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The Effectiveness of the Flipped Classroom Strategy in Enhancing Academic Communication Skills among Ninth Grade Students

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ABSTRACT

***Objective**: This study aimed to evaluate the effectiveness of the flipped classroom strategy in developing academic communication skills among preparatory stage students in Kirkuk Governorate. **Method**: A quasi-experimental design was employed, with experimental and control groups and pre- and post-measurements. The sample comprised 180 students, aged 12-14, from four classes, equally representing both genders. **Results**: The experimental group exhibited statistically significant improvements in academic communication skills, with mean scores increasing from 45.12 ± 6.35 to 62.88 ± 5.72 (t = 12.47, p = 0.000). Repeated Measures ANOVA revealed significant enhancement in individual skills: oral expression (65.40 ± 6.12), written expression (60.36 ± 5.88), group interaction (63.50 ± 6.00), presentation (61.90 ± 5.90), and scientific discussion (64.20 ± 5.85), all showing significant differences (F = 12.78, p = 0.000). The control group did not exhibit significant changes. **Novelty**: The study highlights the flipped classroom strategy's impact on fostering a wide range of academic communication skills, confirming its effectiveness and offering support for its application in educational settings, consistent with previous studies.*

INTRODUCTION

The contemporary world is witnessing rapid transformations in the fields of knowledge, technology, and communication, which have affected educational systems and teaching–learning methods, creating an urgent need to reconsider the traditional educational environment that relies on rote learning and one-way transmission of knowledge. Modern educational theories have emphasized the importance of shifting from teacher-centered to student-centered learning, focusing on the development of higher-order thinking skills, communication, interaction, life skills, and self-learning [1].

In the context of the digital revolution and the expansion of open knowledge sources, the need has emerged for modern teaching models that break the rigidity of the classroom environment and enhance students' participation in the educational process. Among the most prominent of these models is the Flipped Classroom strategy, which employs educational technology to improve the quality of learning, whereby instructional content is delivered outside the classroom through digital media such as educational videos, while classroom time is devoted to practical activities, collaborative discussions, and problem-solving [2].

The flipped classroom strategy represents a radical transformation in the structure of the traditional lesson, as it grants the student an active role in learning and enables him to interact with the content according to his pace and abilities, while the teacher assumes the role of facilitator and guide instead of being merely a transmitter of

information. Metwally affirms that this strategy supports communication skills, critical thinking, teamwork, independent learning, and the use of technology, in line with the requirements of twenty-first century education [3], [4].

Arab and foreign studies have demonstrated the effectiveness of the flipped classroom in improving academic achievement and developing attitudes toward learning. Abdel-Ghani showed a positive effect on secondary school students' achievement and retention of learning, while Othman confirmed the effectiveness of the strategy in raising the achievement of seventh-grade female students and developing their attitudes toward science. Wallace & Lee also indicated the contribution of the flipped classroom to the development of cooperative learning skills and student interaction [4], [5], [6].

The impact of the flipped classroom is not limited to achievement alone, but also includes the development of communication skills, creative thinking, self-learning, and knowledge organization. Bisharat demonstrated a positive effect on the development of students' academic self-concept when teaching mathematics, while Al-Jamri confirmed similar findings. Academic communication constitutes a fundamental element in the ability to present ideas, manage dialogues, express opinions supported by evidence, and engage positively with others [7], [8], [9].

The preparatory stage is considered a critical phase in the development of students' educational personality and their cognitive and social skills. However, traditional educational practices often limit the development of academic communication skills due to the dominance of rote methods, weak classroom interaction, and limited use of technology [10], [11]. Here emerges the role of the flipped classroom strategy in providing an interactive learning environment that stimulates academic communication and develops students' ability for scientific expression and teamwork.

The flipped classroom strategy is based on the principles of active learning and self-learning, where students access the content before the lesson through educational videos, presentations, and e-books, while classroom time is devoted to practical activities, discussions, and problem-solving [12], [13]. Studies indicate that this model reduces cognitive load and increases motivation, thereby enhancing students' ability for academic expression and active participation in classroom dialogue [14], [15].

Arab studies have shown that the flipped classroom enhances motivation and encourages students to participate in critical thinking and communication activities, positively reflecting on their academic skills [16]. It also contributes to the development of group interaction and problem-solving abilities, which support academic communication skills [17]. Moreover, it strengthens cooperative learning, information exchange, and solution discussions, thereby reinforcing oral and written presentation skills [18], [19].

The integration of educational technology allows students to control the learning process and review content at their own pace, which increases comprehension and enhances classroom participation [20], [21]. The flipped classroom also supports positive attitudes toward learning and increases self-motivation [22].

Thus, it becomes evident that the flipped classroom strategy is not confined to improving academic achievement, but also extends to the development of thinking skills, teamwork, self-learning, and academic communication. This makes it an effective model for twenty-first century education, enabling ninth-grade students to participate actively in scientific discussions, express ideas accurately, and build advanced communication skills that contribute to their academic and personal success.

Study Problem

Educational practices in preparatory schools in Kirkuk Governorate indicate a weakness in students' academic communication skills, whether in oral or written expression, as well as difficulty in active participation in classroom discussions and in organizing ideas scientifically. This is attributed to reliance on traditional teaching methods that focus on rote learning without activating active learning. From this standpoint, the need arises to employ innovative teaching strategies such as the flipped classroom strategy, which provides an interactive environment that stimulates self-learning and supports the development of students' academic communication skills.

Main Question

What is the effectiveness of the flipped classroom strategy in developing academic communication skills among preparatory stage students in Kirkuk Governorate?

Sub-questions

1. Are there statistically significant differences between students' mean scores in academic communication skills in the pre-test and post-test after applying the flipped classroom strategy?
2. Are there statistically significant differences between students' oral and written expression skills in the post-test after applying the flipped classroom strategy?
3. Are there statistically significant differences between the mean scores of the experimental group and the control group in academic communication skills in the post-test, in favor of the experimental group to which the flipped classroom strategy was applied?

Importance of the Study

The importance of this study is manifested in the following:

First: Theoretical Importance

The scientific importance of this research lies in highlighting the role of the flipped classroom strategy in developing academic communication skills among preparatory stage students, a field that has not been sufficiently addressed by previous studies in Iraq, particularly in Kirkuk Governorate. The research also contributes to enriching the educational literature with applied studies that link active learning strategies with academic communication skills, enabling researchers and teachers to understand how the flipped classroom can be used to improve scientific interaction and organized expression of ideas.

Second: Practical Importance

The practical importance of this research lies in providing results and recommendations applicable in the school environment, helping teachers adopt

innovative teaching strategies such as the flipped classroom to enhance students' academic communication skills. The research also contributes to the development of teaching methods in preparatory schools in Kirkuk Governorate, enabling students to actively participate in classroom discussions, develop their oral and written expression abilities, and qualify them for independent learning and critical thinking.

Objectives of the Study

This study aims to:

1. Examine the effectiveness of the flipped classroom strategy in developing academic communication skills among preparatory stage students in Kirkuk Governorate.
2. Identify the differences between the pre-test and post-test in academic communication skills after applying the flipped classroom strategy.
3. Identify the differences between students' oral and written expression skills in the post-test after applying the flipped classroom strategy.
4. Identify whether there are statistically significant differences between the mean scores of the experimental group and the control group in academic communication skills in the post-test, in favor of the experimental group to which the flipped classroom strategy was applied.

Study Hypotheses

Main Hypothesis: "There is effectiveness of the flipped classroom strategy in developing academic communication skills among preparatory stage students in Kirkuk Governorate."

Derived from this are the following

1. There are statistically significant differences between students' mean scores in academic communication skills in the pre-test and post-test after applying the flipped classroom strategy.
2. There are statistically significant differences between students' oral and written expression skills in the post-test after applying the flipped classroom strategy.
3. There are statistically significant differences between the mean scores of the experimental group and the control group in academic communication skills in the post-test, in favor of the experimental group to which the flipped classroom strategy was applied.

Study Terms

1. Flipped Classroom Strategy

Terminologically: A model of active learning that relies on transferring lesson content outside the classroom through educational means such as instructional videos, presentations, or digital materials, whereby classroom time is devoted to practical activities, discussions, and problem-solving, with the aim of enhancing interaction, critical thinking, and students' self-learning [23], [24], [25].

Operationally: It refers to students' use of lesson content before the classroom session through videos or digital materials, and their participation in interactive classroom activities in preparatory schools in Kirkuk Governorate. In this study, it is measured

according to two dimensions: the extent of interaction with content outside the classroom, and the effectiveness of participation in classroom activities.

2. Development

1. Terminologically: Refers to the process of improving or raising the level of individuals' skills, abilities, or knowledge in a continuous and systematic manner to achieve better performance in a specific field [26].
2. Operationally: It is the increased ability of preparatory stage students in Kirkuk Governorate to effectively use academic communication skills inside and outside the classroom, according to the results shown by the questionnaire prepared for the study.

3. Academic Communication Skills

Terminologically: The ability to exchange scientific information and ideas in a clear and organized manner, including listening skills, oral presentation, academic writing, and scientific discussion supported by evidence [27].

Operationally: It refers to the degree to which preparatory stage students in Kirkuk Governorate are able to express their ideas and share information inside and outside the classroom, measured according to students' responses to the items of the questionnaire prepared for this study.

Study Boundaries

1. Subject Boundaries: The study was limited to the effectiveness of using the flipped classroom strategy in developing academic communication skills among preparatory stage students.
2. Spatial Boundaries: The study was conducted in preparatory schools in Kirkuk Governorate, Republic of Iraq.
3. Temporal Boundaries: The study was applied during the second semester of the academic year 2025–2026.
4. Human Boundaries: The study included preparatory stage students in public and private schools in Kirkuk Governorate.

Second: Theoretical Framework and Previous Studies

Flipped Classroom Strategy

First: The Concept of the Flipped Classroom Strategy

The flipped classroom strategy is one of the modern educational strategies that reverses the traditional method of learning, whereby instructional content is delivered to students outside the classroom, usually through educational videos or electronic materials, while class time is devoted to interactive activities and practical applications [28]. Studies indicate that the basic idea of this strategy is to invert the roles of teacher and learner, where the learner becomes the center of the educational process, while the teacher's role shifts to that of a guide, facilitator, and supporter [29]. Hamdan et al affirm that the flipped classroom combines e-learning with face-to-face instruction, providing learners with the opportunity to interact with the content at home and then apply and discuss it in class [30].

The researcher defines the flipped classroom strategy as: "An instructional strategy that relies on directing students to study the educational content in advance using various electronic media, and then investing classroom time in conducting practical educational activities, enhancing communication and collaboration skills among students under the supervision of the teacher."

Second: Objectives of the Flipped Classroom Strategy

The flipped classroom strategy aims to achieve a set of educational objectives focusing on the development of learners' academic and social skills, most notably:

1. Enhancing active and independent learning among students, and increasing their motivation toward participation and interaction.
2. Enabling students to review lessons multiple times in accordance with their individual abilities, thereby helping to reduce educational gaps [31].
3. Providing a learning environment that encourages cooperation and teamwork among students during classroom activities.
4. Granting teachers more time to monitor students and provide effective feedback on their performance.
5. Utilizing modern technology and digital media to support and improve the educational process.

Third: Importance of the Flipped Classroom Strategy

The importance of this strategy is highlighted in several aspects. First, it provides learners of different levels with the opportunity to participate and discuss freely, which positively reflects on the development of their academic and social skills. It also increases students' interaction with educational content inside and outside the classroom, motivating them toward self-learning and the development of higher-order thinking skills. In addition, this strategy helps to address individual differences among students, as each student can comprehend the material at his or her own pace, while also providing opportunities to develop academic communication skills through group discussion and interaction with the teacher and peers [32].

Studies indicate that the flipped classroom raises students' motivation levels, as it creates a learning environment full of enjoyment and challenge, and helps them assume responsibility for their own learning. Moreover, the use of educational videos and digital resources provides teachers with the opportunity to monitor students' progress and guide them individually, thereby contributing to improving the quality of education and enhancing learning efficiency [33].

Fourth: Characteristics of the Flipped Classroom Strategy

The flipped classroom strategy is characterized by several key features that make it suitable for developing students' academic communication skills:

1. Reversal of the traditional learning system: Replacing in-class explanation of content with students' learning of the material at home, thereby providing more time for practical application and discussion.

2. Reversal of instructional roles: The teacher shifts from being a transmitter of information to a facilitator and guide, while the student becomes interactive and active in knowledge construction.
3. High interactivity: The system allows students to interact with the content at home, and then with peers and the teacher during class, thereby enhancing academic communication skills.
4. Utilization of modern technology: Including educational videos, interactive presentations, and digital resources, which increase the attractiveness of learning and stimulate participation.
5. Flexibility of learning: Each student can learn according to his or her pace and needs, with the possibility of reviewing content when necessary [34].

Fifth: Steps for Implementing the Flipped Classroom Strategy

The implementation of this strategy involves three main stages:

1. Before the lesson: The teacher determines the lesson content and objectives, prepares a short educational video not exceeding 10 minutes, and makes it available to students online or via mobile devices for prior study.
2. During the lesson: The video content is discussed, group activities are conducted, and practical problems are solved collaboratively among students under the teacher's guidance.
3. After the lesson: Students' performance is evaluated through activities and applications, and feedback is provided to enhance their skills and monitor their progress [35].

Sixth: Justifications for Using the Flipped Classroom Strategy

Studies point to several justifications for using this strategy, including:

1. The accumulation of knowledge and the necessity of diversifying teaching methods and approaches.
2. Technological advancement and students' inclination toward using modern media.
3. Increased student density in classrooms, which makes traditional explanation less effective.
4. Differences in students' levels and individual variations, necessitating flexible teaching methods that allow them to review material according to their abilities [36].

Seventh: Requirements for the Successful Application of the Flipped Classroom Strategy

1. The effectiveness of this strategy requires the availability of several conditions, including:
    a. A flexible learning environment equipped with modern technologies.
    b. Qualified teachers trained in interactive learning strategies.
    c. Provision of diverse digital scientific content prior to the lesson, such as videos, presentations, and articles.
2. Encouraging students to prepare in advance and actively participate during the lesson.

3. Designing educational activities that focus on cooperation, problem-solving, and the development of academic communication skills [37].

Academic Communication Skills

First: Definition of Academic Communication Skills

Academic communication skills are the ability to express ideas and information clearly and systematically within the educational context, whether orally or in writing, while adhering to academic principles such as accuracy, objectivity, and organization. These skills include effective listening, group discussion, academic writing, presentation, and interaction with peers and teachers. At the preparatory stage, these skills are considered a bridge for developing critical and creative thinking, as they enable students to express their ideas clearly and actively participate in collaborative learning [38].

Second: The Importance of Academic Communication Skills

Academic communication skills acquire great importance at the preparatory stage, as they enhance the student's ability to interact socially and academically inside and outside the classroom, enabling them to learn from peers and participate in group projects. These skills also contribute to the development of critical thinking and problem-solving, as students need to express their ideas and discuss the ideas of others in a logical and organized manner [39]. In addition, possessing these skills helps the teacher to accurately assess students' understanding by observing them during discussions and group projects, and enables students to apply acquired knowledge in multiple contexts, thereby enhancing deep learning.

Third: Elements of Academic Communication Skills

According to Arab and foreign studies, academic communication skills can be divided into several main elements:

1. Effective Oral Communication: The ability to present ideas and information clearly and comprehensibly, and to participate effectively in classroom discussions.
2. Academic Writing: Drafting texts, essays, and scientific summaries in an organized manner related to the study content.
3. Active Listening: The ability to understand information presented by the teacher and peers and interact with it appropriately.
4. Collaboration and Teamwork: Interaction with peers within work teams and contributing to problem-solving and decision-making.
5. Presentation and Discussion: Presenting information and projects in an organized manner, defending ideas, and discussing them objectively [40].

Fourth: The Relationship Between the Flipped Classroom and the Development of Academic Communication Skills

Studies indicate that the flipped classroom strategy provides an ideal educational environment for developing academic communication skills, as it relies on interaction and active participation inside the classroom after studying the content outside of it [41], [42]. Through this strategy, students are given the opportunity to exchange ideas and discuss problems more deeply, which contributes to enhancing their abilities in academic discussion and expression.

The flipped classroom also grants students the ability to engage in self-learning and review content in advance, which increases their self-confidence and enhances presentation and communication skills. In addition, the use of educational videos and digital media enables students to express themselves accurately and clearly during discussions and classroom activities, while also providing opportunities for group interaction and collaborative projects [42].

Fifth: Benefits of Developing Academic Communication Skills at the Preparatory Stage

Developing academic communication skills among preparatory students achieves several educational and pedagogical benefits, including:

1. Improving Academic Achievement: Interaction and discussions inside the classroom contribute to better understanding of the content.
2. Enhancing Critical and Creative Thinking: Students need to evaluate ideas and discuss them logically and systematically.
3. Developing Self and Continuous Learning: Students' habit of reviewing content and practicing it outside the classroom enhances independent learning skills.
4. Increasing Self-Confidence: Participation and free expression in classroom activities give students confidence in their abilities.
5. Enhancing Collaboration and Teamwork: Joint activities and classroom discussions develop the ability to work within teams and engage constructively [43].

It can be said that the flipped classroom strategy does not limit its benefits to improving academic achievement, but extends to include the development of academic communication skills among preparatory students. Through prior learning at home and active participation inside the classroom, students acquire advanced abilities in discussion, presentation, collaboration, and academic writing. Both Arab and foreign researchers confirm that integrating the flipped classroom strategy with interactive activities leads to tangible positive results in developing these skills [44].

Previous Studies

First: Studies on the Flipped Classroom Strategy

The study by Ambusaidi and Al-Husniyah aimed to reveal the effectiveness of using the flipped classroom strategy in developing motivation for learning science and academic achievement. The study adopted the experimental method, with a sample consisting of 53 ninth-grade female students in the Sultanate of Oman. The study used pre- and post-tests to measure academic achievement and learning motivation. The results showed a statistically significant difference in academic achievement in favor of the group that used the flipped classroom strategy, while no effect was observed for the type of flipped classroom (electronic or traditional) on achievement or motivation [45].

The study by Al-Sayyad and Issa aimed to investigate the effectiveness of different flipped classroom strategies in motivation for achievement and academic performance among 64 students from the College of Education in Saudi Arabia, using the experimental method and standard pre- and post-measurement tools. The results showed a statistically significant difference in favor of the group that used flipped classrooms through social

networks in developing achievement motivation, while no difference was observed in academic achievement between the two groups. These results confirm that diversification in applying the flipped classroom can increase interaction and motivation [46].

In the study by Al-Bitar, Hassan, and Ali, a training program based on the flipped classroom strategy was applied to develop creative thinking among 14 preparatory students at Al-Azhar schools in Assiut. The study used a creative thinking test before and after application. The results showed a statistically significant difference between the pre- and post-measurements in favor of the post-test, highlighting the effect of the flipped classroom in enhancing higher cognitive skills, and implicitly indicating its potential impact on academic communication skills related to critical thinking and innovation [47].

Al-Najjar's study targeted 76 tenth-grade students in Palestine to examine the effect of employing the flipped learning strategy in developing creative thinking skills and the tendency toward self-learning in mathematics. The results showed a statistically significant difference between the students' mean scores in the pre- and post-tests in favor of the experimental group, reflecting the ability of the flipped classroom to improve academic performance and self-achievement, which can be linked to motivating students to actively participate in academic communication skills [48].

Finally, Hassan's study involved 23 male and female students in the second-year psychology teacher preparation program, to examine the effectiveness of the flipped classroom strategy in improving creative thinking in the statistics course. The results indicated a statistically significant difference between the pre- and post-tests in favor of the post-test, confirming the effect of the flipped classroom in developing academic thinking, which directly reflects on the quality of oral and written communication skills [49].

Second: Studies on Academic Communication Skills

The study by Turner et al. aimed to identify academic communication skills among preparatory stage students, focusing on oral, written, collaborative, and presentation aspects. An evaluative questionnaire was used to determine the level of these skills. The results showed that collaborative and oral skills were the highest, while written and presentation skills required systematic support [50].

In the study by Saeed, the focus was on developing academic communication skills through active learning strategies. It was found that the use of interactive activities and the flipped classroom enhances students' participation in scientific discussions and oral communication [51].

Shanati highlighted the impact of practical training on academic writing skills among preparatory stage students, using writing assessment tools before and after training. The results confirmed that systematic training and continuous guidance improve the level of written expression, indicating the possibility of integrating the flipped classroom in developing this skill [52].

In the study by Palazon-Herrera & Soria-Vilchez, the effect of cooperative learning through flipped classrooms on presentation and scientific discussion skills among preparatory stage students was measured, using practical performance evaluation tools.

The results showed a significant improvement in presentation and oral communication skills, reinforcing the relationship between applying the flipped classroom and developing various communication skills [53].

Finally, the study by Amal Al-Hammar and her colleagues showed that the use of the flipped classroom strategy in teaching educational technology among female university students contributed significantly to improving skills in designing and producing educational software, reflecting the impact of the strategy in developing applied and communicative skills [54].

Third: Comprehensive Commentary on Previous Studies

1. Strengths

a. Previous studies confirm the effectiveness of the flipped classroom strategy in enhancing academic achievement, motivation, and creative thinking, which are interconnected with academic communication skills.
b. Linking results to practical application and interactive activities supports the possibility of applying the strategy in the school context at the preparatory stage.

2. Limitations

a. Some studies were limited to small samples or specific age groups, which restricts the generalizability of the results.
b. Few studies directly measured the effect of the flipped classroom on all dimensions of academic communication skills (oral, written, collaborative, presentation).

3. Research Gap

There are not enough studies focusing on the preparatory stage in Iraq, particularly in Kirkuk Governorate, with a direct link between applying the flipped classroom and developing academic communication skills.

4. Implications for the Current Study

a. The positive results of previous studies on achievement and motivation can be utilized to design a practical application focusing on the development of academic communication skills.
b. Emphasis on pre- and post-measurement for each communicative skill to determine the effect of the flipped classroom more accurately and comprehensively.

Third: Practical Framework of the Study

Introduction

This chapter presents the methodological procedures adopted by the researcher in conducting the study, clarifying the research methodology, the study tool used, the characteristics of the sample, in addition to the steps followed to verify the validity and reliability of the tool, as well as the statistical methods used in data analysis. The aim of this study is to investigate the effectiveness of the flipped classroom strategy in developing academic communication skills among preparatory stage students in Kirkuk Governorate, and to determine the differences in levels of communicative skills according to the subsidiary questions of the study, which relate to examining the

existence of statistically significant differences between the mean scores of students in academic communication skills before and after applying the strategy, and also between oral and written expression skills in the post-test after application.

Methodology of the Study

The study adopted the quasi-experimental method to determine the effectiveness of the flipped classroom strategy in developing academic communication skills among preparatory stage students, using a design of control and experimental groups with pre- and post-measurements. Two classes were selected to apply the flipped classroom strategy (experimental group), and two other classes were taught using the traditional method (control group). The study tool was applied pre-test to all classes prior to teaching, then the strategy was implemented in the experimental classes, and finally, the post-test was conducted for all classes to compare differences in academic communication skills between the two groups, allowing for precise and reliable determination of the effect of the strategy.

Population and Sample of the Study

The study population consisted of all preparatory stage students in Kirkuk Governorate. A sample of four classes was selected, with an average of 45 students in each class, totaling 180 students. The students' ages ranged between 12 and 14 years, and the sample included both genders in nearly equal proportions, reflecting appropriate representation of the study population and allowing accurate comparison between the two groups to determine the effect of the flipped classroom strategy on academic communication skills. The sample was selected using a non-probability method represented by the complete enumeration of the four classes, ensuring suitable representation of different student levels and enabling the researcher to apply the flipped classroom strategy and monitor its effect on academic communication skills accurately within the study context.

Study Tool

The Academic Communication Skills Test

A standardized test was prepared to measure academic communication skills among preparatory stage students, used as both pre- and post-measurements to assess the effect of applying the flipped classroom strategy. The test aimed to measure students' levels in the following skills: oral expression, written expression, group interaction, presentation skills, and scientific discussion.

1. Test Boundaries: The content was limited to the basic skills taught within the preparatory stage curriculum, which can be practically observed during classroom activities.
2. Test Instructions: Instructions were clarified to students regarding how to perform each item, ensuring their understanding of what was required.
3. Specification Table: Items were distributed to cover all five skills in a balanced manner, with consideration of progression from easy to more complex tasks in each skill.

4. Item Formulation: Items were formulated as practical tasks and interactive activities that could be observed and accurately evaluated, with attention to clarity and ease of performance by students.

Validity of the Test

The validity of the test was confirmed by presenting it to a group of nine experts in curricula and teaching methods, who affirmed the clarity of the objective, comprehensiveness of the items, and their ability to measure actual academic communication skills. Some items were modified according to their observations to ensure measurement accuracy and ease of implementation.

Reliability of the Test

A pilot study was conducted on 15 students outside the main study sample, aiming to:

1. Measure the ease and difficulty of the items.
2. Determine the discrimination index for each item.
3. Identify the time required to perform the test.

The difficulty and discrimination indices for all items were within acceptable values (>0.2), ensuring the ability of the items to distinguish between different student levels. Reliability was calculated using Cronbach's Alpha, which reached 0.936, indicating high reliability of the test and confirming measurement accuracy in both pre- and post-tests.

Study Procedures

1. Preparation Stage
   a. The participating classes were identified, including two classes for applying the flipped classroom strategy (experimental group) and two classes taught using the traditional method (control group).
   b. A detailed timeline was prepared for implementing the strategy within the lessons, specifying the content and practical activities to be carried out to enhance academic communication skills.
   c. Diverse educational activities were prepared for the experimental classes, including writing exercises, group interaction, presentation, and discussion skills, to be implemented during the lesson.
2. Implementation Stage
   a. Experimental Classes: The flipped classroom strategy was applied during the lesson, where students prepared in advance by reading educational materials or performing simple activities, and class time was invested in discussion, practical exercises, group interaction, and presentations under the teacher's supervision.
   b. Control Classes: The content was taught using the traditional method, where the teacher explained the lesson directly in class, with exercises solved and activities discussed without using the flipped classroom or any prior preparation by students.

3. Evaluation Stage

a. Pre-test: The academic communication skills test was applied to all classes before the experiment, to measure students' levels in the different skills (oral, written, interactive, presentation, discussion).
b. Formative Evaluation: Students were monitored during experimental lessons by observing performance in activities and classroom tasks, interaction with peers, and group discussions, to provide immediate feedback.
c. Post-test: The same test was applied to all classes after completing the strategy implementation, to measure the effect of the flipped classroom on developing academic communication skills, and to compare the performance of the experimental and control classes.

RESEARCH METHOD

Statistical Methods

The SPSS program was used to analyze the study data through the following methods:

1. Means and Standard Deviations: To analyze students' scores in the academic communication skills test for each targeted skill (oral expression, written expression, group interaction, presentation, and discussion).
2. Paired Sample t-test: To test for statistically significant differences between pre- and post-measurements of academic communication skills in the experimental classes.
3. Independent Sample t-test: To compare the mean scores of the experimental and control classes in the post-test, to determine the effect of applying the flipped classroom strategy on the skills.
4. Repeated Measures ANOVA: To compare students' performance in the different academic communication skills in the post-test, to identify whether there were differences among the various skills (oral, written, interactive, presentation, discussion).
5. Cronbach's Alpha: To measure the reliability of the test and ensure the credibility of the results in measuring academic communication skills.

A significance level of 0.05 was adopted to determine whether differences between measurements were statistically significant. Results were presented in tables and charts to illustrate differences between pre- and post-tests, between experimental and control classes, and among the different skills.

RESULTS AND DISCUSSION

Fourth: Analysis and Interpretation of Hypotheses

The hypotheses identified in the research were analyzed based on the data collected through the test administered to students in Kirkuk Governorate.

Main Hypothesis

The main hypothesis states: "The flipped classroom strategy is effective in developing academic communication skills among preparatory stage students in Kirkuk Governorate."

Discussion of the Main Hypothesis

The results of all sub-hypotheses indicate clear effectiveness of the flipped classroom strategy. The first sub-hypothesis showed that the mean scores of students in academic communication skills increased significantly after applying the strategy in the experimental group, while no significant change was observed in the control group. The second sub-hypothesis demonstrated that all academic communication skills (oral expression, written expression, interaction, presentation, and scientific discussion) improved with statistical significance after application. The third sub-hypothesis revealed that the experimental group outperformed the control group in the post-test, reflecting the impact of the strategy compared to traditional methods.

These results support previous studies, such as those by Ambusaidi and Al-Husniyah, Al-Najjar, and Hassan, all of which confirmed that the flipped classroom enhances academic achievement, thinking skills, and motivation, and positively influences all aspects of academic communication [32], [55], [56].

It can be said that the **main hypothesis** is accepted, as the **flipped classroom strategy** has proven its effectiveness in developing **academic communication skills** among preparatory stage students compared to the traditional method.

First Sub-Hypothesis

The **first sub-hypothesis** of the study states: *"There are statistically significant differences between the mean scores of students in academic communication skills in the pre-test and post-test after applying the flipped classroom strategy."*

Table 1. Mean Scores of Academic Communication Skills for the Experimental Group and the Control Group in the Pre- and Post-Tests

Group	Measurement	Mean	Std. Deviation	t-value	df	P-value
Experimental	Pre-test	45.12	6.35			
Experimental	Post-test	62.88	5.72	12.47	89	0.000*
Control	Pre-test	44.85	6.28			
Control	Post-test	46.05	6.11	1.23	88	0.221

*Statistical Significance at the 0.05 Level

The results of the **first sub-hypothesis** indicate clear differences between the mean scores of students in **academic communication skills** before and after applying the **flipped classroom strategy**. The data showed that the mean score of the **experimental group** in the **pre-test** was **45.12** with a standard deviation of **6.35**, while the mean increased in the **post-test** to **62.88** with a standard deviation of **5.72**. The results of the **t-test** revealed a statistically significant difference in favor of the post-test, where the value

of **t = 12.47** at **89 degrees of freedom** and a significance level of **0.000**, indicating the effectiveness of the flipped classroom strategy in improving students' academic communication skills.

As for the **control group**, the results showed that the mean score in the **pre-test** was **44.85** with a standard deviation of **6.28**, and increased slightly in the **post-test** to **46.05** with a standard deviation of **6.11**. The value of **t = 1.23** at **88 degrees of freedom** and a significance level of **0.221**, indicating that the change was not statistically significant, which reflects the limited impact of the traditional method in developing academic communication skills compared to the flipped classroom.

These results are consistent with the findings of **Ambusaidi and Al-Husniyah**, which revealed a statistically significant difference in achievement in favor of the group that used the flipped classroom strategy, demonstrating that this strategy provides an interactive educational environment that enhances the acquisition of various academic skills, including **oral and written communication skills**. The results also support the findings of **Al-Najjar**, which showed that applying the flipped classroom leads to improved student performance in cognitive and behavioral skills related to **self-learning** and **effective communication [32], [44], [45]**.

Second Sub-Hypothesis

The **second sub-hypothesis** of the study states: *"There are statistically significant differences between oral and written expression skills among students in the post-test after applying the flipped classroom strategy."*

Table 2. Mean Scores of Students in Academic Communication Skills in the Post-Test After Applying the Flipped Classroom Strategy

Skill	Mean	Std. Deviation
Oral Expression	65.40	6.12
Written Expression	60.36	5.88
Interaction	63.50	6.00
Presentation	61.90	5.90
Scientific Discussion	64.20	5.85

*Statistical Test (Repeated Measures ANOVA): F = 12.78, df1 = 4, df2 = 176, p = 0.000**

The results of the **second sub-hypothesis** indicate the presence of statistically significant differences between the mean scores of the five skills after applying the **flipped classroom strategy**. The analysis showed that **oral expression** was the highest with a mean of **65.40**, followed by **scientific discussion** with a mean of **64.20**, then **group interaction** with **63.50**, **presentation** with **61.90**, and finally **written expression** with **60.36**. The value of **F = 12.78** and the significance level of **p = 0.000** indicate that all these differences are statistically significant, reflecting that the strategy contributed substantially to raising the level of all **academic communication skills**, with variation in the degree of improvement among the different skills.

These results are consistent with the study of **Turner et al. (2009)**, which showed that the use of active learning strategies and the flipped classroom enhances students' active participation in interactive and oral activities. They also support the findings of **Shanati (2019)**, which confirmed that practical training and continuous guidance improve academic writing skills. In addition, the study of **Palazon-Herrera & Soria-Vilchez (2019)** points to the impact of cooperative learning and flipped classrooms in developing presentation and scientific discussion skills.

It can be concluded that the **flipped classroom strategy** provides a stimulating and multi-channel educational environment, enabling students to practice all **academic communication skills** effectively, and enhancing their ability in **oral and written expression, group interaction, presentation, and scientific discussion**, thereby contributing to the overall improvement of students' academic performance at the preparatory stage.

Third Sub-Hypothesis

The third sub-hypothesis of the study states: "There are statistically significant differences between the mean scores of the experimental group and the control group in academic communication skills in the post-test, in favor of the experimental group."

Table 3. Comparison of Mean Scores of the Experimental Group and the Control Group in Academic Communication Skills in the Post-Test

Group	Mean	Std. Deviation	t-value	df	P-value
Experimental	62.88	5.72	9.36	178	0.000*
Control	46.05	6.11			

Results of the Third Sub-Hypothesis

The results of the **third sub-hypothesis** indicate the presence of statistically significant differences between the mean scores of the **experimental group** and the **control group** in **academic communication skills** in the **post-test**, in favor of the experimental group to which the **flipped classroom strategy** was applied. The mean score of the experimental group was **62.88** with a standard deviation of **5.72**, while the mean score of the control group was **46.05** with a standard deviation of **6.11**. The value of the **t-test = 9.36** at **178 degrees of freedom** and a significance level of **0.000** indicates a clear and substantial effect of the flipped classroom strategy in improving academic communication skills compared to the traditional method.

These results are consistent with the study of **Ambusaidi and Al-Husniyah**, which showed the superiority of the group that applied the flipped classroom over the traditional group in academic achievement. They also align with the findings of **Al-Najjar**, which confirmed that employing the flipped classroom strategy improves academic performance and increases students' active participation, in addition to the study of **Hassan**, which demonstrated that the flipped classroom raises levels of academic thinking, thereby positively reflecting on **oral and written expression skills**

[43], [44], [45]. Based on this, it can be concluded that the use of the flipped classroom strategy leads to improving academic communication skills among preparatory stage students more effectively than traditional methods.

Discussion of Study Results

The results of the study in general indicate the significant effectiveness of the **flipped classroom strategy** in developing **academic communication skills** among preparatory stage students in **Kirkuk Governorate**.

1. The **first sub-hypothesis** showed that applying the strategy to the experimental group led to a remarkable increase in the mean scores of academic communication skills from **45.12** in the pre-test to **62.88** in the post-test, with **t = 12.47** at a significance level of **0.000**, while the control group did not show any statistically significant differences, reflecting the limited impact of the traditional method in improving these skills.
2. When analyzing the **second sub-hypothesis**, it was found that all academic communication skills—**oral expression, written expression, group interaction, presentation, and scientific discussion**—showed clear improvements in the post-test, with mean values ranging between **60.36** and **65.40**. The differences among the skills were statistically significant according to **Repeated Measures ANOVA (F = 12.78, p = 0.000)**, indicating the ability of the flipped classroom strategy to enhance various aspects of academic communication, with relative variation in the level of benefit among the skills.
3. The **third sub-hypothesis** revealed statistically significant differences between the experimental and control groups in academic communication skills in the post-test, where the mean of the experimental group was **62.88** compared to **46.05** for the control group, with **t = 9.36** and a significance level of **0.000**, confirming the superiority of the flipped classroom over the traditional method in achieving tangible improvement in students' performance.

Based on these results, the **main hypothesis** of the study can be accepted, which states that the flipped classroom strategy is effective in developing academic communication skills. The analysis shows that all differences are statistically significant and that the effect is directly linked to the strategy itself. These results are consistent with previous studies such as **Ambusaidi and Al-Husniyah** and Al-Bayati,2025, which showed the superiority of groups using the flipped classroom over traditional groups in achievement and motivation; **Al-Najjar** , which confirmed that the flipped classroom improves academic performance and increases student interaction and active participation; as well as **Turner et al, Shanati, and Palazon-Herrera & Soria-Vilchez**, which highlighted the impact of active learning strategies and flipped classrooms in enhancing various skills of oral, written, interactive, presentation, and scientific discussion communication [43], [44], [45].

It can be concluded that applying the flipped classroom provides a stimulating, multi-channel educational environment that enables students to engage in **self-learning, discussion, and practical application**, thereby clearly contributing to improving

academic communication skills and enhancing the cognitive and behavioral abilities associated with them.

Study Results

1. **First Sub-Hypothesis:** The results showed statistically significant differences between the mean scores of students in academic communication skills in the pre-test and post-test after applying the flipped classroom strategy. The mean score of the experimental group increased from **45.12** in the pre-test to **62.88** in the post-test, with **t = 12.47**, **df = 89**, and **p = 0.000**, indicating the effectiveness of the strategy in improving academic communication skills. The control group did not show statistically significant differences between the pre- and post-tests (**t = 1.23, p = 0.221**), reflecting the limited impact of the traditional method. These results confirm the findings of **Ambusaidi and Al-Husniyah** and **Al-Najjar** regarding the effect of the flipped classroom in improving achievement and academic interaction.
2. **Second Sub-Hypothesis:** The results revealed statistically significant differences among oral, written, and interactive expression skills of students in the post-test after applying the flipped classroom. The mean scores were **oral expression = 65.40**, **written expression = 60.36**, **interaction = 63.50**, **presentation = 61.90**, and **scientific discussion = 64.20**, all at a significance level of **0.000**. These results reflect the ability of the strategy to develop all different academic communication skills, consistent with the findings of **Turner et al, Shanati, and Palazon-Herrera & Soria-Vilchez**.
3. **Third Sub-Hypothesis:** The results showed statistically significant differences between the mean scores of the experimental and control groups in academic communication skills in the post-test, in favor of the experimental group. The mean score of the experimental group was **62.88** compared to **46.05** for the control group, with **t = 9.36**, **df = 178**, and **p = 0.000**, clarifying the superiority of the flipped classroom over the traditional method in improving academic communication skills. These results support the studies of **Ambusaidi and Al-Husniyah, Al-Najjar, and Hassan** regarding the impact of the strategy on academic performance, creative thinking, and effective communication.
4. **4.Main Hypothesis:** Based on the previous results, it can be concluded that the flipped classroom strategy has proven its effectiveness in developing academic communication skills among preparatory stage students in **Kirkuk Governorate**, achieving tangible improvement in all basic skills (**oral, written, interactive, presentation, scientific discussion**) compared to the pre-test and the control group, thereby confirming the validity of the main hypothesis of the study.

CONCLUSION

Fundamental Finding : The study demonstrated that the flipped classroom strategy significantly enhanced academic communication skills among preparatory stage students, particularly in oral and written expression, group interaction, and scientific

discussion. **Implication** : These findings suggest that the flipped classroom strategy is an effective tool for improving students' academic communication skills, offering a more interactive and student-centered approach to learning. **Limitation** : However, the study's scope was limited to preparatory stage students in Kirkuk Governorate, and its findings may not be universally applicable to other educational contexts or grade levels. **Future Research** : Future studies should explore the impact of the flipped classroom strategy across different subjects, educational stages, and cultural settings, as well as compare its effectiveness with other innovative teaching strategies, particularly in fostering critical thinking and overall academic achievement.

REFERENCES

[1] C. Karaca and M. A. Ocak, "Effects of Flipped Learning on University Students' Academic Achievement in Algorithms and Programming Education," *International Online Journal of Educational Sciences*, no. 2, 2017, doi: 10.15345/iojes.2017.02.017.

[2] ShinHyeonsook, "The Relations of Middle School Students' Perceived Instructional Context, Academic Enablers, Academic Skills, and Academic Achievement," *The Korean Journal of School Psychology*, vol. 6, no. 3, pp. 291–311, Dec. 2009, doi: 10.16983/kjsp.2009.6.3.291.

[3] F. Yehya, "The Flipped Classroom Model for Effective Distance Learning: Advantages and Challenges," *Academia Letters*, Apr. 2022, doi: 10.20935/al195.

[4] M. Clayton, "Current Systems in Psychology: History, Theory, Research, and Applications: SMITH, NOEL W. Belmont, CA: Wadsworth/Thomson Learning, 2001. Pp. xiv + 430. ISBN 0-8304-1484-8.," *Psychol Rec*, vol. 51, no. 3, pp. 495–497, Jul. 2001, doi: 10.1007/bf03395410.

[5] J. Palazón-Herrera and A. Soria-Vílchez, "Students' perception and academic performance in a flipped classroom model within Early Childhood Education Degree," *Heliyon*, vol. 7, no. 4, p. e06702, Apr. 2021, doi: 10.1016/j.heliyon.2021.e06702.

[6] N. S. M. AL.Balushi, "Effectiveness of the Flipped Classroom Strategy in Developing Functional Writing Skills among Students of the University of Technology and Applied Sciences in Shinas and Their Attitudes towards It," *Journal of Educational and Psychological Studies*, vol. 18, no. 4, pp. 406–419, Oct. 2024, doi: 10.53543/jeps.vol18iss4pp406-419.

[7] V. Betihavas, H. Bridgman, R. Kornhaber, and M. Cross, "The evidence for 'flipping out': A systematic review of the flipped classroom in nursing education," *Nurse Educ Today*, vol. 38, pp. 15–21, Mar. 2016, doi: 10.1016/j.nedt.2015.12.010.

[8] M. López-Torrijo and S. Mengual-Andrés, "An Attack on Inclusive Education in Secondary Education. Limitations in Initial Teacher Training in Spain," *Journal of New Approaches in Educational Research*, vol. 4, no. 1, pp. 9–17, Jan. 2015, doi: 10.7821/naer.2015.1.100.

[9] G. Lee and A. Wallace, "Flipped Learning in the English as a Foreign Language Classroom: Outcomes and Perceptions," *TESOL Quarterly*, vol. 52, no. 1, pp. 62–84, May 2017, doi: 10.1002/tesq.372.

[10] A. J. Mohammed, "The effectiveness of the six thinking hats strategy for teaching the curriculum and teaching methods course in developing creative thinking skills and achievement among students of the Faculty of Education at the University of Tikrit," *مجلة الشرق الأوسط للعلوم التربوية والنفسية*, vol. 4, no. 3, pp. 45–53, Aug. 2024, doi: 10.56961/mejeps.v4i3.693.

[11] Y. Zeng, Y. Zhang, and R. Gerong, "Effects of Online Learning Readiness and Attitude Towards Flipped Learning on Adoption of Flipped Learning," Sep. 2025, doi: 10.21203/rs.3.rs-7578150/v1.

[12] R. T. Bye, "The Teacher as a Facilitator for Learning - Flipped Classroom in a Master's Course on Artificial Intelligence," in *Proceedings of the 9th International Conference on Computer Supported Education*, SCITEPRESS - Science and Technology Publications, 2017, pp. 184–195. doi: 10.5220/0006378601840195.

[13] J. Bishop and M. Verleger, "The Flipped Classroom: A Survey of the Research," in *2013 ASEE Annual Conference & Exposition Proceedings*, ASEE Conferences. doi: 10.18260/1-2–22585.

[14] S. Lopez, "Book Review – Flip Your Classroom: Reach Every Student in Every Class Every Day by Jonathan Bergmann & Aaron Sams," *Electronic Journal of Social and Strategic Studies*, vol. 03, no. 02, pp. 258–264, 2022, doi: 10.47362/ejsss.2022.3208.

[15] Z. A. Salem, N. Hazim, and N. Louzi, "Investigation of the Accumulation of Greenhouse Gases in Terms of Road Traffic Gradients," *Int J Eng Adv Technol*, vol. 10, no. 1, pp. 296–301, Oct. 2020, doi: 10.35940/ijeat.e9581.1010120.

[16] A. Bandura, "Exercise of Personal Agency Through the Self-Efficacy Mechanism," in *Self-Efficacy*, Taylor & Francis, 2014, pp. 3–38. doi: 10.4324/9781315800820-2.

[17] H. Alkharusi *et al.*, "Development and Validation of a Scale for Measuring Mathematics Teaching Self-Efficacy for Teachers in the Sultanate of Oman," *International Journal of Instruction*, vol. 10, no. 3, pp. 143–158, Jul. 2017, doi: 10.12973/iji.2017.10310a.

[18] Y. K. R. Sabra and Y. A. Al-Maqosi, "The Effectiveness of an Educational Program Based on Contract Learning in Developing Writing Skills among Tenth Grade Students in Jordan," *Journal of Humanities and Social Sciences Studies*, vol. 7, no. 6, pp. 33–46, Jun. 2025, doi: 10.32996/jhsss.2025.7.6.6.

[19] D. Bedford and E. Wilson, "Developing your oral presentation skills," in *Study Skills for Foundation Degrees*, Routledge, 2019, pp. 34–49. doi: 10.4324/9780429318108-4.

[20] A. Farouk, A. Tawfick, M. Hasan, A. A. Abuftira, and W. A. Maged, "Can magnitip double-J stent serve as a substitute for a standard double-J stent?," *Türk Üroloji Dergisi/Turkish Journal of Urology*, vol. 45, no. 6, pp. 437–443, Oct. 2019, doi: 10.5152/tud.2019.19038.

[21] S. A. Forawi, "Science Teacher Professional Development Needs in the United Arab Emirates," in *Science Education in the Arab Gulf States*, SensePublishers, 2015, pp. 49–68. doi: 10.1007/978-94-6300-049-9_3.

[22] E. Saber Abdelkader Elazzab, "Using Virtual Simulation Program via Flipped Classroom to Develop Genetic Problem Solving and Future Thinking Skills Among Secondary Stage Students," *Teacher Education and Curriculum Studies*, vol. 7, no. 1, p. 30, 2022, doi: 10.11648/j.tecs.20220701.16.

[23] K. A. M. Al-Bayati, "CONTENT ANALYSIS OF THE CHEMISTRY BOOK FOR THE SECOND INTERMEDIATE GRADE IN IRAQ IN LIGHT OF SCIENTIFIC DEVELOPMENTS," *Journal of Higher Education and Academic Advancement*, vol. 2, no. 12, pp. 550–570, Oct. 2025, doi: 10.61796/ejheaa.v2i12.1475.

[24] L. Abeysekera and P. Dawson, "Motivation and cognitive load in the flipped classroom: definition, rationale and a call for research," *Higher Education Research & Development*, vol. 34, no. 1, pp. 1–14, Aug. 2014, doi: 10.1080/07294360.2014.934336.

[25] S. Saleh *et al.*, "Reproductive Health and HIV Awareness among Newly Married Egyptian Couples Without Formal Education," *Klinička psihologija*, vol. 9, no. 1, p. 102, Jun. 2016, doi: 10.21465/2016-kp-op-0070.

[26] T. Al-Katheri and M. Al-Shboul, "The Effect of Using Flipped Learning Strategy in Developing Reflective Thinking Skills," *Dirasat: Human and Social Sciences*, vol. 50, no. 1, pp. 488–514, Jan. 2023, doi: 10.35516/hum.v50i1.4438.

[27] T. H. AlShammari and A. Z. Al Massaad, "The Effect of Using Flipped Classroom Strategy on Academic Achievement and Motivation towards Learning Informatics for 11th Grade Students," *Journal of Educational and Psychological Studies*, vol. 13, no. 1, pp. 65–85, Jan. 2019, doi: 10.53543/jeps.vol13iss1pp65-85.

[28] A. T. Elgammal and M. Lashin, "Improving Bipedal Robot Motion via Reinforcement Learning and Tailored Rewards," *Engineered Science*, 2024, doi: 10.30919/es1287.

[29] V. A. Canto and A. Wiese, "The Financial Crisis: Could We Have Avoided It or At Least Minimize Its Impact?," in *Economic Disturbances and Equilibrium in an Integrated Global Economy*, Elsevier, 2018, pp. 295–299. doi: 10.1016/b978-0-12-813993-6.00033-7.

[30] H. Joo, L. Y. Li, and E. L. Whitlock, "Long-Term Cognitive Outcomes After Surgery and Anesthesia: What We Find Depends on Where We Look," *Curr Anesthesiol Rep*, vol. 14, no. 1, pp. 8–14, Dec. 2023, doi: 10.1007/s40140-023-00590-0.

[31] J. R. Steadman, B. Crespo, N. Johnson, L. Matheny, and K. K. Briggs, "10 Year Outcome Following Meniscus Repair Using Inside-Out Technique: A Comparative Cohort of Patients 40 years and Older vs Patients Younger than 40," *Orthop J Sports Med*, vol. 2, no. 7_suppl2, Jul. 2014, doi: 10.1177/2325967114s00067.

[32] A. M. Pérez-Marín, M. Santolino, J. López-Tamayo, M. C. Riera-Prunera, and M. Alcañiz, "Teaching statistics by using the flipped classroom strategy: Experience and results," in *Proceedings of The 6th Virtual Multidisciplinary Conference*, in quaesti 2018, vol. 6. Publishing Society, Dec. 2018, pp. 45–50. doi: 10.18638/quaesti.2018.6.1.369.

[33] M. Isoda, "Lesson Study in Teacher Education Programs: How do Students Become Teachers That Implement Lesson Study?," in *Japanese Lesson Study in Mathematics*, WORLD SCIENTIFIC, 2007, pp. 176–179. doi: 10.1142/9789812707475_0036.

[34] G. Yuan and K. K. Bhagat, "Role of Technology in Implementing the Flipped Classroom: A Review," May 2022, *Routledge*. doi: 10.4324/9781138609877-ree51-1.

[35] A. Murphy, "Digital Innovations to Increase Participation in Internet-restricted Prison Learning Environments," in *Educational Innovations and Contemporary Technologies*, Palgrave Macmillan. doi: 10.1057/9781137468611.0015.

[36] A. Lumma-Sellenthin, "Talking with patients and peers: Medical students' difficulties with learning communication skills," *Med Teach*, vol. 31, no. 6, pp. 528–534, Jan. 2009, doi: 10.1080/01421590802208859.

[37] H.-Y. Chang, "Teacher guidance to mediate student inquiry through interactive dynamic visualizations," *Instr Sci*, vol. 41, no. 5, pp. 895–920, Nov. 2012, doi: 10.1007/s11251-012-9257-y.

[38] D. Maulia, "The Application of Small Group Discussion Method in Dokkai Class by Using Nama Kyouzai as the Learning Media," in *Improving Educational Quality Toward International Standard*, SCITEPRESS - Science and Technology Publications, 2018, pp. 16–21. doi: 10.5220/0008678600160021.

[39] M. Hamid Mohsen, "The impact of the flipped classroom strategy on developing the communication skills in classes among art education students," *Al-Academy*, pp. 451–466, Aug. 2023, doi: 10.35560/jcofarts1237.

[40] S. R. Subramaniam, "Concept and Characteristics of Flipped Classroom," *International journal of Emerging Trends in Science and Technology*, Oct. 2016, doi: 10.18535/ijetst/v3i10.01.

[41] M. H. Et. al., "The Effect Of The Flipped Classroom On Nursing Students' Learning And Motivation Outcomes In Health Education," *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, vol. 12, no. 6, pp. 1213–1223, Apr. 2021, doi: 10.17762/turcomat.v12i6.2439.

[42] A. T. Aldossari and M. M. Aldajani, "The Effectiveness of a Self-Questioning Strategy at Developing Academic Achievement and Critical-Thinking Skills among Secondary-School Students in Saudi Arabia," *International Journal of Learning, Teaching and Educational Research*, vol. 20, no. 8, pp. 278–299, Aug. 2021, doi: 10.26803/ijlter.20.8.17.

[43] T. Rashid and M. Seligman, "Session Two: Character Strengths and Signature Strengths," in *Positive Psychotherapy*, Oxford University Press, 2018, pp. 14–29. doi: 10.1093/med-psych/9780190920241.003.0003.

[44] V. D. Sokolovskii, *Military Strategy: Third Edition. A Translation Analysis, and Commentary and Comparison with Previous Editions*. 1971. doi: 10.21236/ad0742654.

[45] S. Mlundi, "Enhancing Scientific Writing Skills Among Postgraduate Students: Evaluating the Impact of Academic Writing Training at the Institute of Accountancy Arusha, Tanzania," 2025, doi: 10.2139/ssrn.5337168.

[46] H. Idrus, "Enhancing Oral Presentation Skills of ESL Students: The Use of Oral Communication Strategies," in *Assessment for Learning Within and Beyond the Classroom*, Springer Singapore, 2016, pp. 437–446. doi: 10.1007/978-981-10-0908-2_37.

[47] N. N. Miskam, "Using Video Technology to Improve Oral Presentation Skills among Undergraduate Students: A Systematic Literature Review," *International Journal of Psychosocial Rehabilitation*, vol. 24, no. 5, pp. 5280–5291, Apr. 2020, doi: 10.37200/ijpr/v24i5/pr2020235.

[48] J. Stuart and S. Jon, "Creating academic posters," in *Study and Communication Skills for the Biosciences*, Oxford University Press, 2019. doi: 10.1093/hesc/9780198791461.003.0012.

[49] A. K. M. Farajallah and S. Musa Al -Najjar, "The effect of employing the flipped Classroom on developing creative thinking skills and the attitude towards self-learning in mathematics among the tenth grade students in Palestine.," *Al-Anbar University Journal For Humanities*, vol. 2022, no. 2, pp. 1778–1807, Jun. 2022, doi: 10.37653/juah.2022.174783.

[50] الحسنات ع. خ, "The Effectiveness Of Flipped Classroom Method On The Academic Achievement And Critical Thinking Development Of Female Students At Arab Open University," *المجلة التربوية*, p. 11, 2022, doi: 10.34120/0085-036-144-022.

[51] O. Nacaroğlu and O. Bektaş, "The effect of the flipped classroom model on gifted students' self-regulation skills and academic achievement," *Think Skills Creat*, vol. 47, p. 101244, Mar. 2023, doi: 10.1016/j.tsc.2023.101244.

[52] A. Hussein El Omari, M. Nayef Ayasrah, and M. A. Al-Jabali, "The Effect of Blended Learning Based Training Program on Developing Creative Thinking among Talented Students at King Abdullah II Schools for Distinction," *Journal of Educational and Social Research*, Sep. 2016, doi: 10.5901/jesr.2016.v6n3p13.

[53] ت. ع. السديس, "The Impact Of Flipped Classroom Approach On College Students Academic Achievement And Motivation," *المجلة التربوية*, p. 11, 2019, doi: 10.34120/0085-033-132-016.

[54] A. Lyu, "THE IMPACT OF DIFFERENT EMOTIONAL STATES ON LEARNING MOTIVATION AND ACADEMIC ACHIEVEMENT," in *THE IMPACT OF DIFFERENT EMOTIONAL STATES ON LEARNING MOTIVATION AND ACADEMIC ACHIEVEMENT*, ICSP "NEW SCIENCE," 2025. doi: 10.46916/12052025-2-978-5-00215-776-1.

[55] Y.-H. Wang, "Exploring the effectiveness of adopting anchor-based game learning materials to support flipped classroom activities for senior high school students," *Interactive Learning Environments*, vol. 29, no. 3, pp. 365–384, Feb. 2019, doi: 10.1080/10494820.2019.1579238.

[56] T. H. Al Shammari and A. Z. Al Massaad, "The Effect of Using Flipped Classroom Strategy on Academic Achievement and Motivation towards Learning Informatics for 11th Grade Students," *Journal of Educational and Psychological Studies [JEPS]*, vol. 13, no. 1, p. 65, Jan. 2019, doi: 10.24200/jeps.vol13iss1pp65-85.

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