New Perspectives in Science Education
International Conference
NEW PERSPECTIVES in SCIENCE EDUCATION


# Made by them to them: The Students in the Learning Process

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## Abstract

*The social and technological evolution reaches the school, so the pedagogies implemented in it no longer correspond to the expectations of students and society. There is a need to do different, innovate to make the teaching and learning process more natural and engaging for students, articulated and meaningful. We propose a pedagogy in which students are the producers of resources that they use in the learning process. This study aims to understand the importance of meaningful learning, focused on cognition, behavior and affectivity. In this sense, the Flipped Classroom methodology was used. In Primary School, Storytelling and Video Recording were experienced as knowledge enhancement resources. In Higher Education collaborative and oriented research was experimented and the results were treated, synthesized and shared in presentations made by the students and presented by them to them. Methodologically it is a case study whose data collection, in Primary Education, was made from the collection of reflective narratives carried out by trainees regarding the pedagogical practices implemented in real contexts. In Higher Education the data collection was performed by the teacher through direct observation. The data, in both situations, were objects of thematic analysis. The results point out that the pedagogy "made by them to them" (1) activates previous knowledge, (2) promotes personal and group efforts in achieving better results, (3) creates emotion in the learning process, since it generates involvement, recognition of oneself and of others. It was concluded that involving students in their learning process through active and participatory methodologies makes learning more meaningful and leads to the construction of learning in an active, participative and autonomous way.*

**Keywords:** *pedagogical innovation, 21st century competencies, active methodologies.*

## 1. Introduction

In a world marked by complexity, diversity and interconnectedness, reflected in the changing ways of living personal, professional and social life and the unpredictability of the future, there is a need for innovation in education methodology in relation to the generation that grows in the 21st century. The current scenario launches the renewal or disruption of the "old" paradigms, based on patterns of social conformity and behavioral passivity, presenting a panorama that distances itself from the conceptions and educational models of the industrial era. Indeed, in today's global, ubiquitous digital world, Education must respond to both the interests of students and the challenges of an increasingly organized society around complex digital networks. Many authors, for example Azevedo [1] and Guerra [2], who consider that the school does not respond to the needs of the new generation, which generates demotivation. Also, several official documents emphasize the need for up-to-date training in teaching methodologies and resources, as teacher training plays a decisive role in the transition to a knowledge-based society and economy [3-7].

## 2 Theoretical framework

Contemporaneity shows that adapting to today's reality and building a sustainable world requires skills that allow us to respond to complex challenges, mobilizing scientific, technical and technological knowledge and psychosocial resources that include attitudes, principles and values in a particular context, as revealed by the DeSeCo project [8]. Thus, for the critical understanding of the world, personal participation and conscious and responsible social intervention are required. In this context, a frame of reference for the profile of the student of the XXI century [9] was designed with a focus on critical thinking, flexibility, entrepreneurship and responsibility, among others, for which they point to an autonomous student with empathic and collaborative attitudes, entrepreneur, resilient and with ethical

and moral responsibility. In cognitive terms, it should present critical, creative thinking and problem solving ability, be able to build knowledge from diverse sources using multimodal technologies to communicate them. The above mentioned student profile points to young people with cognitive and metacognitive competences, emersed in emotional and social capacities, and values such as motivation, trust, respect for diversity, as well as individual, local and global character [8-11]. We are faced with a curriculum of humanistic tendency that is based on the personality of the human being and emphasizes a paradigm based on the results and the logic of the competences, for which it imposes strong changes in the process of teaching and learning and in the use of varied digital pedagogical resources aligned with active methodologies troubleshooting. In this context, the teacher's training and creativity are vital, with the need to transform his pedagogical practices in order to adopt active, collaborative, and problematizing methodologies, always focused on the student and his teaching and learning processes.

In this study, we combine two distinct approaches, Flipped Classroom [12] and Storytelling, and articulate individual work and collaborative work. We did so because we believe that this alliance allows students to be involved in tasks, developing socio-emotional and cognitive competences as mentioned above. The Flipped Classroom puts emphasis on "prepare-to-do" and Storytelling on the "do-count" allowing "see-reflect-evaluate". These are three important steps in the learning process, as they involve the student in the active construction of knowledge. Thus, Flipped Classroom enhances how students interrelate with knowledge outside the classroom and activate prior knowledge, important organizers in the bridges of knowledge, as well as providing the teacher with the possibility of freeing himself from the presentation of content and to take advantage of class time for activities of discussion and construction of knowledge and pedagogical differentiation [13]. The same author considers that this inversion declines the unidirectional paradigm and promotes the reinforcement of classroom learning in a dynamic and satisfying work environment, enhancing the development of competences, namely creativity and autonomy in the use of technological resources. Lopes, Gouveia and Reis [14] show that the success of this pedagogical model depends on the initiative and the responsibility of the students to study the contents proposed outside the classroom, so that they can participate in the classroom with the necessary knowledge to discuss and debate ideas. For their part, Hugo and Johan [15] mention several studies that reveal that there are conditions for this approach to work well. They recognize that students become more active, participatory and accountable in the classroom, improve communication with peers and teachers, understanding and deepening curriculum content, collaborative learning, digital literacy and the ability to trust in themselves, skills that tend to improve the outcome of their learning. However, the same authors point out that other studies show that continuity of the methodology is fundamental for deep learning effects. Since the work of both teachers in the preparation of materials and of students in self-study is greatly increased, it is necessary to have methodological continuity without this meaning that all content must be worked in this way.

Storytelling can become an indispensable ally that gives meaning to non-classroom learning, since such knowledge is needed to create the stories, which in turn will be the digital learning resources on which learning is based. Storytelling captivates children and fosters them in educational activities, especially because they participate in history, thus stimulating emotions, dialogues and synergies. We assume that if children have worked outside of school to build Storytelling, with their voices and materials, as a learning resource in learning, it may make learning more meaningful. Consequently, it would increase the predisposition to do homework and to fulfill higher level goals, and perhaps the excitement in carrying out the educational activities and didactic resources will motivate them to an easy and happy learning process, and perhaps the prior knowledge and stimulate more extensive and broader participation.

## 2. Methodology

Methodologically it is a case study [16] that seeks to understand the importance of meaningful learning through cognition and affectivity. It was based on the premise that there are three broad competencies whose categories interrelate in such a way that they represent key competences that promote a successful life and contribute to the good functioning of society: "Use Tools interactively (eg language, technology), interact in heterogeneous groups, Act autonomously" [8]. As far as primary education is concerned, the Flipped Classroom approach, Storytelling and video recording were applied. The sequence of the work was as follows: in class 1 a Brainstorming was done on the subject to study and verses, text or book for individual reading by the children (Flipped Classroom) was sent as homework. In class 2, in the classroom, a video was produced collaboratively, or a Storytelling that included the

voices of children. In class 3, also in the classroom, the storytelling created in the previous class was used as didactic resource for understanding the poem, text or literary work. The student teachers reflected on these practices, carried out in real contexts within the mother tongue, with students from different years of elementary school education. These reflections take the form of narratives. From these narratives five were selected and these were the data analyzed in this article.
In the scope of higher education, the direct observation and recording in the field diary was done by the teacher. The students belonged to an engineering course and the teaching activities had the following structure: in class 1 the subject was approached and the materials related to the theme were sent through the Moodle platform. At home, the students communicated with each other to distribute assignments, each assuming responsibility for a part to be investigated and presented in the classroom. In class 2, tutorial, each group reflected on the topic studied at home and built a PowerPoint presentation. In class 3, in class, each group presented their work to the class. For the analysis of data, both narratives and field notes, thematic analysis were used [17]. From this analysis, emerged the three major categories that we present below.

## 3. Findings

From the analysis of the narratives, to the work carried out in primary school, and from the diaries, related to activities in higher education, several themes emerged. For this study we select the three that best evidence the characteristics of MADE BY THEM TO THEM: a) Activates previous knowledge; b) Promote personal and group efforts to achieve better results; and c) It creates emotion in the learning process, since it generates involvement, recognition of self and others. We justify each of these thematic categories below. We do it for each subject, first for primary school and then for higher education. The amount of evidence presented in each case is related to the amount of work developed and that in higher education there was only one teacher involved and in primary school there were five student teachers.

**a) Activates previous knowledge**

One of the students says that in the strategy of Flipped Classroom "students have a first contact with the materials, or contents, that will work before the class, considering this process as part of the learning (...)", allows to carry out tasks that lead to higher levels of knowledge, since the basic knowledge can be worked out prior to class, with time in the classroom for more challenging and pedagogically richer activities" (N1). It is verified, therefore, that resorting to previous knowledge learned or remembered before the class frees the time of the class for a work of greater cognitive requirement. This idea appears in the diaries of more students as it is verified in the following two examples: "a video cast was carried out with the students (...) activity to appropriate and understand better the work that they would accomplish (...). This moment served simultaneously as a pre-reading moment, where previous knowledge was activated and motivated to read and understand the history ... a relationship was established between the textual comprehension and the previous knowledge of the reader, allowing the construction of meaning" (N3); "The children identified the verses they read the day before, beginning to speculate about the application of their voices (...)". "This recognition of the verse's lyrics immediately called their attention by improving the interactions and the quality of student participation" (5).
Regarding higher education, we extract the following excerpt from the teacher's field notes: "sending the topic to be treated outside the classroom, gave the student the opportunity to relate the new subject with knowledge and representations they already had and also the opportunity for everyone to participate in the production of group products that resorted to the mobilization of the knowledge acquired at home." (NC6)

**b) Promote personal and group efforts to achieve better results**

The data in the narratives confirm that "the possibility of the students recording their speech stimulated the improvement of the reading; (...) the fact that they can listen, reflect on their performance and still use their own reading as a support for learning moments, has significantly elevated learning by placing the student at the center of this process" (N3). In another narrative we can read "the time spent on autonomous exploration by the students, provided the creation of links between the contents covered ... knowledge was built with the contribution of the students, which, from the perspective of the master, enriched the learning of each one of the others, in the group" (N2); it entailed hours of commitment and improvement outside the school (home) (...), "elicited the interest of the group

demonstrated in the accomplishment of the subsequent exercises, which improved student performance and school results" (N5).
The higher education teacher emphasized in the field notes that "sharing with the group, the information resulting from individual research, stimulated the individual to strive to find scientific news that would surprise colleagues; was also felt as a way of compensating the other elements for the research information received from the group. In addition, the presentation to the group of the products made in group, allowed to overcome some shyness and was leveraged by the stimulus of competition, since it stimulates the group in the achievement of better results relative to the other groups, promoting a greater involvement and effort of the group" (NC6).
In summary, and in both cases, it is verified that the previous preparation of the work, to be carried out in the classes requires motivation and effort of the student and ends up translating into more solid, more lasting and deep learning, in effect with better results.

**c) It creates emotion in the learning process, since it generates involvement, recognition of self and others**
Since the works of Antonio Damasio, the connection between rational and emotional aspects is widely recognized, also in learning. This is what was verified in the data extracted from student teachers' narratives.
... "The previous involvement of students in the activities that were to be developed throughout the class provided great enthusiasm; they anticipated what would follow, by recognizing one or another aspect or content that they identified as having been worked on previously (...); the fact that the students get involved, even before the lesson, with contents and learning and that they would be approached, makes them more participative and more committed to the success of their learning process, promoting a climate in the classroom, a class that is more prone to dynamization of more complex tasks that reach higher levels of challenge (N1); "There was a greater concentration on the part of the students (...); full motivation and enthusiasm on the part of the children who were genuinely fascinated to see themselves on the other side of the screen (...); participated in the construction of resources, in this case storytelling, which contained elements that trigger predisposition for active participation in class; work that they will not easily forget "(N3). From another narrative we take the following words that end up synthesizing this third thematic category: "Managing the emotions is not easy! Students like to recognize who speaks, enjoy listening, self-evaluate and evaluate their classmates, which is a very enriching moment of reflection in this learning process" (N5).
In the words of the professor of higher education, "the investigation of a given subject by the individual student and the group discussion facilitates the exchange of knowledge and experiences generating an emotive load that infects the members of the group, causing them to remember the contents and facilitating the process of applying the concepts in real life. As a side effect of this teaching learning process, a great value has been created, consisting of the natural memorization of information that results from the process of involvement, discussion and sharing provided through the repetitive approach of concepts. In the subsequent laboratory classes, the improvement of understanding of experimental work was evident, leading to a higher class output. This effect is even more noticeable in student-workers who have little time to study and who often present themselves in laboratory classes without having done the pre-study of recommended preparation" (NC6)

## 4. Conclusions

Our proposal "Made by them to them: the students in the learning process" is an approach that envisions the student as the main driver of his motivation and of his learning process, making him simultaneously a producer and a direct consumer of his production.
At both levels of education it was found that students were committed to developing to their full potential, both individually and in the collaborative process of building products such as video, storytelling, or PowerPoint. "Made by them to them" makes learning meaningful because it has included the student at the center of the learning process since class preparation. Thus, it activates the fundamental prior knowledge in a meaningful articulation, by which it facilitates the understanding of the curricular contents. The involvement of the student and the opportunity to share his knowledge, results in a greater personal and group effort with an impact on the performance and fluency of the teaching / learning process. It also results in an emotional process that generates recognition of self and others, of places and tasks, where the student becomes aware of himself and takes responsibility. On the other hand, it gives the teacher an opportunity to rethink the action plan by aligning the

previous knowledge and the competences of the students and interests with curricular contents, which allows to create new levels of complexity and challenges.

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