

The Effect of the Task-Based Learning (TBL) Strategy in Acquiring the Biological Concepts of the Second Intermediate Grade Students in Sciences

Mohammed Ahmed Bahjat Khalaf⁽¹⁾, Dr. Falih Abdul Hasan Owayid Altaee⁽²⁾

⁽¹⁾(corresponding writer) Postgraduate Student (Masters) :(Iraq ,University of Diyala, College of Basic Education/Department of Science, Specialization in Methods of Teaching Science)

⁽²⁾Ashraf Associate : Professor in (Iraq , University of Diyala ,College of Basic Education, Specialization in Methods of Teaching Science)

moh.ahm.bahjat2022@gmail.com, faleh.altaee77@gmail.com

Abstract: This study aimed to know the effect of the task-based learning strategy (TBL) on acquiring biological concepts for second-grade students in science. One of the intermediate schools was selected (Al-Tirmidhi for boys) in Diyala Governorate The students were divided randomly to represent one of the experimental groups and the other to represent the control group. The research sample consisted of (71) students, the experimental group included (36) students and the control group included (35) students. The study material included four chapters (seventh, eighth, ninth, tenth), the behavioral objectives of the chapters were formulated (177) for the four levels of Bloom's classification of the cognitive domain (remember, understanding, application, analysis), and preparing the teaching plans for the two groups (experimental and control).) And there were (24) teaching plans for the experimental group and (24) for the control group. The test tool consisted of acquiring biological concepts prepared by the researcher, consisting of (20) biological concepts so that each biological concept included three operations (definition, distinction, application) and by adopting a standard (66.6%) for acquiring the concept, and thus the test became a component of (60) multiple-choice tests. The results were processed using the SPSS statistical bag. The researcher also used the percentage law and the t-test equation to measure and find the significance of the differences between the percentages of acquiring each concept individually between the experimental and control group for acquiring biological concepts. The results showed that the experimental group outperformed the control group in acquiring biological concepts.

Keyword: Task based learning (TBL); Concepts; Concept Acquisition.

Introduction: The topic of teaching concepts has taken a prominent role in the educational process, and scientific endeavors have emerged in the field of educational scientific research because it constitutes the important component of school content that requires a focus on teaching concepts along with generalizations, theories or principles, rather than relying on facts or information to allow For learners to remember or recall them, because the concepts reduce the need to review what the student has learned, and the new concept also helps in solving some learning difficulties for students who move from one class to another. These concepts also lead to asking questions about the experience or specific information to make it meaningful, and also help them to organize sensory experiences. (Saadeh, 1988).

Problem of the Research: Learning and acquiring concepts is one of the main and indispensable things in all stages of education, because it simplifies and organizes countless sensory and non-sensory perceptions, in addition to organizing, arranging, naming,

distinguishing and categorizing basic components of human knowledge, as a basis for personal knowledge and a basis for knowledge. In the event that this percentage of knowledge is not achieved, learning remains incomplete, weak or non-existent, and this is not done in the usual ways in which the teacher is the focus of the educational process. (Al-Fatlawi, 2006). Whereas, the empirical studies conducted in Iraq such as (Al-Ta'i, 2004), (Khalil, 2012), (Khuza'i, 2014), (Karim, 2015) and (Al-Saadi, 2017) confirmed the presence of a decrease in the level of acquiring biological concepts for the second intermediate grade, As the majority of teachers rely on teaching methods and methods that depend on memorizing the scientific material only. Therefore, the use of modern strategies based on educational theories has proven successful in the field of science teaching, so the researcher wanted to use a modern strategy that might have good results in raising the level of acquiring biological concepts.

Importance of the Research: Science is the most basic subject of education, because the importance of science and its teaching has greatly enhanced the country's progress and development. Some studies also emphasized the need to improve and develop strategies in science at all levels of education that correspond to the nature of teachers, the nature of students and the available educational environment, in addition to the huge increase in knowledge and technology. Where the traditional methods of teaching are no longer able to transfer the ideas and developments of the modern era from the minds of thinkers, inventors and scientists to the minds of students, so it has become necessary to use more modern and more advanced teaching methods commensurate with what we want to achieve from learning and one of these strategies is task-based learning.

Objectives of the Research:

This research aims to identify the effect of the task-based learning strategy (TBL) on acquiring biological concepts for second-grade students in science subject.

Research hypothesis:

In order to achieve the research objective, the following two null hypotheses were formulated:

- There is no statistically significant difference at the level of significance (0.05) between the average scores of the experimental group students who studied biology according to the task-based learning strategy (TBL) and the average scores of the control group students who studied biology according to the usual method in the test of acquiring biological concepts for science subject.
- There is no statistically significant difference at the level (0.05) between the average scores of the experimental group students who studied according to the task-centered learning strategy (TBL) and the average scores of the control group students who studied according to the usual method in acquiring each of the biological concepts.

Limits of The Research:

The human and temporal limit : students of the second intermediate grade, the first semester of the year (2021-2022).

Spatial limit: middle schools affiliated to the General Directorate of Education in Diyala Governorate - Baqubah Center (Al-Tirmidhi Intermediate School for Boys).

4. The cognitive limit : The study material was specified in the fourth and fifth units of the Science Book (Biology).

Define of the terms:

Task-Based Learning strategy : It is a curriculum that reinforces the three-step teaching process, pre-task, task execution, and post-task, and is concerned with increasing students' motivation to learn and increasing collaborative learning in the classroom. (Viriya, 2018).

Concepts : that an abstract mental perception in the form of a symbol, a word, or a sentence, used to denote a specific object, subject, or scientific phenomenon, and it is formed as a result of linking facts to each other and finding the existing relationships between them. (Ibrahim 2009).

concept acquisition: It is the process in which the learner acquires the concept through his ability to define it and apply it in new educational situations, and give examples of it. (Darwaza, 1995)

Theoretical framework and previous studies:

:First - Theoretical framework :

- Task-Based Learning:

The task-based learning strategy (TBL) is based on the social constructivist theory, which sees that the student is an active being and acquires knowledge, experiences and ideas through self-learning. Therefore, this strategy focuses on the actions and activities of the student inside or outside the classroom, where they reach a solution to a specific problem or Accomplish tasks in the form of cooperative groups, which helps in collaborative work and collective negotiation among them .The essence of task-based learning is that group learning contributes well to the retention of experiences, knowledge and ideas, and cooperation with others within the group is an essential step in acquiring basic information and concepts for any study topic, and receiving positive feedback from students and teachers increases, encourages and motivates Towards learning, the teacher also provides the qualities that students possess during the implementation of tasks such as accepting the opinions of others, their speed in solving activities, the method of asking questions and inquiries that include tasks, and the extent to which they acquire information and ideas that students produce by communicating with each other. (Boncer,2010).

Conceptual Rooting Task Based Learning (TBL):

There are some definitions and opinions about the concept of this strategy, including:

- as : Sequential steps and procedures aimed at accomplishing scientific tasks and goals with a specific and clear meaning, which helps with self-learning while providing reinforcement and evaluating performance during the implementation of the tasks, either individually or collectively (Al-Sayyid, 2010).

- as: a set of stages in which various effective activities, roles and tasks are presented by the students. The role of the teacher is the guide who gives the tasks to the students and follows

up their participation in carrying out these tasks, then evaluates their performance and gives feedback (Al-Khatib, 2012).

After reviewing a set of previous opinions about the concept of this strategy, the researcher finds that: A pattern of modern educational patterns in the development events in education. It is considered an effective strategy in the teaching process. It includes three steps: (1-the pre-task stage 2-the task's implementation stage 3-the post-task stage) and implemented in order to provide students with concepts, principles and integrated skills with clear goals.

Stages of implementing a task-based learning (TBL) strategy:

- (Introductory) Phase During this phase, which can take a full lesson if necessary, the teacher introduces the task to the students and motivates them to solve it, with the participation of everyone and the teacher must explain what the goal of the task is, give instructions and inquire about how to get to the solution of the tasks.
- (task execution) This is the main stage of task-based learning where students begin to work on the task, usually in groups or pairs. This stage takes place in the language of communication between students. The aim is for students to feel the need for social negotiation in order to solve the task. The role of the teacher Monitors students and provides hints if students need support and feedback.
- (Post-Assignment Review) gives students the opportunity to reflect and analyze their work in order to improve their understanding, ideas and skills in the future. Students are also allowed to evaluate each other's work and provide assignment review only for repeated errors during the assignment. Feedback can be provided to students through class discussions and discussions between teacher and student or among the students themselves. (Kawasaki, 2021)

Teacher roles in task-based learning (TBL) :

The role of the teacher changes within the task-based learning strategy, and task-based learning is presented according to (Bonces, 2010)

- They become efficient as leaders or managers of a particular group.
- Organizers of group discussion and collaborative work among students.
- Students' participation in performing the task by encouraging them (motivating them).
- Provides feedback to students when help and necessity.

Student roles in task centered learning (TBL) :

- They represent the center of the educational process.
- They form the main focus of the learning process in the task-based lessons.
- Use the correct language that depends on the completion of tasks.
- Take advantage of opportunities that help them develop scientific concepts and facts when undertaking a task.
- Participants in marital work and group work.

Concepts:

Those interested in education assert that one of the most important basic goals that educational institutions should be concerned with is teaching concepts in all different subjects, and all educational levels. Therefore, curriculum planners and authors of different

textbooks work in identifying concepts in different educational stages in a sequentially in addition to using methods development. And the appropriate strategies for teaching them, as teaching concepts forms the basis for learning and solving problems in human life(Saeada, 1988). defines it as: a group of symbols, objects, terms, or a specific word with common characteristics and referred to by a specific symbol or name, which are classified into specific categories or groups according to a specific criterion (Ali, 2012). The researcher believes that the concepts have characteristics, including-: Concepts are a set of phrases that have been agreed upon in order to facilitate the understanding of the knowledge content, Concepts have the ability to grow and develop, and with their growth and development, science grows and develops, One concept may have more than one meaning, depending on the degree, complexity and way of perceiving the concept, The process of acquiring concepts may be affected by the cultural level of the family and the socialization of the student.

Concept Acquisition: Acquisition is defined as students ability to comprehend educational content by distinguishing and generalizing it. This ability to acquire is measured by summing the total scores obtained by students in the test prepared for it .Concept acquisition is one of the mental processes and is described as the most exciting and stimulating thought process for the mind, as many specialists misunderstand concepts, so they limit it to a general term or a general rule that describes specific information. Acquiring or learning a concept indicates a good distinction between the qualities that pervade the elements of a class of things and ideas. In addition, it is considered one of the most important cognitive functions that humans perform, and one of the most important ones.(Carroll, 1964). Therefore, the researcher defines concept acquisition: the ability of second-grade students (the research sample) to acquire the concept by answering two test items depending on the three processes (definition, distinction, application) which reflect his acquisition of each concept. (Al-Saadi, 2020). believes that acquiring concepts is of great importance, which are : To make the students able to provide solutions about the environmental or daily life problems they face, It helps students to categorize things according to certain characteristics and then put them into groups with their own names, and thus be able to possess the skill of classification. (Funna, 2012)

Research Methodology and Procedures:

First: Research Methodology : The researcher chose the experimental method for the purpose of achieving the purpose of the research, because it is considered one of the best approaches appropriate to the nature of the research, which is based on the experimental method.

Second: The selection of the experimental design : Choosing the experimental design with partial control (experimental and control) with a post-test to test the acquisition of biological concepts.

The design includes two groups, the first is exposed to the independent variable, which is the experimental one, and the second is studied in the usual way, which is the control one as in Scheme [1] :

[Scheme 1] of the experimental design of the research

the group	parity	independent variable	dependent variable
Experimental	1. Chronological age in months	Task Based Learning (TBL) Strategy	Acquisition of biological concepts
	2. Raven IQ test		
	3. Previous achievement in science	traditional teaching	
control	4. Test the previous information.		
	5. Parents' academic achievement		

Third: The research community and its sample:

Determining the research community : The current research community consists of middle schools for boys to study affiliated with the General Directorate of Education in Diyala Governorate / Education in Baquba District for the academic year (2021-2022).

Determining the research sample: The research sample was chosen by random assignment in (Al-Tirmidhi Intermediate School for Boys), where group (A) was chosen to represent the experimental group of (36) students that will be studied according to the strategy of task-based learning (TBL), and group (E) to represent the control group of (35) students, which will be studied in the usual way, and thus the sample size becomes (71) students. In order to achieve parity between the two research groups, the researcher rewarded the two groups for some variables of which :

Chronological age: Then calculate the ages of the two divisions (A, E) in months, through school records. And to verify the equivalence of the experimental and control groups in the chronological age, then using the t-test for two different independent samples. The results showed that there was no statistically significant difference in this variable as shown in Table (1):

[Table 1] The arithmetic mean, variance and standard deviation of the two research groups in the variable age

the group	number the sample	arithmetic mean	variance	standard deviation	df	T value		Statistical significance at 0.05
						calculate d	tabular	
Experimental	36	163.33	62.333	7.895	69	1.009	1.995	NON- function
control	35	165.74	135.51	11.64				

Previous achievement in science: The students' scores in science (for the first intermediate grade) were obtained from the school records and using the t-test for two different independent samples and their equivalent. The results showed that there was no statistically significant difference between the two research groups in this variable. and as shown in Table (2):

[Table 2] The equivalence of the students of the two research groups in the previous achievement variable in science

the group	number the sample	arithmetic mean	variance	standard deviation	df	T value		Statistical significance at 0.05
						calculated	tabular	
Experimental	36	69.861	203.01	14.248	69	0,367	1.995	NON-function
control	35	68.229	278.32	16.950				

Raven's test of intelligence: Intelligence tests reveal students' general mental level by performing certain mental tasks. Equality was achieved between the students of the two research groups in terms of intelligence by applying the Raven test for the successive matrices, which consists of five different groups (A, B, C, D, and E). Each of these groups includes (12) items, and each item includes (6) alternatives to the end of group (b) and then (8) alternatives starting from group (c, d, e) and using the t-test for two different independent samples, the results showed that there was no statistically significant difference between the two research groups in the variable intelligence., and as shown in Table (3):

Table (3) The equivalence of the students of the two research groups in the intelligence variable

the group	number the sample	arithmetic mean	variance	standard deviation	df	T value		Statistical significance at 0.05
						calculated	tabular	
Experimental	36	28.194	62.323	7.890	69	1.164	1.995	NON-function
control	35	25.429	133.50	11.554				

Previous information: The researcher prepared a test for the previous information that includes (20) items of the type (multiple choice), and the test material consisted of the sixth grade science subjects, and by using the t-test for two independent equal samples, the results showed that there was no statistically significant difference between the two research groups. In this variable, as shown in Table (4):

[Table 4] The students of the two research groups are equal in the previous information variable

the group	number the sample	arithmetic mean	variance	standard deviation	df	T value		Statistical significance at 0.05
						calculated	tabular	
Experimental	36	5.75	4.188	2.046	72	0.812	1.995	NON-function
control	35	5.85	4.180	2.044				

Parents' academic achievement: The researcher collected information related to the academic achievement of the parents from the students themselves by means of a form submitted to them. The results of the data, using chi-squared, showed the equivalence of the

two research groups in the educational achievement variable of the father and the mother. as shown in Table (5):

[Table 5] Repetitions of the academic achievement of the fathers and mothers of the students of the two research groups

parents	the group	Total	Parents' academic achievement						df	T value		Statistical significance at 0.05
			ignorant	Reads and writes	Primary	medium	preparatory	Institute and up		calculated	tabular	
Father	Experimen tal	36	2	9	10	4	9	2	5	2.502	11.070	NON- function
	Control	35	0	9	12	4	1	9				
mother	Experimen tal	36	4	12	14	3	1	2	5	3.449	11.070	NON- function
	control	35	1	9	18	2	2	3				

Research requirements: The following supplies have been prepared to complete the search:

Determining the subject : The subject was determined from the science book for the second intermediate grade, which he teaches in the first semester of the academic year (2021-2022) and has four semesters.

Formulation of behavioral objectives: formulated (177) behavioral objectives distributed over the four chapters (seventh, eighth, ninth, tenth) according to the cognitive levels (remembering, understanding, application, analysis) of the Blue classification, Then it was presented to experts in the field of science teaching methods to know their opinions on the appropriateness of formulating these purposes and their suitability for the educational content (80%) or more is a criterion for accepting the purpose or not, and all the purposes have been accepted, As in Table (6):

[Table 6] Behavioral objectives are distributed according to Bloom's four levels of cognitive domain

Study content	level of behavioral purpose				Total
	Knowledge	Understanding	Application	Analysis	
Chapter 7	16	15	6	4	41
Chapter 8	27	16	11	5	59
Chapter 9	32	7	13	5	57
Chapter 10	4	7	6	3	20
Total	79	45	36	17	177

Preparation of study plans: A set of appropriate teaching plans for the topics of the four seasons were prepared according to the (TBL strategy) and the usual method,(24) plans were prepared for the experimental group and (24) plans were prepared for the control group, and the two plans were presented to the experts to see the extent of their comprehensiveness and achievement of objectives, The percentage (80%) of consensus was set to be in the final form.

The research tools: In order to achieve the objectives of the research, the hypothesis of the research tool must be tested, which is a test of acquiring biological concepts. The test construction includes the following :

Determining the objective of the test: The objective of the test is to measure the acquisition of biology concepts for students of the second intermediate grade in the four chapters specified in the research from the science book (Biology) for the school year (2021-2022).

Determining the biological concepts: The researcher identified the biological concepts contained in the four chapters, in agreement with the supervisor, and then identified (20) main concepts and to calculate the apparent validity of the concepts in order to know their suitability and validity for the content of the material, and they were presented to specialists in the methods of teaching sciences, and all biological concepts were agreed upon by accreditation On agreement (80%) or more, as a percentage of acceptance of the concept, so I kept the concepts as they are.

Drafting of test items: In light of the previous step, the test consisting of (60) test items was built, and for each concept (3) test processes were constructed that measure the processes of concept acquisition (definition, discrimination, application). The test items were selected according to the type of multiple choice.

Building a Biological Concepts Acquisition Test : The researcher prepared a special test in order to measure the level of acquisition of biological concepts by members of the research sample (second-grade students), and he built a test of biological concepts acquisition for science subjects (biology) and for the four seasons (seventh, eighth, ninth, tenth). With instructions on how to answer the test and model answers.

Instructions and Answer Correction: After checking the validity of the test items, the instructions and answers for the Biological Concept Acquisition Test are set, giving an illustrative example of how to answer the test.

Test validity: Honesty is one of the most important characteristics of a good test, and the test is actually honest if it measures what the researcher has set it to measure Therefore, the validity of the test was confirmed in two ways (Mahjoub, 2005):

First: Apparent honesty: It means "the degree to which the test measures what is supposed to be measured and is considered a preliminary procedure for choosing the scale and the validity of the content" On the percentage of agreement (80%),all the paragraphs of the test of acquiring biological concepts were approved by the experts ,For this reason the test paragraphs were kept (60) and the test became ready for application. (Al-Dhamen, 2007).

Second: Content validity: The validity of the content is related to answering the following question: To what extent does that test measure (the acquisition of biological concepts) identified by the behavioral objectives Therefore, the test paragraphs, behavioral objectives and the content of the study material were presented to experts in biology and methods of teaching science and science Life, measurement, evaluation and educational psychology. To

find out the extent to which the test matches and achieves the content of the study material, an agreement percentage (80%) of the arbitrators was approved, and all paragraphs related to the test, behavioral objectives and key biological concepts were agreed upon. Therefore, the test prepared by the researcher is considered To measure the acquisition of the second graders of biological concepts honest in terms of content (Melhem, 2002).

The exploratory application of the achievement test:

Determining the time and clarity of instructions and Statistical analysis : This application aims to know the clarity of the test instructions and its paragraphs and the time taken to answer them with statistical analysis to know the psychometric properties of them, The test was applied on (Monday) corresponding to (1/13/2022) on an exploratory sample other than the research sample consisting of (100) students of the second grade of the intermediate school in the (Pacific Mediterranean Intermediate School for Boys). Where the average time taken was (33) minutes to answer the test, Statistical results were analyzed and included :

Difficulty coefficient: The number of correct answers for each of the (60) substantive paragraphs was calculated. It was found that the difficulty coefficient for the objective test items ranged between (0.20 - 0.72) and thus all the items have an appropriate difficulty coefficient. (Al-Hashimi,2013).

Discrimination coefficient: According to the discriminatory power of each paragraph, and the paragraphs' values ranged between (0.22 - 0.63), where (Ebel) indicates that the paragraph is good if its discrimination power is 20% or more. (Al-Nuaimi, 2014).

The effectiveness of wrong alternatives: The effectiveness of each alternative depends on its ability to attract student responses. An alternative that does not attract a response from any of the students is considered weak camouflaged, which requires reconsideration through modification or deletion and the use of a more camouflaged alternative and the values were negative for all items of the test, and thus all the alternatives for the items were considered appropriate (Al-Najjar, 2010).

Test reliability: I mean, if the experiment is repeated on other groups of students and they have the same similar conditions, it will give the same results in the first experiment (Mahjoub, 2005) and according to the reliability of the test in two ways: Then it was calculated using the half-split method, which amounted to (0.81), and after correction using Pearson's law, it reached (0.81) and it is considered a good acceptable coefficient, and when corrected using the Spearman-Brown equation between the scores of the two halves of the test, it reached (0.89), which is a very good stability coefficient. Stability (0.90) is a very good stability coefficient. (Allam, 2013).

Biological concepts acquisition test in its final form: After completing the statistical procedures, the test became valid for application in its final form, which consists of (60) items.

Seventh: Procedures for applying the experiment

The research equalized the students of the two research groups with the variables (chronological age calculated in months, previous information, Raven's test of intelligence, previous achievement in science, the academic achievement of parents), which started on Thursday (18/11/2021) and ended on Monday (22 11/2021).

Teaching for the experiment began on Tuesday (23/11/2021), and continued until Thursday (20/1/2022), and includes six lessons per week, for each group (one lesson) per day, for three days per week. The two groups were on the same day, as the total of the classes was (24) classes for each group. The test was applied to students at the end of Thursday (20/1/2022).

Eighth: Statistical Means: The researcher used the statistical package (SPSS and Microsoft Excel) to perform the statistical operations, and the statistical operations included the following: arithmetic mean, variance, standard deviation and the second test (t-test for two independent equal samples, the difficulty coefficient, the discrimination coefficient and the effectiveness coefficient of the alternatives paragraphs achievement test Objectivity, coefficient of difficulty and coefficient of discrimination of test items for deductive reasoning, The percentage equation and the t-test equation to measure the differences between percentages and chi-squared, Kewder-Richardson coefficient, Pearson correlation coefficient, and Spearman-Brown coefficient.

Ninth: Presentation of results, discussion and conclusions :

First : results :

To verify the first null hypothesis which states that (there is no statistically significant difference at the level (0,05) between the average scores of the experimental group students who studied biology according to the task-based learning strategy (TBL) and the average scores of the control group students who studied the subject Biology according to the usual method in the test of acquiring biological concepts) the arithmetic mean, variance and standard deviation of the scores of students of both the experimental and control group were found, as in Table (7):

[Table 7] The arithmetic mean, variance, standard deviation and the calculated and tabulated T-value of the scores of the students of the two groups (experimental and control) in the test of acquiring biological concepts

the group	number the sample	arithmetic mean	variance	standard deviation	df	T value		Statistical significance at 0.05
						calculated	tabular	
Experimental	36	37.111	12.654	3.557	69	6.443	1.995	function
non- experimental	35	31.657	12.054	3.472				

The table shows that the average scores of the experimental group students in the concept acquisition test are (37,111), the variance (12,654) and the standard deviation (3,557), while the average scores of the control group students (657,31), the variance (12,054) and the standard deviation (3,472), using the equation The t-test for two different independent samples showed that the calculated t-value (6,443) is greater than the tabular value (1,995) at the significance level (0.05) and the degree of freedom (69), which indicates the superiority of the experimental group students over the control group students In the test, the acquisition of biological concepts, so the first null hypothesis is rejected and the alternative hypothesis is accepted, that is, there is a statistically significant difference between the mean scores of the experimental group and the average scores of the control group in favor of the experimental group.

To verify the second null hypothesis, which states that (there is no statistically significant difference at the level (0.05) between the average scores of the experimental group students who studied biology according to the task-based learning strategy (TBL) and the average scores of the control group students who studied the subject Biology according to the usual method of acquiring each of the biological concepts. The researcher sorted the biological concepts from each other in terms of measurement items for each of them on the basis of inference on their acquisition based on three processes (definition, distinction, application), where one degree was given to each of the paragraphs of inference on the concept, where the student obtained one degree for the concept. He is considered unearned. Either obtaining two or three degrees is considered earned. percentage of (66.6) was adopted as a criterion for acquiring the concept. In light of that, the number of students who acquired each concept and the percentage of students' acquisition in the two groups was calculated as in Table (8):

[Table 8] The number of students in the two experimental and control groups who acquired biological concepts and the extent of acquisition expressed in percentages

concept number	The experimental group		The control group	
	number of students acquired	percentage	number of students acquired	percentage
1	29	48.571	17	80.556
2	26	42.857	15	72.222
3	26	42.857	15	72.222
4	20	62.857	22	55.556
5	29	48.571	17	80.556
6	24	40.000	14	66.667
7	23	71.429	25	63.889
8	26	45.714	16	72.222
9	25	57.143	20	69.444
10	20	51.429	18	55.556
11	32	54.286	19	88.889
12	26	40.000	14	72.222
13	32	54.286	19	88.889
14	21	54.286	19	58.333
15	30	51.429	18	83.333
16	23	60.000	21	63.889
17	30	48.571	17	83.333
18	34	57.143	20	94.444
19	28	45.714	16	77.778
20	27	60.000	21	75.000

shows in table that there are differences in the extent to which the biological concepts are acquired by members of the two groups and in favor of the experimental group in most of the biological concepts, This means that the extent of acquisition of biological concepts for members of the experimental group that studied using the strategy of task-based learning

(TBL) is greater than the extent of acquisition of biological concepts for members of the control group that studied using the usual method.

To infer the knowledge of the extent of discrepancy between the experimental and control group students in their acquisition of biological concepts and to verify the second null hypothesis of the research The researcher adopted the application of the T-test equation for percentages in order to infer the moral differences between the percentages for the acquisition of each of the biological concepts between the members of the experimental and control group, which are shown in Table (9) :

[Table 9] The number of students of the experimental and control groups who acquired biological concepts and the calculated and tabulated T-value of the acquisition percentages

concept number	Biological Concepts	The number of students acquired the concepts		T-value for percentage	tabular value	Statistical significance
		Experimental	Control			
1	protists	29	17	2.102	2.000	function
2	fungi	26	15	2.168	2.000	function
3	algae	26	15	2.116	2.000	function
4	mosses	20	22	0.526	2.000	NON-function
5	seed plants	29	17	2.102	2.000	function
6	conveyor vessels	24	14	2.125	2.000	function
7	Gymnosperms	23	25	0.475	2.000	NON-function
8	monocotyledonous plants	26	16	2.058	2.000	function
9	Al-Jawf Intestine Division	25	20	0.827	2.000	NON-function
10	Flatworms Division	20	18	0.329	2.000	NON-function
11	Nematodes Division	32	19	2.050	2.000	function
12	Arthropods Division	26	14	2.439	2.000	function
13	Echinoderms Division	32	19	2.050	2.000	function
14	Mollusk Division	21	19	0.306	2.000	NON-function
15	vertebrate animals	30	18	2.009	2.000	function
16	fish class	23	21	0.267	2.000	NON-function
17	amphibian class	30	17	2.238	2.000	function
18	Products	34	20	2.086	2.000	function
19	consumables	28	16	2.204	2.000	function
20	Analyzers	27	21	0.945	2.000	NON-function

Table (9) shows that the t value of the percentages calculated for the biological concepts (1, 2, 3, 5, 6, 8, 11, 12, 13, 15, 17, 18, 19) is greater than the tabular value of the t percentages as for the concepts (4, 7, 9, 10, 14, 16, 20) the T-value of the calculated percentages was less

than the tabular value of (2,000) with a degree of freedom (69) and a significant level (0.05) for a one-ended test. It is clear from the results that there are significant differences for the acquisition of (13) biological concepts, with an acquisition rate of (73,47%) for the experimental group, and there is no significant difference for the acquisition of (7) biological concepts, so the second null hypothesis is rejected and the alternative hypothesis accepted, that is, there is a statistically significant difference Between the average scores of the experimental group and the average scores of the control group in favor of the experimental group, and the percentage of acquisition of the combined biological concepts of the experimental group (73.47%) and the percentage of acquisition of the combined biological concepts of the control group (51.86%).

Second: the discussion: The results indicate the superiority of the students of the experimental group who studied according to the task-based learning strategy (TBL) over the students of the control group who studied according to the usual method in the concept acquisition test for science (biology). This superiority is attributed to several reasons, including:

- The use of the task-based learning strategy (TBL) organizes the study material and divides it into sequential and ordered steps, which has a positive impact on the educational process by making the student have a key role in the self-learning process of the educational process by carrying out class activities and tasks in the form of cooperative groups and this is concerned with him Modern education.
- The use of multimedia (images and videos) according to the task-based learning strategy (TBL) in the presentation of the lesson made the students more interactive and active with each other and more interested in the study material, and this helps to raise the level of their acquisition of biological concepts.

Third: Conclusions: The current researcher leads to the following results of the current search:

- Teaching concepts using Task-Based Learning (TBL) made students more interested and interested in studying biology than in the usual way.
- Teaching is a strategy Task-based learning (TBL) helped improve the academic level of second-grade students in science, especially their acquisition of biological concepts.

Recommendations: Based on the research results and conclusions, the researcher recommends the following:

- Directing the attention of curriculum designers in science in Iraq to the need to add a teacher's guide that includes the steps of the TBL strategy It is applied to all subjects such as physics, chemistry and biology
- Directing students' attention to the importance of inferential thinking that they lack for the purpose of benefiting from it and striving to master and develop it.

Suggestions: In light of the results of the current research, the researcher suggests the following::

- carry out other studies about strategy task based learning In teaching in other variables such as (achievement, retention, scientific reconnaissance, scientific thinking, multiple intelligences, critical thinking, and creative thinking).
- Conducting a study to compare the effect of this strategy with other teaching methods and strategies on the acquisition of biological concepts for the different educational stages.

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