

## FLIPPED LEARNING: ENHANCING EDUCATION

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### Summary

This research explores the concept of flipped learning and its implications for contemporary pedagogical science. Various models and approaches to flipped learning are examined, highlighting its potential benefits and challenges. Through an analysis of current research and practical examples, it is demonstrated how flipped learning can enhance student engagement, promote active learning, and facilitate deeper understanding of course material. The aim of this research is to substantiate the effectiveness of employing the “flipped learning” methodology in the preparation of future educators. Additionally, the changing roles for both educators and students in the flipped classroom environment are discussed, underscoring the importance of collaboration and student autonomy. It is concluded that the use of flipped learning technology, under methodologically sound application, will contribute to the development of digital competence among educators and the enhancement of students’ scientific skills, motivation, and academic success.

**Key words:** technology of “flipped learning”, e-learning, education, types of flipped classrooms.

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### 1. Introduction

In contemporary academia, universities find themselves at a crossroads, tasked with the mission of nurturing a novel generation of graduates: individuals who embody creativity, critical thinking prowess, and the ability to tackle intricate socio-ecological dilemmas (Cortese, 2003; Wals & Jickling, 2002). Concurrently, these institutions confront mounting pressure to revolutionize their pedagogical paradigms while aiding an increasingly diverse student populace in their journey into higher education (Crosling, Heagney, & Thomas, 2009). Such imperatives underscore the pressing need for pedagogical approaches that are both introspective and adaptive. Blended learning methodologies, which seamlessly integrate a spectrum of technology-enhanced learning modalities across physical and digital realms, have emerged as pivotal tools in this educational landscape (James Cook University, 2014, section 3). However, the emergence of Generation Z students, presents a new challenge. These digital natives exhibit a palpable restlessness and disenchantment with traditional teaching formats characterized by passive lectures and rote note-taking. Consequently, educators find themselves grappling with the realization that conventional pedagogical methods no longer suffice in engaging this cohort. This dwindling classroom engagement poses a formidable obstacle, as robust student participation correlates closely with enhanced academic achievement.

**The aim of this research** is to substantiate the efficacy of employing the “flipped learning” methodology in the preparation of prospective educators.

Blended learning characterizes a pedagogical approach that combines online and face-to-face learning (Zounek, 2009). The benefit of blended learning lies in the integration of technology in teaching with methods used in face-to-face teaching. According to some authors, blended learning is a flexible and dynamic complex system that combines face-to-face instruction with technology-based instruction (Thorne, 2003). Technology does not play the most important role in blended learning. Rather, it is the pedagogy and methods that occupy the most significant role in blended learning. This statement is also emphasized by Zounek (2009) in his publication, who stresses that blended learning is important to use in teaching only if the chosen technology will help us to achieve our learning objectives.

Teaching using blended learning is more beneficial, effective, and flexible for both students and teachers (Stein & Graham, 2020). The same authors believe that blended learning promotes active learning and independence in the learning process. Other studies highlight the following benefits of blended learning: Effective pedagogy (Picciano *et al.*, 2013), ease of establishing communication between student and teacher, self-regulation of learning, and verbal and nonverbal communication throughout the course.

Teachers and course designers can choose from several types of blended learning (Stein & Graham, 2020) and divide blended learning into three different types: hybrid learning, hyflex learning, and the flipped classroom. In hybrid learning, part of the learning is moved to an online environment, and in hyflex learning, teaching is delivered in an online format in combination with face-to-face tutorials. Students themselves decide how often they want to use face-to-face consultations (Beatty, 2014).

### 2.1. Characteristics of the Flipped Classroom

There are numerous interpretations and perspectives regarding the features of the Flipped Classroom model. According to the University of Minnesota (2013), while various opinions exist regarding the characteristics of the Flipped Classroom approach in educational settings, the most effective Flipped Classroom model typically embodies three key attributes. Firstly, the in-class learning environments are meticulously structured, necessitating educators to plan for every minute to ensure students remain engaged with the lesson. Secondly, the in-class activities should be designed to prompt students to solve problems, respond to quizzes, apply, or recall the content covered in the flipped video beforehand. Lastly, students are strongly incentivized, through grading, in-class activities, and educator expectations, to complete out-of-class assignments and attend in-person sessions. Zounek (2016) outlines four models of blended learning based on the Christensen Institute framework. Rotation Model: Instruction occurs in both online and face-to-face formats, with the primary portion of teaching delivered in a face-to-face manner. The Rotation Model is further subdivided into Local Rotation, Room Rotation, Flipped Classroom, and Individual Rotation.

Flexible Model: In this approach, instruction primarily takes place online, and students attend school for consultations or seminars conducted in small groups.

Free-Choice Model: Students in this model select online courses as supplements to face-to-face classes.

Enriched Virtual Model: In this model, teachers prepare course content in an online format. Students become acquainted with the course content during brief meetings with the teacher at school, with additional face-to-face sessions serving as supplements to the online courses. In conclusion, blended learning is a flexible and dynamic pedagogical approach that integrates online and face-to-face instruction. Its advantages include effective pedagogy,

seamless interaction between students and instructors, self-regulation of learning, and verbal and non-verbal communication throughout the course. Instructors and course developers can choose from various models, including hybrid learning, hyflex learning, and the flipped classroom. The flipped classroom model, a type of blended learning, involves relocating traditional lectures outside the classroom and utilizing class time for hands-on and collaborative educational activities. This approach can be particularly effective in promoting active learning and increasing student engagement.

In the practice of foreign teachers, there are several types of flipped classrooms:

- The Standard Flipped Classroom: students are assigned homework that involves watching video lectures and reviewing materials related to the upcoming lesson. During class time, they apply the theoretical knowledge gained, and teachers have additional time to work individually with each student;
- Discussion-Oriented Flipped Classroom: students are tasked with watching specific videos or materials from online resources, after which the teacher facilitates a discussion based on the information presented;
- The Demonstration-Focused Flipped Classroom: this format is suitable for subjects that require the demonstration of materials and visual experiments. The teacher demonstrates the necessary activities, and students observe and analyze them before independently performing related tasks;
- The Faux-Flipped Classroom: this approach is employed when there is uncertainty about whether students will adequately prepare at home. In this model, students watch a video in class and then complete relevant tasks, with the option of receiving individual consultations with the teacher if needed.

The Group-Based Flipped classroom model encourages students to learn collaboratively, interact with one another, seek correct answers, and discover effective methods for obtaining information and conducting scientific research. To implement this model, students must voluntarily or at the teacher's recommendation form groups, familiarize themselves with relevant materials, and collaborate in solving specific scientific problems during class.

The Virtual Flipped Classroom enables the organization of students' work entirely remotely: the teacher provides materials for review, assigns practical tasks, offers online consultations, administers tests, and assigns final grades. The crucial aspect is initiating the study of relevant material by independently working through the theory, following the principles of the Flipped Classroom.

"Flipping the Teacher" implies that not all tasks need to be performed by the teacher—tasks such as preparing or searching for video materials, creating practical assignments, providing guidance, and evaluating work can also be delegated to students. In this scenario, the teacher observes the learning process, evaluates information presentation, and provides assistance as needed. (Learning and Innovation (2012).

The flipped learning represents a pedagogical innovation that has gained significant attention in recent years. It redefines traditional teaching methods by shifting the focus from passive instruction to active student engagement. This approach involves students accessing course content outside of class, allowing valuable in-class time to be dedicated to interactive activities and collaborative learning. In this way, the flipped classroom offers educators a dynamic framework to promote deeper learning and student-centered instruction.

## 2.2. Advantages and disadvantages of flipped learning

The use of the flipped classroom model has certain advantages:

- The teacher optimally manages their time to offer personalized assistance to each student, while simultaneously maintaining a focus on the quality of the practical tasks completed by each individual;
- Students have the freedom to independently revisit the material at their own pace, with the ability to pause or revisit specific segments as required;
- Enhanced Student Engagement: flipped learning promotes active participation by encouraging students to engage with course materials before class, leading to more interactive and engaging in-class sessions;
- Improved Understanding: pre-class study allows students to familiarize themselves with concepts independently, leading to deeper discussions and a better comprehension of the subject matter during class.

Personalized Learning: with traditional lecture time freed up, instructors can provide more individualized support and feedback to students, catering to their specific learning needs.

Disadvantages of Flipped Learning:

- Time-Intensive Preparation: implementing flipped learning requires significant time and effort from instructors to develop or curate pre-class materials, potentially increasing their workload;
- Technology Dependency: flipped learning heavily relies on technology for delivering pre-class content, which may pose challenges for students with limited access to technology or internet connectivity;
- Increased Student Responsibility: flipped learning places greater responsibility on students for independent learning outside of class, which can lead to heightened stress levels and feelings of overwhelm for some learners.

## 3. Conclusions

The use of flipped learning methodology brings about significant changes in the teaching process, which can have a substantial impact on the quality of education and the preparation of future teachers. This approach entails active collaboration between instructors and students, shifting the responsibility for learning onto the latter. By encouraging students to actively participate and experiment, flipped learning promotes a shift from mere information delivery to its comprehension and refinement. Such an approach can facilitate a deeper understanding of the learning material and enhance the effectiveness of the educational process.

However, for successful implementation of flipped learning, it is crucial to have adequate technological resources and corresponding pedagogical skills. Significant attention is required in planning and organizing the learning process, as well as in supporting students in their independent work. The ultimate goal of flipped learning is active student engagement in their own learning and the development of their analytical and problem-solving skills, which can positively impact their professional development as future educators.

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