraq, Thi-Qar Governorate, for the academic year 2022/2023.
2. The subject of the English language (comprehension) prescribed for the second intermediate grade.

Operational definitions of terms

Academic Psychotropic Stimulants (Mental stimulants): "They are the specific cognitive means that urge the learner to employ the appropriate mental process during his learning or leave him the freedom to employ whatever mental processes he wants that lead to understanding and assimilation and then learning (Darwazet Afnan: 1995, p. 130).

Reading comprehension: a mental process that focuses on realizing the explicit and implicit meanings in the read text, organizing ideas, linking details, and criticizing the read in the light of experiences and contexts (Qahf: 2016, p. 11).

Theoretical Framework

Psychotropic (Cognitive Strategies)

Abd al-Rahman Adass defined it: “Methods and strategies that help the learner to link new and unfamiliar information with familiar words, ideas and perceptions, and then organize and process them” (Abdul Rahman Adass: 1998. p. 299).

Imad Abdel Rahim stated, "An organized cognitive process that enables individuals to understand the external world around them and adapt to it by choosing appropriate performance patterns (Imad Abdel Rahim: 2004, P.116).

Darwazah defined it as “Those mental aids that rely on symbols, language, shapes, and images to facilitate the learning process.” (Darwazah Afnan: 2000, p. 223).

Types of Psychoactive Stimulants (Cognition Strategies)

1. Paraphrasing: “It is a restatement of the studied material, and it reflects the individual understands and comprehension of what he reads. (Grabowski 1989 p234).
2. Educational questions: These interrogative sentences urge the learner to search in his memory for the stored information and retrieve it with the aim of answering the question asked or solving the problem presented. (Darwaza: 2004, p. 158).
3. Educational objectives: Behaviors, skills, or abilities that the learner is expected to display after the learning process. They may be general educational achieved in a relatively long period such as a semester or an academic year, or specific behavioral achieved in a short period as a study session. (Darwaza: 2004, pg. 158).
4. Instructions: guiding sentences that direct the learner to how to work, solve the problem facing him, and proceed in the learning process. They are often presented to the learner in the form of points or steps. (Mealey: 1989 p493).
5. Similes: It is a link and comparison between two academic subjects of equal generality level, one of which is familiar to the learner and the other is unfamiliar, for making the unfamiliar subject familiar (R, V: 1984, P. 117).
6. Summaries: a thinking process that includes the ability to find the core of the topic, extracts the main ideas in it, and expresses it briefly and clearly. (Fathi: 1999. p. 217).
7. Spatial learning strategy: It is about the main ideas and information that appear in the studied text and knowledge of the relationships that link these ideas using arrows after they are organized in the form of tables and maps starting with the

highest general idea to the idea that is lower than it and so on. It may be from right to left and it may appear in the form Circles connected by straight lines. (Annis, L, F: 1985.p10).

8. Structures: It is a brief system of information that shows the internal relationships that link the ideas of the text with each other and with other ideas. (Darwaza Afnan: 2000, p. 223).
9. The lines under the important ideas: They are straight relationships that plan the ideas that the learner believes are important and main in learning the studied material. (Crouse, J, H: 1972.p313).
10. Information Map: A way to represent the structure of knowledge that can be perceived as a combination of concepts and the relationships between them, which are called issues or principles that are organized in hierarchical structure. (Novak,j,D1995.p86).
11. Sentences and titles: brief words that express an idea, concept, principle, or a general learned procedure and give an essential idea about it. (Witt rock: 1975.p489).
12. Material sensory images: A perspective illustrative form provides the learner with information and facts about a specific situation or incident. These images may be colored or black and white (Carrier, C, Joseph: 1983.p.135).
13. Educational stories: A popular method presented to students of different ages and educational levels, as it leads to arousing their interest, attracting their attention, and increasing their motivation to learn. (Ahmed Khairy and Saad Bass: 1973. p. 204).
14. Class notes: brief sentences woven from the content of the study material or the experience of the learner himself, and these sentences represent the important ideas that appear in the studied text, comment on it, or add to it. (Shrager: 1989.p.263).
15. Mental images and fantasies: a visualization or imagining of a specific idea, concept, principle, procedure, or fact with the aim of seeing this information in a clearer and richer way and finding out its subtleties. This stimulation helps to improve the processes of remembering and reading comprehension (Darwaza: 2004, p.264).
16. The advanced information system: a brief plot of general information first, then the less general and less general information gradually.(Ausubel:1960,p. 272).

17. Memory consolidation tools: letters, words, or images, each of which represents a word, image, important idea, or term to be learned, and they are interconnected in perfect harmony, and the aim is to improve and support the learner's memory.(Lindsay,p,H:1977.p. 77).
18. Pen tips and lines: a skill related to defining the relationships between concepts and organizing them in a way that reflects the abstract general ideas that were mentioned in the subject, then moving on to the tangible sub-ideas that are less general. (Keny, R, F: 1994.p.14).
19. Introductions: a prelude to what is to be learned, so that it prepares the learner for the ideas, concepts, principles, and procedures that will come, and provides him with a brief idea about them. (Waxman, H, c: 1987.p. 88).
20. Revisions: Reconsidering and reviewing the learned material to ensure that the two learning processes take place. The revision often covers the important points mentioned in the studied text, whether it is general information or partial information. (Darwazeh: 2004, p. 160).

Methods of Introducing Stimulants to Mental Processes

The derivation of the stimulants of mental processes stems from the two sources of the teacher and the student. Accordingly, there are two educational methods used in presenting the stimulants of mental processes:

Method of Stimulants of Mental Processes Involved 1-

It is the educational methods that relies on the teacher (or the curriculum developer or the instructional designer) and places the greatest responsibility on his shoulders in helping the student achieve the desired goals.

Presentation of stimulants in this method comes from the teacher (or curriculum developer or instructional designer) selecting the stimulant he deems appropriate, preparing and presenting it to the student, then urging him to study it and employ it in the educational situation. Example: The teacher gives "educational questions" to the student and then asks him to answer them in order to help him learn the subject in a better way.

Method of Discrete Mental Processes Stimulants

The educational method provides the student with instructions and instructions that urge him to think and derive "energizing" information on his own to achieve the educational goals (Darwazeh, 1993: pp. 223-225).

This method is divided into two parts:

a. Discrete (limited) mental process stimulants:

In it, the student is urged to think about deriving the stimulus suggested by the teacher, as if the teacher asks the student to think about setting educational questions for the subject and then answering them

b. Discrete (unlimited) stimulants:

In it, the student is left free to use the stimulant that he thinks is appropriate without prior determination by the teacher, such as asking the teacher to ask the student to use whatever stimulant he wants that he thinks is appropriate and helps him understand the subject and assimilate it in a better way (Al-Affoun, Qahtan, 2010, pg. 76-77).

In the current study, the researcher relied on the method of mental processes stimulants included and the method of separate mental processes stimulants in its first limited part, due to the nature of the age stage of the students and the limited lesson time of 45 minutes.

The Timing of the Emergence of Mental Processes Stimulants in the Educational Process

Some mental process stimulants are more effective than others are if used before the start of the lesson, while others are more effective if used during the lesson, while some stimulants are not effective unless used after the end of the lesson, and one stimulant can be used in more than one time. During the educational learning process, for example, you may use educational questions before, during, and after the lesson. The timing of using mental process stimulants depends on the educational level to be developed, the characteristics of the student, and the educational content. It also depends on the type of stimulant used, and the mental stage in which the information is stored. Therefore, mental process stimulants appear during the lesson according to Darwazah's distribution as follows:

1. Before teaching: (the stage of receiving and entering information)

It helps the student to receive information and enter it into the short-term memory, due to what these stimulants do by attracting attention to the prominent ideas in the learned material and linking the new learning with the previous learning.

2. During teaching (the stage of coordinating and programming information)

It helps the student to coordinate information, encode it, process it, and transfer it to long-term memory, because stimulants convert the material to be transferred into meaningful learning patterns by analyzing, interpreting, organizing, and moistening it with relevant, previously learned information, tabulating, assembling, and arranging it

3. After teaching (the stage of information retrieval and its use)

It helps the student to encode information in the long-term memory to use it at the time of need, because of what these stimulants do in summarizing the learned material, assembling it, and seeing it as a whole, which helps to review it in a relatively short time (Darwazeh: 2004:148-152).

Table1 Psychotropic stimulants, the timing of their use in the educational process, and the mental level they develop

Psychotropic: (After the lesson)	Psychotropic: (during the lesson)	Psychotropic: (before the lesson)
1. Post-educational questions 2. Reformulation 3. Summaries 4. Visual information system reviews	1. The educational questions 2. Reformulation 3. Comparisons 4. The main ideas 5. Mental images 6. Stories 7. Classroom notes and means of memory consolidation	1. Educational goals 2. Tribal educational questions 3. Sentences and headings 4. The heads of the pens 5. Physical sensory images 6. Figures and tables 7. Mental images 8. Stories 9. Introductions 10. Abstracts 11. The system of tribal information and means of consolidating memory
Installation and calendar	application and analysis	Remember and understand

2. Methodology

There are many approaches that are used in scientific research, and in order to achieve the objectives of the research, the researcher had to choose the experimental approach with the design of the two equal groups, the control, and the experimental, due to its suitability to the nature of the problem of the study and its solution

The Sample of the Study

The research sample consisted of 40 students in the second grade average of Al-Istabraq Intermediate School for Girls for the academic year 2022/2023, and the ages of the students ranged between (13-15) years, and they were divided into two groups, the experimental and the control, with 20 students for each group

Study Procedures

1. Selection of psychotropic stimulants: In order to determine the psychotropic stimulants to be studied, and through reviewing the literature and sources and conducting interviews with experts and specialists, three psychotropic stimulants were identified.

Pre-lesson educational questions (understanding and remembering)-

Reformulation during the lesson (application and analysis)-

Reviews after the lesson (calendar)-

2. Determining the scientific subject: the researcher identified the reading topics that will be studied for the students of the second intermediate grade for the academic year 2022/2023 in the English language book and the scheduled activity book for a period of eight weeks.

Table2 Comprehension topics to be taught during the trial period

Page	Textbook	Subject	Week
6	2nd Intermediate Students Book	Meet a local personality	The first
13	2nd Intermediate Students Book	Jad and Johnny –A tour of London	Second
17	2nd Intermediate Students Book	Take my advice	Third
21	2nd Intermediate Students Book	Jalal's story A true story	Fourth
26	2nd Intermediate Students Book	Camping at Stonehenge	Fifth
33	2nd Intermediate Students Book	Olympic superstars	Sixth
37	2nd Intermediate Students Book	The football match	Seventh
39	2nd Intermediate Students Book	Thy anew sport	Eighth

Tribal Tests

The pre-tests will be conducted on the day (Sunday) approved (16/10/2022) before the school of the subject and the supervisor. The test grade will be based on the reading comprehension level of the piece to be tested and the grade was 10 points.

Educational Program for Mental Stimulants (Cognition Stimulants)

To achieve the objectives of the research, it required the adoption of a systematic method in designing the program according to specific steps and stages.

1. The analysis stage: This stage includes defining the study material, the category used, and the educational environment:

a. Determining the study subject: the researcher chose the subject of reading comprehension in the English language subject and within the curriculum prescribed by the Ministry.
b. Determining the category used: Second year intermediate students have been identified for the academic year 2022/2023.
c. Determining the educational environment: To study the educational environment on which the educational program will be applied, the availability of tools from an appropriate classroom and methodological books, to determine the lesson time that includes 45 minutes, and to determine the repetition of the educational curriculum distributed over eight weeks, at the rate of two units per week, and within the vocabulary of the prescribed curriculum.

Analysis of Educational Needs

a. Directing an open, exploratory questionnaire to a sample of second-grade intermediate students to find out their views on the educational needs that they see as appropriate for learning reading comprehension.
b. Using educational means such as pictures, films, etc.
c. Use a variety of teaching methods
d. Examine the literature, sources and previous studies to analyze the needs

Curriculum:

The curriculum included eight pieces of reading comprehension, in which mental stimulants will be used. It will confirmed that:

1. Matching the educational units with the sample level

2. Divide the educational units in the lesson plan and take into account the time of the educational unit
3. Ensure that the inotropic sequence is used

The educational unit will be divided into four sections

1. The preparatory section, which lasts for 5 minutes, where the students sit in their places, greet them, take absences, and introduce the students to the subject to be studied.
2. The educational section and a period of 10 minutes. The subject teacher uses the first activator (educational questions) to read the lesson clearly and focus on showing the meanings of the letters and the pronunciation of the words and focus on the students' comprehension of the piece to be learned.
3. The applied section is 20 minutes, and the second activator is used (rephrasing). The students re-read the subject to be learned alternately, in the students' language, to show the extent of their understanding and assimilation of the subject to be studied.
4. he concluding section, 10 degrees, in which the third tonic (revisions) is used to evaluate the performance of the students and to indicate the strengths and weaknesses of the subject to be studied.

Steps to implement the educational curriculum

1. Before starting the implementation of the educational unit, the researcher organized the research sample represented by the students of the second intermediate grade in Al-Istabraq Intermediate School for Girls, according to the division of the school administration and taking two divisions (A & B) as follows:

a. Experimental group: Part A method of psychotropic stimulants was used
b. Control group: Division B. The method used by the subject teacher was used

2. The curriculum contained three types of mental stimulants (educational questions, rephrasing and reviews).
3. lesson, and the subject teacher explains the lesson and reads it to the students accurately and carefully, while setting questions for implementation.
4. Using mental stimulants. Rephrase during the lesson. The largest number of students read the lesson and focus on reading comprehension and correcting mistakes, if any.

5. Using the third mental stimulant, reviewing in the concluding section of the lesson, evaluating what the students have learned, highlighting strengths and showing weaknesses in order to correct them
6. Emphasis on moving from one tonic to another, sequentially and according to the school plan
7. Commitment to the specified time for each tonic and for each part of the plan
8. The curriculum continues in this way for eight consecutive weeks, with two units per week

Post-tests:

The post-tests will be conducted by the subject school for the sample and according to the grades of the oral exams prescribed in the schools after the completion of the implementation of the educational program on the day16/10/2022) corresponding to (29/12/2022).

Statistical means

1. Arithmetic mean
2. Percentage
3. standard deviation
4. T-correlation for one sample

T correlation for two equal samples

3. Results and Discussion

Table (3) shows the arithmetic mean, standard deviation, the calculated T value and its statistical significance for the pre and post- tests of the experimental and control groups

Table3 mean, standard deviation, the calculated T value and its statistical significance

Topic	Group	Pre-test		Post-test		T value	Statistical Significance
		Arithmetic Mean	Standard Deviation	Arithmetic Mean	Standard Deviation		
Reading Comprehension	Experimental	4,6	1,64	7,71	2,33	9,14	Moral
	Control	4,8	2,23	6,56	1,123	10,17	Moral

It is clear from Table (3) that the arithmetic mean of the experimental group in the pre-test was (4.6) and with a standard deviation of (1.64), while the post-test obtained an arithmetic mean of (7.71) with a standard deviation of (2.33) and the value of (T) appeared calculated (9.14), which is greater than the tabular value and the level of significance (0.05) and the arithmetic mean

of the control group in the pre-test)4,8 (with a standard deviation of (2.33), while the post-test obtained an arithmetic mean of (6.56) and a standard deviation of (1.23). The calculated (T) value appeared (10.17), which is greater than the tabular value and the level of significance (0, 05) This indicates that there is a significant difference in reading comprehension scores between the pre and post -tests, in favor of the post test, and for both the experimental and control groups

The researcher attributes the moral difference of the experimental group to the effectiveness of the curriculum according to the strategies of mental stimulants to develop the level of performance with reading comprehension and improve it and accelerate the learning process through the correct scientific foundations when designing these programs and in a way that is compatible with the capabilities and capabilities available to acquire the learning process and mental stimulants that would work on Simplifying the learning process and ignoring the unfamiliar educational content familiar to the beginner and developing different and varied mental levels. Presenting the mental stimulant to the learner in different styles and different times would develop in him different and untapped mental processes in the field of learning, understanding and retrieval, and this is consistent with what he mentioned (Aqel Fakher 1976, p. 232) Because part of the student's failure to recall is his lack of the correct way to study and his scarcity of knowledge of mental stimulants that act as means of remembering, as remembering is one of the effective elements in the learning process. In addition to a development in the level of reading comprehension of the control group, due to the effectiveness of learning using the applied subject school curriculum, and that any educational curriculum that has a scientific method that is studied and appropriate for the student's level, there must be a development in performance, so the implementation of the curricula effectively leads to an improvement in the general performance of the student

The arithmetic mean, standard deviation, the calculated and tabular T-value, the degree of freedom and their significance for the post-tests of the control and experimental research groups in reading comprehension is shown in table (4)

Table4 mean, standard deviation, the calculated and tabular T-value, the degree of freedom and their significance for the post-tests of the control and experimental research groups

Group	Sample	Mean	Standard Deviation	T Calculated	T Tabular	Degrees Freedom	Sig
Experimental	20	7,71	2,33	4,16	2,09	18	function
Control	20	6,56	1,23				

It is clear from Table (4) that the value of the arithmetic mean for the experimental group and for the post-test was (7.71) with a standard deviation (2.33) and for the control group it was (6.56) with a standard deviation (1.23) and the calculated (T) value was (4.16). It is greater than the tabular (T) value (2.09) at a degree of freedom (18) and a level of significance (0.05) This indicates that there are significant differences in reading comprehension scores between the post-tests of the experimental and control groups, in favor of the experimental group

The researcher attributes the effectiveness of the educational curriculum according to the strategies of mental stimulants, because it provides the students with the links of storage and retrieval of the educational task, because the student employs his mental operations during learning, he will learn better than those who do not perform this process, because it leads to the superiority of their performance over the performance of their counterparts who did not have such an opportunity. In the usual curriculum and contributed to the development of reading the text and limiting the prominent parts in organizing the material read and repeating the material, and thus the student was able to absorb these ideas, while the control group achieved a significant impact on the results, and this confirms the validity of the approach followed by the school of the subject, and this was confirmed by a study (Gadzella 1984) there A correlation between achievement and cognitive strategies and their mental stimulants

Table5 the pre and post tests and the rate of development for the experimental and control groups

Group	Pre-test	Post-test	Evolution rate
Experimental	4,6	7,71	40,33%
Control	4,8	6,56	29,87%

Table (5) shows that the difference between the pre-test and the post-test for the experimental group was (3.11) and the development rate was (40.33%), and the difference between the pre-test and the post-test for the experimental group was (1.76) and the development rate was (29.87%). The reason for this development is due to the students of the experimental group who had never been exposed to such a scientific, organized and enjoyable method of the learning process through educational questions, analyzing and rephrasing them, and then reviewing them. The level and percentage of learning over the control group.

4. Conclusion

1. The educational curriculum according to mental stimulants (cognition strategies) is able to improve the level of reading comprehension for female students
2. The experimental group and the control group excelled in post-tests in reading comprehension
3. The experimental group was superior to the control group in post- tests
4. The experimental group was superior to the control group in level of development

Recommendations

1. The use of psychotropic stimulants, which has an impact on raising the level of students and accelerating comprehension and understanding
2. Conducting studies on some other types of psychotropic stimulants and their relationship to other variables
3. Issuing a guide that includes psychotropic stimulants and how to use them in the teaching process
4. Conducting similar studies for other academic stages and linking them to other variables

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