

USING FLIPPED CLASSROOM TO FACILITATE COOPERATIVE LEARNING IMPLEMENTATION: AN ACTION RESEARCH CASE STUDY WITH PHOTOVOICE

Keywords

*Flipped classroom, cooperative learning, action research,
case study, photovoice*

Abstract

Implementing cooperative learning in the Initial Teacher Training program may be challenging yet rewarding. Using a flipped classroom to facilitate cooperative learning implementation showed positive outcomes for teachers and students. This study aimed to develop a model for cooperative learning implementation in a Romanian university for two classes of Pedagogy of preschool and primary school academic program. A mixed intra-paradigm research design of case study, action research, and photovoice was used to facilitate the implementation and model development. From the seven components of the CoLearnITT process model, in the present study is presented the flipped classroom component. Data collection methods, participants, and results are presented by

the two cycles of action research. The study presents also the process used in developing the model, which took place in three phases planning, performing, and perfecting, during two different school years. The results showed that a flipped classroom successfully facilitates cooperative learning implementation with positive results.

1. Review of literature

In a changing world, education practices need improvement and a fast capacity for adjusting actions to overcome challenges and disruptions. In this era, using technology to support teaching and learning may bring unexpected results by fulfilling the needs of teachers, students, and even the needs of the educational system. By looking at the actual challenge of shifting teaching, in a short time, from the classroom to the online classroom due to the Covid-19 pandemic, we can better see the importance of training students in their initial training for the teaching profession. Therefore, implementing new teaching practices that fit the needs of the students and better prepare them for professional life seems to be the way for success. The initial teacher training (ITT) is the time for such instruction of students in their preparation for being effective teachers. At the same time, actively involving students in the classroom through cooperative learning (CL) and interactive teaching is a challenging process due to the lack of time for in-class interaction. The use of technology may overcome this challenge. As the outcomes of such practices are rewarding, the educators should aim to get familiarized with tools such as flipped classrooms for supporting CL implementation in the ITT.

Flipped Classroom

A flipped classroom is about switching class activities with homework. That means that students read at home a specific

material, or they watch a video about new content, getting familiarized with the content (Willis, 2017). Before coming to class, they complete an assignment based on that material. As a result, in-class activities can be designed for expanding the content, for digging deep into it, making it more meaningful for learners (Gaikwad, 2013), for collaboratively solving problems, and allowing for practical application of the theory (Reidsema, Hadgraft, Lidia, & Hadgraft, 2017). A flipped classroom is an element important when using CL, having the potential of creating an engaging learning environment for students (Bates, Almekdash, & Gilchrest-Dunnam, 2017; Kavanagh, Reidsema, McCredden, & Smith, 2017). It consists of having students explore the low-level content (Bergmann & Sams, 2014) or theoretical content before class (Willis, 2017) and the difficult content in the classroom. In higher education, students are typically independent learners. Therefore, by designing pre-class readings and assignments, the in-class interaction is extended (Shaykina & Minin, 2018), and the level of knowledge increased (Kavanagh et al., 2017). As a result, practical applications occur in the classroom.

A flipped classroom is a significant element for a good drawing up of the pre-class activities (Willis, 2017). Besides all the preparation teachers do for planning activities, preparing materials, and giving feedback, flipping the classroom requires additional forethought. It may look like a challenging process (Hsieh, 2017), yet rewarding.

Structuring the reading material by units and preparing assignments for each unit help students learn better. Also, the learning management system used may impact the learning effectiveness. Content organization, as well as how teachers assess pre-class assignments and how they offer expert feedback, are parts of the planning step. In such a learning environment, teachers may act according to the motto: Teacher ready, materials ready, classroom-ready, that's the remedy!

There is a structured way of planning for a flipped classroom by deciding on distinct learning objectives, choosing and dividing the material, and organizing class interaction (Hsieh, 2017). In delivering and assessing within a flipped classroom, three aspects must be addressed: the educational platform, the content organization, and the planned assessments (Zappe & Litzinger, 2017).

Educational platform. Teaching in a 21st-century class requires the use of technology both for face-to-face and for online activities (Richter, Hale, & Archambault, 2018), especially when flipping the classroom (Crawford & Senecal, 2017). Teachers must implement it in their teaching to effectively address students' needs and learning styles (Al-Abdeli, 2017). With regards to the educational platform used when flipping the classroom, teachers need to take into account several criteria. For instance, teachers must know what the recommendations of the school are regarding the platform to use (McGrath, Groessler, Fink, Reidsema, & Kavanagh, 2017). What do teachers consider suitable for their classes, which learning management system best fits the students' technological skills, and which platform is user-friendly (Willis, 2017) are aspects that should be also addressed. Teachers may have additional criteria, according to the format of their classes. Hence, it can be a back-and-forth process until the most suitable platform is found.

Content organization. In a flipped classroom, systematizing content is valuable. It is the art of the teacher to design learning materials and to bridge pre-class and in-class activities (Crawford & Senecal, 2017). An essential aspect of content organization is chunking the material to be explored (Hsieh, 2017). According to Marzano (2017), the length of the chunked content differs according to its difficulty and the familiarity of the student with the new topic. When the content is problematic and unknown, the designed unit is smaller and vice versa. Teachers have the responsibility to decide what to include or not to include in the

class content. It may have an audial or visual format (Hsieh, 2017), based on the students' needs (Willis, 2017). That may help students with their respective learning styles.

Assessment. After exploring the designed reading, audio, or video material, which may be prepared by the teacher or already made (Crawford & Senecal, 2017), for assessing students' understanding, a short assignment can be prepared. That assures the teacher that before coming to class, students read or carefully watch the content. Addressing appropriate questions from the explored material is a method to assess their learning and understanding (Bergmann & Sams, 2014). Therefore, teachers must formulate questions that activate higher levels of thinking, based on Blooms' taxonomy (Bloom, 1956). When teachers are focusing on the last three superior levels (analysis, synthesis, evaluation), then the lower levels (knowledge, comprehension, application) are involved. When the objectives are aligned toward analysis, synthesis, and evaluation, better outcomes result. It can be emphasized that formative evaluation has an important role when flipping the classroom (Hsieh, 2017), even if the summative evaluation still has its place and part. As the content is organized in chunks of different lengths and levels of difficulty, the teacher's feedback must come for each assignment to improve students' learning. In the beginning, it may be challenging for teachers, but it has efficiency for students' learning and teachers' teaching (Zappe & Litzinger, 2017). Teachers may also make use of online quizzes (Crawford & Senecal, 2017), synchronously, or asynchronously.

Cooperative Learning

Cooperative learning is not just a kind of interaction. It refers to organize students in small groups and to their working "together to maximize everyone's learning. Within CL groups, students discuss the material to be learned with one another, help one another to understand it, and encourage one another to work

hard” (Johnson & Johnson, 2014, p. 481). Gaikwad (1991) defined CL as organizing learning in groups of two to five students, motivating students, increasing learning outcomes, strengthening relationships among students, and improving students’ needs for belongingness. Students do not focus only on their learning but also on the other colleagues learning (Sharan, 2010; Slavin, 2014a). CL has five core characteristics, based on its proponents, Johnson and Johnson (2018).

Positive interdependence. It focuses on group members achieving a goal, fulfilling specific tasks, and setting up the group and individual roles (Johnson & Johnson, 2018). Within the group, there is interdependence regarding goals, roles, resources, and rewards. Hence, teachers must carefully approach this characteristic looking for strategies that facilitate the contribution of each individual for the common good of the group.

Individual accountability. Through individual accountability students work and learn in groups to become powerful as individuals (Johnson, Johnson, & Smith, 2014). Students must know that their contribution within-group affects positively or negatively the entire group. As a result, personal responsibility increases. There is shared support for increasing the level of positive interdependence among group members (Kagan, 2014). However, when individual accountability is not implemented appropriately, some students can contribute less to the group goals achievement (Johnson & Johnson, 2018; Slavin, 2014b).

Promotive interaction. Within their respective groups, the students are arranged so that interaction can take place at any required moment. In organizing each learning activity, teachers intentionally plan for reciprocal help, assistance, encouragement, and teaching (Johnson & Johnson, 2018). Interactive activities promote students’ face-to-face interaction and occur whenever students assist other group members in learning. It takes place also when students share resources, when they give constructive feedback, when they challenge each other for a deeper

understanding, or when they work to achieve group goals (Johnson et al., 2014). As a result, reciprocal acceptance can take place, developing students' ability to work efficiently in different types of groups (Calloway-Thomas, Arasaratnam-Smith, & Dearthoff, 2017). To promote positive interaction among participants, the teachers need to present each task and each objective.

Social skills. The involvement of students in active work develops their social skills. Within their groups, they not only learn to communicate but also to lead, to trust each other, to manage a conflict, or to make decisions (Johnson & Johnson, 2018). Through active participation in groups, their social skills are improved (Kagan, 2014). By using class-building and group-building activities such as corners, people hunt, class bar graphs, and others, students get to know each other (Kagan & Kagan, 2009). That leads them to be open to collaboration within their respective groups.

Group processing. An intentional reflection on the group's weaknesses and strengths may lead to individual and group growth. Students are required to identify what was useful or not within their group work (Johnson & Johnson, 2018). As such, they must decide what they will continue or discontinue to practice. It is a valuable reflection on how an individual's contribution within a group leads to metacognition (Marzano, 2017). By observing how students contribute to their group work, teachers may decide what structures to apply for assessing group processing. The teaching structures such as turn-to-your-neighbor and think-square/pair-share may help students reflect on what was learned and how it was learned (Green & Henriquez-Green, 2008). Additionally, teachers can opt for students' reflective journals as well as for post-teaching reflective journals after the micro-teaching sessions.

In the present study, the CoLearnITT (Cooperative Learning for Initial Teacher Training) process model was designed as a guideline for teachers in implementing CL for education students during their initial training. It started as a single class CL implementation and was developed into a training model of CL

implementation for two classes of the ITT program. It is a response to the felt need of teachers to be trained in implementing CL and to have a guide for putting CL into practice.

The components of the CoLearnITT process model developed based on this study are (a) training model, (b) flipped classroom, (c) classroom management, (d) dimensions of learning, (e) interactive lecturing, (f) mastery learning, and the last (g) integration of faith and learning. CoLearnITT is flexible regarding the chosen strategies, structures, and techniques. However, the core components need to be used for a successful implementation of CL. Figure 2 presents the seven core components of CL implementation.

The CoLearnITT process model may be implemented step-by-step, adapting its components to the course objectives and the students' needs. Its components need to be mastered by the teachers by using the model in their classrooms. The three steps of planning, performing, and perfecting (see Figure 1) facilitates the implementation of CL. A flipped classroom plays a significant role as a platform for making room for more in-class interaction. This study presents the contribution of the flipped classroom in the process of CL implementation.

2. Methodology

This study used a qualitative research methodology with a mixed intra-paradigm research design of action research, case study, and photovoice. This section presents each step of the inquiry, in detail, for helping researchers who want to replicate it and assuring in this way the transferability of it.

Purpose of the Study

The purpose of this study was to explore the teaching practices in a Romanian university and to propose a process model to improve teaching by implementing CL. Further, the study aimed

to train the student participants in using CL in teaching. Additionally, the study explored teachers' and students' experiences during and after the implementation of CL. Furthermore, it showed how flipped classroom was organized and how facilitated the implementation of CL in the ITT program.

Research Questions

The following questions guided this study:

1. What were the teaching practices in the selected university before the implementation of cooperative learning?
2. What recommendations can be made to improve the prevalent teaching methods in the selected university?
3. What does the implementation of cooperative learning methods in selected classrooms look like?
4. What are the outcomes of the cooperative learning implementation in the selected university?
5. What are the challenges and the coping strategies encountered in the implementation of cooperative learning by the selected participants?
6. What model is recommended to support the use of cooperative learning at the selected university?

Research Gap

In Romania, the university teachers mainly use traditional teaching style (Presadă & Badea, 2014) even though modern and interactive teaching is highly recommended (Voinea, 2019). Thus, there is a need to improve teaching for effective learning (Kitchen et al., 2017). Moreover, the future teachers are not well trained for teaching interactively even if they appreciate “interactive teaching strategies, suitable personal characteristics of teachers and a good teacher-student relationship” (Peculea & Peculea, 2017, p. 70). Therefore, university students should be trained to teach by using a diversity of interactive teaching methods. Even though modern

teaching methods and CL are presented in published Romanian education literature (Dumitrana, 2008; Popa & Laurian, 2007), there is no process model for training future teachers to implement interactive teaching strategies and CL.

Research Design

This qualitative research study used an intra-paradigm mixed methodology of action research, case study, and photovoice. According to O'Reilly and Kiyimba (2015), a mixed intra-paradigm qualitative methodology refers to the use of two or more qualitative research designs in the same study. In the present study, this was the choice as the action research design offered a framework, a systematic cyclical model to implement CL in the selected university. Through the case study design, the experiences of the participants were explored before, during, and after the process of the CL implementation. Photovoice helped to disseminate the results of the study, informing the policymakers of the selected university how the implementation of CL took place.

Action Research. According to Sagor (2011), action research is “any investigation conducted by the person or the people empowered to take action concerning their own actions, for the purpose of improving their future actions” (p. 5). It has two types: practical action research and participatory action research (Clark & Creswell, 2015). Regarding the practical action research, the type of AR used in this study, Creswell (2012) says that “of all of the research designs, action research is the most applied, practical design” (p. 576). Its main goal is change and improvement in practices, developing solutions for practical problems (Clark & Creswell, 2015; Creswell, 2012; Merriam & Tisdell, 2016; Thomas, 2017) and to “generate living theories about how learning has improved practice” (McNiff & Whitehead, 2006, p. 13). Therefore, action research helps practitioners who are interested in improving their practice.

Case Study. In this study, I used an embedded single-case research design. According to Merriam (1988), a case study “is an examination of a specific phenomenon such as a program, an event, a person, a process, an institution, or a social group” (p. 9). Additionally, a case study is “an in-depth description and analysis of a bounded system” (Merriam, 2009, p. 40), explored “within its real-life context” (Yin, 2003, p. 13). A phenomenon is a case only if it is bounded, meaning that it has limited data, participants, and time for observation (Merriam & Tisdell, 2016). In this study, the case is CL, and the bounded system is formed by the two classes of Pedagogy of preschool and primary education (PPPE) academic program explored for one semester in the second cycle, thus having limited participants, data, and time for implementation.

Photovoice. In addition to the case study and action research designs, the present study used the photovoice approach. It is a design used to generate change. It is a relatively new option for researchers who aim to create a proper environment for improvements in which participants share stories by using photos. Wang and Burris (1997), the proponents of the term “photovoice,” state that it has three goals: (a) to record and reflect the positive and the negative aspects of a community, (b) to provoke discussions on community concerns, and (c) to prepare a way for policymakers to solve community issues. It was developed based upon the Empowerment Education framework (Freire, 1993), also used in this study, and it comes to add value to the PAR through its model for individual, institutional, and social change (Wallerstein & Bernstein, 1988).

Data Collection Methods

For the first cycle, during the preliminary phase of data collection, the focus was to present the university teaching practices before CL’s implementation and ask for recommendations for improving the teaching process. Data were collected through (a) FGD with four students enrolled in the class

involved in the study (two students from PPPE and two from Social work), (b) document analysis (syllabus of the class), (c) researcher's field notes, and (d) literature.

For the first cycle of action research, the final phase, the goal of data collection was to show how the implementation of CL was experienced by the participants and to propose a process model for improving teaching. Therefore, for the final phase data were collected through (a) eight in-depth interviews (four students from PPPE and four students from Social work), (b) observations (six occasions in the selected class), and (c) document analysis (students' reflective journals).

For the second cycle, the data collection sources were multiple, and to have a visual presentation of data collection methods, it was developed a triangulation matrix (Table 1). The research questions are presented here to show what data have been collected to respond to each research question. The triangulation matrix is used also to ensure the trustworthiness of the study.

Research Participants

The participants are presented by the phases of the two cycles. In the first cycle of action research, in the initial phase, from the 52 students, 12 were registered as regular students. Four of them participated in a Focus Group Discussion (FGD)—two from PPPE and two from Social work. In the final phase, after CL was implemented, eight students were selected for interviews, four from PPPE and four from Social work.

For the second cycle, the study had three groups of participants: students, faculty, and specialists. For the preliminary phase, the participants were (a) 25 students and 17 faculty who responded to the online questionnaire; (b) six students who participated in phase I of photovoice (three students from PPPE 2 and three students from PPPE 3); (c) one teacher who accepted to have an interview in the form of written communication (she

mentioned in the course outline that she used CL in a class); and (d) two specialists, authors of publications about CL.

For the final phase, the 49 students who enrolled in the PPPE academic program were involved in the study. All of them had the opportunity to experience the implementation of CL as they were students in the two classes. However, not all were selected for data collection. The following participated during this phase: (a) two faculty teaching the PPPE specialization—the teacher-researcher taught a course for PPPE 2, and the second teacher taught for PPPE 3, both implementing CL in the two selected classes; (b) nine students participated in FGD (six from PPPE 3 and three from PPPE 2); (c) six students who participated in photovoice phase II; and (d) one specialist, author of several publications in CL, books, and articles (professor from a public university in the Western part of Romania). The latter accepted to respond to several questions through written communication.

Trustworthiness and Ethical Consideration

The trustworthiness of this qualitative study was ensured for credibility by developing a triangulation matrix (Table 1) and using a member check. Transferability was assured through a detailed description so that the research can be replicated. Confirmability was accomplished by linking the findings to other studies. The study was approved by the Ethical Research Board committee of the institution of higher education where the researcher was studying and the selected participating university. The participants agreed to be part of this study and signed the informed consent form, which contained all the necessary information about this study. They received pseudonyms so that confidentiality was guaranteed.

3. Results

The findings of this study are presented also by the two cycles of action research. This modality of presentation helps the reader create a clearer image of the CL implementation process during two school years (2017/2018 and 2018/2019). It may also assist those interested in applying the study in their context, adjusting it to the specific format of their environment.

First Cycle

In the initial phase of the first cycle of AR, the goal was to depict how students perceived teaching in the selected university. Before implementing new practices, it was of value to know what the participants were experiencing regarding the actual teaching methods used at the university. The participants emphasized lecture as a dominant method of teaching and sporadic use of brainstorming, class presentations, and group portfolio. They also mentioned the importance of class relationships, as they experimented with both supportive and open relationships as well as unsupportive relationships with some professors. In their recommendations, the participants highlighted the need for different teaching methods and expressed their dream for positive relationships. They gave prominence to the use of interactive teaching, giving responsibilities to students, and improving teacher-student and student-student relationships through different interactive activities.

Based on the data from the initial phase of the first cycle of action research, it was developed an action plan for CL implementation. The plan was divided into three main phases: planning (pre-class activities), performing (in-class activities), and perfecting (post-class activities).

As regards the planning of pre-class activities, the teacher organized the flipped classroom. In a flipped classroom, students explore the materials before coming to class. The belief is that this

will help them be ready to explore more deeply the topic under discussion. As a result, students had weekly reading material. For each unit, after reading the assigned material, students responded to teacher questions—an assignment based on the material they read. The teaching materials, activities, and lesson plans have been organized before class.

In-class learning activities were practiced under the CL model. Based on the participants' recommendations, it was included in the performing phase several elements. First, CL was used as the class format. Then, a variety of interactive strategies were chosen to assure the active participation of students, such as jigsaw, random call, think-square-share, think-pair-share, KWL, mix-and-match, corners, numbered heads together, Venn diagram. The class was organized into groups wherein students had roles and responsibilities.

Student reflective journals were used as a post-class activity to help them reflect on their learning, to evaluate themselves, the group, and the teacher. Additionally, journals facilitated a different way to communicate with the teacher by giving and receiving feedback throughout the learning process.

The action plan was implemented for a period of eight weeks, April–May 2018, in the selected class. For each class session, the three main phases were used: planning, performing, and perfecting. After implementing the CL process model in the selected class, the results revealed positive academic experiences from the participant students. In the data analysis, the participants mentioned that there was effective teaching, with constructive classroom management and positive outcomes. The participants appreciated CL strategies considering them worthwhile for their learning, as they supported each other during class activities, solved problems, and worked in groups having specific roles.

Flipping the classroom had a positive influence by making room for class interactions and in-depth exploration of the content. Weekly assignments were considered very useful for the

systematic development of knowledge and skills. Adriana stated, “the assignments were not like those of the other courses when you should learn only for the final exam. Here we had them every week. This helped me” (Folder 1, IDI, Adriana, p. 1). Andra said, “I did my assignments on time, and they had a continuity. The professional skills do not develop in one week but need time to be learned, to try to see if the idea is good and if it is working” (Folder 1, IDI, Andra, p. 2).

The student-participants acknowledged the positive outcomes of CL, such as awakening attention, improving communication, developing critical thinking, developing decision-making skills, assuring long-term retention, and helping them apply knowledge and skills.

As the purpose of the first cycle was to develop a model to implement CL and interactive teaching in the selected university, the participants made recommendations for improving the resulted model. Based on the data collected, it was developed a future action plan for implementation (see Figure 1). The new proposed process model suggests extending CL to other classes, diversifying the group types and the teaching methods for better assisting students in their learning. Micro-teaching sessions were recommended for successfully assuring the transfer of knowledge from the classroom to the workplace.

Second Cycle

As the plan developed at the end of the first cycle, was to gradually extend the implementation of this process model to other classes, it was important to understand how the faculty and the students from the selected university perceive teaching there and to discover their recommendations for improving the teaching methods.

The initial phase of the second cycle was organized to respond to the first two research questions and to cover the planning phase of this second cycle. The traditional methods were

mentioned with the lecture as a dominant method but blended in some cases with active learning and activities by groups. A number of the strategies, structures, and techniques used in the first cycle were mentioned as taking place in some classes. The recommendations were related to teaching by employing different teaching methods, to help participants to be well prepared for the teaching profession. A faculty-participant mentioned that: “My class would allow students to experiment with some of the taught methods. However, the time does not allow it” (Folder 2, FQ). To overcome this challenge, a flipped classroom was applied in the two selected classes.

The technology was recommended for enhancing students learning, as technological tools are appreciable support when using flipped classrooms. Several faculty-participants suggested the use of “methods which involve a lot of technology” as well as video materials and multimedia presentations (Folder 2, FQ). For students, technology may serve not only for in-class activities:

We can keep the laptop, and the interactive work from the class can be transferred [also] in the online environment (Google Classroom, YouTube, Skype). As students, we can give solutions to improve the old teaching methods. (Folder 2, PV. 1, Photo #17, Silence. . .)

In this phase of the study, the specialists-participants call attention to the need of being aware of the strengths and weaknesses of CL. By apprehending the strengths teacher may emphasize them in the class activities, as well as knowing the weaknesses may help find solutions to overcome them.

In the final phase, the process model of CL implementation was improved through a comprehensive understanding of how teaching was perceived in the selected university. As a result, the proposed process model from the first cycle was developed based on the findings of the initial phase, and it was implemented in the two selected classes. The performing step for this action research helped to answer Research Questions 3 to 5. After implementing

the CL process model in the selected classes, the participants brought to the fore the features of this implementation: effective classroom management by flipping the class, creating a positive classroom climate with students' positive attitudes, teacher enhanced involvement when expressed positive expectations, and when intentionally planned class interactions. As the focus of this study is on the flipped classroom component from the CoLearnITT model, details from data are presented from this perspective.

Using a flipped classroom may be considered timesaving in CL; thus, overcoming the challenge of finding time for in-class interactions. As stated before, students were brought into contact with the content of a particular topic before coming to class. That means that the learning activities were organized interactively in-class to extend students' knowledge. Alexia stated,

Besides this systematization of information, in a flipped classroom—you read, you get informed, you get familiarized with the information and the content of the next class—but more than that, in class or during the class you manage to dig deeper because it is possible. Otherwise, you stay on that superficial level because you have to bring that information first to go deeper after. (Folder 2, FGD II, Alexia, p. 5, ls. 199–203)

Flipped classroom brought responsibility. Maria felt responsible for doing her assignments on time and for teaching others in the class. She learned that this is an opportunity for helping non-regular students, who took the course together with them, better understand the topic of a lesson:

We were the ones who, practically the representatives, those who prepared their assignment by reading the material designated for that day, we helped them [non-regular students] understand what our lesson was all about. (Folder 2, FGD I, Maria, p. 3, ls. 132–134)

For faculty, flipped classrooms involved more work and better organization. The reading materials and assignments for each unit were posted on the web-based chosen platform, in this case, Google Classroom. All tasks were designed and related to enabling students' learning:

Using the flipped classroom, they had to read a lecture and answer some questions and then upload that document to the platform I used. So, I had to prepare questions for each one of these lectures, and then I had to prepare, think of review questions for the class that had to be connected somehow with the assignment at home; and work with what I was planning to teach or I thought the previous class occasion. (Folder 2, IDI. F1, p. 5, ls. 241–245)

A flipped classroom facilitated students' academic attainment as learning is not happening only in the classroom. Note that flipped classrooms contributed to the students' academic preparation, as they had pre-class activities to fulfil before coming to class. As academic preparation is essential for any teacher, in the present study, the pre-class readings were blended with in-class interaction. At the beginning of each class, the teacher evaluated the students' understanding of the content explored by readings: "The review of the reading was realized through graffiti. It assured positive interdependence as students worked for the group goal" (Folder 2, Ob. R., April 17). Livia appreciated reading the lecture before coming to class: "These methods helped me very much. By the fact that, for example, I went to the class knowing a small part of the lesson, with the other part being presented to us, it helped me" (Folder 2, FGD II, Livia, p. 5, ls. 215–216). Students emphasized this blended individual and group learning:

I am thinking that individual learning and cooperative learning were very well combined. When you have learned at home, it was individual learning, and you were learning in your rhythm or like you were used to learning, and in class, you could check whether you understood. (Folder 2, FGD II, Amalia, p. 5, ls. 207–210)

When the content is divided into units and students explore it systematically, the learning is the responsibility of both teachers and students. Teachers are responsible for planning and preparing in a sequential way the content and the manner of delivering it. Students become responsible for learning on time:

I had to prepare questions for each lecture so, using a flipped classroom they had to read a lecture and answer some questions, and

then upload that document to the platform I used. (Folder 2, IDI, F1, p. 5, ls. 240)

The fact that the assigned material was divided for each week and it was not all received at the end, it helped us very much. It made us responsible in a way, and it made us aware, seeing the positive results made us aware that it is good to do this thing, to learn systematically and on time. (Folder 2, FGD II, Georgiana, p. 5, ls. 191–195)

In their recommendations, participants mentioned some references to the role of the flipped classroom in implementing CL and interactive teaching. The flipped classroom was recommended as an effective tool teacher could use to support CL implementation in the classroom:

I would encourage everybody to find ways of doing that and start with flipping the classroom to create a space during class time for discussions and meaningful group work. The best way is to experience it, to see how it works, and if it's not possible to experience it, at least we have somebody who experienced it and he's very motivated to explain it to you, to show you, to help you understand. (Folder 2, IDI, F1, p. 9, ls. 430–435)

The process model, with its three phases, remained as a framework for the CL implementation (Fig. 1). It provides the tool for organizing, applying, and evaluating the process of change in any classroom, regarding teaching methods.

Based on the findings of this study and its positive outcomes, flipped classrooms demonstrated that supports the successful implementation of CL, together with the other elements, resulted after CL implementation. Therefore, the flipped classroom continues to be one of the seven components of the CoLearnITT process model (Figure 2).

4. Discussions

A flipped classroom has satisfying outcomes when properly used in higher education. The findings of the present study showed that a flipped classroom facilitates class interactions as the learning

content is explored before the class. It is also timesaving for teachers who want to implement CL in their classes, and showed effectiveness in students' learning, using technology as a powerful tool.

CL showed positive results in both teaching and learning (Tadesse & Gillies, 2015). Knowing this information should motivate teachers to improve teaching and student learning (Willis, 2017). In choosing their teaching methods, the teachers must employ a flexible approach (Ashton & Stone, 2018), mostly when modern methods are implemented within traditional environments. They may combine the teaching strategies, structures, and techniques so that the learning objectives are achieved, and student learning occurs (Barkley & Major, 2018).

Saving Time for In-class Interaction

Students need to be well prepared for the teaching profession. Thus, they need to be exposed to modern strategies in their training. Teachers must promote practical applications of those modern strategies (Peculea & Peculea, 2017) to facilitate students' teaching skills development. As displayed, the time issue can be efficiently addressed by using the flipped classroom model (Shaykina & Minin, 2018), leading to positive reactions from students (Willis, 2017). Teachers must be trained in learning what it is and how to use a flipped classroom.

A flipped classroom is beneficial when using CL. In higher education, students may be considered independent learners. By inverting the class and designing pre-class readings and assignments, the in-class interactions increase, and practical applications take place (Shaykina & Minin, 2018). Systematizing content for a flipped classroom is also valuable. It is the responsibility of the teacher to artfully design materials (Ozdamli & Asiksoy, 2016) and to bridge pre-class and in-class activities (Crawford & Senecal, 2017). As such, curriculum design is involved, with teachers deciding what to include and what not to use within

the class content (Hsieh, 2017). There is recommended a structured way of delivering the content and assessing learning in a flipped classroom (Zappe & Litzinger, 2017), as the findings of this study showed.

Academic Preparation

Pre-class individual readings assure the necessary time for in-class CL activities. However, as Crawford and Senecal (2017) stated, teachers must ensure that pre-class content is explored before students come to class. Through the use of pre-class assignments (Apedoe et al., 2017) and in-class reviewing activities, the teacher motivated students to complete their pre-class requirements. That is in line with what Bergmann and Sams (2014) recommended as a solution for assessing students. They found that using formative and summative assessments as valuable in assessing students' mastery of the content. Dividing the course material into sequential units is another method to enhance learning and teaching (Hsieh, 2017). The student participants experienced positive outcomes, as well as other students who mastered content chunked in learnable sequences (Marzano, 2017).

Technology

Teaching in a 21st-century class requires the use of technology both in face-to-face and in online activities (Richter et al., 2018). Students are actively engaged in online activities and social media in their daily practices. Using technology thus matches their way of being active in the online space (Herlo, 2015). Based on students' skills, technology must be used for learning purposes (Tudor, 2016). Usually, teachers use electronic presentations and videos to enhance students learning (Siefert, Kelly, Yearta, & Oliveira, 2019) and other technological tools to help students go deeper into a topic. This practice exerts a positive influence on teaching and learning. Therefore, teachers need to be aware of the strengths and challenges of using technology in the classroom

(Willis, 2017). The recommendation is to use technology in both online and face-to-face environments (Redes, 2016) to facilitate students' interaction in synchronous and asynchronous learning activities.

5. Conclusions

In a changing world, education practices also need change and improvement. Therefore, implementing new teaching practices that fit the needs of the students and better prepare them for professional life seems to be the way for success. The initial teacher training is the time for such instruction of students in their preparation for being effective teachers. At the same time, actively involving students in the classroom is a challenging process yet rewarding. Flipped classrooms revealed positive results when applying it to facilitate in-class interactions. This study showed how flipped classroom supported the implementation of cooperative learning and interactive teaching, preparing students for academic and professional life and familiarize them with using technology for educational and professional purposes.

As the study was conducted in one university, the findings cannot be generalizable. However, the goal of qualitative research is not to generalize but to transfer the results to other environments. That is in the readers' hand, and it was assured thought the tick description of the methodology and the model developed.

For further studies, the first recommendation is to apply the CoLearnITT model in the ITT program. The second recommendation is to use a flipped classroom not only for making room for CL and in-class interaction but also for using technology to create audio/video learning materials, as well as formative/summative online quizzes and evaluating synchronous/asynchronous activities.

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Tables, figures and appendices

Table 1. Triangulation Matrix for Data Collection

Phase	Initial		RQ1: What are the teaching practices in the selected university before the implementation of cooperative learning?						
			RQ2: What recommendations can be made to improve the prevalent teaching methods in the selected university?						
	Data Source 1	Data Source 2	Data Source 3	Data Source 4	Data Source 5	Data Source 6	Data Source 7	Data Source 8	
Q1	-	-	-	Document analysis (Syllabi)	Survey (Faculty & Students)	Survey (Students)	Photo	-	
Q2	-	-	-	Document analysis (Syllabi)	Survey (Faculty & Students)	Survey (Students)	Photo	Literature on effective teaching	
Final Phase	Final		RQ3: What does the implementation of cooperative learning methods in selected classrooms look like?						
			RQ4: What are the outcomes of the cooperative learning implementation in the selected university?						
	Data Source 1	Data Source 2	Data Source 3	Data Source 4	Data Source 5	Data Source 6	Data Source 7	Data Source 8	
Q3	Focus-group interview (Students)	Focus-depth interview (Faculty)	Observation (Class)	Document analysis (SRJ; PTRJ)	Survey (Students)	Survey (Students)	Photo	Literature on CL strategies	
Q4	Focus-group interview (Students)	Focus-depth interview (Faculty)	Observation (Class)	Document analysis (SRJ; PTRJ)	Survey (Students)	Survey (Students)	Photo	Literature on CL results	

Q5	ocus- group interview (Students)	F n-depth interview (Faculty)	I bservation (Class)	O ocument analysis (SRJ; PTRJ)	-	Photo II (Students)	Lit. on challenges in CL
Q6	ocus- group interview (Students)	F n-depth interview (Faculty)	I	O ocument analysis (SRJ; PTRJ)	-	Photo II (Students)	Lit on improving CL

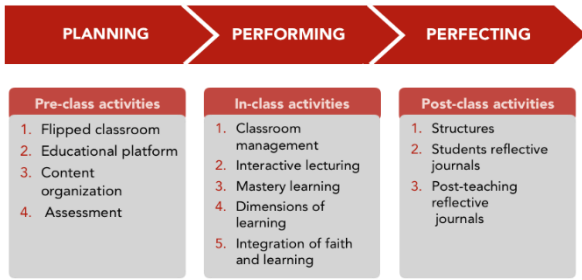


Figure 1. The 3Ps of the process of CL implementation.

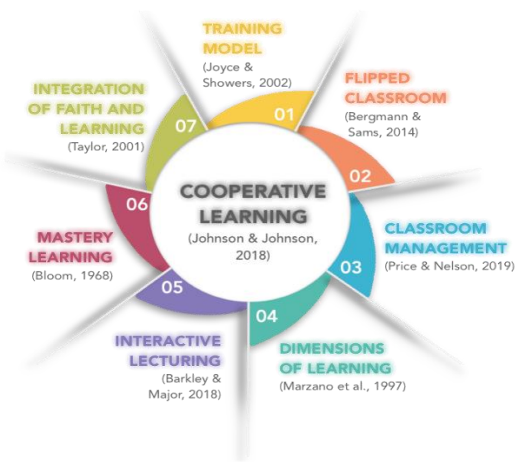


Figure 2. The CoLearnITT process model