



Optimizing educational management through the flipped classroom method: An innovation in Islamic education learning in the digital era

Atabik*, Khafifatul Fian, Fajar Hardoyono, Ahmad Dahlan

Universitas Islam Negeri Prof. KH. Saifuddin Zuhri Purwokerto, Indonesia

*Corresponding Author: atabik@uinsaizu.ac.id

ABSTRACT

This experimental study employed nonequivalent control group design to examine the effect of the flipped classroom method on students' achievement in Islamic education learning among grade XII students at SMA Negeri 1 Sumpiuh in 2024. The flipped classroom method was implemented by instructing students to study the material independently through learning videos followed by elaboration and discussion through online platforms. For data analysis, tests were administered to 30 students in the experimental group and 30 students in the control groups. The results of the N-gain Score calculation showed that the improvement in material comprehension among students in the experimental group was higher than that of the control group. The N-gain score for the experimental group students was 0.3562, while that for the control group was 0.1511. Statistical analysis using an independent samples t-test showed that the comprehension ability of the experimental group was significantly higher than that of the control group ($p > 0.05$). Based on these findings, the flipped classroom method can be considered an effective alternative strategy to enhance students' understanding of learning materials in online Islamic education.

Keywords: flipped classroom, Islamic education material, online learning

Article history

Received:

14 April 2025

Revised:

01 June 2025

Accepted:

07 September 2025

Published:

06 October 2025

Citation (APA Style): Atabik, A., Fian, K., Hardoyono, F., & Dahlan, A. (2025). Optimizing educational management through the flipped classroom method: An innovation in Islamic education learning in the digital era. *Cakrawala Pendidikan: Jurnal Ilmiah Pendidikan*, 44(3), pp. 557-567. DOI <https://doi.org/10.21831/cp.v44i3.88460>

INTRODUCTION

Along with the progression of time and advances in technology, the learning process has undergone significant transformation. Initially, teaching and learning were conducted exclusively through face-to-face instruction; however, many teachers or lecturers use information technology as an online learning medium. The effectiveness of online learning has generally been classified as good. Supporting this perspective, Jasrial et al. (2023) found that integrating digital reading materials such as e-books within structured learning management systems significantly improves students' literacy and learning outcomes, highlighting the potential of technology to enhance educational effectiveness.

This is based on the advantages obtained during online learning, including the ease of learning interaction anywhere and anytime, the ability to increase interaction learning, a wider range, and the storage and refinement of learning materials (Sumadevi, 2023). Davis et al explained some of the advantages obtained for both teachers and students in implementing online learning. The advantages obtained by teachers in the application of online learning are that it creates time flexibility to carry out the learning process, able to improve communication at the time of Giving assignments to students because it can be done either by written message or through audio messages, teachers can take notes related to students who are actively involved in learning because of the availability of data on how often students access teaching materials provided by teachers, and online learning does not require any special preparation. In students, the advantages obtained in the application of online learning are flexibility of time in doing the

assigned tasks and the ability to foster motivation and independence in students to learn (Davis et al, 2019).

The advantages of applying the flipped classroom method include several key aspects. First, it allows for more efficient use of class time, as learning materials are provided to students before classroom sessions. Second, it promotes more comprehensive and in-depth elaboration and exploration by giving students opportunities to discuss substantial topics. Third, the approach enables teachers to employ varied instructional strategies. Fourth, it encourages teacher creativity, as instructors are challenged to create engaging and meaningful content that prevents monotony. The benefits obtained when applying the flipped classroom learning method are for students, the use of the flipped classroom method can provide convenience in terms of understanding the teaching material because the teacher is not only sharing the teaching material but also providing explanations related to the material. The position of teacher is a facilitator, so the center of learning is the student (Bicen & Beheshti, 2019). Bergmann & Sams explained that in flipped classroom classrooms, the main role is the student, and the teacher acts as a guide (Latorre-Coscolluela et al, 2022). The benefit for teachers is that there is a wider space for interaction to create a discussion process between teachers and students (Kim et al., 2022).

Next, regarding the weaknesses of online learning, these include potential adverse impacts on health, the requirement for adequate facilities and infrastructure, and the demands for teachers to master technology (Aidoo et al., 2022). The weakness of the flipped classroom method are as follows: not all educational institutions possess sufficient facilities and infrastructure to implement the flipped classroom approach (Divjak et al., 2022). Second, students may experience stress due to the added responsibility of studying material independently before class, and not all students can manage this effectively (Yeh, 2022). Third, it is not certain whether students are listening to the learning videos that have been shared (Thatphaiboon & Sappapan, 2022). From the weaknesses of implementing flipped classrooms, there are many obstacles experienced by teachers or students during the online learning process. One of the obstacles experienced by teachers is the limited control of student activities when learning from home. The learning obstacle experienced by students is that it is difficult to understand the learning material, especially if the teacher only distributes learning materials without explanation. According to researchers, this is the cause of students not mastering the subject matter so learning methods are needed that can anticipate learning difficulties or obstacles, one of which is using the flipped classroom method (Oudbier et al., 2022). In terms of understanding, a flipped classroom is a learning method where before carrying out the learning process in class, students learn the material first based on the direction of the teacher. From this, the flipped classroom learning method is very appropriate to use, because it encourages students to learn independently by studying the material shared by the teacher. Especially when it comes to subject matter that requires students to be able to relate the material to the phenomena of daily life, for example in Islamic education subjects the material of faith in the "Hereafter".

The implementation of the flipped classroom learning method provides significant benefits for both teachers and students. Teachers are encouraged to utilize ICT media and maximize their potential in creating online learning content (Aidoo et al., 2022). Meanwhile, students can master ICT and are active and independent to master learning materials (González-Velasco et al., 2021). In addition, students also collaborate through discussions, share ideas, and respond to opinions from other students (Baig & Yadegaridehkordi, 2023), thereby creating a dynamic learning environment within online-based virtual spaces. Thus, supporting the formation of the necessary skills in the 21st century which include first, communication skills which are very important because they are related to students' abilities in conveying and receiving information (Murat & Cam, 2021). The information conveyed must be clear and effective so that it is easy for the audience to understand. Second, collaboration skills are related to the ability of students to work together so that the tasks given by the teacher are completed properly (Fischer & Yang, 2022). Third, critical thinking skills aim to produce analysis, interpretation, evaluation, and inference on which decisions are made (Ma, 2023). Fourth, creativity is related to students' ability to produce new ideas (Hsu & Wu, 2023).

As far as researchers are concerned, numerous studies have examined the flipped classroom method. For example, in the article entitled “The Effect of Flipped Classroom on Student Learning Outcomes; An Overview” by Anjomshoaa et.al, the results were obtained that flipped classrooms can increase student learning motivation and new innovations are needed by teachers during the learning process. It was also explained that the talents of children have a very large role in motivating students to do assignments with the results obtained according to expectations (Anjomshoaa et al., 2022). Article entitled “Effects of Flipped Classroom on Learning Outcomes and Satisfaction: An Experiential Learning Perspective” by Chen results were obtained for experimental groups using flipped classrooms able to improve material understanding higher than control groups using traditional methods (Chen, 2021). Article entitled “Flipped classroom improves student learning outcome in Chinese pharmacy education: A systematic review and meta-analysis” by Peng et al, the results of the implementation of the flipped classroom model have a positive influence on learning outcomes and can improve chemistry learning outcomes in solution materials buffer (Peng et al., 2022). The difference in this study is that the material you want to study is related to faith on the Hereafter of the Islamic education subject.

In relation to learning methods, these can be defined as approaches taken by teachers before conducting instructional activities, aimed at facilitating the delivery of teaching materials and helping students more easily understand the content provided. If teachers conduct virtual learning, one method that can be applied is flipped classroom. The flipped classroom method is a derivative of the blended learning model which is a learning model that is carried out in combination between virtual learning and face to face learning. From the definition of the blended learning model, it can be termed that the flipped classroom method is a method that is carried out with reverse classes, meaning that activities that are usually carried out in the classroom are reversed with activities that are usually done at home (Herreid & Schiller, 2013; Bagley, 2018). Fulton explains flipped classroom is a method by which students listen or in this case watch lessons from home and do homework in class (Fulton, 2012). Alten et al in Yılmaz explained that the flipped classroom method is applied by the way students listen to the content of teaching materials through video online before learning in class (Yılmaz, 2021). Hung in Jiang et al explained that flipped classroom provides direction that this method is carried out to reconsider how to reconsider how to relate activities in the classroom to those outside the classroom in an integrated manner and the use of technology (Jiang et al., 2020). The flipped classroom is a method introduced to students with content at home with the provision of assignments to be done at school with the guidance of the teacher or it can be said to be a method that has similarities with mixed learning. Chung et al explained that the flipped classroom is a blended learning model (Chung et al., 2021). Based on several definitions of the flipped classroom method, it is concluded that the flipped classroom method is a method with the process of distributing teaching materials by teachers that are shared through learning applications for students to learn before carrying out learning activities at school. When at school, students are given assignments by the teacher to be done in class with discussions together to make the discussion room and students become a learning center.

There are several advantages of the flipped classroom method. First, it increases students' independence to learn, enhances academic achievement, and provides opportunities to study instructional materials without the limitations of time and space. Second, it promotes self-regulated learning, encourages metacognitive behavior, and enhances motivation through active, constructive processes that help students regulate their learning goals. Third, class time becomes more effective, accommodating student diversity, increasing engagement and interaction, fostering a sense of responsibility answer, and improving critical thinking and problem-solving skills. The implementation of the flipped classroom according to Mazur in Wright & Park is that students finish their reading before they come to class, then engage in a discussion during the presentation and answer questions that have been determined (Wright & Park, 2022). Wassinger et al., explained that flipped classroom learning methods require careful consideration because they are carried out offline and online (Wassinger et al, 2022). Koponen explained that flipped classroom is done in a way before class learning, students are asked to do pre-learning assignments provided by the teacher (Koponen, 2019). Abeysekera and Dawson mentioned that

there are 3 (three) circumstances when implementing flipped classrooms, namely the transmission of information outside the classroom, class time is used for socialization as well as activities, and it is required for students to do activities both before and after class (Singh dkk, 2022).

The roles of teachers and students in implemting the flipped classroom method are described by Fallah et al. (2022). First, regarding the role of the teacher, approximately one week before instruction, teachers distribute learning materials through a WhatsApp group and respond to students' questions about content they do not yet understand. During learning, the teacher guides students in discussions using video conferencing or WhatsApp groups, provides directions for students who are presenting using video conference or WhatsApp groups, guides students who do not understand the material, provides reviews related to what students present, and provides evaluations. After the lesson, teachers and students use social media to share projects that have been done. The second relates to the role of students. Before learning for approximately one week, students study the teaching materials that have been distributed, record the material, and prepare assignments according to the teacher's direction. During learning, students conduct discussions according to the teacher's direction which are carried out through video conference or WhatsApp groups, presenting the results of discussions, doing quizzes, or making material recommendations. After the lesson, teachers and students use social media to share projects that have been done.

METHOD

This study employed an experimental design using a nonequivalent control group model and involved 60 clagradess XII students from SMA Negeri 1 Sumpiuh. For data collection, the researchers selected 30 students for the experimental group and 30 students for the control group. Pre-tests and post-tests were administered to gather data on students' understanding of learning materials before and after the implementation of the flipped classrooms. Improved learning achievement was analyzed using the calculation of the N-gain Score in each experimental group and control group. Furthermore, the paired sample t-test was used to analyze differences in students' material comprehension in the experimental group and the control group.

$$\frac{O_1 \times O_2}{O_3 \quad O_4}$$

Figure 1. Nonequivalent Control Group Design Research Design

(Source: Assuah et al., 2022)

Description:

O₁: Experimental class before treatment (pre-test)

O₂: Experimental class after treatment (post test)

O₃: Control class before treatment (pre-test)

O₄: Control class after treatment (post-test)

X : Treatment

The stages of this quasi-experimental research, as summarized in Figure 1, followed a nonequivalent control group design. Students were given (pre-test) to determine learning achievement before treatment on the experimental group (O₁) and control group (O₃). Furthermore, the treatment stage (X) for the experimental group was treated using the flipped classroom method while the control group was treated using the lecture method. Furthermore, in the final stage, students were given (a post-test) to determine learning achievement after treatment in the experimental group (O₂) and the control group (O₄).

FINDINGS AND DISCUSSION

Findings

Normality test results

Researchers used the Chi Square statistical test with the help of SPSS version 26 with the criterion if the significance value is 0.05 then the $\geq$ population is normally distributed. Here are the normality test results (Table 1). Based on Table 1, teh results showthat Asymp.Sig value for

the experimental group pre-test was 0.552, which is greater than 0.05. Therefore, the data were normally distributed. The post-test distribution in the experimental group has Asymp.Sig 0.460 or more than 0.05 so that it can be declared normally distributed data. For pre-test data in the control group had Asymp.Sig 0.527 or more than 0.05 so that it can be declared normally distributed data. The distribution of post-test data in the control group has Asymp.Sig 0.966 or more than 0.05, so that it can be declared normally distributed data. Based on the results of the normality test, it can be concluded that the data obtained were normally distributed.

Table 1. Normality test results

Variable		Chi-Square	Asymp.Sig.	Description
Experiment	Pre-test	10,733	0,552	Normal
	Post-test	10,8	0,46	Normal
Control	Pre-test	13	0,527	Normal
	Post-test	6	0,966	Normal

Independent sample T-test results

The independent t-sample t-test was used to determine whether there was an average difference between two unpaired samples. In the t-test independent sample t-test, the researcher used SPSS version 26 with criteria if the value of Sig. (2-tailed) < 0.05 then there is a significant difference but if the value of Sig. (2-tailed) > 0.05 then there were no significant differences between the experimental group and the control group. The following Table 2 is the results of the independent t-test.

Table 2. Independent sample T-test results

Variable	Group	t count	Sig (2-tailed)	Description
Pre-test	Experiment	1,229	0,224	No Difference
	Control	1,229	0,225	
Post-test	Experiment	2,164	0,035	There's a Difference
	Control	2,164	0,036	

Based on table 2, it can be concluded that the pre-test results in the experimental group with the control group were in the category of no significant difference because the Sig. (2-tailed) value > 0.05. Meanwhile, the post-test results in the experimental group with the control group were in the category that there was a significant difference because the Sig. (2-tailed) value < 0.05.

Test results of the experimental group and control group

Based on Tables 5 and 6, the experimental group consisting of 30 respondents obtained a minimum pre-test score of 64 and a minimum post-test score of 76. Meanwhile, in the control group, which also consisted 30 respondents, the minimum pre-test score was 25 and the minimum post-test score was 32.

Table 5. Descriptive statistic pre-test and post-test experimental group

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	30	64	98	85.97	7.907
Posttest	30	76	100	91.43	6.174
Valid N (listwise)	30				

Table 6. Descriptive statistic pre-test and post-test group control

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	30	25	97	82.20	14.801
Posttest	30	32	98	85.77	12.947
Valid N (listwise)	30				

In the experimental group, the maximum pre-test value was obtained, namely 98, and the maximum post-test value of 100. Meanwhile, in the control group, the maximum pre-test score was obtained, namely 97 and the maximum post-test score was 98. The average pre-test in the experimental group was 85.97 after being treated with a post-test average of 91.43. Meanwhile, in the control group, the average pre-test of 82.20 after being treated obtained a post-test average of 85.77. These results indicate that students' comprehension abilities in both groups before the intervention were relatively comparable. However, after the flipped classroom treatment, the experimental group showed a higher improvement in understanding compared to the control group. Based on the distribution of pre-test data in the experimental group, 7,097 were obtained while the control group obtained 14,801. This indicates that the control group exhibited greater variability, meaning that the gap between high- and low-achieving students was wider than in the experimental group. Based on the distribution of post-test data in the experimental group, 6,174 were obtained while the control group obtained 12,947. This again shows that the control group's scores varied more widely than those of the experimental group, indicating a greater disparity between high- and low-performing students.

N-Gain score calculation results

Table 7. Normalized gain test results

Variable	<i>N-gain Score</i>	Category
Pre-test & Post-test Experiments	0,3562	Middle
Pre-test & Post-test Control	0.1511	Low

Discussion

Analysis of management education innovation through flipped classroom method: Planning of learning with flipped classroom

In the flipped classroom instructional model, the delivery of learning content is no longer conducted during conventional classroom hours; instead, it is assigned for students to study independently outside the classroom environment. This learning process is typically facilitated through asynchronous materials such as instructional videos, digital modules, or various online media platforms (Bergmann & Sams, 2012). Subsequently, in-class time is allocated to active learning activities that emphasize student engagement, including structured discussions, Socratic questioning, case-based learning, hands-on exercises, and collaborative group projects. During the planning phase, educators are required to formulate explicit and attainable learning objectives that align with both independent pre-class learning and interactive classroom engagement (Lo & Hew, 2017).

The instructional design must also include the development of pre-class materials that are pedagogically effective, accessible, and engaging. These materials may comprise concise video lectures, interactive readings, or topic-relevant podcasts, all curated to support autonomous learning. Moreover, teachers must ensure that an appropriate digital platform such as Google Classroom, Moodle, or educational social networks is available to facilitate equitable access for all students (Chen et al., 2014). Within the classroom, the teacher assumes the role of a facilitator, guiding learners through the processes of critical thinking, collaborative problem-solving, and reflective inquiry. Accordingly, classroom tasks must be intentionally designed to promote meaningful participation and to encourage deeper cognitive engagement with the pre-learned content.

The evaluation process in this model typically involves a combination of formative and summative assessments, which not only measure students' conceptual understanding but also provide timely and constructive feedback (Bergmann & Sams, 2012). The flipped classroom approach offers several pedagogical advantages, including the promotion of learner autonomy, increased flexibility in accessing learning materials, and the cultivation of a more interactive and cooperative classroom culture. Nonetheless, its implementation is not without challenges, namely, the availability of reliable digital infrastructure, the digital literacy of both educators and students, and the need for learner self-regulation in completing pre-class assignments. Therefore, effective

implementation of flipped classroom pedagogy necessitates careful instructional planning, technological readiness, pedagogical innovation, and sustained commitment on the part of the educator to ensure transformative learning experiences and the holistic development of student competencies.

Implementation of flipped classroom in the learning process

The implementation of the flipped classroom represents a significant pedagogical innovation within 21st century learning strategies, aimed at reconstructing the traditional roles of teachers and students in the educational process. This model transforms the conventional instructional approach in which content is delivered directly during classroom sessions into a learner-driven framework that promotes self-directed study outside the classroom environment. In its application, this approach necessitates a paradigm shift from teacher centered instruction to student centered learning (Bishop & Verleger, 2013). The initial phase of flipped classroom implementation involves the development of instructional content in digital formats that are accessible to students in a flexible manner. This content typically includes video lectures, interactive modules, narrated presentations, podcasts, or curated digital readings. Such materials must be systematically organized, concise, and engaging to facilitate students' preliminary understanding before participating in face-to-face class sessions (Lo & Hew, 2017).

Upon completing the independent learning phase, classroom time is devoted to active and collaborative learning activities. Teachers no longer dominate lessons through direct instruction, instead serve as facilitators who guide discussion, manage group work, and support students in solving case studies or participating in simulations. These classroom activities are designed to be applicative, allowing students to transfer theoretical concepts acquired outside the classroom into practical, real-world contexts (Zainuddin & Halili, 2016). The success of flipped classroom implementation is highly dependent on the availability of supporting infrastructure, such as stable internet access, technological devices (computers, tablets, or smartphones), and digital learning platforms like Google Classroom, Moodle, or institutional LMS. Equally important is the teacher's preparedness in designing quality digital content and managing pedagogical interactions within a technology-integrated environment (Y et al., 2014).

Moreover, effective implementation requires efficient time management and a comprehensive approach to assessment. Teachers are encouraged to adopt a balanced combination of formative assessments, such as quizzes or reflective journals, and summative evaluations, including final projects or group presentations. These assessments serve not only to measure student learning outcomes but also to provide constructive feedback that encourages self reflection and continuous academic growth (O'Flaherty & Phillips, 2015).

Evaluation and monitoring of learning outcomes

Evaluation and monitoring play a significant role in ensuring that the entire learning process is conducted effectively and contributes to the improvement of student learning outcomes. In the context of a flipped classroom, evaluation serves not only to assess learning outcomes but also to gain a comprehensive understanding of the learning process itself. Evaluation is typically conducted in two stages pre class and in class. During the pre class phase, teachers may employ online quizzes, written reflections, or discussion forums to assess students' initial engagement and understanding of the learning materials studied independently at home. Meanwhile, in class evaluation focuses on assessing students' critical thinking and collaborative skills through group discussions, presentations, or project-based activities. Additionally, summative assessments such as examinations, portfolios, and performance-based assessments are used to measure the overall improvement in students' academic achievement (Bergmann & Sams, 2012).

Monitoring in flipped classroom learning is carried out continuously to observe and evaluate student activities in both online and offline contexts. Digital platforms such as Google Classroom or Moodle enable teachers to monitor students' participation in accessing learning materials, completing assignments, and engaging in online interactions. Moreover, student written reflective journals serve as valuable monitoring tools that document their learning processes, challenges encountered, and strategies for overcoming them. In the classroom setting, direct

observation by the teacher or peer observation can provide empirical data on student engagement and classroom dynamics. Monitoring efforts may also be strengthened through interviews or questionnaires to assess students' perceptions of the effectiveness of the flipped classroom model (Herreid & Schiller, 2013).

A structured and consistent approach to evaluation and monitoring can significantly enhance student learning outcomes. This model encourages students to become more independent in their learning, fosters active engagement during classroom sessions, and deepens understanding through collaborative interaction. Timely feedback from teachers allows for immediate adjustments to the learning process, thereby addressing any gaps in understanding promptly. Furthermore, students with diverse learning styles benefit from the flexibility of accessing materials repeatedly according to their individual needs (O'Flaherty & Phillips, 2015). Nevertheless, the implementation of evaluation and monitoring within the flipped classroom approach presents several challenges, such as limited access to technology, low student motivation for independent learning, and the lack of teacher preparedness in designing appropriate assessments. Therefore, the development of teacher competencies in technology integrated instructional design and activity-based evaluation is essential to support the successful application of this model in improving student learning outcomes (Zainuddin & Halili, 2016).

Challenges and strategic solutions in flipped classroom management

The implementation of the flipped classroom method in educational practice presents various managerial challenges that must be addressed systematically. One of the primary challenges is the readiness of digital infrastructure, including access to technological devices and reliable internet connectivity. This inequality in access can lead to disparities in student participation during self directed learning outside the classroom (Abeysekera & Dawson, 2015). In addition, resistance from both educators and students toward the shift in instructional models poses another significant barrier, particularly when they lack a clear understanding of the essence and long-term benefits of the approach. Limited time for teachers to design interactive and relevant digital content also constitutes a serious concern, as this method requires more complex planning and content development than conventional teaching (Lo & Hew, 2017).

From an educational management perspective, overcoming these challenges requires a comprehensive approach. As emphasized by Musa et al. (2024), sustainable improvement in educational innovation depends on educators' continuous professional growth and lifelong learning commitment, which reinforce their readiness to adopt and manage technology-based pedagogies. First, educational institutions must develop supportive policies that promote the integration of technology and provide professional development programs for teachers to ensure balanced pedagogical and technological competence commonly framed as Technological Pedagogical Content Knowledge (TPACK) (Mishra & Koehler, 2006). Second, an effective Learning Management System (LMS) is essential to facilitate material distribution, monitor student engagement, and provide real-time feedback. Third, an open and participatory communication strategy should be established to enhance students' psychological and cognitive readiness for the transition in learning models. This includes guidance, mentoring, and active student involvement in designing learning experiences that align with their individual needs (Thai et al., 2017). With proper managerial planning and institutional policy support, these challenges can be anticipated and transformed into opportunities for improving the quality of education that is more adaptive, and technology driven. The implementation of a flipped classroom model requires not only methodological changes but also a comprehensive transformation in the culture of learning and educational management.

CONCLUSION

The implementation of the flipped classroom method is used by teachers to improve students' understanding in learning materials independently by utilizing information technology devices. During the flipped classroom, students learn the materials by observing learning videos, asking each other, and discussing comprehending the materials cooperatively. Data analysis to

measure the understanding of learning materials in the experimental group and the control group showed that there were differences in the level of understanding of the material. The N-gain score in the experimental group was 0.3562 (medium category) while in the control group, it was 0.1511 (low category). The results of the calculation of the independent t-test showed that the understanding of the experimental group material was higher compared to the control group ($p > 0.05$). The observation results show that the activeness of students to learn independently is shown from the activeness of observing learning videos, asking questions, and discussing with group students. The experiment was better than the students in the control group. This flipped classroom method is effective to become one of the active learning methods by utilizing information technology.

REFERENCES

- Abeyssekera, L., & Dawson, P. (2015). Motivation and cognitive load in the flipped classroom: Definition, rationale and a call for research. *Higher Education Research & Development*, 34(1), pp. 1–14.
- Aidoo, B., Macdonald, M. A., Vesterinen, V.-M., Pétursdóttir, S., & Gísladóttir, B. (2022). Transforming teaching with ict using the flipped classroom approach: Dealing with COVID-19 pandemic. *Education Sciences*, 12(6), p. 421. DOI: <https://doi.org/10.3390/educsci12060421>
- Anjomshoaa, H., Hashemi, A. H. G., Alsadaji, A. J., Jasim, Z., & Masoudi, S. (2022). The effect of flipped classroom on student learning outcomes; An overview. *Med Edu Bull*, 3(2), pp. 431–440. DOI: <https://doi.org/10.22034/MEB.2022.332357.1052>
- Assuah, C. K., Mantey, G. K., & Osei, L. (2022). The effect of think-pair-share learning on junior high school students' achievement in algebraic expressions: pre-test-post-test non-equivalent control group design. *Asian Journal of Probability and Statistics*, 20(2), pp. 46–55. DOI: <https://doi.org/10.9734/ajpas/2022/v20i2418>
- Bagley, S. (2018). The flipped classroom, lethal mutations, and the didactical contract: a cautionary tale. *PRIMUS*, 30(3), pp. 243–260. DOI: <https://doi.org/10.1080/10511970.2018.1555196>
- Baig, M. I., & Yadegaridehkordi, E. (2023). Flipped classroom in higher education: A systematic literature review and research challenges. *International Journal of Educational Technology in Higher Education*, 20(1). DOI: <https://doi.org/10.1186/s41239-023-00430-5>
- Bergmann, J. & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International Society for Technology in Education.
- Bicen, H., & Beheshti, M. (2019). Assessing perceptions and evaluating achievements of ESL students with the usage of infographics in a flipped classroom learning environment. *Interactive Learning Environments*, 30(3), pp. 498–526. DOI: <https://doi.org/10.1080/10494820.2019.1666285>
- Bishop, J. L. (2013). The flipped classroom: A survey of the research. *2013 ASEE Annual Conference & Exposition Proceedings*, 23.1200.1-23.1200.18. DOI: <https://doi.org/10.18260/1-2--22585>
- Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. *ASEE National Conference Proceedings*.
- Chen, C. C. (2021). Effects of flipped classroom on learning outcomes and satisfaction: an experiential learning perspective. *Sustainability*, 13(16), p. 9298. DOI: <https://doi.org/10.3390/su13169298>
- Chen, Y., Wang, Y., Kinshuk, K. & Chen, N. S. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers & Education*, 79, pp. 16–27. DOI: <https://doi.org/10.1016/j.compedu.2014.07.004>
- Chi, M., Wang, N., Wu, Q., Cheng, M., Zhu, C., Wang, X., & Hou, Y. (2022). Implementation of the flipped classroom combined with problem-based learning in a medical nursing course: A quasi-experimental design. *Healthcare*, 10(12), p. 2572. DOI: <https://doi.org/10.3390/healthcare10122572>

- Chung, C. J., Lai, C. L., & Hwang, G. J. (2021). Roles and research trends of flipped classrooms in nursing education: A review of academic publications from 2010 to 2017. *Interactive Learning Environments*, 29(6), pp. 883–904. DOI: <https://doi.org/10.1080/10494820.2019.1619589>
- Davis, N. L., Gough, M., & Taylor, L. L. (2019). Online teaching: Advantages, obstacles and tools for getting it right. *Journal of Teaching in Travel & Tourism*, 19(3), pp. 256–263.
- Divjak, B., Rienties, B., Iniesto, F., Vondra, P., & Žizak, M. (2022). Flipped classrooms in higher education during the COVID-19 pandemic: Findings and future research recommendations. *International Journal of Educational Technology in Higher Education*, 19(1). DOI: <https://doi.org/10.1186/s41239-021-00316-4>
- Fallah, T., Hafezi, F., Makvandi, B., & Bavi, S. (2022). Interdisciplinary Journal of Virtual Learning in Medical Sciences. *Interdisciplinary Journal of Virtual Learning in Medical Sciences*, 13(1), pp. 34–42. DOI: <https://doi.org/10.5812/ijvlms>
- Fischer, I. D., & Yang, J. C. (2022). Flipping the flipped class: Using online collaboration to enhance EFL students' oral learning skills. *International Journal of Educational Technology in Higher Education*, 19(1). <https://doi.org/10.1186/s41239-022-00320-2>
- Fulton, K. (2012) 'Upside down and inside out: flip your classroom to improve student learning', *Learning & Leading with Technology*, 39(8). Retrieve at <http://www.iste.org>, February 17, 2023)
- González-Velasco, C., Feito-Ruiz, I., González-Fernández, M., Álvarez-Arenal, J.-L., & Sarmiento-Alonso, N. (2021). Does the teaching-learning model based on the flipped classroom improve academic results of students at different educational levels? *Revista Complutense de Educación*, 32(1), pp. 27–39. DOI: <https://doi.org/10.5209/rced.67851>
- Herreid, C. F., & Schiller, N. A. (2013). Case studies and the flipped classroom. *Journal of College Science Teaching*, 42(5), pp. 62–66.
- Hsu, C. Y., & Wu, T. T. (2023). Application of business simulation games in flipped classrooms to facilitate student engagement and higher-order thinking skills for sustainable learning practices. *Sustainability*, 15(24), p. 16867. DOI: <https://doi.org/10.3390/su152416867>
- Jasrial, J., Saputra, A., & Rifma, R. (2023). Improving learning outcome: The effectiveness of ebook reading literacy based in learning management psychology. *Cakrawala Pendidikan: Jurnal Ilmiah Pendidikan*, 42(3), pp. 631-641. DOI: <https://doi.org/10.21831/cp.v42i3.53033>
- Jiang, M. Y., Jong, M. S., Lau, W. W., Chai, C., Liu, K. S., & Park, M. (2020). A scoping review on flipped classroom approach in language education: Challenges, implications and an interaction model. *Computer Assisted Language Learning*, 35(5–6), pp. 1218–1249. DOI: <https://doi.org/10.1080/09588221.2020.1789171>
- Kim, J., Lee, H., & Cho, Y. H. (2022). Learning design to support student-AI collaboration: Perspectives of leading teachers for AI in education. *Education and Information Technologies*, 27(5), pp. 6069–6104. DOI: <https://doi.org/10.1007/s10639-021-10831-6>
- Koponen, J. (2019). The flipped classroom approach for teaching cross-cultural communication to millennials. *Journal of Teaching in International Business*, 30(2), pp. 102–124. DOI: <https://doi.org/10.1080/08975930.2019.1663776>
- Latorre-Coscolluela, C., Suárez, C., Quiroga, S., Anzano-Oto, S., Lira-Rodríguez, E., & Salamanca-Villate, A. (2021). Facilitating self-efficacy in university students: An interactive approach with Flipped Classroom. *Higher Education Research & Development*, 41(5), pp. 1603–1617. DOI: <https://doi.org/10.1080/07294360.2021.1937067>
- Lo, C. K., & Hew, K. F. (2017). A critical review of flipped classroom challenges in K-12 education: Possible solutions and recommendations for future research. *Research and Practice in Technology Enhanced Learning*, 12(4), pp. 1–22. DOI: <https://doi.org/10.1186/s41039-016-0044-2>
- Ma, Y. (2023). Exploration of flipped classroom approach to enhance critical thinking skills. *Heliyon*, 9(11), e20895. DOI: <https://doi.org/10.1016/j.heliyon.2023.e20895>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), pp. 1017–1054.

- Murat, M., & Cam, A. (2021). Flipped classroom on fifth grades' 21st century skills and scientific epistemological beliefs. *International Journal of Technology in Education*, 4(4), pp. 752–771. DOI: <https://doi.org/10.46328/ijte.94>
- Musa, S., Suherman, A. M., Sujarwo, S., & Nurhayati, S. (2024). Continuous professional growth: A study of educators' commitment to lifelong learning. *Cakrawala Pendidikan: Jurnal Ilmiah Pendidikan*, 43(2), 502-512. DOI: <https://doi.org/10.21831/cp.v43i2.66654>
- O'Flaherty, J. & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education*, 25, pp. 85–95. DOI: <https://doi.org/10.1016/j.iheduc.2015.02.002>
- Oudbier, J., Spaai, G., Timmermans, K., & Boerboom, T. (2022). Enhancing the effectiveness of flipped classroom in health science education: A state-of-the-art review. *BMC Medical Education*, 22(1). DOI: <https://doi.org/10.1186/s12909-021-03052-5>
- Peng, W., Xiong, Y., Wei, J., Chen, X., Huai, W., He, S., Liu, D., Tian, X., Tang, S., & Chen, Y. (2022). Flipped classroom improves student learning outcome in Chinese pharmacy education: A systematic review and meta-analysis. *Frontiers in Pharmacology*, 13(936899). DOI: <https://doi.org/10.3389/fphar.2022.936899>
- Singh, J. K. N., Jacob-John, J., Nagpal, S., & Inglis, S. (2022). Undergraduate international students' challenges in a flipped classroom environment: An Australian perspective. *Innovations in Education and Teaching International*, 59(6), pp. 724–735. DOI: <https://doi.org/10.1080/14703297.2021.1948888>
- Sumadevi, S. (2023). Effective use of diverse technology tools in flipped learning approach. *A Journal of Historical Research*, 53(2), pp. 106-113
- Thai, N. T. T., De Wever, B., & Valcke, M. (2017). The impact of a flipped classroom design on learning performance in higher education: Looking for the best “blend” of lectures and guiding questions with feedback. *Computers & Education*, 107, pp. 113–126.
- Thatphaiboon, R., & Sappapan, P. (2022). The effects of the flipped classroom through online video conferencing on efl learners' listening skills. *Arab World English Journal*, 13(3), pp. 89–105. DOI: <https://doi.org/10.24093/awej/vol13no3.6>
- Wassinger, C. A., Owens, B., Boynewicz, K., & Williams, D. A. (2022). Flipped classroom versus traditional teaching methods within musculoskeletal physical therapy: A case report. *Physiotherapy Theory and Practice*, 38(13), pp. 3169–3179. DOI: <https://doi.org/10.1080/09593985.2021.1941457>
- Wright, G. W., & Park, S. (2022). The effects of flipped classrooms on K-16 students' science and math achievement: A systematic review. *Studies in Science Education*, 58(1), pp. 95–136. <https://doi.org/10.1080/03057267.2021.1933354>
- Yeh, Y. C. (2022). Student satisfaction with audio-visual flipped classroom learning: A mixed-methods study. *International Journal of Environmental Research and Public Health*, 19(3), p. 1053. DOI: <https://doi.org/10.3390/ijerph19031053>
- Yılmaz, F. G. K. (2021). 'An investigation into the role of course satisfaction on students' engagement and motivation in a mobile-assisted learning management system support flipped classroom', *Technology, Pedagogy and Education*, 31(1). DOI: <https://doi.org/10.1080/1475939X.2021.1940257>
- Zainuddin, & Halili, S. H. (2016). Flipped classroom research and trends from different fields of study. *The International Review of Research in Open and Distributed Learning*, 17(3), pp. 313–340.