The Effectiveness of a Flipped Classroom Strategy in Developing Grammatical Concepts Among Fifth Grade Primary School Students

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Abstract: The current study explored the potential effect of using the flipped class strategy in developing grammatical concepts among fifth-grade primary school students in Irbid, Jordan during the academic year 2019/2020. The study followed the quasi-experimental design, which was applied to a sample of 52 female students, who were divided into a control and an experimental group. The control was taught traditionally and the experimental group was taught grammar through using a flipped classroom strategy respectively. The study developed a list of suitable grammatical concepts for the study sample and a test to measure the Arabic grammatical concepts: declension, case marking, case ending, representation in a sentence, and extraction. After performing the appropriate statistical analysis, the results of the study showed the presence of significant differences between the experimental and the control groups in all grammatical concepts in favor of the experimental group. The researcher recommended applying the flipped class strategy in teaching the grammatical concepts for female fifth graders.

Keywords: *Efficacy, flipped classroom, grammatical concepts, traditional methods.*

Introduction

The Coronavirus disease (COVID-19) pandemic has made several changes in the environment of teaching settings and teaching methods that are no longer limited to teaching facts to learners and having them memorize, but rather emphasize learning trends, intellectual and performance skills, and practical processes. The goals of education are no longer limited to acquiring knowledge in the classroom but go beyond developing the learner's ability to utilize technological innovations in communicating and interacting with others, accessing sources of knowledge wherever they are, and using them in building knowledge (Hassan, 2013). The flipped classroom strategy is one of the modern strategies that aims to activate a blended learning environment (Al-Wahid, 2015) by providing modern technical solutions to remedy traditional learning deficiencies and develop levels of thinking among learners (Al-Zain, 2015). The flipped classroom strategy is also important in teaching English as a second language to primary stage students (Sahin & Kurban, 2016).

The flipped classroom strategy is a modern educational model that invests in modern technology and uses it to provide education that is suitable to the needs and requirements of learners, especially after the COVID-19 pandemic, in a form of blended learning. It was also defined as the educational approach where direct instruction is moved from the group's learning environment to the individual one. This leads to shifting the group's learning place into an interactive context where the teacher guides the learners while applying the concepts and engaging actively in the course topics (Johnston & Karafotias, 2016).

A strong body of research (Al-Far, 2012; Ghanem, 2015; Ronchetti, 2010) recommended more studies related to the use of the flipped class strategy in different specializations. The difference between traditional education and flipped class is in the roles. The idea is to overturn or reverse the well-known educational process, which is to teach and explain lessons inside the classroom and give homework for the learner to solve and hand them to the teacher in the second meeting.

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The researcher believes that the concept of flipped classroom strategy starts by preparing the vocabulary of the lesson at home by the learner on the day before the class and then allocating class time at school to work on activities, homework, and discussions between the learners and the teacher. It is one of the digital teaching strategies that rely on educational technology such as video and the provision of educational content across the Internet.

Further to the above, one of the reasons for the researcher's choice of this study is that there is no previous study – to the best of the researcher's knowledge - that revolves around the effectiveness of using the flipped classroom strategy in developing grammatical concepts among female primary school pupils. There are several studies on using the flipped classroom strategy in subjects other than Arabic grammar (Al-Ruwaili & Al-Talafha, 2020; Loizou & Lee, 2020; McEvoy et al., 2016; Zakaria & Yunus, 2020; Zou, 2020).

Despite the continuous efforts and attempts made by the Arabic language scholars to overcome the difficulty of grammatical rules, the requirements were not met, and the complaint rises of the weakness of students in grammar and the rules of the Arabic language. The students still do not employ the rules they have studied when they speak and write. The researchers believe that the reason is due to the usual methods used by teachers in teaching (Abu Shatat, 2005).

Through the researcher's experience in teaching grammar, she has noticed the low level of students' grammar skills, and that the content of grammar does not develop the ability to think or self-organized learning skills. The current process of teaching grammar depends on traditional teaching methods that center around the teacher and make the student's role passive. It is also noticeable that students turn to private lessons, making knowledge provided to them in a ready-made manner, which leads to a deficiency in their self-organized learning skills. Therefore, this study attempted to benefit from the use of the flipped-classroom learning strategy in developing students' self-organized learning skills. The rationale behind using this strategy also comes from the belief in the importance of developing self-organized learning skills, which is one of the goals of teaching grammar.

Questions of the Study

The study addressed the following main question:

What is the effectiveness of using the flipped classroom strategy in developing grammatical concepts skills among fifth-grade female primary school students?

Significance of the study

The current study contributes to providing a set of research outputs and additions to those interested in the following fields. The results of the study shed light on one of the recent trends in the field of educational techniques and technological innovations, which is the flipped class strategy, and conducting more research in other aspects of the course. The study provides actual evidence for those involved in the educational process about using the flipped class strategy during research skills and sources of information to develop digital culture skills. The results may contribute to providing a realistic picture about applying the inverted class strategy during research skills and information sources to achieve the targeted learning outcomes for learners and direct the attention of teachers to apply them which contributes to improving and enriching teaching strategies in the courses. The study draws the attention of members of the Arabic language curricula and grammar and the ones teaching reading that it is necessary to provide early primary school teachers with new methods, steps, and teaching models that keep pace with the developments of the times.

Literature review

The flipped classroom model has several pedagogical benefits in the educational process (Giannakos et al., 2014). This model also enhances the experience of the learners and boosts their competencies (Bergmann & Sams, 2012). In the primary education context, the flipped classroom model has not been used often, as some researchers believed that the young age of students might be an obstacle in the implementation of such a model. They believe that young students lack self-regulation, which is a major feature in the students to follow up with the flipped classroom (Herreid & Schiller, 2013).

The flipped class strategy has several characteristics. Learners of the current century are a digital generation, who are distinguished by having a short attention span in learning through traditional methods, and a long period of attention when they learn through games and movies and surfing the Internet and preferring to learn through pictures, audio, and video instead of written texts. They also can work within the team and, work on multiple assignments. They prefer to learn through modern technology because it has become part of their lives (AL-Hudrob, 2019).

The problems of traditional methods are in not considering the individual differences of learners, their needs, and their learning styles. Al-Kaheili (2015) claims that teaching by depending on the teacher as the only source of information and focusing on him instead of focusing on learners make the educational process go one way without having the learners contribute to their learning. Furthermore, traditional methods can not compensate learners for what they missed in case of their absence.

Among the important features of the flipped classroom strategy is to meet the needs of learners. It invests modern technology in combining two types of e-learning and traditional patterns in a third style called blended learning, allowing the learner to learn individually at the time and place that suits him (Al-Dirshawi, 2019) and then provides the learner with a learning environment that is centered on him/her in the class according to his activity and positivity. Al-Zain (2015) believes that the inverted class is characterized by many features that made it a strategy that considers the learner and his needs and abilities to achieve better learning for him/her. The most important of these features: staying in line with the changes of the digital age, flexibility, effectiveness, and transparency (Alvarez, 2011).

A flipped classroom strategy requires awareness by the teacher and learner to understand how it functions, and their respective roles in the learning process. However, the use of the inverted class strategy is still a matter of controversy. Despite the advantages of this strategy, Alghamdi (2019) argued the existence of some obstacles such as preparing a flipped class strategy requires extensive experience and awareness that many teachers may not have. The recording of the videos requires extraordinary awareness and effort on the part of the institution or entity producing these videos. This strategy also requires new teaching skills that the teacher has not experienced before and requires understanding by the learners of the mechanisms of strategy (Khasawneh, 2021).

Hubaishi (2012) maintains that obstacles are standing in the way of implementing the inverted class strategy, including the availability of appropriate technology at the appropriate level to adopt an inverted class strategy may be one of the fundamental issues for its success or failure. The teacher must have the skills to deal with programs so that he can produce new learning materials. For this strategy, there is a need for learners to accept their responsibilities of learning and to give up their dependence on the teacher as in traditional education (Kim, et al., 2017; Stockard et al., 2018).

Nevertheless, teaching Arabic grammar is one of the most difficult tasks facing Arabic language teachers. This is due to the difficulty of the subject and the distance of learners from the standard Arabic language. Therefore, Arabic language teachers should have the ability to follow modern methods of teaching the subject and use modern strategies.

Previous studies

Several studies tackled the use of the flipped-classroom learning strategy in different school topics. Loizou and Lee (2020) conducted a multi-case study to explore the most effective ways of implementing flipped classrooms in primary education. An inquiry-based flipped classroom model has been developed and applied in five primary schools in Cyprus in 2017–2018. The participants of the project were 5 teachers, 77 students, and their parents. After extracting the views and perceptions of the participants, the researchers concluded several design principles that can be used with the flipped classroom strategy.

Zakaria and Yunus (2020) conducted a study to explore the impact of using flipped classroom strategy in improving the tenses learning of students learning English as a second language. The participants were 36 students from a school in Negeri Sembilan, Malaysia. The study concluded those students have positive attitudes toward learning English grammar using the flipped classroom strategy. The strategy improved students' understanding of the tenses of the English language.

Zou (2020) concluded the positive advantages of using the flipped classroom model. The study covered a project for 1 year on gamified flipped English language classrooms. The participants were 277 primary students and eight teachers. The study collected data by conducting interviews, making observations, and taking students' and teachers' perceptions. The study concluded that flipped classrooms increased motivation and confidence among students.

McEvoy et al. (2016) investigated the use of flipped classrooms in helping primary students in the fourth grade to understand nutrition education. The investigation was carried out by medical students in a school in Derry Township, Pennsylvania, USA. The findings showed significant improvements in nutrition knowledge among the students of the fourth grade. The teachers who were involved in the training reported the usefulness of the strategy to teach primary school students.

Al-Ruwaili and Al-Talafha (2020) investigated the effectiveness of using flipped learning strategy on developing self-regulation learning skills among second intermediate students in social and national studies courses in Saudi Arabia. They also investigated the impact of using flipped learning strategy according to the level of achievement. The study included 62 students, who were distributed into two groups: the experimental group, which is taught using flipped learning strategy, and the control group which is taught using the usual method. The findings showed the improvement of the members of the experimental group in the self-regulation learning scale after using the flipped learning strategy.

Methodology

Sample of the study

The sample of this study included 52 female students in the fifth grade in Jordan. The sample was divided into two equal groups. The experimental group studied using the flipped class strategy and the control group studied using the usual (traditional) way. All of them underwent a written test.

Instruments of the Study

The study used the following instruments to answer the questions of the study: a list of grammatical concepts and a grammar concepts test.

The list of grammatical concepts was derived from Arabic and foreign studies and previous research related to grammatical concepts and from the goals of grammar education (syntax) at the primary level (Alghamdi, 2019; Al-Ruwaili & Al-Talafha, 2020). This was followed by presenting it to reviewers with expertise and specialization to ensure that the concepts are appropriate and suitable for the students and that they are well formulated and prepared and to have them choose what they see appropriate. Then, the final image of the list was determined based on the agreement of many reviewers who preferred some of it and added what they deemed appropriate.

The second instrument was the test of grammar concepts, which was prepared to measure the understanding of the female learners of the study sample of the grammatical concepts: declension, case marking, case ending, representation in a sentence, and extraction.

Validity of the test

The test of grammar concepts consisted of twenty-five multiple-choice items each of four alternatives. To verify the validity of the test, it was presented to a group of specialists in Arabic language curricula and its teaching methods. According to the stability factor of the Cronbach Alpha method after its initial application on twenty female primary school learners from the fifth grade who are not of the study sample, the values of the reliability coefficients ranged from 0.77 to 0.81 for the skills and reached 0.82 for the entire test, which is high-reliability values and indicates that the test has an acceptable degree of reliability.

Difficulty and Discrimination

The psychometric indicators for the grammar concepts test were verified by applying them to a survey sample of 25 female students. The difficulty coefficients values were between 0.30 and 0.70 and fall within the acceptable range. Item discrimination coefficients ranged from 0.45 to 0.50 and all of them fall within the acceptable range of the discrimination index.

Reliability of the grammatical list

The test is not informal, as it was prepared by the teacher. The reliability of the list was verified by the Cronbach Alpha method for the dimensions and the overall score. The reliability values ranged from 0.71 to 0.86, all of which are high values that indicate the reliability of the test. For the internal consistency indexes, Pearson correlation coefficients were calculated between the total score of the skill and the total score of the list. The values of correlation coefficients ranged from 0.39 to 0.62.

Test marking

The researcher marked the test (the study instrument) according to the following:

1. Declension skill. This skill has been given 5 marks.

2. Case ending skill. The skill has been given 5 marks.

3. Case marking skill. The skill has been given 5 marks.

4. The representation in a sentence skill and has been given 5 marks.

5. The skill of extraction and has been given 5 marks.

Application procedures

The study was applied according to the following procedures:

1. Reviewing the educational literature specialized in teaching grammatical concepts at the elementary level of schools, including several relevant Arab and foreign research and studies, to deepen awareness of the problem throughout the research and study and to benefit from it in building tools.

2. Determine the school of application, and random test the sample of female learners.

To verify the equivalence of the two groups, a pre-grammatical concepts test was applied to the two groups and calculated the differences between them using the t-test for two independent groups. The results were as shown in Table 1 below:

Table 1. The Value of t and Its Significance for the Differences Between Both Groups in the Pre-Measurement to Test Grammatical Concepts.

Level	Group	Number	Mean	Standard Deviation	t value	Significance Level	p-value
Declension	control	26	1.94	0.71	0.78	Not Significant	0.153
	experimental	26	2.09	0.71			
Case ending	control	26	1.96	0.72	0.10	Not Significant	0.235
	experimental	26	1.98	0.73			
Case marking	control	26	1.88	0.85	0.24	Not Significant	0.140
	experimental	26	1.94	0.91			
Representation in a sentence	control	26	2.06	0.62	0.49	Not Significant	0.120
	experimental	26	1.94	1.03			
Extraction	control	26	1.96	0.72	1.09	Not Significant	0.085
	experimental	26	1.75	0.68			
Overall score	control	26	9.81	2.19	0.14	Not Significant	0.194
	experimental	26	9.71	2.80			

Table 1 shows that the values of t for the pre-differences between the two groups are not significant in all levels and the overall score, which means that the two groups are equal.

3. Apply the grammar test in one session.

4. A plan was developed to visit the teacher who will implement the teaching of grammatical concepts, with five visits taking into consideration that she adheres to her school program. Four sections were selected in a simple random way. The researcher met with the teachers in the resource rooms in the classroom before implementing the model and gave them comprehensive instruction about the study and the study's standards and procedures. She also provided them with a copy of the training program after ensuring that the teacher understood the procedures of this program.

5. The researcher provided the teachers with the study standards to determine the degree of children's possession of grammatical skills, two weeks before the application of the training program, and they were asked to observe the children's behaviour during a school week, and then determine and estimate the degree to which children possess the skills contained in the scale during the second week. The researcher adopted this procedure because it is a traditional procedure in many studies in which teachers were assigned to observe and assess the behaviour of children.

6. To identify the suitability of the program to the research sample of students, the researcher applied some of the program's activities to a pilot sample of twenty students from outside the study sample for one week. The researcher found that the program was clear in terms of instructions and content and that the average time taken is one study session for the session. The teacher applied the program and the test, as the researcher reads only one phrase after working to simplify the phrases on the students' ears with the help of a teacher and through the students' answers. The researcher noticed that there is a great convergence in the students' answers. Therefore, the researcher applied the test again where the researcher found there was a great contradiction in the students' answers, which confirms the students' resort to randomness when answering. When students compare themselves to the teacher's assessment, the researcher found that there is a huge difference in the assessment process and favour of the teacher's assessment. The researcher was keen to be a mentor for teachers during the implementation phase to ensure that the program is implemented accurately and to assist the teacher in the application and helping to operate the devices, displaying slides and photos, and asking questions.

7. As for the educational aids used in the program, the researcher relied on the following and other means in communicating experiences to children, such as:

− The computer.

− Display machine.

− Illustrations of activities.

− Illustrative pictures of the activities.

− Chalkboard.

− Some simple tools (putty, cubes, ...).

− Working papers.

8. The results obtained from applying the grammatical concepts test were monitored.

9. The study hypotheses were validated by processing the obtained data, extracting the results, and then discussing them.

Study variables

To determine the potential effect of using the flipped classroom strategy in developing grammatical concepts, the current study used the teaching method (two levels: flipped classroom strategy, the usual or traditional method) as the independent variable to determine their impact on the dependent variable which is the development of grammatical concepts.

Statistical methods

The appropriate statistics were used to analyse the data obtained in the results. These statistics included the t-test, the ETA equation to calculate the effect size, and equation (d) to define the level of the effect size.

Results

The results of the first hypothesis:

To test the first hypothesis, the t-test was used to identify the differences between the experimental and control groups in the post-measurement of the level of declension. The results are as follows in the following table:

Table 2. The Value of t and Its Significance for the Differences Between the Experimental and Control Groups in the Post-Measurement of the Level of Declension

Group	Number	Mean	Standard Deviation	t value	Significance Level
control	26	2.65	0.49	10.65	.01
experimental	26	4.54	0.76		

Table 2 shows that the value of t for the differences between the mean scores of the experimental and control groups in the post-measurement of the level of grammatical declension is significant. It is clear through comparing the mean scores of the two groups that the average score of the experimental group reached 4.54 compared to 2.65 for the control group, therefore, the differences are in favor of the experimental group.

The results of the second hypothesis:

To test this hypothesis, the t-test was used for the independent groups to identify the differences between the experimental and control groups in the post-measurement of the level of the case ending, and the results came as in the following table:

Table 3. The Value of t and its Significance for the Differences Between the Experimental and Control Groups in the Post-Measurement of the Level of the Case Ending

Group	Number	Mean	Standard Deviation	t value	Significance Level
control	26	2.58	0.64	8.02	.01
experimental	26	4.19	0.80		

Table 3 shows that the t value was significant. It is clear through a comparison of the mean scores of the two groups that the average score of the experimental group reached 4.19 compared to 2.58 for the control group. Accordingly, the differences are in favour of the experimental group.

The results of the third hypothesis:

To test this hypothesis, a t-test was used for the independent groups to identify the differences between the experimental and control groups in the post-measurement of the level of case marking, and the results came as in the following table.

Table 4. The Value of t and Its Significance for the Differences Between the Experimental and Control Groups in the Post-Measurement of the Level of Case Marking

Group	Number	Mean	Standard Deviation	t value	Significance Level
Control	26	2.92	0.27	9.44	.01
experimental	26	4.23	0.65		

Table 4 shows that the value of t for the differences between the mean scores of the experimental and control groups in the post-measurement of the level of case marking was significant. It is clear through a comparison of the mean scores of the two groups that the average score of the experimental group reached 4.23 compared to 2.92 for the control group, therefore, the differences are in the direction of the experimental group.

The results of the fourth hypothesis:

To test this hypothesis, the t-test was used to identify the differences between the experimental and control groups in the post-measurement of the level of representation in a sentence, and the results are as in the following table:

Table 5. The Value of t and Its Significance for the Differences Between the Experimental and Control Groups in the Post-Measurement of the Level of Representation in a Sentence.

Group	Number	Mean	Standard Deviation	t value	Significance Level
control	26	2.77	0.43	7.21	.01
experimental	26	4.15	0.88		

Table 5 shows that the t value was significant. It is clear through a comparison of the mean scores of the two groups that the average score of the experimental group reached 4.15 compared to 2.77 for the control group. Accordingly, the differences are in the direction of the experimental group.

The results of the fifth hypothesis:

To test this hypothesis, the t-test was used to identify the differences between the experimental and control groups in the post-measurement of the level of extraction.

Table 6. The Value of t and Its Significance for the Differences Between the Experimental and Control Groups in the Post-Measurement of the Extraction Skill.

Group	Number	Mean	Standard Deviation	t value	Significance Level
control	26	2.69	0.74	5.94	.01
experimental	26	3.88	0.71		

Table 6 shows that the t value was significant. It is clear through a comparison of the mean scores of the two groups that the average score of the experimental group reached 3.88 compared to 2.69 of the control group. Consequently, the differences are in the direction of the experimental group.

The results of the sixth hypothesis:

To test this hypothesis, the t-test was used for the independent groups to identify the differences between the experimental and control groups in the post-measurement to test the grammatical concepts, and the results came as in the following table:

Table 7. The Value of t and Its Significance for the Differences Between the Experimental and Control Groups in the Post-Measurement to Test the Grammatical Concepts

Group	Number	Mean	Standard Deviation	t value	Significance Level
control	26	13.62	1.06	11.81	.01
experimental	26	21.00	3.01		

Table 7 shows that the value of t for the differences between the mean scores of the experimental and control groups in the post-measurement to test grammatical concepts was significant. It is clear through a comparison of the mean scores of the two groups that the average score of the experimental group reached 21 compared to 13.62 for the control group, therefore, the differences are in the direction of the experimental group.

To know the effect size of the strategy in developing grammatical skills, the ETA equation was used to calculate the effect size and the equation (d) to know the level of the effect size. The value of (d) = 0.2 means the effect size is small, and the value of (d) = 0.5 means the effect size is medium, and the value of (d) = 0.8 means a large effect size, and the results are as shown in table (8) as follows:

Table 8. The Value of the Effect Size and Its Level of the Effect of the Strategy on Developing Grammatical Concepts.

Levels	t value	Degrees of freedom	eta squared value	d value	Effect size
Declension	10.65	50	0.69	2.96	Big
Case ending	8.02	50	0.56	2.27	Big
Case marking	9.44	50	0.64	2.67	Big
Representation in a sentence	7.21	50	0.51	2.04	Big
Extraction	5.94	50	0.41	1.66	Big
Overall score	11.81	50	0.74	3.37	Big

Table 8 shows that the value of the ETA squared for the effect size ranged between (0.41 - 0.69) for the skills and the overall score reached 0.74, which means that 74% of the variance of female students' degrees in the post-measurement of the grammatical skills is due to the effect of the strategy. The value of (d) ranged between (1.66 -3.37) for the skills and for the overall degree, which is large effect size.

Discussion

The results of the study showed the existence of differences between the mean scores of the two groups (experimental and control) in the post-measurement of the test attributed to the group variable. These differences show the effectiveness of the flipped class strategy in meeting the needs of learners in this concept by solving this big problem that was intercepting learners. This supports the trend towards using technological tools in teaching and learning to take advantage of self-learning and invest the time to perform activities and solve homework, which agrees with the study of (Al-Ruwaili & Al-Talafha, 2020). This also indicates the effectiveness of the flipped class strategy in developing grammatical concepts. The flipped class strategy gave the learner a greater opportunity to practice learning activities and increased discussion and interaction within the classroom which seems to go in line with the studies of (Al-Zain, 2015; Lee & Choi, 2018).

The flipped-class strategy provided immediate feedback to the learners by the teachers in the class inside the classroom and encouraged communication between them because they work in small participatory groups. It also closed the knowledge gap often caused by absenteeism from the class, whether forced or optional. The strategy also allowed the teacher to find out the weaknesses and strengths of the learners' understanding of the content, so the teacher dealt with it correctly. It is also clear that providing the complete freedom for the learner to choose the place, time, and speed with which she learns helped and enabled the learner to represent in a sentence, as well as in case marking. The flipped classroom strategy proved to help engage students with the different activities and with the teacher. Although students were at younger ages, they were able to learn more about self-regulation to take their roles as asked by the teacher. This helped in achieving the desired goals of the strategy.

It was found that the flipped-class strategy was effective in developing the concept of extraction. The goal of the study was achieved by the ability of learners to work as a team and employ what they learned in building knowledge, which agrees with Hassan (2013). This result shows that the flipped class strategy is a guide and facilitator of the learning process and meets the actual needs of learners. It was also found that the mean scores of the experimental group for the total score of the grammatical concepts test was 21 compared to 13.62 for the control group and accordingly the differences are in favour of the experimental group. The results agree with previous studies (Al-Ruwaili & Al-Talafha, 2020; Loizou & Lee, 2020; McEvoy et al., 2016; Zakaria & Yunus, 2020; Zou, 2020) that demonstrated the efficiency of using the inverted class strategy in developing concepts, in favour of the inverted class strategy, which has increased the enthusiasm of the female students where the learner played a major role in it and because the inverted class strategy provided a mechanism to assess learners' assimilation through tests and short assignments.

These findings demonstrate substantial evidence of the effectiveness of the inverted class strategy in developing grammatical concepts as a whole in expressing, case marking, case ending, and representation in a sentence and extraction. This strategy has solved a big problem facing learners as they learn grammatical concepts. The innovation part in this strategy relied on the interactive environment the students feel, which is different from the traditional environment, where the teacher is just narrating information to students without engaging them in discussions and clear activities. Thus, the flipped class strategy is a modern educational model that invests and employs modern technology and provides better education that suits learners' needs and requirements.

Conclusion

This study shows a significant indication of the effectiveness of the flipped classroom strategy in developing grammatical concepts in expressing, case marking, case ending, and representation in a sentence and extraction. The study concludes that such a strategy should be integrated with the Arabic language curriculum to develop the language skills among students. The use of the flipped learning strategies can help educators in providing learners with instant access to

their learning materials wherever they are and whenever they need them. This is because blended learning relies on technology, and all the learning materials are accessible online.

Recommendations

Based on the results of the current study, the following recommendations were developed:

- Paying attention to teaching the Arabic language in general and grammar in particular and turning to modern methodology in teaching Arabic is connected to the involvement of the students in everything going on during the lesson.
- Conducting more structural sequential research on the inverted class strategy and its applicability to the different branches of the language.
- Activating the inverted class strategy is one of the effective methods in teaching Arabic grammar.

Limitations

This study is determined by:

- The sample of the study consists of two female students' sections having 52 female students from the fifth grade in the city of Irbid in Jordan during the second semester of the year 2020/2021.
- The application of the educational content that was approved in the study consists of three texts of the grammar assigned for the study sample from the Arabic course.
- Application of the list of grammatical concepts: declension, case marking, case ending, representation in a sentence, and extraction and training students on them according to the inverted class strategy.
- Testing the grammatical concepts (rules) intended to measure the extent of mastery in grammatical concepts, and therefore the results of the study are determined by the extent of availability of indications of validity and reliability in these tools.

References

Abu Shatat, S. M. (2005). *The effect of employing computers in teaching grammar on the achievement of eleventh-grade female students and their attitudes towards it, and its retention* [Unpublished master's thesis]. College of Education at the Islamic University.

Al-Dirshawi, A. A. (2019). The impact of the strategy of blended learning on academic achievement and on retaining information for students of the eleventh literary grade in the subject of geography in the center of Duhok governorate. *Studies - Educational Sciences: The University of Jordan - Deanship of Scientific Research, 46*, 271 - 286. http://search.mandumah.com/Record/948926

Al-Far, I. A. (2012). *Educations of technology for the twenty-first century: Technology (web 2.0).* Dar Al-Fikr Al-Arabi.

Alghamdi, F. A. A. (2019). Effects of flipped learning strategy on the cognitive achievement of the female students in the art education teaching methods course at Umm Al-Quran university. *Umm Al-Qura University Journal of Educational and Psychological Sciences, 10*(2), 157 - 188.

AL-Hudrob, K. F. (2019). The effectiveness of flipped learning in developing current and postponed achievement among students of the study skills course at the University of Jordan. *The Arab Journal For Quality Assurance in Higher Education*, *12*(40), 33-48. https://doi.org/10.20428/AJQAHE.12.40.2

Al-Kaheili, I. S. (2015). *The effectiveness of flipped classes.* Dar Al-Zaman Library.

Al-Ruwaili, F. B., & Al-Talafha, H. A. (2020). The impact of using flip learning strategy on developing self-regulation learning skills among second intermediate students in social and national studies course in Saudi Arabia. *IUG Journal of Educational and Psychology Sciences, 28*(1), 617-646. https://bit.ly/3H137l3

Alvarez, B. (2011). Flipping the classroom: Homework in class, lessons at home. *Education Digest: Essential Readings Condensed for Quick Review*, *77*(8), 18–21. https://bit.ly/3APZKsQ

Al-Wahid, M. A. (2015). *The strategy of the flipped classroom in teaching Arabic to non-native speakers.* New Education. http://www.new-educ.com

Al-Zain, H. B. (2015). The impact of using the flipped learning strategy on academic achievement of female students of the college of education at princess Noora bint Abdul Rahman University. *The International Interdisciplinary Journal of Education, 4*(1), 171-186.

Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day.* International Society for Technology in Education.

Ghanem, B. M. (2015). The reality of educational services provided to students with special needs in basic government schools in the city of Jenin from the viewpoint of employees. *Al-Aqsa University Journal (Human Sciences Series), 19*(1), 257-292. https://doi.org/10.12816/0018018

Giannakos, M. N., Krogstie, J., & Chrisochoides, N. (2014). Reviewing the flipped classroom research: reflections for computer science education. In NEED EDITOR(S) HERE, *Proceedings of the computer science education research conference* (pp. 23-29).: https://doi.org/10.1145/2691352.2691354

Hassan, N. E. M. (2013). The effect of using participatory learning based on Google educational applications in developing the skills of designing electronic courses and the trend towards it among faculty members at Umm Al-Qura University*. Journal of the Faculty of Education: Alexandria University - Faculty of Education, 23*(4), 107-173. http://search.mandumah.com/Record/819120

Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, *42*(5), 62-66.

Hubaishi, D. K. (2012). *Employing e-participatory learning in developing field training for students of the computer teacher preparation division at faculties of qualitative education* [Unpublished master's thesis]. Mansoura University.

Johnston, N., & Karafotias, T. (2016). Flipping the classroom to meet the diverse learning needs of library and information studies (LIS) students*. Journal of Education for Library & Information Science, 57*(3), 226-238. https://doi.org/10.3138/jelis.57.3.226

Khasawneh, M. A. S. (2021). Language skills and their relationship to learning difficulties in English language from the students' point of view**. *Science and Education*, 2(9), 261-272. https://doi.org/10.34293/education.v9i4.4082

Kim, J., Park, H., Jang, M., & Nam, H. (2017). Exploring flipped classroom effects on second language learners' cognitive processing. *Foreign Language Annals, 50*(2), 260–284. https://doi.org/10.1111/flan.12260

Lee, J., & Choi, H. (2018). Rethinking the flipped learning pre-class: Its influence on the success of flipped learning and related factors. *British Journal of Educational Technology*, *50*(2), 934–945. https://doi.org/10.1111/bjet.12618

Loizou, M., & Lee, K. (2020). A flipped classroom model for inquiry-based learning in the primary education context. *Research in Learning Technology*, *28*, 1-17, https://doi.org/10.25304/rlt.v28.2287

McEvoy, C. S., Cantore, K. M., Denlinger, L. N., Schleich, M. A., Stevens, N. M., Swavely, S. C., Odom, A. A., & Novick, M. B. (2016). Use of medical students in a flipped classroom program in nutrition education for fourth-grade school students. *Health Education Journal*, *75*(1), 38–46. https://doi.org/10.1177/0017896914561879

Ronchetti, M. (2010). Using video lectures to make teaching more interactive. *International Journal of Emerging Technologies in Learning*, *5*(2), 45-48. https://doi.org/10.3991/ijet.v5i2.1156

Sahin, M., & Kurban, C. F. (2016). *The flipped approach to higher education: Designing universities for today's knowledge economies and societies*. Emerald Group Publishing. https://doi.org/10.1108/S2059-2841201603

Stockard, J., Wood, T. W., Coughlin, C., & Rasplica Khoury, C. (2018). The effectiveness of direct instruction curricula: A meta-analysis of a half-century of research. *Review of Educational Research*, *88*(4), 479–507. https://doi.org/10.3102/0034654317751919

Zakaria, S., & Yunus, M. M. (2020). Flipped classroom in improving ESL primary students' tenses learning. *International Journal of English Language and Literature Studies*, *9*(3), 151-160. https://doi.org/10.18488/journal.23.2020.93.151.160

Zou, D. (2020). Gamified flipped EFL classroom for primary education: Student and teacher perceptions. *Journal of Computers in Education*, *7*(2), 213-228. https://doi.org/10.1007/s40692-020-00153-w