

The Effects of the Collaborative Video-Based Flipped Learning Strategy on the Achievements in Arabic Grammar of 10th-Grade Female Students

Naser Al-Maqableh*

Department of Curriculum & Instruction, Yarmouk University, Irbid, Jordan

Batool Al-Makhadmeh

Department of Curriculum & Instruction, Yarmouk University, Irbid, Jordan

Abstract—the study aimed to gauge the effect of the collaborative video-based flipped learning strategy on the achievement of tenth-grade female students of Arabic grammar in the Ramtha Education Directorate during the first semester of the 2022/2023 academic year. A 60-question test in Arabic grammar was developed and distributed over three cognitive levels: knowledge, comprehension, and application. The study sample consisted of 60 tenth-grade female students chosen through the available sampling method and divided equally into a control and experimental group (n=30). The former group was taught traditionally and the latter group was taught using the video-based flipped learning strategy. The results showed a statistically significant difference at ($\alpha = 0.05$) between the means of the study sample's performance in both groups at each cognitive level whether separately or collectively attributed to the flipped learning strategy. The study recommended adopting this strategy in teaching Arabic grammar in particular and language skills in general.

Index Terms—strategy, flipped learning, Arabic grammar

I. INTRODUCTION

Language is one of the most important tools that have been used by human beings in the attempt to pass information from one individual to another. Not only that many cognitive benefits of language acquisition be denied, but the language helps to acquire information about other cultures, contributes to the establishment of trust, and unites people at the level of international comprehension. Socrates believed that words are the keys to thinking, while Watson described thinking as self-talking. That is, when humans think, they speak but without using their voices.

Grammar is the structural foundation of abilities to express themselves. It is the core structure of learning a language and comprises rules that govern how words can be put together to form sentences. Furthermore, it is a science that specializes in studying words and the changes that occur within their structure or what is known as a meaningful sentence (Al-Hmouz, 2002). Grammar rules define the conditions of Arabic structures such as syntax and construction that determine speech correctness or corruption (Asr, 2005).

It is rare to find a language without rules to govern the sounds, words, and sentences as well as their combination and interpretation. Practicing and applying grammar rules helps to give an accurate linguistic expression and achieve actual integrity (Shahata, 2008). Chomsky once said that it is impossible to judge an individual's proficiency in their mother tongue unless they are proficient in the grammatical system on which it is based.

Sbeitan (2010) defines grammar as rules such as phonological rules, word combination rules, and syntax rules that govern language. Abu Al-Dab'at (2007) states that grammar rules define the conditions of Arabic word endings that result from their combination with each other in terms of declension, syntax, and related matters. By following these rules, the tongue is protected from pronunciation errors, and the pen is safeguarded from making mistakes in writing and editing.

From the above, it can be concluded that the rules of language are a set of laws, principles, and systems that deal with the structure of speech, sentences, and phrases. They regulate speech and protect it from errors, mispronunciation, and deviation from the norms of Arabic speech to convey the intended meaning properly in both spoken and written forms.

As a result, researchers point out that language rules work to develop the individual's abilities in reasoning, balancing between the language structures, and selecting elegant, refined, and expressive vocabulary, which polishes their taste and develops their expression. The Arabic language rules originally included the rules of grammar, morphology, rhetoric, criticism, and writing, but what is currently taught in schools includes only grammar and morphology without

* Corresponding Author. Email: naser.m@yu.edu.jo

other branches of language (Fayyad, 1995).

Arab scholars have made an effort to explain the concept of grammar. Ibn Geni (2003) referred to grammar as the awareness of Arabic speech including pluralization, dualization, singularization, addition, composition, attribution, and more to ensure that every learner of Arabic can speak it fluently. Al-Sakkaki (1983) defines grammar as knowing how to combine words to convey absolute meaning based on derived measures from Arab speech to avoid mistakes in compositions.

Recently, the concept of grammar has expanded to become more comprehensive. Al-Dlaimi and Al-Waeli (2003) define grammar as the process of standardizing rules and generalizations related to word endings and their use in linguistic contexts. It is the science that studies linguistic structures and the relationships between words in a sentence and between sentences in phrases (Hawamdeh & Ashour, 2007).

The researchers believe that the science of grammar is concerned with studying linguistic structures, their characteristics, and the knowledge of words state in terms of declension, construction and identifying the relationship between words in a sentence and between sentences in phrases as well as determining case endings.

As for morphology, Abdul Latif (1999) described it as the science of studying language vocabulary. It was once an integral part of grammar and remained so until it was separated by Abu Uthman Al-Mazini. Morphology is an indispensable science in language studies and deals with how Arabic structures are formulated. It cannot be understood in isolation from the rules of phonetics which underscores the integration and interdependence of language sciences (Al-Rajhi, 2000).

Atiyah (2015) maintained that morphology is the study of word structure and its variations to facilitate pronunciation, its change in meaning, or both. This is known as word inflection, which affects the structure of verbs regardless of their tense and modifies the form of nouns through dual and plural inflections, diminutives, and attribution. However, inflection does not apply to solid verbs, constructed nouns, and words with less than three letters since they have only one form. Alsamirai (2013) emphasized that morphology specializes in studying derived nouns and non-solid verbs while solid verbs, constructed nouns, and letters are not related to morphology.

The researchers conclude that the science of morphology deals with studying the patterns of words, the letters, and their diacritics, except for the last letter's diacritic, and the changes that occur in them such as declension, substitution, and assimilation. It specializes in studying derived nouns and non-solid verbs.

The researchers believe that language skills are interrelated and integrated by reciprocal relationships. Language is governed by many rules to produce eloquent and proficient speech and relies on these rules to preserve its identity and authenticity from distortion and deviation. Mastering the rules of grammatical syntax enables language users to develop all four language skills.

Experts have given much attention to identifying the causes of weakness in language grammar among students. It is believed that this weakness is one of the toughest challenges facing educators as students' aversion to learning grammar rules has become apparent in all stages of education from elementary school to university graduates (Hawamdeh & Ashour, 2009).

One of the main reasons for learners' weakness is that the content of curricula does not take into consideration students' needs and tendencies. Moreover, they are not built according to principles of integration and continuity which results in a weak connection between topics and sequence in addressing language components (Abu Al-Dab'at, 2007).

In the same context, Zaqout (2013) pointed out that the teaching methods used by teachers make grammar a silent topic. Their reliance on traditional strategies hinders students from reaching the stage of active learning and acquiring higher-order thinking skills. Moreover, the academic weakness of language teachers was negatively reflected by student performance as well as the weakness of teachers practicing other subjects of the language and its rules (Sbeitan, 2010).

The demand for finding solutions to these challenges has become an urgent necessity in preserving the language and its rules, which might be achieved by focusing on studying its systems, skills, and rules, especially grammar and morphology. There has been a noticeable trend towards developing new methods and strategies that keep pace with the tremendous advancement in technology and meet the requirements of the new generation. Strategies are being developed to make learning the Arabic language more engaging and enjoyable to overcome the obstacles that learners face.

A plethora of research (see, for example, Hawamdeh & Ashour, 2007; Abu al-Daba'at, 2007; Attiyah, 2015) pointed out certain effective methods in teaching Arabic grammar including:

- Linking the lessons to students' real-life situations, needs, and interests to raise motivation and use them in teaching grammar.
- Avoiding complex teaching methods when presenting the material.
- Utilizing the available modern educational tools in teaching Arabic grammar they create excitement and interest.
- Organizing the Arabic grammar topics in a logical and progressive order, starting with the easiest and progressing to the more difficult and complex ones.
- Using other branches of the Arabic language to apply the grammar rules through them, and emphasizing the importance of listening to correct Arabic language usage.

Accordingly, achieving educational goals requires a change in the roles of teachers and the strategies they use in teaching to keep up with the significant progress in the fields of science and technology. This has led to an increased need for the use of modern strategies that serve students in the process of research, thinking, and skill acquisition.

Teaching strategies play an important role in classroom instruction. Without it, teachers would be aimlessly presenting information that does not connect or engage with learners. Strategies help learners participate and connect and add excitement to the content being taught. Their importance lies in being the tool for delivering information through designing educational activities, providing diverse learning resources, and presenting knowledge in ways that address students' aptitudes and abilities, taking into account their differences (Bergman & Sams, 2012). Consequently, educators have found it necessary to create teaching strategies that are compatible with the modern era.

One of these approaches is the flipped learning strategy, which is considered a modern form of learning. Its roots can be traced back to the natural evolution of blended learning, inquiry-based learning, and other teaching strategies, methods, and tools that aim to make learning more flexible and enjoyable (Alshurman, 2015). As opposed to the traditional approach to learning, the flipped classroom model has been hailed as the solution for all learning challenges being experienced by students. The flipped classroom model, as the name suggests, is a model of teaching and learning in which the traditional roles of the teacher are reversed and the students come prepared to the class having completed their readings and other assignments. Learners receive the first part of the learning material at home and, during the class, learners participate in cooperative learning, which means that they are focused, learn cooperatively, and think critically. In their classroom, students have to watch instructional videos, which are prepared at home by the teacher. The way students take notes and write questions while they watch the video helps them during class time. These questions and discussions are then redirected to elaborated discussions of the content, asking more questions, implementing some projects, or solving some assignments, which give more possibilities for successful communication between students and their teachers (Bergman & Sams, 2008).

The researchers conclude that flipped learning relies on leveraging modern technology to benefit the teaching and learning process. It is based on active learning, student effectiveness, student participation, and disseminating educational content more engagingly. The value of flipped learning lies in utilizing and converting class time into a workshop where students discuss what they want to investigate from the educational content.

Collaborative video platforms have become widely popular they are one of the modern applications on which flipped learning is prominently based. Al-Shay'a (2018) referred to YouTube as one of the most famous collaborative video platforms worldwide YouTube provides video clips for learners and allows them to post, upload, like, and comment on them.

A collaborative video is a tool that can be employed and utilized for flipped learning, as it is an easy way to deliver information to learners. Furthermore, these videos do not require constant internet connectivity if they are downloaded to electronic devices, reducing concerns about the availability of a stable internet connection. Videos come in a variety of formats. These include videos that individuals can create themselves using modern applications and pre-recorded content available on platforms such as YouTube and Dailymotion (Subramaniam & Muniandy, 2016).

Bergman (2017) suggests that a good video does not necessarily have to be long; rather, short videos make the content more engaging and enjoyable while focusing on the information. It is suggested that the video range between 10 and 15 minutes long and on one educational topic. In addition, collaborative videos allow students to comment, leave notes, provide summaries, or even answer some questions.

Flipped learning strategy is carried out according to organized and sequential steps, as follows:

Analysis: This is the fundamental stage as it lays the foundation for the subsequent steps. It involves creating a plan to use the collaborative video according to the flipped learning strategy, determining the type of learners, their levels, and attitudes, and analyzing the content of the educational material. Students are directed to watch a video on the topic they are studying, determine learning outcomes, prepare lesson objectives, select or design a video that suits the lesson objectives, choose suitable group activities for the lesson topic, and prepare individual work to enrich the topic.

Design: This is the stage of designing the appropriate educational programming or providing it from available resources.

Deployment and Guidance: This stage involves uploading the educational programming using a social media platform or an internet website, then directing students to watch it, providing immediate feedback, and opening the door for discussion and dialogue, if possible.

Application: This stage aims to apply what the student has learned after watching the educational video or any other educational programming they received, and then apply what they learned through discussion and dialogue within the classroom, answering the textbook's exercises, activities, and worksheets prepared by the teacher.

Evaluation: This stage focuses on evaluating the effectiveness of the flipped learning strategy in achieving learning objectives, represented by formative evaluation during the learning process, and summative evaluation that evaluates the effectiveness of the strategy after its implementation (Al-Talhi, 2019).

In flipped learning, the roles of the teacher and the student, as well as the roles of the teaching process between the classroom and home, are reversed. This is achieved by using technology tools and collaborative video platforms such as YouTube, as well as social media sites like WhatsApp and Facebook to prepare and present lessons and send them to students before attending class. Once in class, students discuss the ideas and information they have learned.

By embracing the radical reconstruction of time and space with the use of technology the teacher did not have to conform to the traditional approach of the system. Nevertheless, students get many of the benefits of the instructional videos in a manner that aligns them with their learning capabilities in the subject matter in a more controlled and directed manner. These videos are also popular among most teachers since they are given the freedom to be mentors and coaches meant for projects, which they can demonstrate the practical application of the subject matter. This can enable them to have better and more meaningful interaction with students, and a more innovative role in the development of curricula and programs (Bergman & Sams, 2008).

Each strategy has its advantages; the flipped learning approach is characterized by effectively utilizing class time and improving student achievement (Al-zain, 2015). It also provides students with the opportunity to review the lesson according to their differences and needs allowing each student to learn at their own pace and abilities, thus emphasizing individualized learning. The flipped classroom approach aligns with the new era by using modern technology that encourages students to learn more (Shareer, 2017).

Al-Khahily (2015) noted that flipped classroom contributes to remedying the weaknesses of traditional learning methods by utilizing class time for guidance, motivation, and assisting students. It has shown an increase in student participation and the full practice of active learning exercises as well as an increase in interaction between students and faculty members as they perform the required activities.

In light of the above, the researchers believe that employing the flipped learning strategy in the educational process is possible as it is compatible with the features of the fast-paced and digital world. This strategy can activate the role of the student and make him or her focus on the educational process. It also emphasizes the role of the teacher in presenting the educational material in an interesting way that helps students learn effectively and meets their needs. Therefore, it is expected that this strategy will improve the study sample's performance in Arabic language rules and treat their weaknesses.

As a result, the current study aimed to investigate the impact of the flipped learning strategy on the performance of 10th-grade female students in Arabic grammar and its effect on overcoming the difficulties they face.

A. Problem and Questions of the Study

The educational system in Jordan places significant emphasis on teaching the Arabic language. This emphasis is evident through the initiatives of the Ministry of Education implemented within the past decade following a noticeable decline in student proficiency in the language, which is reflected in their ability to acquire grammar rules and apply them correctly. A strong body of research (e.g., Hawamdeh, 2007; Sbeitan, 2010; Al-Dulaimi & Al-Waeli, 2005; Al-Halak, 2010) has confirmed that the problem of teaching Arabic grammar lies in the fact that grammar rules still face the same challenges in teaching strategies and presenting educational content, as well as in using traditional methods of teaching Arabic grammar.

Through their experience in the field of education, the researchers have observed this reality and attributed student weakness to the practices followed by teachers in teaching grammar which rely on rote memorization, answering questions, and doing homework, leaving the student as a passive recipient without contributing to reaching the answers on his own. Moreover, there is a lack of interaction between the teacher and the student inside and outside the classroom. Another reason behind this weakness may be also attributed to the overcrowded curriculum, poor presentation, and the weak reliance on technology in delivering content and giving it a sense of stagnation.

Based on the foregoing, the study examined the effect of the collaborative video-based flipped learning strategy on the achievements of 10th-grade female students of Arabic grammar. The following questions drove the collection of the subsequent data:

1. Is there a statistically significant difference at ($\alpha=0.05$) between the mean scores of study sample performance in each level of the Arabic grammar test separately (knowledge, comprehension, and application), attributed to the teaching strategy (conventional and collaborative video-based flipped learning strategy)?
2. Is there a statistically significant difference at ($\alpha=0.05$) between the mean scores of study sample performance on the Arabic grammar test items as a whole, attributed to the teaching strategy (conventional and collaborative video-based flipped learning strategy)?

B. Objectives of the Study

The study aimed to investigate the achievements of 10th-grade female students in Arabic grammar skills and the impact of the collaborative video-based flipped learning strategy compared to the conventional method.

C. Significance of the study

The importance of this study lies in the following:

- Drawing the attention of educators to the necessity of adopting modern philosophies that stem from the technological era when preparing learning environments. It also involves utilizing the potential provided by intelligent learning environments to achieve positive and distinguished learning outcomes.
- Developing Arabic language teaching strategies that rely on integrating technology in education and providing tangible scientific evidence of the importance of this strategy in teaching Arabic language rules.

- Providing experiment-based results of whether using the collaborative video-based flipped learning strategy improved students' Arabic language rules.
- From a practical perspective, understanding the practical steps to implement the flipped learning strategy through collaborative video.

D. Limitations of the Study

The generalizability of the findings may be limited to the effect of collaborative video-based flipped learning strategy on the achievements of 10th-grade female students in Arabic grammar at the Ramtha Education Directorate during the first semester of the 2022/2023 academic year and the topics of grammar covered in the Arabic grammar textbook. In addition to being limited to the validity and reliability of the study instruments, the accuracy and objectivity of the study sample responses and the use of flipped learning strategy exclusively.

E. Terms of Definitions

Flipped learning is a set of teaching procedures in which students can first prepare for the class through the coverage of course content in the form of readings or lecture videos, and then use class time for the application, analysis, or synthesis of the material. Getting the students ready with the course material before a class session helps to use the class time to navigate through tough content, respond to questions, foster learning activities, and relate with real-life scenarios.

Achievement is the measurement of students' overall academic learning over a particular period. In this study, it is the score that the student obtains on the achievement test prepared according to the Arabic grammar textbook of the 10th-grade students.

10th-grade female students are 15- to 16-year-old students in the final stage of basic education in Jordan.

Grammar rules are a set of laws and systems derived from Arabic speech that govern the correct use of language, in terms of syntax, structure, and word formation to convey the intended meaning through linguistic communication. This includes the topics covered in the 10-grade Arabic grammar textbook, as stipulated by the Ministry of Education in Jordan.

II. LITERATURE REVIEW

Upon reviewing theoretical literature, little research has been conducted on the impact of the flipped learning strategy on student performance in Arabic grammar. The researcher could not locate much research that focuses on this topic; thus, the study is expected to add to the existing body of related research.

Al-Ahwal (2016) conducted a study aimed at verifying the effect of using the flipped learning strategy on developing grammatical skills and attitudes concerning the curriculum of high school students in Saudi Arabia. The sample consisted of 57 high school students divided into both a control group (n = 28) and an experimental group (n = 29). The quasi-experimental method was used in addition to a list of grammatical skills necessary for the study and a grammatical skills test was used for gathering data. The results indicated statistically significant differences between the experimental and control groups in favor of the experimental group, which were attributed to the use of the flipped learning strategy.

Lofnertz (2016) examined 40 high school perceptions toward the flipped classroom approach for teaching grammar specifically in Sweden. A quasi-experimental method was used in addition to a questionnaire and an interview to collect data after applying the strategy. The findings showed that students had a positive attitude towards the use of the flipped classroom and that this could result in enhanced learning of grammatical concepts.

Share (2017) investigated the effectiveness of a flipped classroom environment in developing grammar skills and attitudes toward grammar among ninth-grade students in Palestine. The study used an experimental approach with a descriptive-analytical method. The study was conducted on a sample of 67 female students. The results showed significant differences between the mean scores of the experimental and control groups study instruments. However, there were no significant differences between the mean scores scale of their attitudes towards grammar.

Koiv (2017) investigated the effectiveness of the flipped classroom in teaching grammar rules and its impact on student performance in Estonia. A quasi-experimental design was used with a study sample of 22 students. In addition to pre and post-tests, a self-assessment scale and interviews were used as research instruments. The results showed that using the flipped classroom had a positive effect and led to improved test scores. In addition, the students also found the educational videos useful in learning grammar rules.

Nuon and Champakaew (2017) examined the impact of flipped classrooms on grammar achievement. The study sample involved 81 second-year students at Mae Fah Luang University in Thailand who were divided into both a control group (n=41) and an experimental group (n=40). The instruments used in the study included an achievement test and student records to collect data. The results showed a convergence in the performance of both groups with a slight advantage for the experimental group attributed to the flipped classroom.

Saif and Al-Najdi (2018) conducted a study to investigate the effectiveness of using the flipped classroom strategy in developing grammatical concepts included in the language skills course among preparatory year students at Tabuk University in Saudi Arabia. For gathering data, the quasi-experimental and descriptive-analytical approaches were used.

A pre-and post-test was developed and applied to a sample of 126 students divided equally into both a control group and an experimental group (n = 63). The results showed statistically significant differences between the mean scores of the control and experimental groups attributed to the flipped classroom strategy.

Asaka, Shinozak and Yoshida (2018) applied the flipped classroom approach to teaching English to examine its effectiveness on the performance, attitudes, and perceptions towards learning English of Japanese EFL junior high school students. The study sample consisted of 160 7th-grade students divided equally into both a control group and an experimental group (n=80). The study used pre-questionnaires and post-questionnaires to collect data as well as teacher interviews in the flipped classroom to analyze perceptions toward English and the flipped classroom. The adoption of the flipped classroom strategy in teaching illustrated that the flipped classroom played a role in enhancing the students' grammar and speaking performances. The questionnaires and interviews showed that the attitudes of students and teachers toward using the flipped classroom strategy in the EFL class were positive.

Al-Asiri (2019) investigated the effect of interaction between the collaborative video-based flipped classroom strategy and learning styles the purpose of this study was to examine the effectiveness of the proposed intervention in raising third-year secondary students' achievement in English grammar. To this end, a quasi-experimental method was adopted with a 3x2 factorial design was employed. Twenty-six students have been assigned to the experimental group and 31 students to the control group. A sample achievement test was used for generating data. The findings of the study indicated that the group of students who adopted the flipped classroom approach had more positive learning outcomes than the group of students who were exposed to traditional classroom practices. On the other hand, no interactions between strategy and styles were statistically significant.

Based on previous literature, the importance of using electronic educational programs in the educational system is evident. Prior research examined the effect of the flipped learning strategy on various variables under different conditions including its effect on achievement, developing grammatical and morphological concepts as well as its potential benefits for teaching grammar rules and overcoming difficulties in learning grammar. The researcher benefited from previous studies in identifying the reasons behind student weakness in Arabic grammar which can be attributed to the scarcity of using modern strategies and teachers being weak when it comes to using and being familiar with these strategies.

Furthermore, the current study benefitted from previous studies in the following ways; in presenting and enhancing the theoretical literature, in the process of constructing the study instrument, in determining the method that was used in the study, while discussing the results of the study, and while identifying the problem and objectives of the current study. Thus, this research contributes to the current literature by providing a deeper understanding of the factors that influence the decision to purchase fast foods, which called for seeking the effectiveness of using the flipped classroom strategy in developing the grammatical performance of students.

On the contrary, the study differed from previous literature in terms of employing the collaborative video-based flipped learning strategy and examining its impact on Arabic grammar. The study offered an educational strategy that motivates students and develops their motivation towards learning Arabic in a lively and active manner that aligns with their preferences in the era of speed and technology.

III. METHODOLOGY

A quasi-experimental design was used which involved selecting two groups: an experimental group taught by the collaborative video-based flipped learning strategy and a control group taught conventionally. A pre-test and post-test of Arabic grammar were administered to both study groups.

A. Study Sample

The study participants consisted of 60 female students from two sections of the 10th grade at Al-Ramtha Girls' High School in Ramtha Education Directorate using the convenient sampling method. The simple random method was used to select the experimental and control groups (n =30 students for both).

B. Study Instrument

To achieve the goal of the study, the researchers prepared a 22-item multiple-choice/short-answer test to measure the extent of improvement in Arabic grammar among the study participants. The grammar lessons were identified and analyzed. Test instructions were prepared the purpose of the test and how to answer its items were explained.

(a). Validity of the Instrument

To establish the face validity of the instrument, the instrument was reviewed by a panel of educational experts. Instruments and their content in terms of their paragraphs, relevance to the objectives of the present research, the language used, and how effectively it was developed by the team represent the effect of collaborative video-based flipped learning strategy on the 10th-grade students' achievements in Arabic grammar. The comments and recommendations of the panel were studied carefully and taken into account in amending the final version of the instrument.

(b). Reliability of the Instrument

The reliability coefficient value Validity of the instrument was established through reliability analysis using a pilot test involving 43 students who were not part of the study sample selected through a random sampling technique. The students were given the test and they were expected to complete it in two weeks' time but with an interval of one week in between. The correlation coefficient that was used in the study was the Pearson correlation coefficient, this was calculated both. Cronbach Alpha was calculated to be 0.82-.086 which was deemed appropriate to complete the study.

To further ensure the appropriateness of the test items, the values of difficulty and discrimination were calculated for each item. It was observed that the values of the difficulty ranged between 0.42 and 0.71, and the values of the discrimination ranged between (0.44-and 0.69). According to the criteria for accepting paragraphs referred to by Odeh (2010), these values were found educationally acceptable.

(c). *Equivalence of the Study Groups on the Pre-Test*

To verify the equivalence of the two study groups in the pre-test, the means and standard deviations for the study performance in Arabic language rules were calculated according to the conventional and flipped teaching strategies and reached 14.72 and 13.22 respectively. To determine the statistical significance of this apparent difference, a T-test for the two independent samples was performed.

The T-test value for the teaching strategy reached 0.804 with a statistical significance of 0.424 which is higher than the level of statistical significance at ($\alpha = 0.05$). This indicates that the two study groups are equivalent as there is no statistically significant difference in the performance of the control and the Arabic grammar test.

Grammar Teaching Procedures According to the Flipped Learning Strategy

Bergman and Sams (2012) outlined the steps of teaching grammar using the flipped learning strategy and divided it into two main stages:

Before the Class Session

1. Determine the lesson topic and the technological tools to be used.
2. Analyze the lesson; identify its content and objectives.
3. Convert the lesson topic into a video prepared by the teacher, or select a pre-prepared video from the internet that suits the lesson topic.
4. Upload the selected video to the internet or a social networking site such as WhatsApp. The application is determined in agreement with the students.
5. Assign students to watch the video on the lesson topic and take notes or summarize it.

During the Classroom Session

1. Dedicate the first part of the session to discuss with the students, answer their questions, and ensure that they have watched the video.
2. Prepare enrichment activities and worksheets, answer them individually or by dividing the students into groups, then present the answers to the students and receive feedback on these answers.
3. Answer lesson questions and exercises.
4. Use various assessment tools, such as asking questions or answering worksheets, to ensure that the desired objectives are achieved.

C. *Study Variables*

This study examined the following variables:

- Independent variable: represented by the teaching strategy (conventional and collaborative video-based flipped learning).
- Dependent variable: represented by each level of Arabic grammar separately and collectively.

IV. RESULTS AND DISCUSSION

A. *Results of the First Research Question*

The study sought whether or not there is a statistically significant difference at ($\alpha=0.05$) between the mean scores of study sample performance in each level of the Arabic grammar test separately (knowledge, comprehension, and application), attributed to the conventional and collaborative video-based flipped learning teaching strategy.

To answer this question, means and standard deviations of the study sample performance at each level of Arabic grammar were calculated for the pre-test and post-test (knowledge, comprehension, and application) according to the teaching strategy, as shown in Table 1.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF THE STUDY SAMPLE PERFORMANCE AT EACH LEVEL OF ARABIC GRAMMAR FOR THE PRE AND POST-TEST (KNOWLEDGE, COMPREHENSION, AND APPLICATION) ACCORDING TO THE TEACHING STRATEGY

Level	Teaching Strategy	Pre-Test Performance		Post-Test Performance		Modified Post-Test Performance	
		Mean	SD	Mean	SD	Modified Mean	Error
Knowledge (AC=16)	Conventional	9.13	3.93	11.87	3.89	11.99	0.59
	Collaborative Video-based Flipped Learning	8.77	4.74	14.40	2.43	14.28	0.59
	Total	8.95	4.32	13.13	3.46		
Comprehension (AC=22)	Conventional	4.37	3.36	11.20	7.61	11.41	1.16
	Collaborative Video-based Flipped Learning	3.27	2.66	17.72	5.11	17.50	1.16
	Total	3.82	3.06	14.46	7.22		
Application (AC=22)	Conventional	1.22	1.28	9.62	7.73	9.86	1.19
	Collaborative Video-based Flipped Learning	1.18	1.81	17.18	5.39	16.94	1.19
	Total	1.20	1.56	13.40	7.63		

AC: Overall Score for the Level

Table 1 shows statistically significant differences between the mean scores of the pre-test and post-test performance of the experimental group, in favor of the post-test. In addition, there were significant differences in the mean scores of post-test performance between the experimental and control groups in favor of the experimental group.

To determine the statistical significance of the post-test differences according to the teaching strategy (after neutralizing the pre-test differences in performance between the study groups at each level of the Arabic grammar test), a one-way Multivariate Analysis of Covariance (MANCOVA) was performed, as shown in Table 2.

TABLE 2
RESULTS OF THE ONE-WAY MANCOVA ANALYSIS OF THE MEANS OF THE STUDY SAMPLE POST-PERFORMANCE AT EACH LEVEL OF ARABIC GRAMMAR TEST BASED ON THE TEACHING STRATEGY

Source	Level	Type sum of squares	df	Mean square	F	Sig (P)	Eta squared η^2
Prior Knowledge	Knowledge	33.970	1	33.970	3.362	0.072	
	Comprehension	177.026	1	177.026	4.470	0.039	
	Application	173.596	1	173.596	4.172	0.046	
Prior comprehension	knowledge	29.838	1	29.838	2.953	0.091	
	Comprehension	101.386	1	101.386	2.560	0.115	
	Application	119.176	1	119.176	2.864	0.096	
Prior application	knowledge	0.480	1	0.480	0.048	0.828	
	Comprehension	18.164	1	18.164	0.459	0.501	
	Application	24.830	1	24.830	0.597	0.443	
Teaching Strategy Hotelling's Trace=0.322 Statistical Significance=0.002*	knowledge	75.284	1	75.284	*7.451	0.008	0.119
	Comprehension	532.471	1	532.471	*13.445	0.001	0.196
	Application	721.100	1	721.100	*17.332	0.000	0.240
Error	knowledge	555.726	55	10.104			
	Comprehension	2178.140	55	39.603			
	Application	2288.291	55	41.605			
Modified total	knowledge	706.933	59				
	Comprehension	3073.646	59				
	Application	3433.900	59				

Statistically significant at ($\alpha \leq 0.05$)

Table 2 shows that the statistical significance value for the Hotelling test according to the teaching strategy was 0.002, which is less than ($\alpha = 0.05$), indicating that there is at least one statistically significant difference in one of the levels of the Arabic language proficiency test (knowledge, comprehension, and application).

Based on the statistical significance of these levels (0.008, 0.001, 0.000) respectively, which are lower than the significance level ($\alpha = 0.05$), the null hypothesis was rejected and the alternative hypothesis was accepted. There is a statistically significance difference at ($\alpha = 0.05$) between the two mean scores of the control and experimental groups' performance in the Arabic grammar test in favor of the experimental group.

Using Eta Square, the values of the Effect Size for the Arabic grammar test levels (knowledge, comprehension, and application) were 0.119, 0.196, and 0.240 respectively. This means that 11.9%, 19.6%, and 24.0% of the improvement

in the performance of the students is attributed to the effect of employing the collaborative video-based flipped learning strategy for each level of the Arabic grammar test.

The result might be attributed to the nature of the flipped learning strategy which attracted and encouraged students to the learning process by relying mainly on the advantages of modern technology. This technology facilitated the delivery of information and provided students with opportunities for classroom activities that reinforced their understanding (Bergman & Sams, 2012). The result is consistent with Hodeib (2012), Al-Ahwal (2016), Shareer (2017), Nuon and Champakaew (2017), which revealed that the video-based flipped learning strategy outperforms traditional instructional strategies.

Furthermore, the flipped classroom strategy creates rich learning opportunities and makes students the center of the teaching-learning process. It reverses the roles of those responsible for the educational process, increases students' curiosity to seek knowledge on their own, raises their confidence makes them more effective. In other words, this model provides teachers with more time to attend to their student's learning needs and develop various skills by eliminating some of the time-consuming processes of teaching and learning (Al-Talhi, 2019).

The researchers believe that the nature of this strategy allows students to access different levels of knowledge. It enables weak students to replay the educational video multiple times until they reach the minimum levels of knowledge in Bloom's taxonomy. It leads average students to higher levels of knowledge, pushing them to apply their knowledge individually or collectively through the provided exercises and activities both inside and outside the classroom until they reach the final knowledge and the intended lesson. This approach allows for self-evaluation through pre-prepared exercises and discussions with the teacher and classmates in the classroom.

B. Results of the Second Research Question

The second research question sought whether or not there is a statistically significant difference at ($\alpha=0.05$) between the mean scores of study sample performance on the Arabic grammar test items as a whole, attributed to the teaching strategy (conventional and collaborative video-based flipped learning)

To answer this question, the means and standard deviations for the pre and post-test performance on Arabic grammar test items as a whole according to the teaching strategies were calculated as shown in Table 3.

TABLE 3
MEANS AND STANDARD DEVIATIONS FOR THE PRE AND POST-TEST PERFORMANCE ON ARABIC GRAMMAR TEST ITEMS AS A WHOLE ACCORDING TO THE TEACHING STRATEGIES

Teaching strategy	Pre/performance(AC=60)		Post/performance (AC=60)			
	Mean	SD	Mean	SD	Modified mean	Error
Conventional	14.72	6.46	32.69	17.62	32.71	2.74
Collaborative video-based flipped learning	13.22	7.92	49.30	11.46	49.28	2.74

AC: Overall Score for the Test

Table 3 shows statistically significant differences between the pre-test and post-test means of the experimental group's performance on the Arabic grammar test items as a whole, in favor of the post-test mean. There was also a significant difference in the post-test means between the experimental and control groups, in favor of the experimental group. To determine the statistical significance of these differences (after neutralizing the pre-test differences in performance between the study groups of the Arabic grammar test as a whole) a one-way ANOVA was performed as shown in Table 4:

TABLE 4
THE RESULTS OF THE ONE-WAY ANOVA OF THE POST-STUDY SAMPLE PERFORMANCE ON THE ARABIC GRAMMAR TEST ITEMS AS A WHOLE ACCORDING TO THE TEACHING STRATEGY

Source	Type sum of squares	df	Mean square	F	Sig (P)	Eta squared η^2
Pre test	2.686	1	2.686	0.012	0.913	
Teaching strategy	4074.013	1	4074.013	*18.136	0.000	0.241
Error	12804.356	57	224.638			
Modified total	16948.746	59				

Statistically significant at ($\alpha \leq 0.05$)

Table 4 shows that the statistical significance value for the teaching strategy was less than ($\alpha = 0.05$). Therefore, the second null hypothesis was rejected and the alternative hypothesis was accepted. There is a statistically significant difference between the performances of the two groups in favor of the experimental one.

Using Eta Square, the effect size was 0.241; this means that 24.1% of the improvement in the performance of the group on the Arabic grammar test items can be attributed to the collaborative video-based flipped learning strategy.

This result may be attributed to the fact that this strategy allows students the opportunity for self-assessment where they can evaluate their learning outside the classroom by applying what they learned at home after watching the video.

When they attend the classroom, it reinforces their knowledge and corrects any misconceptions through their dialogue with their teacher (Al-Kahily, 2015).

The result is in line with Hodeib (2012), Shareer (2017), Allam (2020), Saif and Al-Najdi (2018), Lofnertz (2016), Asaka, Shinozaki and Yoshida (2018) and Al-Asiri (2019) that indicated the superiority of the collaborative video-based flipped learning strategy over the conventional strategy.

The researchers believe that these results may be generally attributed to the flipped learning strategy which motivates students toward active learning methods, considers their needs, and supports their skills in dealing with modern technology. This strategy also helps to break away from the monotony that dominates the educational material and free it from the rigid framework adopted by the Ministry of Education. It also caters to the individual differences of students and considers their life circumstances that may force them to be absent from school and lose knowledge on that day. This strategy instills a sense of reassurance that any information will be available at any time.

V. CONCLUSION

Based on the results and discussion, it can be concluded that there are statistically significant differences between the mean scores of the pretest and post-test performance of the experimental group, in favor of the post-test. In addition, there are statistically significant differences between the pre-test and post-test means of the experimental group's performance on the Arabic grammar test items as a whole and in favor of the post-test mean. Furthermore, the results showed a statistically significant difference at ($\alpha = 0.05$) between the means of the study sample's performance in both groups at each cognitive level whether separately or collectively attributed to the flipped learning strategy.

VI. RECOMMENDATIONS

Based on the findings of the current study, the researchers recommend the following:

- Conducting training courses to qualify teachers in schools in general, and Arabic language teachers in particular, to introduce them to modern teaching methods, especially the flipped learning strategy.
- Developing plans to address the clear deficiencies in the teaching strategies used in schools in Jordan, which have a negative impact on student levels, achievements, and motivation towards learning.
- Developing curricula that align with the characteristics of the flipped learning strategy, in order to effectively employ the strategy and improve students' academic performance.
- Providing the necessary technological resources to serve students and increasing their awareness of the importance of technology in developing their cognitive and learning abilities.

REFERENCES

- [1] Abdul Latif, A. (1999). *Fundamentals of Arabic Grammar*. Al-Maktab Al-Jame'i Al-Arabi.
- [2] Abu Al-Daba'at, Z. (2007). *Methods of Teaching Arabic Language*. Dar al-Fikr for Publishing and Distribution.
- [3] Al-Ahwal, A. (2016). The Effect of Using Flipped Learning on Developing Grammatical Skills and Attitudes toward the Course among Secondary School Students. *Journal of the message of education and psychology*, 55, 41-67.
- [4] Allam, S. (2020). The Effect of Using the Supported Flipped Classroom Strategy with Corrective Feedback Patterns on Developing Grammatical Concepts and Self-Learning Skills among Non-Native Arabic Speakers. *Journal of Scientific Research in Education*, 9(21).
- [5] Al-Asiri, M. (2019). The Impact of the Interaction between the Flipped Learning Strategy based on Collaborative Video and Learning Approaches (Deep, Surface, and Strategic) on the Achievement of English Grammar among 3rd Grade Female Secondary School Students. *Journal of King Khalid University of Educational Science*.
- [6] Al-Dalimi, T. & Al-Waeli, A. (2003). *Scientific Methods in Teaching Arabic Language*. Dar Al-Shorouk for Publishing and Distribution.
- [7] Al-Dulaimi, T. & Al-Waeli, S. (2005). *New trends in teaching Arabic language*. Alam Al-Kutub Al-Hadith.
- [8] Al-Halak, A. (2010). *The reference in teaching Arabic language skills and sciences*. Modern Book Institution.
- [9] Al-Hmouz, M. (2002). *Al-Rashid in Arabic Grammar*. Dar Al-Safa for Publishing and Distribution.
- [10] Al-Kahily, I. (2015). *The Effectiveness of Flipped Classrooms in Learning*. Dar Al-Zaman Library for Publishing and Distribution.
- [11] Al-Rajhi, A. (2000). *The Application of Morphology*. Dar Al-Nahda Al-Arabiya for Printing, Publishing and Distribution.
- [12] Al-sakkaki, M. (1983). *The Key to Sciences*. Dar Al-Kotob Al-Ilmiyah.
- [13] Alsamirai, M. (2013). *Arabic Morphology: Rules and Meanings*. Dar Ibn Kathir for Printing, Publishing, and Distribution.
- [14] Al-Shay'a, H. (2018). The effectiveness of using collaborative YouTube videos in developing skills of producing educational videos among students of the Special Education Department at Princess Noura University and their attitudes towards it. *Education Journal*, Sohaj University, 52(4), 743-797.
- [15] Al-Shurman, A. (2015). *Blended learning and flipped learning*. Dar Al-Maseera for Publishing, Distribution, and Printing.
- [16] Al-Talhi, S. (2019). *Flipped Learning: Experimentation and Implementation*. King Fahd National Library.
- [17] Al-Zain, H. (2015). The Effect of the Flipped Learning Strategy on the Academic Achievement of Female Students at the College of Education, Princess Nourah bint Abdulrahman University. *Specialized Educational Journal*, 4(1), 186-171.
- [18] Asaka, S., & Shinozaki, F. & Yoshida, H. (2018). The Effect of a Flipped Classroom Approach on EFL Japanese Junior High School Students Performances and Attitudes. *International Journal of Heritage, Art & Multimedia*, 3, 71-78.

- [19] Asr, H. (2005). *Modern Approaches to Teaching Arabic Language in the Preparatory and Secondary Stages*. Alexandria Center for Books.
- [20] Attiyah, G. (2015). *The Ladder of Language in Arabic Morphology, Syntax, and Rhetoric*. Al-Muqtbase.
- [21] Bergman, J. (2017). *Solving the Homework Problem by Flipping the Learning*. Alexandria, Virginia USA: ASCD.
- [22] Bergmann, J. & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International Society for Technology in Education (ISTE).
- [23] Bergmann, J & Sams, A. (2008). *Remixing Chemistry Class Report Learning & Leading with Technology*. Retrieved from: http://wordpress.ed.pacificu.edu/stephanierae/files/ISTE_Remixing-Chemistry-Class (18/Feb/2023).
- [24] Fayyad, S. (1995). *Modern Grammar*. Al-Ahram Translation and Publishing Center.
- [25] Hodeib, M. (2012). *The effect of programmed and computerized instruction on the achievement of tenth grade Jordanian students in Arabic grammar* [Unpublished master's thesis]. Al-Zaim Al-Azhar University.
- [26] Hawamdeh, M. & Ashour, R. (2007). *Teaching methods for Arabic language*. Dar Al-Maseera for Publishing and Distribution.
- [27] Hawamdeh, M. & Ashour, R. (2009). *Arabic Language Arts and Teaching Methods: Between Theory and Practice*. World of Modern Books.
- [28] Ibn Geni, A. (2003). *The characteristics*. Dar al-Kotob al-Ilmiyah.
- [29] Koiv, K. (2017). *Effect of teaching grammar to adult EFL learners using the flipped classroom technique* [Unpublished master's thesis]. University of TARTU: Estonia.
- [30] Lofnertz, E. (2016). *Students Perceptions of grammar teaching in the EFL flipped classroom* [Unpublished master's thesis]. Goteborgs University.
- [31] Nuon, L. & Champakaew, D. (2017). Student Perceptions of the Flipped Classroom in College Algebra. *Primus*, 782-791.
- [32] Saif, N. & Al-Najdi, S. (2018). The effectiveness of using flipped classroom strategy in developing grammatical concepts is included in the linguistic skills syllabus for preparatory year students at Tabuk University. *Journal of Scientific Research in Education, Ain Shams University*, 8(19), 199-223.
- [33] Sbeitan, F. (2010). *Principles and Methods of Teaching Arabic Language*. Dar Al-Geneidah.
- [34] Shahata, H. (2008). *Teaching Arabic language: between theory and practice*. Dar Al-Masrya Al-Lubnania.
- [35] Shareer, M. (2017). *The Effectiveness of Using a Flipped Classroom Environment in Developing Grammar and Attitude towards it among 9th Grade Female Students in Gaza* [Unpublished master's thesis]. Islamic University of Gaza.
- [36] Subramaniam, S, R. & Muniandy, B. (2016). Concept and characteristics of flipped classroom. *International Journal of Emerging Trends in Science and Technology*, 3(10), 4668-4670.
- [37] Zaqout, M. (2013). *A Guide to Teaching Arabic Language*. Amal Library for Publishing and Distribution.

Naser Al-Maqableh is a full professor of Arabic Language Curriculum and its Teaching Methods at the Department of Curriculum & Instruction, Yarmouk University, Jordan. He received his Ph.D. in Arabic Language Curriculum and its Teaching Methods, in 1999. His research interests include teaching language skills, language learning and teaching strategies, and teaching Arabic language to non-native speakers.

Batool Al-Makhadmeh is an Arabic Language Teacher at Jordanian Ministry of Education since 2015. She received her M.A in Arabic Language curriculum and its Teaching Methods from Yarmouk University, Jordan in 2019. Her research interests include teaching grammar and learning motivation & Attitudes.