

Journal of legal and social studies

ISSN: 2507-7333

E-ISSN: 2676-1742

Classroom Interaction Transformations in Light of the Flipped Learning Strategy

Attoum wissam^{*}

jijel University (Algeria), wissam.attoum@univ-jijel.dz

Date of send: 2026/03/04	date of acceptance: 01/05/2026	Date of Publication: 01/06/2026
--------------------------	--------------------------------	---------------------------------

***Corresponding author**

Abstract:

Classroom interaction is considered the essence of the educational process, as it reflects the nature of pedagogical relationships and the dynamics of learning within the classroom. Modern technology has contributed to bringing about a qualitative transformation in this interaction through the flipped learning strategy. This strategy has reorganized the roles of both the teacher and the learner by moving the delivery of instructional content outside the classroom via digital media, while using class time for interactive and applied activities. Within this framework, the learner shifts from a passive recipient to an active agent who participates in selecting content, engaging in discussion, solving problems, and cooperative learning, while the teacher's role shifts to that of a guide and facilitator of learning. Accordingly, this article aims to identify the course of the educational process in light of this strategy, including the process of classroom interaction.

Keywords: Classroom Interaction; Flipped Learning; Learner; Teacher; Educational Process.

INTRODUCTION:

In light of the profound transformations taking place in the contemporary educational system, classroom interaction has become one of the central axes that reflect the dynamics of the teaching–learning process. It is no longer confined to the traditional linear relationship between teacher and learner; rather, it has become a social process influenced by changing teaching patterns, technological advancements, and the redistribution of roles within the classroom environment.

For this reason, many strategies that focus on classroom interaction have emerged, among them the flipped learning strategy. It is considered one of the most important modern pedagogical models that has brought about a qualitative shift in the structure of classroom interaction by reversing the temporal and spatial roles of learning. The acquisition of basic knowledge moves outside the classroom through digital media, while classroom time is devoted to interaction, discussion, problem solving, and the construction of shared meaning. This strategy reveals a new process of classroom interaction based on a shift from passive reception to participatory action.

Many theories have addressed this mode of learning, including constructivist theory, which is among the most prominent educational theories supporting learning within the flipped classroom framework—whether in its cognitive dimension as proposed by Bruner (1966), or in its social dimension as formulated by Vygotsky (1978). These theories emphasize that purposeful, meaningful learning is achieved only when the learner is actively engaged in interacting with the educational content.

Flipped learning relies on a set of constructivist principles, most importantly designing content in the form of learning situations, problems, and meaningful real-world activities, with a focus on active learning. It also redefines the teacher's

role so that the teacher becomes a guide, advisor, and facilitator of the learning process. Knowledge is built for the student through individual assessments and cooperative activities, and by providing a flexible, resource-rich learning environment that goes beyond the traditional constraints of time and place. Learning extends beyond the classroom through the use of modern technology and the internet in delivering lectures.

The flipped classroom focuses on learners' activities, the use of active constructivist learning strategies, reflective thinking approaches, and information processing, alongside strategies of social negotiation, cooperative learning, and participatory learning. It also places importance on providing support and assistance to learners in constructing knowledge, encouraging independence, self-regulation, and effective engagement in learning, while adopting appropriate methods for performance appraisal and for assessing learning outcomes.

Accordingly, the process of classroom interaction transformations under flipped learning appears through overlapping stages. It begins with the pre-learning preparation stage, which is the core of flipped learning, where the learner engages in indirect interaction with digital content. This is followed by the active classroom interaction phase, characterized by intensified horizontal interactions among learners and vertical interactions between learners and the teacher. In doing so, it goes beyond the teacher's traditional roles and operates within new roles for the teacher as a facilitator and guide. This process also extends beyond the class session through sustained interaction in digital environments, reflecting a shift in interaction from a momentary event to an ongoing social process¹.

Studying classroom interaction transformations in light of the flipped learning strategy has particular sociological importance because it makes it possible to understand how the dynamics of new classroom interactions and teaching patterns are being reshaped amid the growing presence of digitalization in education, and as the educational process moves from the logic of traditional instruction to the logic of active learning based on participation, interaction, and the construction of shared understanding.

On this basis, we posed a main question:

How does classroom interaction change in light of the flipped learning strategy?

To identify the process of this transformation, this article is divided into the following Topics:

- Topic One: A conceptual approach
- Topic Two: The characteristics of flipped learning and the steps for its implementation
- Topic Three: The role of the teacher, the student, and materials in flipped learning and classroom interaction
- Topic Four: The dynamics of classroom interaction and flipped learning

THE FIRST TOPIC: A CONCEPTUAL APPROACH

Within the context of the rapid transformations occurring in the educational field as a result of digitalization, the need has emerged for new instructional patterns that reshape classroom dynamics and the structure of social relationships. Flipped learning has emerged as one of these patterns, and it is especially important when linked to classroom interaction. For this reason, both flipped learning and classroom interaction are central concepts that require careful conceptual treatment, given the transformations they involve in the roles of actors within the classroom.

First requirement: Flipped Learning

The flipped classroom model is an instructional strategy that serves as an alternative to the traditional model, and it is a form of blended learning that combines online learning with face-to-face instruction. This model reverses teaching within the classroom by replacing at-home learning activities: students learn new instructional content in their free time by watching lecture videos that teachers have recorded in advance or selected from online sources. They then participate in teacher-guided learning activities that are student-centered, such as cooperative learning activities and problem-solving activities, with the aim of developing higher levels of cognitive learning. Thus, the flipped classroom model replaces passive, lecture-based instruction with a student-centered learning environment inside the classroom. It gives students opportunities to take responsibility for their learning through interaction with teachers and peers, and through self-directed learning to acquire and construct knowledge. In return, the teacher's role shifts from mere transmission of information to that of a facilitator who supports learning activities before and during the lesson, while providing greater follow-up, guidance, mentoring, and personal interaction².

The flipped classroom is a modern educational model that reverses the traditional roles of learning inside and outside the classroom. It relies on making core theoretical content available to students through digital media for individual learning at home, while devoting valuable class time to interactive activities, practical application, problem solving, and cooperative discussions. The goal is to enhance active participation, develop higher-order thinking skills, and transform the teacher's role into that of a facilitator and guide in the learning process³.

Flipped learning is a blended educational model that combines synchronous and asynchronous learning. It is a promising strategy for increasing the use of technology in classrooms, strengthening students' digital competencies, developing higher-order thinking skills, increasing active learning time, and enhancing problem-solving, teamwork, and collaboration skills. It is one of the instructional strategies that can be implemented to enhance student participation. According to Bergmann and Sams, who promoted the flipped learning approach, this approach transcends physical constraints (such as time and place) and allows students to study course materials anytime and anywhere as long as an internet connection is available. Students participating in flipped learning are expected to

learn at home by watching pre-recorded video lectures prepared by the instructor before attending face-to-face sessions. By watching and replaying the videos, students are expected to clarify their understanding and study flexibly at a pace that suits them. By having students learn and review materials outside the classroom, teachers can use class time for more interactive group activities and more individualized instruction⁴.

First section: Classroom Interaction

Classroom interaction is a natural human process carried out by students and teachers inside the classroom, with the aim of communication, transmitting ideas and exchanging them among themselves, achieving a state of harmony or adaptation, and spreading an atmosphere of safety and sound relationships⁵.

The characteristics of flipped learning and the steps for its implementation

THE SECOND TOPIC: JUSTIFICATIONS FOR IMPLEMENTING FLIPPED LEARNING IN TEACHING

In light of the digital transformation the world is experiencing, the need has emerged to adopt modern learning models that keep pace with this shift. Accordingly, this section highlights the justifications for implementing flipped learning.

- The flipped learning strategy helps save class time.
- It gives the learner sufficient time to repeat learning outside the classroom, allowing the student to reach mastery.
- It strengthens self-directed learning, freedom in the learning process, and the ability to search for information from different sources.
- It develops students' critical thinking and creates cooperative learning with peers and with the teacher.
- Another reason for using the flipped classroom is that the accumulation and rapid growth of knowledge has made it necessary to diversify the ways in which it is presented.
- Rapid technological developments, and the fact that students spend most of their time on smartphones and the internet, make access easier.
- Some educational videos include many drills and practical experiments.
- It reduces the need for material costs that schools may not be able to provide when implementing a number of applications, skills, and practical experiments.
- Teachers need more time to explain and discuss topics in order to carry out the required activities.
- Individual differences among students in the speed of understanding and comprehension create a strong need to re-explain and repeat content, and this can cause fast learners to lose interest during repeated explanation⁶.

THE THIRD TOPIC: CHARACTERISTICS OF FLIPPED LEARNING AND ITS REQUIREMENTS

Flipped learning is distinguished from other instructional patterns by a set of characteristics. It also integrates a set of requirements known as the four pillars of flipped learning.

First Requirement: Characteristics of Flipped Learning

Flipped learning differs from other forms of instruction through several characteristics, which can be explained as follows:

- Reversing the teaching system: The lesson time, access to content, and homework are reversed. Instead of completing these tasks at home after class, the student reviews the lesson content at home first, then comes to the classroom to complete assignments and activities. The student's role also changes from a recipient of knowledge to an active, interactive learner who collaborates with classmates, uses technology to access content, and learns critical thinking, problem solving, communication, and participation in content. One element of flipped learning is that the student, or learner, becomes a participant in decision-making related to content.
- Reversing roles: This characteristic relates directly to the teacher and the learner. Through flipped learning, the teacher shifts from merely transmitting knowledge and delivering content to becoming a guide and mentor of the educational process. The student's role also changes, learning how to search for information, find it, take responsibility for learning, verify its accuracy, and share it with the group.
- Using digital learning resources: Since flipped learning is fundamentally based on digital content, the teacher uses technological media that facilitate delivering content to the student. The most important of these media is the instructional video, which the teacher provides to learners before class time.
- Increasing the time allocated to study: Because learning in this approach is reversed, the time devoted to watching the instructional video is considered additional time beyond class time and does not reduce it. Meanwhile, class time is used for practice, discussion, interaction, and presenting the parts that students did not understand⁷.

Second Requirement: Requirements of Flipped Learning and the Stages of Its Implementation

Flipped learning is a contemporary pedagogical strategy that requires the availability of a set of requirements. Among the most prominent are a flexible environment, a learning culture, and preparing the teacher to manage active classroom interaction and guided content. Its implementation also depends on planning and preparing content in advance, followed by classroom execution based on interactive activities, and ending with formative and summative assessment to ensure that learning outcomes are achieved.

First Section: Requirements of Flipped Learning

For the teacher to transition to teaching through this approach—centered on reversing the educational process—the teacher must ensure the integration of a set of requirements known as the four pillars of flipped learning: a flexible environment, a learning culture, intentional content, and a professional educator.

First: Flexible environment

A flexible environment in flipped learning is based on the idea that the teacher acts as a guide. The teacher prepares learning activities in different ways, which may be individual or cooperative, continuously monitors students, and evaluates each student's achievements and learning time.

Second: Learning culture

Learning culture refers to the idea that investing in the classroom means the student must actively assume responsibility for their own learning and participate in meaningful learning activities that are accessible to everyone. This means the student is the center of the educational process, not the teacher, under the teacher's supervision and guidance, in order to achieve significant learning.

Third: Professional educator

The teacher should be available to all students, communicate and collaborate with other teachers, and adopt a reflective and self-critical stance regarding their instructional practices. This is done by conducting formative assessments to identify difficulties in the learning process and by exchanging experiences, with the aim of continuous training related to students and the teaching process. This should be reflected in the use of active learning methods and strategies that make it possible to achieve the objectives planned in advance.

Fourth: Intentional and guided content

This refers to the teacher's thoughtful process in selecting relevant content that is clear and appropriate for all students, and in designing and scheduling activities. It should be noted that implementing the flipped model requires digital tools as long as they align with students' learning objectives and have sufficient quality. This model can be applied by presenting content outside the classroom and then addressing students' educational needs inside the classroom⁸.

Table 2: Flipped Learning Requirements and Indicators.

Pillar	Indicators
Flexible environment	• I establish spaces and time frames that permit students to interact and reflect on their learning as needed. • I continually observe and monitor students to make adjustments as appropriate. • I provide students with different ways of learning content and demonstrating mastery.

Learning culture	• I give students opportunities to engage in meaningful activities without the teacher being central. • I scaffold these activities, and make them accessible to all students through differentiation and feedback.
Intentional content	• I prioritize concepts used in direct instruction for learners to access on their own. • I create and/or curate relevant content (typically videos) for my students. • I differentiate to make content accessible and relevant to all students.
Professional educator	• I make myself available to all students for individual, small group, and class feedback in real-time as needed. • I conduct ongoing formative assessments during class time through observation, and by recording data to inform future instruction. • I collaborate and reflect with other educators, and take responsibility for transforming my practice.

Resource: Nam Hui Kim, Hyo-Jeong So, Young Ju Joo: Flipped learning design fidelity, self-regulated learning, satisfaction, and continuance intention in a university flipped learning course, Australasian Journal of Educational Technology, 2021, 37(4), p3

Second Section: Stages of Implementing Flipped Learning

Implementing flipped learning is not done randomly; rather, there are several stages related to the teacher and the learner that must be followed in order to benefit from this mode of instruction:

First: Planning

This includes selecting appropriate content, precisely defining behavioral objectives, identifying the skills to be developed, choosing the appropriate technological format, determining tasks and activities inside and outside the classroom, and selecting the appropriate method.

Second: Preparing content before the lecture

This involves preparing and presenting the content in an electronic format that is available to the student before the lecture, determining pre-lecture learning activities, and specifying the types of individual tasks and activities that students will carry out before attending the lecture.

Third: Determining learning activities during the lecture

This includes solving problems related to everyday life and to other subjects.

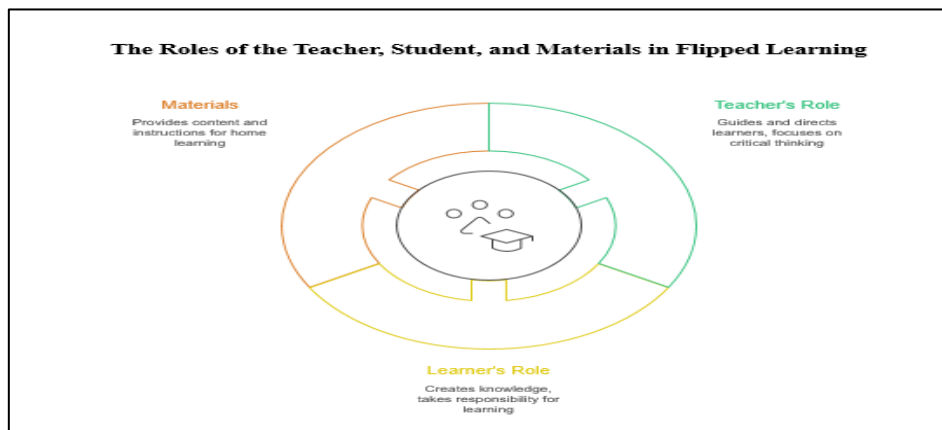
Fourth: Carrying out activities during the lecture

This involves assigning new tasks in preparation for the new lesson.

Fifth: Formative and summative assessment

This includes checking the extent to which objectives have been achieved providing feedback, and evaluating the lesson⁹.

: Represents the roles of teacher and learner, and their participation in teaching hearts.



Source: Prepared by the researcher

THE FOURTH TOPIC: THE ROLE OF THE TEACHER, THE STUDENT, AND MATERIALS IN FLIPPED LEARNING

First Requirement: The Role of the Teacher, the Student, and Materials in Flipped Learning

Although there is a difference between the conventional teaching approach and the flipped learning approach, the teacher, the learner, and instructional materials each have roles within it. These roles can be identified as follows:

First Section: The Teacher and the Learner

First: The Teacher

Even if learning is reversed, this does not mean the teacher's role disappears; on the contrary, the teacher has many roles, but they differ from those in traditional instruction. These roles include:

- The teacher is present to guide and mentor learners.
- In this approach, the teacher helps students understand and develop the content, and trains them in critical thinking. The focus is not on the teacher as the transmitter of knowledge and the primary source of information.
- Preparing a lecture to be recorded—either by the teacher personally using supportive technological tools, or obtained from another professional source. Planning the content and obtaining it are among the most time-consuming steps. It is also the most visible step, though not the most

important in the overall planning process. Students watch this content at home in video form, typically lasting 10 to 20 minutes¹⁰.

Second: The Learner

It is well known that the learner's role in flipped learning differs completely from their role in traditional learning. It can be summarized in the following points:

- The learner becomes a producer of knowledge.
- The learner assumes responsibility for their education and plays an active role, acquiring knowledge and experience outside the classroom. For the student to acquire and develop this skill, they must learn how to search for information, find it, verify its accuracy, share it with the group, critique it, and communicate it in order to continue learning throughout life and to develop critical and creative thinking.
- The flipped classroom is fundamentally based on involving the learner in the learning process, course design, participation in group work, and strengthening deep learning. Because the student receives the content before entering the classroom, the student is the one who presents it to the teacher¹¹.
- Flipped learning shifts the student from being a passive recipient of knowledge to a student who participates in searching for knowledge and sharing it inside the classroom.
- The learner also assumes responsibility for their own learning.
- Flipped learning relies on instructional videos and various courses and resources; therefore, the student's role is to watch lecture videos before the class session and prepare for it using all available means.
- Because the learner receives the content before attending class and records notes and questions, they interact with the teacher and classmates, carry out the necessary interactions with the teacher and peers, participate in different discussions, and take part in group work teams and cooperative learning¹².

Second Requirement: Materials

Just as the teacher and the learner have roles in flipped learning, the materials used are also of great importance. Video clips and original materials are the core resources on which flipped learning is based. They contain the flipped content and direct instructions, since the student follows them at home. They are an excellent instructional tool that helps learners learn quickly at a pace that suits their levels and abilities outside the classroom. Therefore, the teacher must give great attention to planning useful, meaningful instructional content used either inside the classroom or within the flipped learning environment, and this content may include articles, films, television programs, newspapers, and magazines¹³.

THE FIFTH TOPIC: THE DYNAMICS OF CLASSROOM INTERACTION AND FLIPPED LEARNING

Flipped classrooms allow for increased classroom interaction inside the classroom between the teacher and the learner, as shown in the following points:

- Through flipped classrooms, classroom interaction increases between the learner and the teacher, as well as among peers and with concepts and instructional materials. It provides an opportunity for discussions and extended practice. Exercises are structured in a way that enables students to work in cooperative groups or individually, which allows the teacher to address the questions and problems the learner faces. This leads to a deeper understanding of concepts¹⁴.
- Flipped learning compensates for shortcomings in traditional teaching methods by capturing attention across different educational levels through the creation of a positive learning environment. It plays an important role in motivating students' interest in learning through the following: the teacher devotes class time to active learning activities, making it more productive and innovative by providing more time for direct contact and more opportunities for teachers and learners to interact. The aim is to create a learning atmosphere that responds to students' interests. Video-based learning places lectures under learners' control, increasing their freedom and responsibility for learning, cooperation, motivation, confidence, and participation. It also makes it possible to reverse place and time for students by allowing them to replay content and choose learning spaces at home or elsewhere, beyond the settings they are used to in traditional academic environments. As a result, it creates more opportunities for students to learn and shifts them from passive learners to independent, engaged learners¹⁵.
- The flipped classroom uses audio-visual media and makes use of the home environment by reviewing the lesson sent by the instructor, making the learner more engaged in the teaching–learning process because it stimulates curiosity and imagination in the student's mind. The student expresses this through questions that arise and searches for solutions, sometimes with help from family. This contributes to breaking the rigidity and monotony of the traditional lecture.
- Stronger relationships are built between the teacher and the learner.
- Flipped classrooms rely on the use of technology, and one of the best ways to use modern technology is to address the weaknesses of traditional learning. Students watch short video presentations of lectures at home, then interact, engage in dialogue, and discuss the content with classmates in the classroom under the teacher's supervision. The teacher spends more time interacting, dialoguing, and discussing with students instead of delivering lectures. This helps eliminate the monotony and rigidity of traditional teaching, improves learning, and develops students' thinking skills. According to Bloom's taxonomy, class time focuses on higher levels of the cognitive domain (application, analysis, synthesis, evaluation), because in

flipped learning students achieve the lower levels of the cognitive domain (acquiring knowledge and comprehension) at home¹⁶.

- Recent research on flipped classrooms continues to reinforce the advantages of using this concept in teaching and learning. Rivera (2016), in her graduate thesis, found that students' participation and effectiveness in classrooms improve when they take part in flipped classrooms. In addition, McCarthy (2016) argued that the flipped classroom provides more meaningful interaction among students, indicating that students become active participants during in-class learning¹⁷.
- The flipped teaching model generally consists of two stages: the lecture stage and the knowledge reinforcement stage (also known as the teacher–student interaction stage). In the first stage, students interact with lecture videos to acquire foundational knowledge. Then, in the teacher–student interaction stage, they deepen their understanding of the material through face-to-face discussions with the teacher. In addition, before conducting a face-to-face class, the teacher typically arranges the interaction process step by step, generating an organized teacher–student interaction phase. By contrast, teacher–student interaction in the traditional teaching model tends to be spontaneous or voluntary and occurs during the lecture itself. If students have no questions and the teacher does not initiate inquiries, interaction between teacher and students may not occur. Therefore, it is reasonable to conclude that the flipped teaching technique enhances communication during the interaction phase thanks to prior knowledge acquisition and a well-planned schedule. According to the interactive–constructive–active–passive theory, interaction (such as teacher–student interaction), with a sufficient degree of role exchange and predominantly constructive contributions by the participants, enhances students' learning during interaction. Teachers' explanations and feedback help complete students' knowledge structures by filling gaps in their understanding. Moreover, teachers encourage students to re-evaluate their existing knowledge, correct misconceptions, and derive new insights. Empirical studies have also found that well-coordinated teacher–student interactions are effective in improving learning¹⁸.
- The flipped classroom approach is an innovative educational strategy that enriches students' learning experiences by encouraging interaction and participation. It involves flipping the structure of the traditional lesson: students access resources and instructional materials before class, which enables them to focus during class time on discussions and cooperative activities with peers and teachers. This blended learning model combines self-directed learning with interactive classroom discussions, providing many benefits for educating students. This method allows students to interact with lesson materials and instructional videos outside class time, while class sessions focus on discussions and problem-solving activities. This flexibility supports a smoother transition between interactions inside

and outside the classroom, encouraging collaboration between students and teachers¹⁹.

- In the current era, digital technology is not merely a tool; it is a catalyst for change. Lebrun indicates that the tangible effects of educational technology can only be seen when it is integrated into an interactive, learner-centered teaching methodology. From this perspective, authors stated decades ago: It is clear that the tools provided by these technologies enhance interaction, and therefore facilitate the acquisition of new skills [...] all of this gradually leads the student, or learner, toward genuine autonomy. The flipped classroom model embodies this perspective, as it plays a pivotal role in moving knowledge outside the classroom and dedicating the interactive space to direct interaction. This approach also changes the teacher's role, going beyond the traditional role to become a mediator of knowledge and a facilitator of cognitive processes²⁰.

CONCLUSION:

In light of what has been presented, it becomes clear that the flipped learning strategy has contributed to bringing about a qualitative shift in the structure of the educational environment and its functions. The classroom is no longer merely a space in which knowledge is transmitted from teacher to learner; rather, it has become a dynamic space where the understanding is achieved. This strategy has also supported a shift from a traditional pedagogical model to an interactive model. Under the flipped learning strategy, the classroom's interactive environment has changed in terms of time, place, and the learning activities. Theoretical explanation has moved to the digital space outside the classroom, which has made it possible to use school time for applied activities, in-depth discussions, and cooperative problem solving. In this way, the class session has become a space for practical application and interaction rather than passive reception of information. The teacher has become a guide and facilitator of learning processes, while the learner has become the center of educational activity.

Accordingly, it can be said that the flipped learning strategy represents a pedagogical framework capable of bringing about a profound transformation in classroom dynamics in a way that enhances the quality and effectiveness of learning and establishes a more open, educational environment that aligns with the requirements of the digital transformation taking place in the world today.

Margins list:

- 1- Karima Mahmoud Mohamed. Interaction between the level of participation in activities and the style of student assessment in a flipped-classroom environment and its effect on developing certain learning outcomes and perceived self-efficacy among educational technology students. *Journal of Educational and Social Studies*, Vol. 27, March issue, 2021, p. 257.
- 2- Guan-Yu Lin et al. Investigating factors affecting learning satisfaction and perceived learning in flipped classrooms: The mediating effect of interaction. *Interactive Learning Environments*, Vol. 31, No. 9, 2023, p. 5761.
- 3- Majed Abdallah Alharthi. The Synergy of Augmented Reality with the Flipped Classroom Structure and Its Impact on Learning Engagement Among Higher Education Students. *International Journal of Technology in Education*, 9 (2026), p. 372.
- 4- Masruddin et al. Flipped learning: Facilitating student engagement through repeated instruction and direct feedback. *Cogent Education*, Vol. 11, No. 1, 2024, p. 3.
- 5- Mahmoud Mohamed Zaki Mohamed. A proposed program based on humanistic theory to develop classroom interaction skills and evaluate teaching performance among student teachers of philosophical subjects in colleges of education. *Journal of Educational and Social Studies*, Vol. 28, Part 2, 2022, p. 167.
- 6- Ihab Mohamed Abdel Aziz. The effect of two video modes (linear/interactive) in the flipped classroom on developing augmented reality skills among industrial technical education teachers. *Journal of Contemporary Curricula and Educational Technology*, Vol. 5, No. 1, 2024, p. 14.
- 7- Doaa Omar Saleh Salem, et al. The effectiveness of a program based on the flipped learning strategy in developing pre-number concepts among kindergarten children. *Journal of Childhood Research and Studies*, No. 4, 2022, p. 161.
- 8- Romero, G., García, B., & Touron, J. The flipped learning model in online education for secondary teachers. *Journal of Technology and Science Education*, 9(2), 2018, pp. 110–111.
- 9- Nora bint Mohammed Muqrin Al-Zamel, & Abdel Raouf Mohamed Ismail. The degree of employing flipped learning in electronic activities in the educational process from the perspective of primary school female teachers. *Journal of Educational Technology and Digital Learning*, Vol. 6, No. 18, 2025, p. 17.
- 10- Becki A. B. Understanding the Flipped Classroom: Types, uses, and reactions to a modern and evolving pedagogy. *Culminating Projects in Teacher Development*, No. 12, p. 11.
- 11- Ounasse, N. La classe inversée: Un nouveau rapport au savoir / Flipped classroom: A new relation to knowledge. *Revue Internationale du Chercheur*, 4(3), 2023, pp. 15–16.
- 12- Ozdamli, F., & Asiksoy, G. Flipped classroom approach. *World Journal on Educational Technology*, 8(2), 2016, p. 101.
- 13- Kriengkrai, S. Learning Approach: Engaging 21st Century Learners in English Classrooms. *LEARN Journal: Language Education and Acquisition Research Network Journal*, 10(02), 2017, p. 135.
- 14- Garza, A. The flipped classroom teaching model and its use for information literacy instruction. *Communications in Information Literacy*, 2014, p. 9.
- 15- Zakareya, S., & Alahmad, S. Inverted teaching for improving the teaching performance of EFL student teachers at Jubail College of Education. *Canadian Center of Science and Education*, 12(04), p. 1.
- 16- Elham Al-Shelby. The effectiveness of a teaching program based on the flipped classroom strategy in developing assessment competencies and habits of mind among the student teacher at Imam Muhammad ibn Saud Islamic University. *The Jordanian Journal of Educational Sciences*, No. 01, 2017, p. 102.
- 17- Juhary et al. Flipped classroom at the defence university. In *4th International Conference on Higher Education Advances (HEAd'18)*, Valencia: Universitat Politècnica de València, 2018, p. 829.

- 18- Qi Li, Die Wang, Weilong Xiao, Yingying Tang, Qi Sun, Binghai Sun, Zhishan Hu. Structured interaction between teacher and student in the flipped classroom enhances learning and interbrain synchrony. *Science of Learning*, 9:27, 2024, p. 1.
- 19- Nana Yaw Brenya Agyeman et al. Implementing flipped classroom to enhance student engagement: An action research. *E-Journal of Humanities, Arts and Social Sciences (EHASS)*, Vol. 5, No. 11, 2024, pp. 1860–1861.
- 20- Ahmed Amine Najih. Classe inversée et intelligence artificielle: Toward an innovative model of continuous professional development for teachers of French as a foreign language at the Moroccan university. *Revue Enseignements Transversaux (ET)*, Vol. 2, No. 2, 2026, p. 308.

Reference List

Academic Journal Articles

- Alharthi, M. A. The Synergy of Augmented Reality with the Flipped Classroom Structure and Its Impact on Learning Engagement Among Higher Education Students. *International Journal of Technology in Education*, 9 2026.
- Agyeman, N. Y. B., et al. Implementing Flipped Classroom to Enhance Student Engagement: An Action Research. *E-Journal of Humanities, Arts and Social Sciences (EHASS)*, 5(11), 2024.
- Al-Shelby, E. The Effectiveness of a Teaching Program Based on the Flipped Classroom Strategy in Developing Assessment Competencies and Habits of Mind among Student Teachers at Imam Muhammad ibn Saud Islamic University. *The Jordanian Journal of Educational Sciences*, 2017.
- Karima Mahmoud Mohamed. Interaction between the Level of Participation in Activities and the Style of Student Assessment in a Flipped-Classroom Environment and Its Effect on Developing Certain Learning Outcomes and Perceived Self-Efficacy among Educational Technology Students. *Journal of Educational and Social Studies*, 27, 2021.
- Lin, G.-Y., et al. Investigating Factors Affecting Learning Satisfaction and Perceived Learning in Flipped Classrooms: The Mediating Effect of Interaction. *Interactive Learning Environments*, 31(9), 2023.
- Masruddin, et al. Flipped Learning: Facilitating Student Engagement through Repeated Instruction and Direct Feedback. *Cogent Education*, 11(1), 2024.
- Mohamed, M. M. Z. A Proposed Program Based on Humanistic Theory to Develop Classroom Interaction Skills and Evaluate Teaching Performance among Student Teachers of Philosophical Subjects in Colleges of Education. *Journal of Educational and Social Studies*, 28(2), 2022.
- Najih, A. A. Flipped Classroom and Artificial Intelligence: Toward an Innovative Model of Continuous Professional Development for Teachers of French as a Foreign Language at the Moroccan University. *Revue Enseignements Transversaux (ET)*, 2(2), 2026.
- Ounasse, N. Flipped Classroom: A New Relationship to Knowledge. *Revue Internationale du Chercheur*, 4(3), 2023.

- Ozdamli, F., & Asiksoy, G. Flipped Classroom Approach. *World Journal on Educational Technology*, 8(2), 2016.
- Qi Li, Wang, D., Xiao, W., Tang, Y., Sun, Q., Sun, B., & Hu, Z. Structured Interaction between Teacher and Student in the Flipped Classroom Enhances Learning and Interbrain Synchrony. *Science of Learning*, 9, 2024.
- Romero, G., García, B., & Touron, J. The Flipped Learning Model in Online Education for Secondary Teachers. *Journal of Technology and Science Education*, 9(2), 2018.
- Salem, D. O. S., et al. The Effectiveness of a Program Based on the Flipped Learning Strategy in Developing Pre-Number Concepts among Kindergarten Children. *Journal of Childhood Research and Studies*, 2022.
- Zakareya, S., & Alahmad, S. Inverted Teaching for Improving the Teaching Performance of EFL Student Teachers at Jubail College of Education. *Canadian Center of Science and Education*, 12(4).
- Al-Zamel, N. M. M., & Ismail, A. R. M. The Degree of Employing Flipped Learning in Electronic Activities in the Educational Process from the Perspective of Primary School Female Teachers. *Journal of Educational Technology and Digital Learning*, 6(18), 2025.
- Abdel Aziz, I. M. The Effect of Two Video Modes (Linear/Interactive) in the Flipped Classroom on Developing Augmented Reality Skills among Industrial Technical Education Teachers. *Journal of Contemporary Curricula and Educational Technology*, 5(1), 2024.
- Garza, A. The Flipped Classroom Teaching Model and Its Use for Information Literacy Instruction. *Communications in Information Literacy*, 2014.
- Kriengkrai, S. Engaging 21st Century Learners in English Classrooms. *LEARN Journal: Language Education and Acquisition Research Network Journal*, 10(2), 2017.

Conference Proceedings

- Juhary, et al. Flipped Classroom at the Defence University. In *4th International Conference on Higher Education Advances (HEAd'18)*, Universitat Politècnica de València, 2018.

Academic Projects / Theses

- Becki, A. B. Understanding the Flipped Classroom: Types, Uses, and Reactions to a Modern and Evolving Pedagogy. *Culminating Projects in Teacher Development*.