Turkish Online Journal of Qualitative Inquiry (TOJQI)
Volume 14, Issue 1, August 2023: 252-266
DOI: 10.53555/tojqi.v14i1.10070

Research Article

The impact of the flipped learning strategy in teaching psychology courses and developing creative thinking among students of the second stage, College of Education, University of Tikrit

Ahmed Jasim Mohammed[1]

Abstract

The current study aims to determine the effectiveness of the flipped classroom strategy in promoting creative thinking in psychology for second-stage students. The research sample consists of (20) male and female students. inverted chapter. 2021/2022. The research tool was the inverted classroom strategy in psychology (developed by the researcher). The researcher applied it to the research group before and after, then he processed the data statistically using the SPSS statistical program, and the results showed that there were statistically significant differences between the measurements after the pre and post-test of the creative sample. The thinking of the research sample students at the level of significance (0.05) in favor of the mean. Measuring size and effect size demonstrates how effective the flipped classroom strategy in teaching psychology is for encouraging creative thinking.

Keywords: flipped classroom strategy, creative thinking, psychology.

Research problem:

Thinking as a cognitive process is one of the most important elements of the mental structure of human knowledge. Thinking differs from all other cognitive processes in that it is the most sophisticated and complex, and is able to dig deep into things. phenomena, situations, and their surroundings, enabling them to process information and produce and reproduce accurate and complete knowledge and new information. By using the mind, aman was able to reach scientific facts that he had not reached for ages ،with great developments in various fields, especially in science, which was an engine for the progress of nations and a powerful tool in building. Civilization resulted in competition between developed countries in the production of many inventions. Technologies that speed up the educational process. There are many ways of thinking, including those related to criticism, including those related to imitation, others related to knowledge, etc. However, the main types of thinking require searching for new solutions that help achieve the original goals. Previously unknown influences include creative thinking, which a researcher who has taken courses in mathematics has noted the importance of creative thinking ،especially in the scientific aspect, and the obstacles that try to disrupt the thinking process of students and put them in a traditional model based on indoctrination, memorization, listening and entering information into their minds without playing a role in that. It is better to use an educational strategy that helps develop creative thinking in sixth graders and that has been used to develop other types of thinking, however, as far as the researcher is aware Creative thinking hasn't arrived yet, and this strategy is called the flipped classroom strategy. The idea of the flipped or inverted classroom came after the recent publication of a book entitled “Flipped Learning: A Gateway to Student Engagement” by “Jonathan Bergman and Aaron Safar.” The Arab Bureau of Education for the Gulf States translated the book in (2014) and the book appeared in several chapters covering: the flipped learning model,

[1]College of Islamic Sciences
Department: Banking and Financial Sciences
Email: ahhmadjasim@gmail.com

and poor comprehension, content, curiosity, and orientation for deeper and broader learning", focusing on learning about how the teacher becomes the modern educator and student approach and developing creativity through the development of flipped learning and beautiful learning experiences. The idea of a flipped classroom or transfer destination is based on design based on concepts such as Active learning, student effectiveness, and engagement, blended instructional design, and publication or dissemination of educational content. They want to research and research the scientific content and give them the opportunity to apply their knowledge and communicate with each other. Some can no longer rely solely on the traditional model of teaching and learning, or rely only on the teacher as the center of the learning process. The role of the teacher has evolved into many roles, including the role of guide and mentor, and it has become necessary to rely on modern and more flexible educational methods that help empower the self-learner, to meet his needs and activate his role. In the educational process, it also supports the role of the teacher as a coach and facilitator of the teaching and learning process. An example of these modern methods is the flipped classroom based on visual blogging. ‹Which consists of providing students with academic content before they receive it in the traditional classroom, and providing opportunities to engage in learning activities and discussions within the traditional classroom. The student's creative thinking is one of the most important goals of the educational process, because, without it, the student will suffer from a lack of basic skills to participate in personal and social life. Creative people have been the subject of a lot of historical research. Creative thinking can be developed by any student, provided the conditions are right, the student has acquired basic skills and knowledge in all areas, and he has a variety of activities to support his higher thinking. Capabilities .Individual strengths and abilities must be strengthened through the creation of opportunities. These opportunities can be imposed through unit tasks or through a set of activities proposed to the students. Helping this teacher provides students with the opportunity to develop creative thinking that attempts to explain the problem to solve and help them to control their own learning process (Al-Shammer, 2012, 16) and this may have prompted the researcher to investigate how the flipped classroom strategy can be used to improve creative thinking in psychology sophomore students prepare for the exam .The problem of the study is represented in the poor level of students' achievement of the concepts and vocabulary of the psychology course based on reviewing their achievement results and surveying the opinions of their teachers. Accordingly, the current study seeks to identify the effectiveness of using the flipped learning strategy on the achievement of students in the second stage of the Department of Psychology in Education for Human Sciences, University of Tikrit.

Research question:

The current research problem is defined by the following question:
How effective is the use of the flipped classroom strategy in teaching psychology and how does it affect the improvement of creative thinking among psychology graduates?

Search Aim:

The current research aims to improve creative thinking by teaching psychology courses to students of the second stage, Department of Psychology, College of Basic Education, using the inverted learning strategy**.**

Research Importance:

The importance of the current research is as follows:
• Introducing a new educational method that differs from psychological teaching methods and helps the teacher to improve the teaching method.
• Presenting educational materials more attractive and interestingly, using modern media and technology that enable positive and effective participation rather than mere methods.

• Follow global trends that seek to change the educational process by introducing different methods and technologies.
•Encourage students to think creatively by using the inverted classroom strategy.

Search limits:

The research limits are limited to the following:

Objective boundaries.

Teaching psychology courses, the second stage, College of Basic Education, Tikrit University.

Spatial boundaries.

Halls and terraces of the College of Basic Education, Tikrit University.

Temporal limits.

The second semester of the academic year 2022-2023 AD.

Human limits.

Students of the second stage, College of Basic Education, Tikrit University.

Research hypothesis:

The research hypothesis can be formulated as follows:
1. There are no statistically significant differences at the level of significance (0.05) in the average scores of knowledge achievement between the students of the experimental group who study using the creative thinking development maps strategy and between the average scores of the students of the control group who study in the traditional way in the development test.
2. There are no statistically significant differences at the level of significance (0.05) in the mean scores of the test for the development of creative thinking in psychology between the students of the experimental group who study using the inverted learning strategy and the students of the control group who study in the traditional way in the test of developing creative thinking.

Research Methodology:

The semi-experimental approach was used, and the research was applied to two groups, experimental: in which the researcher applied the inverted learning strategy, and control: in which the researcher applied the traditional method of teaching.

Searching terms:

- Inverted separation strategy: The inverted separation strategy refers to the actions of the teacher when planning and designing the content of the lesson through Internet links or re-entering and recording, followed by students following up on these links and discussing their colleagues through the Internet, exploring websites and video recordings related to the home study, (Khalil: 2019) The students then engage their schoolmates in activities to discuss the content of the course, whether individual or group and the teacher then provides feedback to these students and their calendars through students ' assignments in the form of short tests, homework, and practical application

of students ' projects, the process of the volatility of the classroom-home education system through the preparation of short videos ranging from 0 to 10 minutes.

- Procedural definition: Researcher defines the strategy of inverted segregation as a teaching strategy through which the subject is displayed through various electronic media and which calls for excitement, excitement, a spirit of cooperation, and active participation between the student and teacher and the students themselves and the emergence of new ideas previously unknown.

Creative thinking: Creative thinking is defined by Growan (2019, 99-99) as a complex and meaningful mental activity driven by a strong desire to seek solutions or produce original products that were previously unknown. Creative thinking is characterized by inclusiveness and complexity, it falls within the higher complex level of thinking because it has overlapping cognitive, emotional, and ethical elements that constitute a unique state of mind.

the theoretical side

Past theoretical background and studies:

The application of the reverse learning system is due to Johansson & Walvoord, 1998. They have been encouraged to use the backward learning strategy by giving learners the opportunity to learn about the content of education at home and to devote the time of study to analysis, discussion, installation, and problem-solving. This strategy is to change the deeply rooted view of educational minds, which consists of the persistence of a single teaching style and can be replaced by the various educational practices that align with the technological innovations of our present era. The computer is one of the most effective means of teaching, whether outside or within the classroom, and in reverse learning, which takes a central role through the importance of watching educational videos, ,debates and subsequent interaction, whether on the Internet or in the classroom (Sherman, 2015:55).

Flipped learning strategy

Through this module, students are taught out of class through online video files, and students watch videos at home in order to understand concepts and ideas. In the classroom, teachers respond to students ' attitudes and deal with problems that some of them may have encountered while trying to understand the video files. The student is required to make observations and questions during follow-up to the videos posted by the teacher on the Internet and to explain the lesson (Sherman, 2014, 164) .

What is flipped learning

Although the concept of inverted learning is modern and still forms, it is simply his idea that what is done at home within the traditional learning is done during class/salary lecture and that what is done during class/salary class in traditional learning is done at home, so the student is exposed to the subject outside class, whether through a tutorial video that the teacher is recording to explain a particular lesson or readings on the subject of the lesson (Shrman:2015 195-160). Inverted learning is now defined as "the heart of the classroom, meaning that the events that occurred in the course of the class are now the beginning of the course, and the reverse reflection." It recalls that it is a teaching strategy, which makes the learner do the same traditional teaching when he is asked to read a part of a post-school book through available learning sources and then to be discussed from activities, evaluated as part of the study class, and to practice a number of enabling activities. The inverted chapter was also defined as "one of the teaching methods, which consists of two parts: interactive group learning activities within the classroom and online individual computer-based education outside the classroom." He is known (Bergman and Samar, 2014, 41) as "what was typically or traditionally performed in separation is now performed in the home, and what was typically done in the home as an appointment or home duty is completed in the classroom.(" Abed

Rauf, 2014, 12) defined the upside-down classroom as the reversal of learning tasks within and outside the classroom, so that the teacher would use modern techniques and the Internet to prepare lessons, via video, to show the student the explanation of the teacher at home, and then a home within the classroom, thereby enhancing his understanding of scientific material, would perform the activities that were mandatory and this is the developed concept of modern teaching methods (Khalil: 2020).

An active learning environment is aim of applying the back-to-back classroom strategy by placing the learner at the center of the educational process. It is also defined by the National Centre for E-Learning and Distance Learning, 2014 as "a concept that has been developed that has yet to take root in education, and that is an innovative way of teaching and learning, based on the collaborative power of the Internet, where traditional teaching methods are reversed, learning and teaching takes place outside the classroom, while activity and discussions take place in the classroom."

The Role of Teachers and Learners in the backward learning strategy

The inverted classroom strategy does not eliminate the role of the teacher within the classroom, nor does it replace the teacher's new technology and technology, but it helps the teacher to use the class time to increase the interaction within the classroom environment between the teacher and the learner (Sherman, 2015, 191) that within the classroom, the teacher must adopt many of the methods that go from the student-centered teaching entrance, such as active learning strategies, research and introductory performances based on the age or subject. When the teacher continues to use teaching, methods centered around the teacher in backward class strategy, nothing will change and the teacher will not reach the real point of the inverted classes.

The role of the learner:

Secondly, concerns about the student ' s role in backward learning may come to mind. Some may think that the teacher of his or her role in the traditional class is doing much less than the student ' s space. Marshall replies that an educated person has almost the same roles as a teacher, as he pointed out, where he can observe, provide feedback, and evaluate himself and his colleagues.

Characteristics of using the reverse learning strategy:

Bergman and Sams, 2014) asserts that a backward learning strategy leads to group activity in the classroom, building interactive learning, leading to active learning and that learners have a lot of time to share ideas and clarify their idea during the class debate. The main features he referred to (Bergmann and Sams, 2012/14 and Sherman, 2015) can be summarized as follows:

1. Use of the language of the age and meet its requirements: The strategy of reverse learning goes hand in hand with the digital age and modern technologies and reinforces the digital culture by fighting it, or resisting it, allowing learners to use their mobile phones, engaging in activities with each other, interacting and communicating with the teacher at the same time. (Khalil: 2020)
2. Flexibility: The feedback strategy helps learners with other engagements, such as functional or family associations, where they contribute to the provision of content via educational video, through the Internet and can be seen by the student at a time and place
3. Help for late learners: The teacher has a lot of time in the inverted class strategy, where he follows up on late learners, who face learning problems and difficulties, helps them to solve and overcome them, and plans to address them.
4. Help learners control the speed of their learning: By being able to control the teacher ' s explanation, which is appropriate to their level of understanding and understanding, where the slowest learners can use the re-entry button for the educational video used more than once until

they understand the explanation. If they still have a problem, the teacher and their colleagues can help them individually, or collectively, within the school class.

5. The interaction between teachers and learners: Teaching through backward classes allows the potential of education technology, thereby increasing communication and interaction between teachers and learners within and outside the classroom. (Milman, 2012) indicates that using the backward class strategy will provide the student and teacher with valuable time, which can be used in the classroom to discuss rather than listen to lectures, and that providing learners with scientific material before coming to the classroom leads them to be responsible for their own learning, and that the teacher will be only facilitating and guiding the educational process rather than teaching.
6. Promotion of higher thinking skills: The backward classroom strategy helps to move learners to higher levels of thinking and understanding through practical applications, projects, experiences, and rich activities within the classroom to deepen their understanding of scientific material.

Learning steps in reverse learning

There is no particular way to reverse the classroom, but there are agreed steps mentioned (Shrman 2015:200) as follows:

- The student watches the educational video that the teacher put before the class in the home.
- The student takes notes and questions while watching the movie.
-The student attends the class with a basic understanding to answer questions and apply activities with the help of the teacher.

Development of creative thinking

Today, there are many important changes in the field of information, technology, the environment, and education. Today's society needs people who are able to make non-traditional decisions and who are able to think differently and creatively. It is therefore the responsibility of the State to formulate its policies in a manner commensurate with the needs and welfare of young people, especially those who are talented and who are always looking for creativity. To this end, society and the State must work together to develop creative capacities, scientific cognitive skills, and self-education among young people who rise to help them develop their creative thinking.

Innovation and innovation are not only necessarily new, but rather a remodeling of the old in a new or strange way, which is to deal with the familiar things in an unusual way, as well as the ability to form and create something new, to integrate old or new views in a new form, or to use the imagination to develop and adapt views so that they can fill new needs in a new way or do something new, tangible or intangible in one way or another.

Many educators have emphasized the importance of teaching creative thinking in schools and dealing realistically with the cognitive and information explosion, which requires thinking skills and the need for learners to think effectively because of this importance in their educational attainment and academic future. In order for the school to play its role effectively, it is necessary to ensure a school environment that helps to innovate and encourages the outstanding and to care for the extra costs and work of the student.

This research will highlight the most important procedures and practices that can be followed to develop the innovative thinking of students in educational institutions.

The development of innovation is one of the most important educational objectives of various educational institutions (Abd al-Adeem and Mahmoud (2015), in the book Development of Innovative Capabilities about the Young Leader, stressed that if children are to master any skill, they must be taught at the early stages of their school life, and supported by this study), Abdelkafi, in his study the vital role of the teacher at this stage in promoting innovative thinking that is reflected in skills, abilities, and performance and through three important methods:

The question-skill method, the writing method to enhance the content of information, processes, and self-realization, the strategy for the handling of public information, is to enhance the capacity of memory processes to accommodate public information.

In his study (2019), he explained that innovation in educational institutions can be developed by training learners in different thinking skills through curricula. He also stressed that one of the most important actions and practices that teachers must follow in order to develop students ' innovative thinking is the following:

To promote the imagination of students and to use open-ended questions, to accept students ' answers and not rush to judge them, to develop curiosity, excitement, and love for all that is new, to develop their ability to analyze and structure, to help them to face the challenges and problems facing them, to encourage each student to advance in the field of his or her interest, to provide them with and educate them on all their innovation-related money.

In his study, Indian 2019 he emphasized that the use of diverse activities, especially catalytic games, provides an atmosphere of creativity that helps students to innovate and research, not just to focus on access to knowledge, because of their competition and a challenging spirit, and that achievement generates students to search for alternative ideas and to devise better solutions.

(Juma, 2005) From the results of his study, he made it clear that the school environment must take care of and satisfy the needs of the pupil in accordance with the requirements of his own development and sensitivity, creating an environment that allows him to express himself freely without fear, providing for educational activities within the classroom that reveal his own abilities, develop his different perceptions and help students to be creative.

From the point of view of the researcher, he found that an institution that wants to develop creative thinking skills must have learned about the student himself and that the curricula, and their enrichment activities based on mind and intellectual activity, contribute to the creative thinking of the learners by raising their level of achievement, understanding the issues they face in their daily lives and being able to solve their different problems.

You must offer thought-intensive and interesting curricula and an attractive school system to students, support and encourage the learners to try and do their utmost and get them to endure failure so that students can enjoy the learning process, what they need to learn, master it, and be proficient in it.

Attention must also be paid to all the elements: the curriculum, the environment, the means, the teacher, the school, the methodology, the method, the teaching skill, etc. to become effective agents in stimulating students ' internal motivation, overcoming all the obstacles that prevent them from loving and enjoying learning, enjoying our attention by happily accepting students into their schools and eager to learn in love, and bringing them out of the sea of science through research, learning and thought-provoking strategies, and blowing up their potential to produce the best of their abilities and to occupy a prominent place in the process of creativity.

Finally, it must be emphasized that the family has a role to play in respecting the creative child, showing confidence in his or her abilities and decision-making, and ensuring an appropriate and conducive environment for the development of creativity and creativity among them.

Innovation does not come from a vacuum but is the product of knowledge and practices and the result of a set of skills to solve problems, critical thinking, work with the Community and assess and develop.

Develop creative thinking among students

Parents and teachers are required to train students and children to develop their creative thinking skills, so the most important means of helping students to think will be mentioned:

- To have self-confidence and to avoid being ashamed of the question or the comments of students in the classroom.

- •The introduction of teachers' and parents' advice is well-known for the benefit of students in their educational attainment and creative thinking.
- •Accept all criticism from others and make use of it to analyze errors and turn them into useful solutions.
- •Go to the school library and read many books and novels, even if they are not in the area you like.

Impediments to creativity and creative thinking at the university:

The issue of obstacles to innovation has received the attention of writers and researchers. A number of different findings have been drawn with regard to the number and characteristics of these obstacles, although they are complementary, the obstacles to innovation can be limited to four groups, as follows:

Mental disabilities:

Weakness of individual perception, reminder, and analysis in terms of broad range, diversity, and constriction of thought is a constant limit from which we cannot break out. This seems to be the fact that individuals rely on the sense and intuition of right and wrong when solving a problem, the use of familiar methods and the weak ability to translate simple and specific ideas and plans for positive action, the feeling that solving the problem is a complex process, the view of major problems, the reliance on logic in assessing new ideas rather than on their practical choice, the belief that there is a single correct solution to any problem and the extreme stagnation of thinking.

Emotional impediments:

Overreacting, such as intense fear, may cause innovation because it restricts thinking, prevents the pursuit of newness, causes self-esteem, or weakens self-confidence. One manifestation of this is the fear of individuals renewing their unknown risks, and the use of secondary thinking methods, the fear of being mocked, of appearing and of confronting others, and of being blamed by higher authority in the event of a failure of the new idea.

Defense impediments:

The exercise of creativity by individuals requires a genuine desire on their part to make a positive and creative effort. One of the constraints that lead to individual creativity is the lack of determination, the lack of encouragement of teachers and students in the appropriate way, and the lack of respect and appreciation for others.

Regulatory constraints:

Organizational factors that hinder the creativity of teachers and students, the concentration of powers and powers in the hands of management and senior leadership, the lack of permission for university teachers and students to contribute to the design of plans, decision-making, and the definition of their roles in regulations and instructions, the oversight of their performance for fear of going out of the ordinary and the adherence of management to the regulations and procedures stipulated.

Search procedure:

I. Experimental design.

The experimental approach was followed in order to learn after the inverted learning strategy in the development of creative thinking in the second stage of the curriculum, the Faculty of Education for

Human Sciences, in the two variables that follow the development of creative thinking, as shown in the following outline:

Table (1) Experimental design for the experimental and control groups

Group	Independent variable	Dependent variable	Subsidiary variable measure
Experimental	Flipped learning strategy	Development of creative thinking	-Developing Flexible Thinking -The development of absolute thought
control	The usual way		

The research community and its designation:

The research community represents the second-stage students of the Faculty of Human Sciences of Tikrit University of Psychiatric Science, after the approval of the Dean, Head of the Department of Psychology, and Professor of Psychology. A group of these was randomly selected and distributed to two pilot groups and one female officer, excluding the number of female students who had statistically failed to become members of each group.

Equal treatment for the two research groups (control procedures):

Statistical parity between the two groups has been achieved in the following areas: (age of time calculated in months, year-year average, intelligence test, and level of education for parents). The researcher obtained information by distributing a form for students requesting confirmation of age and level of education for parents. The degree of psychology for the previous year was obtained by the researcher from the records of the department. The next test was then applied to two separate samples, equal in number and free in number.

Table (2): Equivalence of the experimental and control groups

Variable	Group				T-value	
	Experimental (32)		Officer (32)			
	mean	Standard deviation	mean	Standard deviation	Accounted	Schedule
Pre-collection of psychology	7.93333	1.638614	6.933333	1.740656	2.561	2.000 DF. 62
Age in months	184.2727	24.773606	169.8181	30.33878	9.081	

Source: Produced by the Spss program

The table above shows the parity of the two research groups with respect to certain exotic variables that may affect the results of the experiment. The educational level of the parents shows that the levels were distributed between (themother, primary, intermediate, preparatory, institute, college, or postgraduate) of both parents.

RESEARCH REQUIREMENTS:

Definition of scientific material (content): The subject was identified by the researcher in chapters I and II of the curriculum for the second phase.

Formulation of behavioral objectives: One of the first actions of a teacher in planning his or her study is to formulate behavioral objectives. When analyzing the subject to be taught in content, the subject ' s behavioral objectives to be achieved are formulated in daily teaching plans. The researcher presented them to a group of experts in psychology and psychology teaching methods to

ascertain their formulation, their views, and possible modifications, their coverage of the subject to be taught, and their specific knowledge levels. A 90% or more of the experts ' agreement on the objectives was adopted. The objective is valid for measuring a certain level if he or she receives an agreement (90%) and more of the opinions of the arbitrators, and the goal obtained less than this ratio was neglected or modified (choir, 2004:131), Most of the targets have obtained this ratio as some of them have been formulated and the targets below this ratio have been deleted.

Preparation of teaching plans: The required plans were prepared in accordance with the progressive activity strategy of the pilot group and a plan based on the traditional method of the commanding group. A model of a teaching plan of both types was presented to a number of experts and arbitrators in the field of the teaching methods of psychology and the teachers of psychology at the second stage to express their opinion on their suitability for teaching in accordance with each method, the content of the scientific material and the objectives set and their suitability.

Research tools:

Represented by the preparation of a multi-selection test.

Creative thinking development test:

A 30-point multi-selection test was agreed upon by preparing the table of specifications (test map) after determining the percentage weight of quotas and behavioral objectives as shown in Table(3) .

Table (3) Test Map for Development Testing

Chapters	Number of pages	The relative importance of content	Remember%20	understanding%20	application%17	Analysis %17	Composition %13	Calendar %13	number of paragraphs %100
1	36	% 52	3	4	3	2	1	2	15
2	33	% 48	3	2	2	3	3	2	15
Total	69	% 100	6	6	5	5	4	4	30

Validation of the test:

It is intended to measure what was intended for it so as to give a clear and complete picture of the ability of students to measure the property to be measured (Female, 2006:45).

- **Prominent honesty**: For the purpose of establishing the first form of the collection test, which consists of 30 paragraphs to a group of experts and specialists in the methods of teaching psychology, with a view to identifying their views on the validity of the test paragraphs, the validity of the wording, the levels that measure them to the behavioral objectives, the logic, the attractiveness of alternatives and their appropriateness to the levels of second-stage students, which would improve the test. The test paragraphs received a 90% agreement from experts and arbitrators, with some modifications to the test paragraphs, so that all test paragraphs became true to measure the development of pure creative thinking.

-**Validation of content**: for the purpose of ascertaining the authenticity of the content in the creative thinking development test, the test paragraphs are prepared according to a specification schedule, which is one of the indicators of the authenticity of the content.

The first reconnaissance application:

In order to verify the clarity of the paragraphs of the test, its instructions, and the time taken to respond to them, the test was applied, in cooperation with the professor of material and the chief of department, to a first survey sample other than the research sample, consisting of 30 students from the Department of Psychology of the Faculty of Education for Human Sciences .

Second reconnaissance application:

In order to calculate the coefficients of difficulty and discrimination and determine the effectiveness of alternatives, for statistical analysis of the development test paragraphs the test was applied to a second random survey sample other than the original research sample consisting of (50) students from the third phase of the psychology department, students were informed of the test date a week prior to the time of the test, and after the answers were corrected, the grades were arranged upward and the sample was then divided into two parts, a minimum group consisting of (25) students and a higher group consisting of (25) students, where literature suggests that it would be better to divide the grades into 50% for each group in the classroom tests and Kelly's signal, which gives a higher distinction if the distribution is equal.

The factor of difficulty, discrimination, and effectiveness of wrong alternatives:

The correct answers were calculated for each paragraph that applied the paragraph difficulty coefficient equation for each test paragraph that was found to range from 0.35-0.66, which means that the test paragraphs are acceptable and the difficulty coefficient is appropriate, as the acceptable range (20%-80%) and using the paragraph power differential formula was found to be between 0.30.60, as Abel shows that the paragraph with its discriminatory capacity (20%) and above (hardness, 2016:56)] and thus all the test paragraphs are considered appropriate in terms of difficulty and discrimination, and when the effectiveness of the wrong alternatives is equated, all the alternatives to the collection test paragraphs show that the results were negative.

Steady testing: persistence is calculated in two ways:

1. **Half-segment:** the test paragraphs are divided into two vertebrae and one pair, and when Pierson & Apos; s correlation coefficient is used to calculate consistency between individual and marital vertebrae degrees found to be (0.88) and then I used the Sperman-Brown equation to correct the coefficient, he found that0.98) .

2. .Kyuder Richardson method: the constant factor (0.89), having completed all the procedures for the construction of the collection test, is 30 paragraphs, ranging from (30-0).

Creative thinking development test:

By looking at several tests, the Seeker prepared the creative thinking development test on the next steps **.**

- **Set the test target:** set the goal of measuring the development of creative thinking among students of the second stage of psychology and relied on the definition identified in the definition of terms
- **Drafting of test paragraphs:** Based on the theoretical framework and familiarization with some previous relevant studies, the skills measured by the development of creative thinking have been identified.
- **Preliminary test:** the searcher prepared the test in its initial form, with 30 paragraphs of a multiple selection type, divided by his eight skills, giving each question only one degree .

Prominent honesty:

The piloting of creative thinking development skills has been presented to a group of psychologists and psychologists and their teaching methods. The expert agreement rate (85 %) has been set at (30), thereby achieving the apparent sincerity of the test.

Rational honesty:

It is a type of truth for the design of the test that the researcher identifies the phenomenon or characteristic that is to be measured logically, and then analyses the subject matter of the test in a comprehensive manner that leads to the order and variation of its sections according to their importance (Allam, 2009). This type of sincerity has been verified by the definitions of creative thinking development, and by the design of the paragraphs, and has been presented to specialists for their views.

Statistical analysis to test creative thinking development skills:

In order to identify the clarity of the paragraphs and instructions and the time required to respond to the test paragraphs, the test was applied to a first survey sample consisting of 75 students from the research sample (Baghdad University). The test paragraphs were found to be clear and acceptable. The response time rate for all female students was calculated at 45 minutes. And all his paragraphs and instructions are understood **.**

The test was applied to a second survey sample of 50 students of the same second sample of the collection test in order to analyze, correct, and sequence the vertebrae into two sections that represented the lower and upper groups. It was found that the difficulty factors were between 0.55-0.88, five paragraphs were deleted because the difficulty level was greater than 0.86, where the difficulty criterion was adopted between 0.20-0.80, and the distinction factor for the vertebrae ranged from 0.37-0.55 to the advantage factor as more than 0.39 was considered to be good and the level below 0.20 was deleted, leaving 25 paragraphs.

Steady Test

The test was reapplied to the same group (50) students and the constant coefficient was found to be equal to (0.84), and then the average test time was recalculated and found to be 35 minutes, so the final test would consist of 25 paragraphs, giving one degree per correct answer, zero for the wrong answer, so the test scores would be between (0.25) degrees.

Results of the study

1. Presentation of the results of the collection test:

In order to verify the first zero hypothesis, which states: There are no statistically significant differences at the point of 0.05 in the average achievement of science between the students of the pilot group studying in the strategy of creative thinking development maps and the average of the students of the commanding group studying in the traditional way of the development test and for the statistical significance test of the differences, the T-test has been used for two equally independent samples, as shown below.

Table (4) Results of the second test for students of the two study groups in the creative thinking development test

Significance level	T-value		Standard deviation	mean	number	Group
Statistical function at (0.05)	Schedule	Counted				
	2.000	2.953	1.27	8.63	32	Experimental
			1.76	6.83	32	Officer

The above table shows the rejection of the zero hypotheses and the acceptance of the alternative hypothesis, which requires statistically significant differences between the average scores of the two

collection test search groups and for the pilot group, and to calculate, determine and judge the size of the impact, the equation of the T-test was used, as shown in the table below :

Table (5) Reference for determining the level of impact of the Triple Classification in Psychiatric and Educational Sciences

The size of the trace	Small	Average	Big
Effect value	0.01	0.06	**0.14**

When comparing the magnitude of the effect of 0.14 and with the table above, it is clear that the magnitude of the impact of the feedback (autonomous variable) learning strategy in the dependent variable (collection) is significant.

2- Presentation of the results of the visual thinking test

To verify the second zero hypothesis, which states that: there are no statistically significant differences at the level of the sign (0.05) in the average degree of the development test of creative thinking in psychology between the students of the experimental group studying in the reverse learning strategy and the students of the command group studying in the traditional way of the creative thinking development test, and most of the statistical significance test of differences used the test of the lateral two separate and equal samples as shown in the table(6) .

Table 6 (T) test results for the two research groups on the creative thinking development test

Group	Number	mean	Standard deviation	T-value		Significance level
				Counted	Schedule	
Experimental	32	26.73	28.66	7.120	2.000	**Statistical function at (0.05)**
Officer	32	23.97	29.11			

The above table shows a rejection of the zero hypotheses and accepts the alternative hypothesis that there is a statistically significant difference between the average scores of the two research groups in the creative thinking development test and for the pilot group, and to measure the magnitude of the impact of the feedback learning strategy on the visual thinking skills test, the following equation was used: ETA=2t/ (df + 2t) = and when comparing the magnitude of the impact of the 0.20 and with the above table, it shows that the magnitude of the impact of the feedback learning strategy (an independent variable) on the dependent variable (development of creative thinking) is significant.

Discussion of research findings:
I. Discussion and interpretation of results of collection testing

The results showed that more students in the pilot group who studied psychology in the learning strategy upside down than students in the commanding group who studied the same subjects in the (traditional) way in the average scores for the achievement test outnumber D statistically at the sign level (0.05). The reason for the pilot group ' s outnumbering students in the collection test was the impact of the independent variable, with teaching using the upturned learning strategy having many educational features, including**:**

1. The backward learning strategy, as visual tools, helps to draw students ' attention to their different levels to learn about the shapes, shapes and contents.
2. The use of the back-to-back learning strategy in teaching has helped to link earlier concepts to later concepts and this leads to a deep understanding of the material, thus increasing their educational attainment.

3. The inverted learning strategy has helped to interact directly between students and the scientific subject and the ability to link concepts to each other and to find similarities and differences between them.
4. The backward learning strategy is a student-oriented strategy that highlights the student ' s knowledge of the concept under the supervision and guidance of his/her teacher.
5. To pursue the presentation of psychological concepts in the backward learning strategy through the educational video, which has helped students to develop their psychological knowledge through the traditional teaching outlet that they have traditionally taught.
6. Teaching students using the upside-down learning strategy has helped to organize their thinking, enabling them to understand psychological knowledge and also their understanding of the relationship between the components of psychological knowledge, giving them a greater opportunity to discover their own language, which in turn reflects positively on their achievement of psychological knowledge.
7. The backward learning strategy introduced a new teaching style for students, which made them enjoyable and attracted to the subject and reflected positively on their performance in the attainment of psychology.

Discussion and interpretation of the results of the development of creative thinking:

The study ' s results, using the inverted learning strategy, have shown that it has a positive impact on the learning process of students of the pilot group compared with the controlling group, contributing to students ' higher standard of psychological knowledge, their absolute thinking, and statistical allowances making the educational situation a rich environment in different thinking skills, because the inverted learning strategy provides the content of psychological knowledge in a graphically structured way with an interesting framework that actively increases the generation of new ideas and motivates them to interact positively with the diverse knowledge and information provided to them, which can be attributed to the following :

1. The backward learning strategy reinforces the psychological concepts of the long term and helps to find new ideas through previous experiences.
2. Using the feedback strategy has helped students to develop their creative thinking through the image forms that develop creativity .
3. Training students to view educational videos suitable for different situations has raised their thinking, making them able to select and target appropriate videos.

Recommendations:

1. Applying the reverse learning strategy to Islamic science courses at various universities in Iraq
2. Train teachers in the use of modern techniques and use them to apply the corresponding learning strategy in various courses, particularly in forensic science courses.
3. The training of Islamic science teachers in the reverse learning strategy should be included in the training programs

References

1- Ibrahim Magdy Aziz (2009): :uejam mustalahat wamafahim altaealum waltaelimi,Cairo, World of Books
2- Al-Azami, Muhammad Mustafa (2009), Studies in the Hadith of the Prophet and the history of its codification, electronic copy, the Endowment Library.
3- Khalil, M. Manar Ismail: (2020), The Effect of Employing the Inverted Learning Strategy in Achievement and Visual Thinking among Fifth Grade Literary Students, Mathematics, Al-Farahidi Literature Journal, University of Tikrit
4- Bergman, C, and Sams, A, (2014AD) Flipped Learning, “Reaching every student in every class” (translated by Zakaria Al-Qadi), Riyadh: Arab Bureau of Education for the Gulf States.

5- Al-Sharman, Atef Abu Hamid (2015 AD), Blended Learning and Flipped Learning, 1st Edition, Amman: Dar Al-Masirah.
6- Al-Shaalan, Saeed Abdullah (2013) Developing the Hadith and Islamic Culture Curriculum for Secondary School Students in the Kingdom of Saudi Arabia, in Light of Students' Needs and Problems, Unpublished PhD Thesis, College of Education, Umm Al-Qura University.
7- Al-Matrafi, Prof. Dr. Ghazi Salah (2019). The effect of a training program based on habits of mind on the development of innovative thinking, understanding the nature of the scientific endeavor, and the attitude towards habits among science teacher's students at Umm Al-Qura University. Umm Al-Qura University Journal of Educational and Psychological Sciences. 10(2),15-100.
8- Khalil, A. M. Manar Ismail: (2019)، The effect of using six-dimensional dimensions on the achievement of third-average female students and their acquisition of mathematical concepts, University of Tikrit, Iraq.
9- Jumaa, Omaima Mustafa Kamel (2005). The effectiveness of the school environment on developing innovation and self-concept. Educational and social studies. 11(1), 300-273.
10- Abdel Azim, Dr. Abdel-Azim Sabry and Mahmoud, Hamdi Ahmed (2015). Developing the creative and innovative capabilities of the young leader. The Arab Group for Training and Publishing.
11- Abdel Kafi, Ismail Abdel Fattah (2004). The vital role of the teacher in developing innovation among kindergarten children. Kuwait Association for the Advancement of Arab Childhood. 5(18),48-62.
12- Hindi, Osama Mohsen Mahmoud (2019). A proposed scenario for employing motivational games to activate the role of school libraries and develop creativity among their students. King Abdul-Aziz Complex for Endowment Libraries. 3,270-315.
13- Bergamo., & Sam's, A. (2010. Flippa your classroom: reach every student in every class everyday Washington, DC ISTE
14- H`OCKSTAD`ER, B (2013) `. Flipped `Learning: Personalize Improve Student Learning. Pearson. Retrieved 2 January 2017, from http://research network. Pearson/ com \ wp-content \uploads\ Flipped- learning. Pdf
15- Hamdan, N., et al., (2013) A Review of Flipped Learning Network Retrieved 2 January 2017 from http://flippedlearing.org\cms\lib07\VA0192311\Centricity\Domain\42\Litreview flipped learning .pdf
16- Mileman, R-E: Visual Communication, Engle wood Cliffs, N-J Education Technology publication,1993.
17- Strayer, j. (2007) The effects of the classroom flip on the learning activity in a traditional classroom and a flip classroom that used an intelligent tutoring system (Ph.D.), School of the Ohio state university. Retrieved 1 February 2017 from: http://etd.ohio link. edu\rws-etd\document\ get\osul 1189523914\inline