

FLIPPED CLASSROOM AS AN INNOVATIVE METHODOLOGY IN SCHOOL ORGANIZATION: ORIENTATIONS IN PRIMARY EDUCATION

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Abstract: This article aims to serve as a didactic resource for future teachers in Primary Education. The topic arises from the integration of new technologies, and the different face-to-face and online modalities. Therefore, we propose a new approach to education, from the didactic proposal of Flipped Classroom, which will revolve around environmental education and social and civic technologies. "Flipped Classroom" tries to invert the role of the teacher and the students in class, so that the students study the theoretical concepts outside the classroom with the support of audiovisual resources provided by the teachers, and the teachers use the class time for their students to do homework based on what they have learned at home. With the implementation of this project, the aim is to integrate ICT in the learning process to make it active and meaningful.

Keywords: flipped classroom, education, school organization, learning.

I. INTRODUCTION

This article created and oriented for the boys and girls who make up the student body of our center is based on how essential it is to have an education completed in both primary education and early childhood education, as these teachings try to develop and strengthen in the child habits and values that will serve them to have a proper functioning in society.

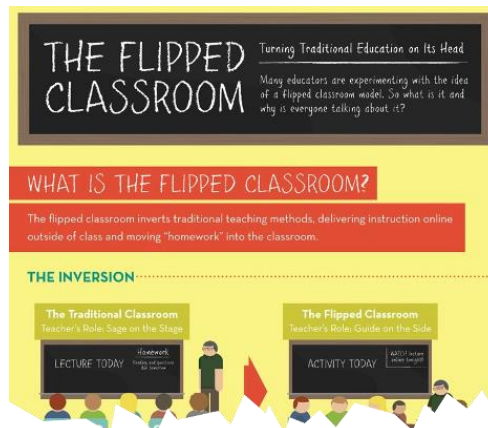
Therefore, we must seek an optimal development of the key competences since this will provide us, through the achievement of these, that our students develop and enhance their capacity and personal autonomy. The development and acquisition of all these aspects will be seen throughout their progress during the infant and primary school years until they reach compulsory secondary education (Akçayır & Akçayır, 2018).

It is important to keep in mind the current legislation on education so that the teacher has a key coordinating role along with the families that will serve to identify difficulties in the learning of students, if this occurs, immediate action should be taken taking the most appropriate and adequate decisions for the improvement of the student and his environment (Herreid & Schiller, 2013).

Our project will place special emphasis on an innovative methodology that is being very innovative in the field of education.

This is called: "Flipped Learning" is "a pedagogical approach in which direct instruction moves from the collective learning space to the individual learning space, and the resulting space is transformed into a dynamic and interactive learning environment in which the educator guides students as they apply concepts and can creatively participate in the subject matter" (Bergmann and Sams, 2014).

Figure 1. Definition of flipped classroom



Source: e-aprendizaje.es

From our innovation project we want to shed light on new technologies, which are experiencing a boom in current education due to advances in this area, through the flipped classroom. Flipped classroom makes the student the central object of the class giving importance to their work at home, which is based on tasks through research for the previous preparation of the student, which in class develops and exposes with the rest of the students. After this, the role of the teacher is relegated to being a mediator, guide and support for their students, which manages, provides and administers the necessary tools for the development of proper learning in students (Milman, 2012).

With this we want to respond to the participation and collaboration of the students, through "homework", they acquire the necessary knowledge and once in class they express this knowledge (Awidi & Paynter, 2019). The result of this is that the student has acquired and knowledge and that in this way it is much easier and more dynamic for them to learn and dynamic in their own learning.

This article works best when we involve new technologies and ICT, as they are increasingly used in primary education classrooms. Thanks to them, learning is much more interactive, and adapts to the needs of today's society, favoring the integral development of the student. In our educational center we integrate ICTs as a fundamental tool for the development of student learning. ICTs will work as external agents in our innovation project as a tool to investigate, discover, and develop learning, in this case related to the environment. Some of the technological resources that we can use in this project would be videos, Google, interactive activities, digital resources (such as the digital whiteboard)...

In order to have a more meaningful learning this methodology is ideal. It makes class time profitable because at home the student looks for information first and the next day in class, the teacher explains the key points where he sees that the student is more sluggish or not so clear.

This creates and provokes an active and not passive center in the class, leaving aside the traditional method we are used to seeing in the classroom. Thanks to this, our students will be able to develop creativity and critical thinking, thus favoring the integral development of the student. On the other hand, this method causes a personalized learning for the pace of the student, as you can perfectly see their shortcomings at the time they come to class, as long as they have previously done the required steps and assigned at home by the teacher (Mok, 2014).

Therefore Flipped Classroom, or also called inverted classroom, is a very good option to carry out in primary classes, as long as they are well supervised tasks that are sent home by parents, not being helped by them, but supervising that they get to do these tasks, because if these are not done at home, the methodology of the inverted classroom can not be carried out for lack of information (Gilboy, Heinerichs & Pazzaglia, 2015).

Regarding the information of our center, the C.E.I.P. Bolivar, consists of three lines per primary course (A, B and C), which are six courses (from 1st to 6th grade), and four lines for each infant course (Ducklings, Butterflies, Frogs and Lambs), which are three courses (from 1st to 3rd kindergarten).

As for the facilities, we have two buildings that correspond each one with Primary and Infant, a pavilion, and two outdoor courts, as well as a small orchard. In the Infant building we have 12 classrooms, as well as a small children's playroom, a teachers' room, a janitor's room and a multipurpose room. In the Primary building we have 18 classrooms,

in addition to a library, a teacher's room, a janitor's room, a secretary's room, the principal's office, a laboratory, a music room, a plastic arts room, a computer room, a multipurpose room, a nurse's room, and an assembly hall.

Relations with municipal, educational and family institutions are as follows. There is an AMPA within the center, it is an association formed by fathers and mothers who seek to be taken into account by the center as a representation of their children. The AMPA usually promotes educational activities for the improvement of the student body that comes from a good coordination and cooperation with the educational center in order to integrate the family institution in the school.

The school also helps and promotes the integration of the ACNEAE (Students with Specific Educational Support Needs), facilitating talks and activities with various associations close to our town that encourages the ACNEAE to integrate better within the social groups of class.

The educational plans in which our school participates are developed and focused on the educational plan of equality and the development of sports in school or the consumption of fruit and vegetables in our daily life as methods for the development of personal areas that will mark the highlights of our students' learning.

The pedagogical plans that our project will carry out have the following objectives:

- Knowledge is built from experience.
- Learning is a personal interpretation of the world.
- Learning is an active process in which meaning is developed on the basis of experience.
- Conceptual growth is embedded in the negotiation of meaning. The sharing of multiple perspectives and the modification of our own representations through collaborative learning.
- Learning should be placed on realistic agreements; testing should be integrated with tasks rather than separate activities.

The school is in a process of introducing alternative pedagogies, which raises the development of two new projects, the first: "INVOLVED", focuses on the adaptation of the school to the student at all levels, to put him in the front line, and let him be part of his education, and take the initiative to contribute to progress. The second, "SUSTAINABLE BEINGS", focuses on encouraging both the educational center and the student to take the initiative to contribute to progress.

The second, "SUSTAINABLE BEINGS", focuses on encouraging both in the school and in the daily life of the students, a correct sustainable development, to meet the needs of present generations, without negatively influencing future generations, so that they also share a well-developed world.

The school has 26 primary school teachers, including the director, deputy director and two heads of studies, three of whom have a specialization in mathematics, three in natural sciences, three in social sciences, three in Spanish language, two in physical education, two in plastic arts, two in music, three in foreign language (English), one in foreign language (French) and four in special education; and it has 12 teachers of infant education. There are also 10 non-teaching staff, including two secretaries, two janitors and six cleaners.

As for the socioeconomic level of the students of the center, it is around a medium/high level, since the center is located in one of the central neighborhoods of the city, and the families that compose it have mostly paid jobs with sufficient income.

As for the cultural level of the students, it is around a high level, due to a good family educational background.

This project is a challenge, since it is a little used methodology, although currently, due to the effects of the pandemic, it has been one of the most used techniques in the educational field. A benefit of this methodological strategy is that it gives the student a certain degree of autonomy and responsibility, even giving him the opportunity to inform himself, thanks to the research, discoveries, etc., that throughout the course he will be doing. that he/she carries out throughout the course.

II. OBJETIVES

A. *General Objective:*

To transfer the work of certain activities and learning processes outside the classroom, through the use of social and civic technologies, to take advantage of class time by enhancing other knowledge, related to Natural Science contents, in which the teacher can intervene by helping as a mediator.

B. *Specific Objectives:*

1. To promote a flexible environment in the teaching-learning process that allows the integration of technologies in the development of the subject of Natural Sciences.

2. To create in the students a learning culture, so that they develop their autonomy and interest in the educational process.
3. To develop students' interest in the environment that surrounds them.
4. Encourage students to lead an active and healthy life, respecting the ecosystem.
5. To know the positive and negative attitudes that we experience and that affect the ecosystem.
6. Identify the disadvantages of pollution in the flora and fauna of the ecosystem.
7. To know and become familiar with the objectives of sustainable development.
8. To develop in the students the desire to learn and to contrast the information they receive in a critical way, so that it affects their learning in a positive way.
9. To provide the knowledge and tools necessary for students to be able to participate in the development of their classes.

III. ACTIVITIES TO BE PERFORMED AND TIMETABLE

TABLE I: DETAILS

	DATE	N ^o SESSIO N	ACTIVITY	BRIEF DESCRIPTION	CONTENTS	ACTORS INVOLVED
INTRODUCTORY ACTIVITIES	10/01/2022	1	Video and questionnaire	VIDEO: https://youtu.be/MCKH5x8X-g During the class hour, a video will be shown about sustainable development as proposed by UNESCO, through which the students will have to obtain the knowledge to answer a questionnaire related to the subject.	Curiosity to make appropriate use of natural resources and energy sources in everyday life. CN.03.03., CN.03.04.	Students and teaching staff.
	18/04/2022		Video and questionnaire	VIDEO: https://youtu.be/RVnkkJaCuRg During the class hour, a video will be shown in which they will learn how to protect the biodiversity of our planet, as proposed by UNESCO, through which the students will have to obtain the knowledge to answer a questionnaire related to the subject.	Development of habits of respect and care for living beings and their habitat. CN.03.03., CN.03.04.	Students and teaching staff.
DEVELOPMENT ACTIVITIES	12/01/2022		Group work	Students will be divided into groups of five, and each group will be assigned one of these five sustainable development goals: 3. Health and well-being, 6. Clean water and sanitation, 7. They will have to look for information and produce a product to explain it later.	Curiosity to make appropriate use of natural resources and energy sources in everyday life. CN.03.03., CN.03.04., CN.03.04.	Students.
	24/01/2022		Parliamentary debate	Following the research done at home, the students will face a debate in two groups or "sides" generated in the classroom. By drawing lots, one group will work on finding and presenting information in favour of the views of environmental activist Greta Thunberg, and the other group will work on finding and presenting information in favour of the views of environmental activist Greta Thunberg.	Oral and written communication, using different media, of the process and the results obtained in the tasks and works carried out. CN.03.03., CN.03.04., CN.03.04.	Students and teaching staff.
				for finding and exposing information that contradicts the views of environmental activist Greta Thunberg.	Development of values of defence and recovery of the ecological balance. CN.03.03., CN.03.04.	
	2/02/2022		1-2-4 Activity	Starting with a text related to the recovery of the ecological balance and some questions related to the topic set out for reflection. Students will first evaluate the conclusions of the text individually, then in pairs and then in groups of four.	Oral and written communication, using different media, of the process and the results obtained in the tasks and works carried out. CN.03.03., CN.03.04., CN.03.04., CN.03.04. Development of values of defence and recovery of the ecological balance. CN.03.03., CN.03.04.	Students and teaching staff.
	20/04/2022		Group work	Students will be divided into groups of five, and each group will be assigned one of these five sustainable development goals: 13. Climate action, 14. They will have to look for information and produce a product to explain it later.	Development of habits of respect and care for living beings and their habitat. CN.03.03., CN.03.04.	Students.
	3-4/05/2022	8	Excursion into nature	There will be a three-day outing to a natural environment where different types of living beings can be observed in their natural habitat. Beforehand, the students will have to do a small research project in groups about the place they are going to visit. Once there, the pupils will be little broadcasters, film-makers, journalists and even interviewees, so that when they return home they can make a short documentary about the place they have visited.	Development of habits of respect and care for living beings and their habitat. CN.03.03., CN.03.04. Interest in direct observation of living beings with appropriate instruments (magnifying glasses, tweezers, etc.), microscope, etc.) and indirectly through the use of audiovisual and technological media. CN.03.03.,	Students and teaching staff responsible.

				to consider a way to maintain sustainable development, depending on the objective they have been given.	of the process and of the results obtained in the tasks and work performed. CN.03.03., CN.03.04.	
CLOSING ACTIVITIES	14/02/2022	5	The raffle	The topic covered during the first five sessions will be divided into 10 questions that will be explained to three students by drawing lots, using the knowledge they have gained through the previous sessions.	Curiosity to make appropriate use of natural resources and energy sources in everyday life. CN.03.03., CN.03.04.	Students and teaching staff.
	16/05/2022		Evaluation groups	The class will be divided into 6 groups. The first two groups will each come up with three questions from the topic to ask. They ask their questions to two other groups (the second ones), and two third groups will be in charge of evaluating the second ones using a very simple co-evaluation rubric: no answer, answer by reading the topic, answer without reading or answer without reading and providing personal opinions.	Development of habits of respect and care for living beings and their habitat. CN.03.03., CN.03.04.	Students.

III. FINANCIAL AND MATERIAL RESOURCES

For the development of this programme of activities, it is necessary to use materials and resources, which, to a certain extent, we can find in our centre, but it is also true that we would need some, and it is because of this that we need to know the budget available to the centre and the cost that these materials and resources would entail.

A. Human resources

In this section, we refer to the participation of families and entities outside the school environment, in order to be able to carry out certain previously programmed activities. In addition to family participation, we need monitors for some activities, such as the activity consisting of an excursion to visit the surroundings of a municipality.

B. Material resources

The materials we need for the above activities would be:

- Tablets/Laptops/Mobile phones
- Tables and chairs that can be moved around the classroom
- Paper and writing materials
- 5 video cameras

IV. EVALUATION

By way of introduction, for the evaluation of our project we will use formative evaluation, which consists of evaluating the students on a continuous basis, this can help in the planning or execution of the tasks or activities, and final evaluation, which consists of carrying out the evaluation at the end of the tasks, either using instruments such as short questions or a digital resource.

The proposed objectives of our innovation project have been achieved in a positive way, as the students have been able to solve the different activities proposed by themselves in a very beneficial way both for them and for the work of the teacher. Thanks to the fact that the teacher has been a guide, and not an authority figure, the pupils have acquired knowledge about responsibility and the development of activities or tasks in an autonomous way, which will be very beneficial for the not so distant future.

Referring to the different curricular elements planned in our innovation project, we consider that they have been totally adequate for the students who will carry out the previous activities based on the curricular elements, such as the objectives we want to achieve with this project, the contents we have chosen to carry out and put into practice our project and the evaluation criteria which we will comment on below.

We consider that our innovation project is suitable for the pupils, although we could also add to comment on possible improvements that we will use in the future, such as using techniques that develop more the creative and/or imaginative aspect of the pupils and reduce the use of different techniques related to a more theoretical field, with this we intend to develop more the practice which is more useful for their daily life and for the acquisition of new experiences. As in any project, there will always be things to change or update, with the intention of being able to take into account the needs of each of our students.

The instruments for formative evaluation will be observation notebooks, in which the teacher will observe the students during the development of the activity and will take notes on each of the components of the groups, in the case that the activity is done collectively and for the final evaluation, we will use a rubric, as we want to move away from the traditional method of doing a written exam, which can cause situations of stress or pressure on the students. Therefore, we will use it to evaluate in a general way all the activities and tasks carried out by them, especially taking into account their attitude both inside and outside the school environment.

An example of a rubric that could be used for this final evaluation, which will be carried out once all the activities have been completed, as an overall evaluation, would be as follows:

	WELL	REGULAR	IMPROVABLE
It has acquired the necessary knowledge from its own autonomy.			
He has worked with an active and participative attitude.			
Their interest has increased and they are informed about knowledge, for their personal development.			
They have kept up to date with the development of the subject and have acted responsibly.			

In relation to the evaluation criteria or indicators, we focus on the following:

- To know the components of an ecosystem, making reference to its characteristics, recognising the forms, structures...
- Classify the components of the ecosystem according to their characteristics.
- Estimating and designing ecosystems, adopting positive behaviours in the conservation of ecosystems.
- Knowing the instruments, resources and audiovisual media, respecting the safety measures for their use.
- Apply audiovisual tools, resources and media and use them responsibly.
- Designing awareness-raising strategies for ecosystem conservation.
- To know the main contamination materials
- Sort materials into the appropriate recycling bins.
- Reflect on the exorbitant use of plastic and its negative consequences on the ecosystem.
- Reflect on what we are doing wrong and what we are doing right for the sustainability of the planet.
- Analyse some of the causes of pollution and extinction of some species.

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