The Flipped Learning Strategy's Effect on Developing Gifted Female Students' Achievement in Grammar Course in the Southern Region in Jordan, 628

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Abstract

This study ultimately intended to manifest the strategy of flipped learning strategy along with its effect on developing gifted female students' achievement in grammar course at King Abdullah II Schools for Excellence, in the southern region of Jordan. To achieve this study's objectives and answer its question, the quasi-experimental approach was used. Moreover, the study tools included: the teacher's guide for flipped learning and a test of the grammar course content for the eighth-grade female students. Besides, the study sample ultimately included (30) female students. They were ultimately divided equally into a control and an experimental group. The study found that there are obvious differences with statistical significance, at the significance level of ($\alpha \le 0.005$), between the scores concerning the members of both the experimental group and the control group, in the post-test scale, on the achievement test. Such differences were for the experimental group. Moreover, it also concluded that there are no obvious statistically significant differences, at the significance level of ($\alpha \le 0.005$), concerning the mean scores related to the experimental group's members, in the posttest scale as well as the follow-up on the achievement test. Therefore, with reference to this study's results, the researchers recommended that it is important to employ elearning and integrated learning environments, which are based on technological innovations, in the process of education.

Keywords: Flipped Learning Strategy, Gifted Students, Grammar Course.

Introduction

The world is undergoing a major scientific and technical revolution that has a major impact on all aspects of economic, medical, social, and educational life. In view of these developments and the rapid changes in knowledge and communication, the field of education can no longer cope with such developments to meet the challenges and complexities that have emerged, including the increase concerning the vast amount of information related to all aspects of knowledge and the way of optimizing the implementation of this information. The development concerning the field of modern information as well as communication technology has contributed to the development of education, which helped the emergence of educational strategies which are based on various technology tools among the most prominent of these strategies is the flipped classroom, which is a blended learning form. It ultimately uses modern technology mainly to provide education which is compatible with the requirements and needs of students in the current era. November et al (2012) viewed the flipped classroom as an ultimate model that enables students to effectively prepare

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themselves effectively for the lesson simply by listening, watching videos, and reading articles.

Flipped learning helps gifted students by providing them with several methods of learning according to their abilities, individual needs, and self-study, instead of receiving the same information in the form of a lecture delivered by the teacher. Therefore, it allows students to manage when and how much of the content they want to have and participate in the discussion. Thus, students' role changes from being passive listeners to be active learners. It additionally helps the teacher invest the class time in discussions, expressing views, organizing interactive experiences, and directing students to academic content (Brame, 2013; Pring, 2012; Siegle, 2014).

The students' role is evident in this strategy, as students shift from the passive recipient of knowledge to the more positive, creative, and knowledge-producing participants. They, further, assume their own responsibilities concerning learning, watch videos related to the lecture before lessons, and prepare effectively for the lesson using the course material. Moreover, learners are allowed to learn as per their own pace and abilities, make the necessary interactions with their teachers and friends, receive and present notes, participate in in-class discussions, and participate in the tasks of the teamwork (Davies et al., 2013; Formica et al., 2010; Milman, 2012; Overmyer, 2014).

The most significant element in the so-called flipped classroom strategy indicates the ultimate teacher's role which is represented by creating educational conditions based on inquiry instead of transferring and directing knowledge to students directly. This strategy serves as a guide that facilitates the learning process, makes one-to-one interactive communication with students, clears students' misunderstanding, individualizes learning for each student, employs technology tools appropriate to the learning situation, and creates opportunities for interactive discussion. Moreover, it increases students' participation and sharing video clips of lectures outside the scope of the activity or class, and provides them with feedback using the pedagogical strategies (Bergmann & Sams, 2012; Bishop & Verleger, 2013; Cohen, S., & Brugar, 2013; Millard, 2012; Nolan & Washington, 2013; Schmidt & Ralph, 2016).

To implement the flipped learning strategy, the following steps must be followed as determined by (Bergmann & Sams, 2012; Hockstader, 2012; Owens & Strayer, 2007):

First, the topic and title of the lesson to be searched and used in a flipped class should be determined, keeping in mind that this lesson should have the features of a flipped lesson. Second, the lesson content should be analyzed into a set of knowledge, skills, and values, and it should also propose a set of important concepts related to the topic of discussion. After that, a video clip is created, either educational or interactive, that includes an explanation of the course material related to the lesson, and it must be an audio and video recording and of no more than 10-15 minutes. The video clip is uploaded onto a website or given to students on CD-ROM or any other means so that they can view anywhere and at any time. Through this video, students acquire the most important concepts and vocabulary and look for the meanings of these concepts through books, references, and websites. In the next class, students perform some activities related to the concepts and meanings they previously learned in addition to preparing various projects. All of this is done under the supervision of the teacher. At the end, the teacher evaluates each student and identifies the extent to which students understand the information they looked for. Students also gain access to appropriate meanings and concepts about the topic of the lesson.

Literature Review

Language in general—whether Arabic or foreign—is the basis for cognitive achievement of various sciences, and students' mastery of language helps them in the acquisition of other knowledges. Language learning is considered one of the topics that need teaching aids, so a language learner needs to link the images of written words with their meanings and their correct pronunciation to be able to comprehend quickly and accurately what one reads or hears. A language learner can communicate and express thoughts verbally and appropriately (Al-Jarida, 2003).

Teaching grammar in Arabic language is one of the prerequisites to appropriate communication with others. Mistakes in parsing and controlling words affect conveying the intended meaning and the ability to comprehend it (Mejawer, 2000). The main goal of teaching grammar is to use Arabic language appropriately, free of intonations in speech and errors in writing (Alkhalifah, 2004).

Arabic grammar is the scientific study of Arabic language, constructing its words, formulating its structures, and controlling its parts. The ability to follow the rules of this scientific study of Arabic language is a skill that must be acquired by its learners if they want to be able to read, write, and express appropriately. In other words, it could be said that teaching grammar is an essential part for learning Arabic language.

Arabic language grammar is one of the most ambiguous and difficult areas in language education curricula in general. Some of the causes of the problems in teaching Arabic, as identified by (Alhashmi, 2010; Mejawer, 2000; Yunis & Alnaga, 1977), include the following:

- 1. The students' loss of motivation to learn grammar; where one achieves his/her aims and talks to and understands people without the need to study this science.
- Students consider grammar as a grammar by which the words endings are known, both grammatically and constructively, although, according to the modern concept, understanding the relationships between words in a sentence and between sentences is considered part of grammar.
- 3. The difficulty of grammar does not lie in its rules, rather it is due to the teacher's inability and the traditional methods that focus on memorizing and recalling the rules that the teacher relies on in teaching students. In most cases, the student's aversion to the rules is due to the teacher's lack of skill in using modern techniques to bring the rules to the student's minds.

Hence, it was necessary for the educational system to keep pace with these changes and adapt to them. Further, it should apply modern learning strategies in the educational field which is based on blended learning in which new innovations are employed-including computers, smart phones-without the Internet. and canceling the teacher's role, rather changing it until the teacher becomes a designer, a guide, and a facilitator of the educational process. The teacher, hence, should encourage students to rely on themselves to navigate the world of broad knowledge to obtain information under his/her guidance and supervision.

Therefore, the information is not presented ready for the student and the student is a mere receiver. However, the student must try to develop the knowledge s/he has. This is a matter that leads to self-reinforcement for the student every time s/he succeeds by relying on his/her abilities and capabilities to access knowledge. Therefore, this study stemmed to manifest the strategy related to flipped learning's effect on enhancing the skills of gifted female students' achievement in grammar course at King Abdullah II Schools for Excellence in the southern region of Jordan.

Several studies which are related to this study's variables have ultimately been conducted. Such studies include a study done by Bezzazi in (2019). It aimed to highlight and manifest the ultimate impact of what is known as flipped learning, on English language as a foreign Language, on a certain number of (EFL) learners'

grammar. Moreover, a number of 132 students enrolled in the first year university were ultimately selected from four Freshman English classes. Besides, they were purposely divided into a group of flipped learning, known as (FLG), along with another traditional instruction group, known as (TIG). The two groups ultimately followed one process which is known as 'weekly two-stage process'. Moreover, to collect data, the researcher conducted pre-as well as post-grammar tests to the FLG as well as CIG. Besides, the FLG was ultimately asked to do a survey that has a number of 16 items. Moreover, it is concerned with their perceptions concerning learning grammar, especially through flipped learning. In this context, the findings obviously indicate that what is termed as the flipped learning program was utterly more effective in teaching English grammar than the traditional instruction. Moreover, the results of the post-test obviously reveal a difference, which has statistical significance, between the two groups. This is represented as following: (t = 8.21, p < .001), with a large effect size (Cohen's d = 1). Furthermore, the survey analysis clearly revealed the FLG participants' satisfaction concerning flipped learning in terms of online material, in-class discussions, along with other benefits.

Mansi (2018) ultimately did a study which aimed to identify the effect of employing the strategy of flipped learning effectively on developing skills of critical listening among the tenth-grade students (female), in Jordan as well as their own attitudes towards it. The skills of critical listening achievement test and the measurement of attitudes concerning the strategy of flipped learning were used. Besides, the study sample included a number of 85 students from the tenth grade, who were purposively chosen from one school. Further, they were divided randomly into two groups. Besides, the experimental group, which included (43) students, used the strategy of flipped learning, on the other hand, the control group, that included (43) students, used the traditional learning strategy. This study's results reflected that there was a difference which is statistically significant at the significance level of (α = 0.05) between the two groups. These differences were for the students of the experimental group. The results also confirmed an improvement in the students' attitudes concerning the strategy of flipped learning.

Another study was done by LI, Wang, Wang & JIA. (2017). It aimed to promote and develop the application of "Flipped classroom" in the process of teaching grammar. Besides, the research ultimately embodies three aspects as follows: flipped classroom's development along with characteristic, flipped classroom's implementation in teaching grammar as well as

flipped classroom's exploring in teaching grammar of English. Following the investigation as well as data analysis, the researcher argues that flipped classroom, concerning teaching grammar, is ultimately beneficial for students who seek to master as well as use grammar in their productive skills.

Pudin (2017) conducted a study that aimed at manifesting an FLP (Flipped Learning Approach) which is related to Teaching Grammar for ESL Students. In fact, Flipped learning is ultimately known as a pedagogical model which effectively reverses activities inside classrooms. Moreover, materials are essentially provided online (in system of learning management, or even other platforms of learning). Besides, students ultimately study the subject before their coming to class. Thus, time of classroom can effectively be used mainly to engage students in certain activities, including discussion, problem solving and analysis. Furthermore, this study intended to explore the flipped learning approach's effect in a grammar classroom. It did so by exploring students' perceptions concerning its effectiveness as well as its feasibility. In this regard, 120 students, with higher MUET, were ultimately asked to respond to a questionnaire. The questionnaire is analyzed. Its results reflected that the students were mostly keen to acquire grammatical rules through flipped classroom. Besides, this study's findings provide ESL practitioners with a better and broad insight into students' preference concerning learning grammar as well as new and effective ways to bring about better teaching through the use of blended learning.

A study conducted by Shareer (2017) aimed to identify an educational environment's effectiveness, especially the environment which is centered on the strategy of flipped classroom, in the development as well as attitude towards grammar among the 9th grade students in Gaza. The study sample included (67) female students selected out of the ninth grade, at Ain Jalout primary school in the directorate of education in Gaza. The researcher prepared a measurement scale for the students' attitudes towards grammar and a test for grammar skills. The researcher implemented the experimental, descriptive, and analytical method. The study's results ultimately reflected that there were obvious differences which are significant, at the level of (α =05.0). Such differences were between the students' mean scores concerning the experimental as well as the control groups in the post-test. Besides, they indicated that there were ultimately no obvious statistically significant differences, at the level of (α =05.0), between the students' mean scores of the experimental as well as the control groups, on the attitudes' scale, towards grammar.

Further, they concluded that the flipped classroom environment achieved efficiency of more than 1.2 according to Blake's modified gain ratio in developing the grammar skills of students enrolled in the ninth grade in Gaza.

Al-Ahwal (2016) did a study that aimed at manifesting the flipped learning strategy's effect on developing the grammar skills that the researcher had deemed necessary to understand and produce Arabic language. The researcher used a set of tools which were represented in a list of grammar skills needed for students distributed on two domains, the grammar skills needed to understand the language and the language skills needed to produce the language, a teacher's guide based on the strategy of flipped learning, and a test of grammar skills represented in two domains: comprehension and production. The study sample included (57) second-grade students. They were divided into an experimental aroup including (29) students who were taught using the strategy of flipped learning, and a control group including (27) students who were taught using the traditional way. Moreover, the study found many results, the most important of which was that there was an improvement in the experimental group's performance compared to the control group.

Another study was done by Thaichay & Sitthitikul (2016). It mainly explored the flipped classroom instruction's effects on language accuracy as well as active learning environment. A number of twenty-six Thai students, enrolled in an upper-secondary demonstration school, in the central area, were enrolled in the school's gifted program in mathematics as well as science. They effectively and voluntarily participated in the study. Six research tools were used: (1) a flipped sit of classroom lesson plans, (2) a pre-test (3) a post-test, (4) a questionnaire (5) reflective journals and (6) focus discussion at the group level. Moreover, data collection was ultimately done during the second semester - Academic Year 2014. The main findings revealed the existence of a difference, which is significant, in the participants' improved language accuracy, along with their positive attitude concerning instruction of flipped classroom, particularly with regard to active learning.

Al-Issawi & Alma'mouri (2015) conducted another study on this topic. It aimed at manifesting the effectiveness of flipped thinking concerning literary achievement and appreciation of fifthgrade students enrolled in the rhetoric course. The study implemented the quasi-experimental research method for the two study groups, the experimental as well as the control group, each consisting of (63) students. After analyzing the results statistically, the study concluded that the female students of the experimental group, who studied the rhetoric course using the flipped thinking, outperformed those of the control group students who studied the same subject traditionally.

Another study was done by Abu-Alreesh (2013). It aimed at identifying the blended learning's effectiveness on the tenth-grade female students' grammatical achievement, in Gaza, along with their attitude towards it. An achievement test consisting of (50) items, a predesigned attitude scale to measure the experimental students' attitude towards grammar consisting of (40) items, and a blended learning grammar program were used by the researcher. The purposive study sample included (40) female students of the tenthgrade at Shohadaa' Khozaa Secondary School for Girls, and it was divided into two groups. The female students of each group were randomly selected from two different classes, each of (20) female students. The results indicated the existence of differences, at the significance level ($\alpha = 0.05$), in grammar achievement's mean scores, among the members of the experimental and control groups. Such differences were in favor of the experimental group. Furthermore, it was also found that there were statistically significant differences, at the level of significance of ($\alpha = 0.05$) in the mean scores of the attitudes of the students towards grammar among the experimental group in favor of the post-application of the measurement scale.

Problem Statement

The flipped learning strategy has its significant role which it plays in the process of education in its various aspects. Researchers found that there is a need to demonstrate the flipped learning strategy's effect in the process of education in general, and in the Arabic grammar class, in particular. This study, according to the researchers, is one of the few studies that identify the flipped learning strategy's effect in developing the gifted female students' achievement in grammar course at King Abdullah II Schools for Excellence in the southern region of Jordan.

The Study Questions

The problem of the current study raises the following main question: "What is the the flipped learning strategy's effect on developing the gifted female students' achievement in grammar course at King Abdullah II Schools for Excellence?

This main question leads to the following secondary questions:

1. Are there statistically and obvious differences, at the significance level $(\alpha \le 05.0)$, among the students' mean

scores, on the achievement post-test between the experimental and control groups attributed to the teaching strategy?

2. Are there obvious statistically significant differences, at the level of significance of ($\alpha \le 05.0$), between the mean scores on the post-test and the follow-up among the experimental group students attributed to the teaching strategy?

The Study Objectives

The current study aims to effectively identify the flipped learning strategy's effect on developing the gifted female students' achievement in grammar course at King Abdullah II Schools for Excellence in the southern region of Jordan.

The Study Significance

The significance of the present study stems from the fact that:

- It came as a response to the scientific and technological advancement in the field of knowledge, in general, as well as the field of teaching Arabic grammar, in particular.
- Activating the role of the learner so that it is the main concern of the teachinglearning process through active participation and access to knowledge and ideas.
- It could provide teachers of various courses and school levels with a vision concerning the extent to which students effectively benefit from their use of strategy of flipped learning.

Delimitations

The results of the present study are delimited to:

Human delimitations: A sample of outstanding and gifted eighth-grade students who are enrolled in special programs at (King Abdullah II School for Excellence).

Place delimitations: Directorate of Education in Tafila and Ma'an Governorates.

Time delimitations: The first semester (academic year 2019-2020).

Topic delimitations: The seventh unit in the Arabic grammar course for the eighth-grade students.

Terminology

Flipped learning: It is a method of learning; a student-centered method of learning. It includes two parts and in-class interactive educational

activities and self-directed learning using the computer outside the lesson (Bishop & Verleger, 2013).

Achievement: According to AlSheikh et al. (2004), achievement is a selected sample of behaviors (learning outcomes) to be measured to find out the degree of individual ownership of this behavior. The researchers, in the present study, define achievement as the ability of the gifted eighth-grade students to know and understand some grammar topics (number and counted rules, and specification) and their ability to use them in current or future situations, using the two teaching methods (traditional and flipped learning), and it is measured by the degree that the student obtains on the prepared achievement test in this study.

Gifted: Those who are competent and show outstanding levels of ability (known as an exceptional ability of thinking and learning) or competence (achievement above 10% or more scarcely or documented performance) in one or more domains including any field of activity organized with its own system code (such as mathematics, music, and language) and / or a set of sensory-motor skills (for example, painting, dance, and sports ("What Is Giftedness? National Association for Gifted Children," 2017).

King Abdullah II School for Excellence: It is one of the pioneering schools of the Hashemite Kingdom of Jordan that incubates gifted and talented students in Tafila and Ma'an governorates, as it provides enriching educational patterns that support the process of education for the gifted and talented students and encourage them to unleash their creativity and distinction (Alazah, 2015; Ministry of Education, 2020).

Methodology and Procedures

Population & Sample

The study population included (180) regular eighth-grade female students, at King Abdullah II Schools for Excellence, in the governorates of Tafila and Ma'an.As for the study sample and for the sake of ensuring that the control group is not affected by the data analysis of the experimental group, it included (30) eighth-grade female students distributed into two groupsof (15) female students,based on the purposive method due to their limited number. The experimental group was chosen from Ma'an governorate and the control group from Tafila governorate.

Methodology

To achieve this study's objectives and to answer its questions, the researchers adopted the quasi-experimental approach. In fact, the quasiexperimental approach is based on designing two groups, namely, experimental group and control group, where the flipped classroom learning strategy was adopted by the experimental group and the traditional classroom method was adopted by the control group.

The Study Design

The pre-test, post-test, and the follow-up were implemented while designing the control and the experimental group with a (Pretest and Posttest Control Group Design) after the completion of the application. The study design can be expressed in symbols as follows: Experimental group: O1 O 2 × O 3 Control group: O1 O 2 - O 3

Instruments

First: An achievement test in the seventh unit (number and counted rules and their specification and parsing), which was applied before and after completing the teaching of the unit. Second: The teacher's guide (according to the flipped learning).

First: The Achievement Test

The researchers prepared an achievement test to ultimately and effectively measure the effect of using the strategy of flipped learning on achievement in the seventh unit, number and counted rules. The test items were formulated based on the Arabic language book of the eighth grade. A content analysis of the unit was conducted to determine the educational objectives it included, then classifying them into several levels: conceptual and procedural knowledge and problem solving. Accordingly, (16) objective items were formulated including multiple choice, fill-in the blanks, and true or false, with a total of (16) marks, after being reviewed and amended into its final form.

Discrimination and Difficulty Coefficient

The discrimination coefficient of the items was calculated by calculating the corrected correlation coefficient, where the correlation coefficient between the student's score on the item and the total score on the test minus the score on the item was calculated. The difficulty coefficient for each of the test items was calculated by calculating the means of the performance of the pilot sample students (n = 30) on the test as shown in Table 1.

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Table 1.

Discrimination and the difficulty coefficients of achievement test items

lte m Nu mb er	Discrim ination Coeffici ent	Diffic ulty Coeff icient	lte m Nu mb er	Discrim ination Coeffici ent	Diffic ulty Coeff icient
1	.554**	.73	9	.439*	.63
2	.420*	.63	10	.551**	.77
3	.532**	.53	11	.648**	.69
4	.367*	.62	12	.461*	.55
5	.362*	.59	13	.594**	.41
6	.394*	.67	14	.581**	.39
7	.433*	.43	15	.482**	.53
8	.543**	.30	16	.564**	.36

*Significant at the level of significance of ($\alpha \leq 0.05$).

**Significant at the level of significance of $(\alpha \le 0.01)$.

As shown in Table 1, it is clear that all the values of the difficulty and discrimination coefficients for the test items were acceptable. The difficulty coefficients ranged between (.30) and (.77) and the calculated discrimination coefficients ranged between (.362) and (.648).

Test Reliability

The test is considered reliable if its results when repeated on the same students, in the same circumstances and in different times and places are convergent. After verifying the reliability of the test content, it was applied in its final form on a pilot sample consisting of (30) students, then two weeks later, it was applied again on the same population of the pilot sample with a reliability factor of (0.92). The reliability was calculated using the Cronbach Alpha formula and the reliability factor was (0.91) which is a high value indicating that the test has a high degree of reliability, and therefore, the test is reliable, and, accordingly, all the test items were accepted, and no item was deleted. This is because all the difficulty and discrimination factors for the test were within the educationally acceptable limitations.

Parity of Groups

The parity of the two groups was confirmed by applying the pre- achievement test, and the (T) test was used for independent samples of the study sample of the control and experimental groups on the pre-measurement test as shown in Table 2.

Table 2.

The results of (T) test for independent samples to find out the significance of the differences between the control and experimental groups on the achievement test in the pre-measurement test

Grou p	Nu mb er	Me an s	Stan dard Devi atio ns	Deg ree of Fre edo m	T-a Iu ₽	Level of Signi fican ce
Exper iment al	15	9.1 3	2.53	28	- .5 43	.592
Contr ol	15	9.6 0	2.16			

It appears from the results in Table 2that there are no statistically significant differences at the level of significance of ($\alpha \le 0.005$) between the mean scores of the population of the experimental and control groups on the pre-measurement achievement test, as the calculated value of (t) was (-.543), and its level of significance was equal to (0.592), which indicates that there is parity between the experimental and control groups on the achievement test.

Second: The teacher's Guide

The two researchers, in this study, prepared a guide for teaching the rules using the flipped classroom strategy. The guide included the theoretical definition of the flipped classroom its implementation strategy, necessary procedures, its appropriate evaluation procedures, and the clarification of the steps for implementing the flipped classroom strategy, the number of classes, the procedures of each class, and the general outcomes. The classes implemented on the experimental group are based on the flipped classroom strategy using the computer and the internet in a way that allows preparing educational lessons in the form of video clips and then preparing these clips in the form of links to be sent to the experimental group via WhatsApp.

The seventh unit of the Arabic grammar textbook for the eighth grade was chosen and the following topics were selected (number and counted rules and specification) as the unit topics are available on websites in the form of educational videos and include the following lessons: the definition and types of number in the Arabic language (the singular and complex number, the number rules and specification, and the parsing and specification of the number and the counted).

The teacher's guide was presented to a group of experts and specialists in the field of

Arabic language curricula and teaching methods and measurement and evaluation in a number of Jordanian universities, supervisors, and teachers of the Arabic language. They were asked to give their opinion concerning the teacher's guide in terms of its appropriateness for the eighth-grade students, the teaching procedures based on the flipped classroom strategy, and its clarity in terms of language wording; outcomes; and procedures. Considering the experts' feedback, some vocabulary, expressions, and wordings were amended.

The two researchers carried out a set of procedures before starting to teach grammar topics: meeting with the experimental group students to define what is meant by the flipped classroom strategy, its importance, the purpose of its use, and the method of dealing with the information and knowledge that they will obtain through the flipped classroom strategy.

The Study Implementation Steps

- 1. The two researchers contacted a teacher at King Abdullah School for Excellence in Ma'an Governorate introducing her to the objectives of the study and how to implement and teach its topics. They, furthermore, provided her with a copy of the videos and the proposed enhancing activities to be applied to the study sample (the experimental group).
- 2. A pre-application for the achievement test on the study sample in the second semester of the academic year 2019-2020 before teaching the educational unit.
- 3. The course unit, which consists of (6) lessons, was implemented, with two lessons per week, in addition to three lessons for the application of the pre and post tests and the follow-up.
- After completing the implementation of the course unit, a post-achievement test was applied to the study sample, and then the achievement follow-up was applied after (15) days to measure the impact of learning on the students.
- 5. Statistical analysis and interpretation of results.

Study Results and Discussion

The first question: Are there statistically significant differences at the level of significance of ($\alpha \le 05.0$) among the mean scores of students on the achievement post-test between the experimental and control groups attributed to the teaching strategy?

To answer the first question, a T-test was used for the independent samples to find out the

significance of the differences between the control and experimental groups on the achievement test on the pre-measurement test, and Table 3 shows the results of the analysis.

Table 3.

The results of (T) test for the independent samples to find out the significance of the differences between the control and experimental groups on the achievement test on the premeasurement test

Group	Nu mb er	Me an s	Stan dard Devi ation s	Deg ree of Free dom	T- Va lu e	Level of Signif icanc e
Experi menta I	15	14. 73	1.38	28	8. 05	0.000
Contr ol	15	9.8 7	1.88		4	

Table 3 indicated that there are differences at the level of significance of ($\alpha \le 0.005$) between the mean scores related to the members of both the experimental and control groups concerning the achievement test on the pre-measurement test, where the total calculated value of (t) was equal to (8.054), and the level of its significance was equal to (0.000). Further, the results indicate that, according to the means, these differences are in favor of the experimental group, which indicates that there is an effect of teaching using the flipped classroom learning strategy on the achievement of grammar among the gifted students. This is attributed to the effectiveness of flipped learning strategy and its features such as its use of more than one sense during the learning process and its observance of the students' audio and visual learning patterns through the variety of methods and learning media used accompanied by pictures, graphics, video clips, and sound effects. It also could be attributed to the ability of students to view and study again these learning contents at any time. Thus, it strengthens the neural connections that stabilize the impact of learning and helps develop memorization, understanding, and comprehension, and increases the academic achievement among students.

Similarly, the achievement of gifted students in this study in the worksheets and classroom activities through dynamic groups was an evidence to the extent of their cooperation with each other. The flipped classroom learning strategy affected them by making them active and effective through their learning, their confidence in their abilities and capabilities to do class assignments and activities, and their ability to debate through the group representatives to discuss the answer of each group. This signifies the positive effect of the flipped classroom learning strategy on the interaction of gifted students and their love for the course material, which was automatically reflected in their improvement in their achievement and led to positive skillful outcomes represented by the communication and cooperation among them. It further signifies the positive sentimental—through their self-confidence and their ability to solve questions and discuss their answers with their peers—and academic skills, represented by increasing their academic achievement.

These results concord with the results of all previous studies, such as: (Abdullatif, 2016; Al-Ahwal, 2016; Alzain, 2015; Overmyer, 2014; Al-Issawi & Alma'mouri, 2015; Althyabat, 2013) which demonstrated the effectiveness of blended education in teaching grammar to students of Tafila University, and the study of (Al-Issawi & Alma'mouri, 2015) which suggested a shift from the traditional methods of teaching rhetoric and literary appreciation in the Arabic language to the flipped thinking strategy, as the traditional methods limit the effectiveness of female students and their activities.

This result is attributed to the positive effect of flipped learning strategy on the continuity of the learning effect and the student's ability to proceed through the learning procedures individually. The flipped learning also provides them with a continuing interactive environment that maintains the continuity of their motivation and their desire for continuing education. It, additionally, provides feedback that would help student to either progress in education if the responses are appropriate, or amend them if they are inappropriate. Furthermore, flipped learning strategy includes stimuli and responses that help understanding, comprehending, memorizing, and remembering, thus, it helps increasing the academic achievement and the desire for education. In addition, when the students used to watch the lessons in advance at home and return to the class, their interaction with the material was noticed through their interest in taking notes about what they have seen, and their eagerness to discuss at the time of presenting the course material for discussion and asking questions, and this indicates that there is a change in their view of the grammar course and marks the beginning of a change to enjoy the material instead of treating it as an abstract subject.

Similarly, the results concur with the results of (Alharbi, 2008) which clarified the effectiveness of using the flipped learning strategy in organizing the enriching environment from the point of view of gifted female students at Al-Ihsaa, which was represented in providing an interactive environment for the gifted student, either with herself or with the teacher. According to the study, this strategy provides the teacher with a learning environment through which the teacher can learn about the views of gifted students, instead of seeking the correct answer to verify the validity of their learning. It also provides an educational environment that can effectively support the mastery of learning among gifted students.

The results also accord with the outcome of (Al-Ahwal, 2016), where the researcher concluded that there was an improvement in the experimental group's performance compared to the control group concerning statistical differences in the test for the experimental group.

Furthermore, the results of the present study concord with those of the study of (Abdullatif, 2016), the study of (Alzain, 2015), the study of (Overmyer, 2014) the study of (Al-Issawi & Alma'mouri, 2015), and the study of (Althyabat, 2013), which demonstrated the effectiveness of blended learning in teaching grammar for the students.

The second question: Are there obvious differences at the significance level of ($\alpha \le 05.0$) between the mean scores on the post-test and the follow-up among the experimental group students attributed to the teaching strategy?

To answer this, the means, and standard deviations on the pre and post measurement scales on the achievement test of the experimental group were calculated as shown in Table 4.

Table 4.

Means and standard deviations on the pre and
post measurement scales on the achievement
test of the experimental group

Post-test		Follow-up		
Mean	Standard	Mean Standard		
	Deviation		Deviation	
14.73	1.38	14.46	1.50	

It is clear from the table as in Table 4 that the mean scores concerning the experimental group immediately after applying the strategy on the post-test was (14.73), whereas it decreased slightly after the follow-up with an average of (14.46). To manifest the significance of the differences, the Wilcoxon test was used for the two correlated samples as an indication for the differences between the ranks' mean scores of the population of the experimental group on the achievement test between the post and the follow-up scales as shown in table 5.

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Table 5.

The results of the Wilcoxon test for the two correlated samples to indicate the differences between the mean scores of the experimental group on the achievement test between the post and the follow-up scales

Post- test scale / follow- up	Num ber	Mea n of Ran ks	Tot al of Ran ks	Z	Signific ance
Negativ e (those whose scores decrea sed)	7	6.29	44.0 0	- 1.0 69	.285
Positiv e (those whose scores increas ed)	4	5.50	22.0 0		
Equal (whose scored remain ed the same)	4				
Total	15				

It is noted from Error! Unknown switch argument. that there are no obvious differences at the level of significance of ($\alpha \le 0.05$) between the ranks' mean scores of the experimental group on the achievement test between the post and the follow-up scales, and the value of (Z) for the total score was (-1.069) with a level of its significance of (0.285). The results also reflect that the number of those students whose grades decreased was (7) and whose grades increased was (4), while (4) of the students whose grades remained the same. This indicates the effect of teaching using the flipped learning strategy on the achievement of grammar among gifted students. This is due to the educational characteristics of gifted students as cited by (Alazah, 2015), including: complexity of thinking; excitement; sensitivity; insight; sacrifice; inclination: prematurity; social leadership tendency; diversity in interests and abilities; the information technology era of and communications; and the knowledge society, so that the gifted students show a broad and multifaceted understanding of the potential of this technology and the creativity of new positions and knowledge.

Likewise, these results are identical with the findings of the study of (Al-Ahwal, 2016), which

indicated that there was an improvement in the group's performance experimental when comparing it with the control group in terms of statistical differences on the test for the experimental group. They, moreover, concord with the results of the study of (Bezzazi 2019), (LI, Wang, Wang & JIA2017), (Pudin 2017), the study of (Thaichay & Sitthitikul, 2016) (Abdullatif, 2016), the study of (Alzain, 2015), the study of (Overmyer, 2014), the study of (Al-Issawi & Alma'mouri, 2015), and the study of (Althyabat, 2013), which demonstrated the blended learning's effectiveness in teaching grammar for the students at Tafila University.

Conclusion and Recommendations

In conclusion, this study attempted to investigate the flipped learning strategy's effect on developing grammar achievement among gifted eight-grade female students at King Abdullah II Schools for Excellence in the southern region of Jordan, specifically at Tafila and Ma'an governorates. The study's results found that there is a positive effect on developing the grammar achievement of the study sample that implemented the strategy of flipped learning. Considering the results of the current study, the researchers recommend the following:

- 1. Paying attention to employing electronic and integrated learning environments based on technological advances in the educational process because of the positive results they have on the educational process and their compatibility with the modern era.
- 2. Conducting training sessions and workshops for teachers to encourage them to adopt the flipped learning strategy in teaching different school subjects.
- 3. Employing the strategy of flipped learning and modern techniques in the teaching process to reduce the problems raised by the abstract concepts in the Arabic language in general and grammar in particular.
- 4. Conducting more studies on other school stages and dealing with different subjects such as science, physics, etc.

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