*European Journal of Education and Pedagogy*
*Vol 4 | Issue 6 | December 2023*
*ISSN* 2736-4534

REVIEW

# Theoretical Foundations of the Flipped Classroom

Assoa Ettien[1,*] and Ya Éveline Johnson Touré[2]

## ABSTRACT

**This study examines the theoretical foundations of the flipped classroom based on a literature search using various online sources such as Google Scholar, Internet Archive Scholar, ScholExplorer, Chatsonic, and ChatGPT. Processing the collected data involved organising, analysing and interpreting the information contained in physical or electronic documents, and after careful reading of the data, pre-processing was necessary to eliminate the content of little relevance to the study. Next, we conducted a textual analysis, extracting key concepts and basic theories related to the flipped classroom. Finally, we grouped authors by theory, classifying secondary contributors under the key author of each theory. The interpretation of the results incorporated in the discussion consisted of answering the research questions. As for the study site, it comprises the entire web. Our results indicate that three main theories support the flipped classroom method: active learning theory, pedagogical differentiation theory and intrinsic motivation theory. Active learning theory stresses the importance of learning through action and play, emphasising the student's active involvement in his or her learning process. In this approach, the student plays a central role in driving learning, creating a game-like experience, and fostering intelligence development. The theory of educational differentiation, on the other hand, recognises the diversity of students' skills, interests and learning styles. It encourages teachers to adapt their teaching to meet students' needs, promoting their learning and success.**

**Keywords:** Foundations, the flipped classroom, the inverted class, theoretical.

**Submitted:** October 26, 2023

**Published:** December 09, 2023

*10.24018/ejedu.2023.4.6.771*

[1] *Teacher-Researcher, Institute of Research, Experimentation and Teaching in Pedagogy (IREEP), Félix Houphouët-Boigny University, Ivory Coast.*
[2] *Department of Education, École Normale Supérieure (ENS) of Abidjan, Ivory Coast.*

* ***Corresponding Author:***
e-mail: etasber@hotmail.com

## 1. Introduction and Problem Situation

The flipped classroom is a teaching method that enables students to do in the classroom everything that in conventional teaching is done at home and to do at home everything that is supposed to be done in the classroom (Lage *et al.*, 2000). To put it more clearly, the role of the teacher in a normal classroom is to provide students with the basic information that forms the basis of the lesson. Students receive this basic information in class, and once at home, they seek to absorb it, doing exercises and other complementary research to deepen the lesson. This order of the student receiving the lesson in class and doing the exercises at home is reversed in the flipped classroom (Ettien, 2023).

In a flipped classroom, the student learns about the lesson for the first time at home. He prepares it so that the exercises can be done in class. So, instead of a traditional teacher transmitting knowledge face-to-face, as in the transmissive approach, the teacher limits himself to providing his students with documents, videos, or any other support that the learner only takes possession of once at home via information technology or physically. In this way, home becomes the place of learning.

As for the classroom, it is transformed into a place where learners exercise their talents under the watchful eye of the teacher. In this way, the teacher becomes an active member of the class, which, in a way, becomes a giant group for studying and sharing different ways of understanding the material previously received. The classroom is also a place for exchanges with the teacher and other students. Finally, the classroom is where group exercises are completed and corrected (Ettien, 2023).

In the flipped classroom, we see a reversal of roles between teacher and learners and a reversal of pedagogical approaches. The flipped classroom takes us from a purely transmissive approach to an active one in which the learner constructs knowledge. This active approach places the learner at the heart of his or her learning while encouraging interaction between learners.

Since the teacher is no longer the sole source of knowledge, he or she becomes, according to Sherbino *et al.* (2013), a learning facilitator. He or she has become a companion who speaks only to clarify, break down or answer questions beyond the learner's comprehension. The speaker's role is to help learners apply their knowledge more effectively (Goldberg & McKhann, 2000; Tune *et al.*, 2013).

In principle, therefore, in a flipped classroom context, no one should arrive in the classroom unaware of the course topic. It should also be noted that the flipped classroom opposes lectures, which are part of so-called traditional pedagogy. Thus, with the birth of printing in the era of medieval universities, there was no better teaching method than bringing learners together to communicate knowledge orally (Bruter, 2008). As for Aka (2004), he describes lecturing as dogmatic teaching in which the magister, supposedly the exclusive holder of knowledge, pours his knowledge into the supposedly empty brain of the learner. Altet (1994) is no different, for whom the lecture is a teacher-centred but coherent monologue that ignores feedback and learner interaction. After this succinct presentation of the flipped classroom, taken from Ettien (2023), what can we say about its theoretical underpinnings?

### *1.1. Research Questions*

The central research question that the present study aims to answer is which theories underpin the practice of the flipped classroom. As subquestions of this central question, three secondary research questions were formulated and presented as follows:

*$H_1$: What does active learning theory contribute to the foundations of the flipped classroom?*

*$H_2$: What does the theory of pedagogical differentiation contribute to the flipped classroom?*

*$H_3$: What contribution does intrinsic motivation theory make to the foundations of the flipped classroom?*

### *1.2. Research Objectives*

The general objective of the present study is to identify the main theories underlying the flipped classroom. As more specified objectives of this general objective, the following objectives are listed:

1. To identify the contribution of active learning theory to the foundations of the flipped classroom.
2. To identify the contribution of pedagogical differentiation to the foundations of the flipped classroom.
3. To recognise the contribution of intrinsic motivation theory to the foundations of the flipped classroom.

## 2. Methodology

This study is essentially a documentary in nature. We have focused on sources that refer to so-called active pedagogy to understand and identify theories that might justify the relevance of the flipped classroom. To collect data, we used the following tools: Google Scholar, Internet Archive Scholar, ScholExplorer, Chatsonic, and GPT chat. These tools enabled us to access the high-level academic content presented in the references, which formed the basis of our data collections deemed relevant to the present study. To process the data collected, we sought to organise, analyse, and interpret the information in physical and electronic documents.

After carefully reading the data collected, a preprocessing step was necessary to eliminate content of little relevance to the study. Next, we conducted a textual analysis to extract key concepts and fundamental theories about the flipped classroom. We then grouped the authors by theory. In this way, secondary contributors were placed under the critical author of each theory.

The interpretation of the results, which consisted of answering the research questions, has been incorporated into the discussion section, which also provides where the research questions are answered. The present presentation is nothing more than a report on this research into the theoretical foundations of the flipped classroom. Finally, the site of this study is the entire Web.

## 3. Results

After processing the data collected, we have identified three main theories underpinning the flipped classroom. These are the theory of active learning, the theory of pedagogical differentiation, and the theory of intrinsic motivation.

### *3.1. Active Learning Theory*

The flipped classroom encourages students to become active learners by giving them responsibility for acquiring basic knowledge at home, enabling them to spend more time in class on engaging and interactive learning activities. The author of active learning theory is John Dewey, an American philosopher and educator who developed the theory in the early 20$^{th}$ century. According to Dewey (1938, as cited in Bolduc, 2015), active learning involves active engagement in the learning process, encouraging critical thinking, problem-solving, and experimentation. This approach emphasises hands-on learning and interaction with the real world, fostering a deeper understanding and practical application of knowledge.

Active learning theory is a pedagogical approach that emphasises the learner's active involvement in acquiring knowledge and skills. This theory is based on the idea that individuals learn best when actively involved in their learning rather than being passive receivers of information. Simply put, children learn by doing. However, Bourgeois and Chapelle (2011) argue that action alone is insufficient to learn better. Action must be accompanied by reflection. However, according to Dewey (1938, as cited in Bolduc, 2015), action has several facets when children learn by

doing. The *doing* of the pair, *learning by doing*, implies "acting, practising, reflecting, questioning, reasoning and relating to one's social and physical environment". This ensemble enables children to live their own experiences and achieve considerable learning (Bolduc, 2015, p. 54).

Moreover, this author stipulates that the learning experience must be based on the child's interests and prior knowledge. (Bonwell & Eison, 1991; Dewey, 1938, as cited in Bolduc, 2015) also, the child learns by playing and mentions that play allows a freedom that represents the condition of all development, enabling the child to use his senses, organs, and limbs to develop his intelligence.

Bolduc (2015) points out that for Dewey in playing:

"*The child chooses certain procedures, experiments with them, judges them appropriately, starts over, arranges, and adapts all methodically and with a goal he gives himself. This proves that the child is active when he plays since it naturally requires a continuous effort of reflection*." (Bolduc, 2015, p. 55).

Bolduc (2015) urges us to remember that children learn actively in a context where they freely play while having materials within their reach that respond to their interests and that they can manipulate spontaneously.

Moreover, 'learning must take place through activities that are guided by the child's intentions, and by the child's participation in determining the goals that direct the activities.' It is also important not to lose sight of 'the importance of giving a predominant place to play, since it enables children to be active in their learning,' according to the same author.

Some authors (Felder & Brent, 2009; Hmelo-Silver, 2004; Prince, 2004) have attempted to critically examine the evidence for the effectiveness of active learning. They concluded that active, collaborative, cooperative, and problem-based learning work best in engineering education, while Freeman *et al*. (2014) confirm that active learning is more effective and increases performance among science, math, and engineering learners.

### *3.2. The Theory of Educational Differentiation*

Differentiated instruction involves adapting teaching to students' needs, interests, and abilities to promote their learning and academic success. This theory emphasises the personalisation of teaching to meet the diversity of learners. The author of this theory, Tomlinson (1999), points out that the classroom is a heterogeneous group in which we find students with different backgrounds, aptitudes, and interests. As for their learning styles, they vary from one student to another. The teacher must be aware of this heterogeneity and take it into account. Considering the individual characteristics of each learner is pedagogical differentiation.

So, when the teacher adjusts his or her teaching to meet the individual expectations of each learner, i.e., when he or she considers the fact that learners do not have the same ease of understanding, the same aptitudes or the same learning preferences, then this teacher is practising pedagogical differentiation.

Tomlinson (1999) proposes several key elements of differentiation: the content of learning, the manner of learning, student production, and the classroom context. As far as assessment is concerned, it should be carried out with pedagogical differentiation in mind, i.e., allowing learners to demonstrate their understanding in different ways while considering each learner's progress.

Finally, the last point is what Tomlinson calls reflective planning, which considers the preparation of materials and activities adapted to students' needs. In conclusion, pedagogical differentiation does not necessarily mean teaching learners individually but taking into account each learner's individual diversity to maximise learning for all.

Various authors have contributed to the theory of pedagogical differentiation. This is the case of Allan (2017), who has emphatically shown the role of the reading specialist as a leader in the classroom, school, and community while emphasising the importance of pedagogical differentiation to meet the reading needs of all students. As for Heacox (2012), she offers practical strategies for primary and secondary teachers to meet the varied needs of students. She focuses on adapting instruction to support the success of all learners.

Villa and Thousand (2017) offer practical advice for facilitating student learning through collaborative teaching. They discuss strategies and approaches for creating an inclusive classroom environment. Frey and Fisher (2016) look at implementing effective pedagogical practices to improve basic learning in students from kindergarten to adolescence. They highlight proven strategies for accelerating student learning, while Reis (2004) explores promising practices and programmes to address academic underachievement among gifted students of African American descent.

As for Novak (2016), his book is a guide that enables teachers to adapt their teaching to meet the varied needs of students. As for Gardner (2011), for whom individuals are endowed with different types of intelligence, he explores the implications of this perspective for education and pedagogical differentiation.

### *3.3. Intrinsic Motivation Theory*

Intrinsic motivation is the natural, internal desire to engage in an activity for pleasure, interest, or personal satisfaction rather than for external rewards (Deci, 1975). This theory promotes autonomy, competence, and social relationships.

Intrinsic motivation is the internal or autonomous motivation that drives individuals to engage in activities simply for the pleasure or interest such activities arouse rather than for external rewards. At the heart of intrinsic motivation is self-determination theory, which explains how individuals need to feel competent, autonomous, and connected to their environment and how these needs impact their intrinsic motivation (Deci & Ryan, 1985).

Another key point of intrinsic motivation theory concerns autonomous regulation, which describes the degree to which an activity is motivated by personal choice and genuine interest, not by external pressures or rewards (Deci & Ryan, 1985). These researchers also point out that introducing extrinsic rewards can influence intrinsic motivation. Similarly, tangible rewards can sometimes diminish the intrinsic appeal of an activity.

Another no less important concept in intrinsic motivation theory on the state of flow was developed by Csikszentmihalyi (1990). This was an experiment in which individuals absorbed in an activity experienced an intrinsic sense of motivation.

The work of Amabile (2011) has shown how intrinsic motivation affects creativity and productivity in professional contexts. Intrinsic motivation also refers to the notion of a mindset and learning. This notion shows how beliefs about intelligence and effort influence people's intrinsic motivation, leading them to persevere in difficult tasks (Dweck, 2006).

## 4. Discussion

Our results summarise three main founding theories of the flipped classroom: Active learning theory, pedagogical differentiation theory and intrinsic motivation theory. This discussion examines these theories' contributions to the flipped classroom's foundations.

Let's now examine the foundations of active learning theory compared to the flipped classroom. This theory states that children learn best by acting and playing. This theory, which encourages active learning, also states that children learn best when actively involved in their learning. In the normal classroom, however, children are not sufficiently involved in their learning since the teacher is at work. The child's involvement is only secondary, relative, as he's busy receiving information from the teacher. They are also busy taking notes.

In the flipped classroom, it's the teacher who becomes relatively inactive, as it's the student who drives the learning. He's the one who acts. This role change gives the child the impression that he or she is playing a game. This is where the theory of active learning comes into its own. Through play, the child frees himself completely, and in this liberation, he uses all his senses, organs, and limbs so that his intelligence develops and is freed (Bonwell & Eison, 1991; Dewey, 1938, as cited in Bolduc, 2015).

In the play, 'the child chooses certain procedures, experiments with them, judges whether they are appropriate, repeats them, arranges them, and adapts them all methodically and with a goal in mind. This proves that the child is active when he plays since it naturally calls for continuous reflection effort (Bolduc, 2015). In this way, intelligence is liberated, and learning is facilitated.

Having examined the contribution of active learning theory to the foundations of the flipped classroom, let's now look at the contribution of the theory of pedagogical differentiation to said foundations. The author of this theory, Tomlinson (1999), teaches that the classroom is a heterogeneous group with students of different backgrounds, abilities, interests and learning styles. Therefore, the author advises teachers to consider this heterogeneity by adapting their teaching to students' needs, interests, and abilities to promote their learning and academic success.

The flipped classroom, although a teaching method, has the merit of transforming itself into a place where learners exercise their talents, into this 'sort of giant study group and this place for sharing different ways of understanding the materials previously received group (Ettien, 2023). By putting students in control of the teaching-learning process, the flipped classroom aligns with the injunctions of Tomlinson (1999). Indeed, since the students assume the role of the teacher, the flipped classroom has already satisfied the need to adapt teaching to the student's abilities.

To teach, you need to have learned beforehand. Consequently, we can say that the flipped classroom structure is based on considering the class group's heterogeneity, interests, and needs (Novak, 2016).

Finally, what can we say about the contribution of intrinsic motivation theory to the foundations of the flipped classroom? The child who engages in the flipped classroom plays an unusual role akin to play, and play engenders pleasure and joy in the child. The theory of intrinsic motivation is the natural, internal desire to engage in an activity for pleasure, interest, or personal satisfaction rather than for external rewards (Deci, 1975).

The flipped classroom promotes autonomy in the student, who momentarily feels like the teacher when he or she is called upon to lead the flipped classroom. They feel strong and competent, increasing their enjoyment and pleasure in this temporary activity. One effective approach to catering to the diverse needs of students and ensuring overall success for all is the implementation of student-led instruction, as suggested by Heacox2012.

In this new role of teachers, students in the flipped classroom setting often experience the state of flow, which Csikszentmihalyi (1990) describes as an experience of intrinsic motivation only individuals absorbed in an activity can experience. Here, too, it appears that the flipped classroom finds its foundation in the theory of intrinsic motivation.

## 5. Conclusion

The flipped classroom is not a fanciful game for teachers needing a break, encouraging learners to momentarily replace them. On the contrary, the flipped classroom is a teaching-learning technique whose foundations are firmly anchored in so-called active pedagogy, as well as thought-out, well-structured, and proven theories. These include the theory of active learning, the theory of pedagogical differentiation and the theory of intrinsic motivation.

These theories help cultivate creativity and productivity in learners (Amabile, 2011), as well as self-determination, competence, autonomy, and intrinsic motivation (Deci & Ryan, 1985). They also make it possible to explore the different types of intelligence and how to use them for pedagogical differentiation at school (Gardner, 2011).

There's also the fact that these theories promote collaborative teaching for an inclusive environment conducive to pedagogical practices, which are themselves conducive to learning and contribute significantly to avoiding failure in the school environment (Frey & Fisher, 2016; Reis, 2004; Villa & Thousand, 2017).

It is, therefore, imperative to study them seriously to better perceive the foundations of the flipped classroom, for it is no coincidence that this technique presents itself as a serious alternative to the injunction of the LMD system, which exhorts the teacher to teach differently and the student to learn differently. How long will we wait for

the institutional clarifications that have been slow to come for at least ten years now that the LMD system has been in place?

## Conflict of Interest

The authors declare that they do not have any conflict of interest.

## References


Aka, A. (2004). Le cours magistral vu par des enseignants de l'université de Cocody [The lecture given by teachers from the University of Cocody]. *RES Academia*, *22*(1).

Allan, S. D. (2017). *The Reading Specialist: Leadership for the Classroom, School, and Community (Solving Problems in the Teaching of Literacy)*. New York: Guilford Press.

Altet, M. (1994). Le cours magistral universitaire: Un discours scientifico-pédagogique sans articulation enseignement-apprentissage [The university lecture course: A scientific-pedagogical discourse without a teaching-learning connection]. *Recherche et Formation*, *15*, 35–44.

Amabile, T. M. (2011). *The Progress Principle: Using Small Wins to Ignite Joy, Engagement, and Creativity at Work*. Boston, MA: Harvard Business Review.

Bolduc, M. J. (2015). *L'apprentissage actif chez les enfants d'âge préscolaire : Une étude collaborative sur l'évolution des pratiques d'une enseignante en contexte d'ateliers libres [Active learning in preschool children: A collaborative study on the evolution of a teacher's practices in the context of free workshops]* (Unpublished master's thesis). University of Sherbrooke.

Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom. In: *ASHE-ERIC Higher Education Report*. Washington, DCs: School of Education and Human Development, George Washington University.

Bourgeois, É., & Chapelle, G. (2011). *Apprendre et Faire Apprendre*. Paris: Presses universitaires de France.

Bruter, A. (2008). Le cours magistral comme objet d'histoire [The lecture as an object of history]. *Histoire de l'Education*, *120*, 5–32.

Csikszentmihalyi, M. (1990). *Flow: The psychology of Optimal Experience*. New York: Harper & Row.

Deci, E. L. (1975). *Intrinsic Motivation*. New York: Plenum Press.

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-DeterminAtion in Human Behavior*. New York: Plenum Press.

Dewey, J. (1938). *Experience and Education*. New York, NY: Macmillan.

Dweck, C. S. (2006). *Mindset: The New Psychology of Success*. New York: Random House.

Ettien, A. (2023). Une expérimentation de la classe inversée comme réponse à l'injonction "enseigner autrement" du système LMD à l'université Félix Houphouët Boigny, Abidjan AIPDP [An experiment of the flipped classroom as a response to the 'teaching differently' directive of the LMD system at Université Félix Houphouët Boigny Abidjan AIPDP.]. *Revue Pédagogique*, *2*(1), 115–124.

Felder, R. M., & Brent, R. (2009). Active learning: An introduction. *ASQ Higher Education Brief*, *2*(4), 1–5.

Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences of the United States of America*, *111*(23), 8410–8415.

Frey, N., & Fisher, D. (2016). *Visible Learning for Literacy, Grades K-12: Implementing the Practices that Work Best to Accelerate Student Learning*. Thousand Oaks, CA: Corwin.

Gardner, H. (2011). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.

Goldberg, H. R., & McKhann, G. M. (2000). Student test score are improved in a virtual learning environment. *Advances in Physiology Education*, *23*(1), 59–66.

Heacox, D. (2012). *Differentiating Instruction in the Regular Classroom: How to Reach and Teach All Learners, Grades 3–12*. Minneapolis: Free Spirit Publishing.

Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review*, *16*(3), 235–266.

Lage, M. J., Platt, G. J., & Treglia, M. (2000). Inverting the classroom: A gateway to creating an inclusive learning environment. *The Journal of Economic Education*, *31*(1), 30–43.

Novak, K. (2016). *UDL Now!: A Teacher's Guide to Applying Universal Design for Learning in Today's Classrooms*. Chicago: CAST Professional Publishing.

Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, *93*(3), 223–231.

Reis, S. M. (2004). *Reversing Underachievement among Gifted Black Students: Promising Practices and Programs*. Austin, TX: Prufrock Press.

Sherbino, J., Chan, T., & Schiff, K. (2013). The reverse classroom: Lectures on your own and homework with faculty. *Canadian Journal of Emergency Medicine*, *15*(3), 178–180.

Tomlinson, C. A. (1999). *The Differentiated Classroom: Responding to the Needs of All Learners*. Alexandria, VA: Association for Supervision and Curriculum Development.

Tune, J. D., Sturek, M., & Basile, D. P. (2013). Flipped classroom model improves graduate student performance in cardiovascular, respiratory, and renal physiology. *Advances in Physiology Education*, *37*(4), 316–320.

Villa, R. A., & Thousand, J. S. (2017). *A Guide to Co-Teaching: Practical Tips for Facilitating Student Learning*. Thousand Oaks, CA: Corwin.