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Original Article

PERCEPÇÃO DE ESTUDANTES SOBRE MÉTODOS DE AULA INVERTIDA NO ENSINO DE ENFERMAGEM

STUDENTS PERCEPTION ABOUT FLIPPED CLASSROOM METHODS ON NURSING TEACHING

PERCEPCIÓN DE LOS ESTUDIANTES ACERCA DE MÉTODOS DE CLASE INVERTIDA EN LA ENSEÑANZA DE ENFERMERÍA

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RESUMO
Objetivo: conhecer a percepção de estudantes de graduação sobre o uso de métodos de aula invertida na disciplina de Enfermagem. **Método:** estudo qualitativo, descritivo, com participação de oito estudantes do curso de graduação em Enfermagem de Universidade Pública da região Norte do Brasil. Realizou-se a coleta de dados, por meio de entrevista, cuja análise seguiu as fases de codificação, aberta e axial, do método das comparações constantes ordenada em versão *trial* do programa Atlas TI®. **Resultados:** constituíram-se de cinco categorias: Preferências; Percepção dos estudantes sobre aula invertida; Processo de aprendizagem facilitado; Dificuldades e desafios; Sugestões e avaliações. Não há consenso entre os participantes sobre preferências, particularmente, se confrontados os métodos de aula invertida versus métodos tradicionais de ensino. Identifica-se que pelos métodos empregados na disciplina os estudantes percebem promoção e desenvolvimento de conhecimentos e habilidades tanto quanto dificuldades e desafios para a sua integração à rotina de estudo. **Conclusão:** o estudo revelou que os estudantes têm uma compreensão razoável sobre a aula invertida, quando demonstram conhecimentos, habilidades, assim como dificuldades e desafios relativos à experimentação do método. Entretanto considera-se necessário investigar experiências de estudantes de enfermagem em outros ambientes, para uma compreensão mais profunda de como o aprendizado é afetado por esse modelo.
Descritores: Enfermagem; Ensino; Métodos.

ABSTRACT
Objective: to know the perception of undergraduate students on the use of flipped classroom methods in a nursing course. **Method:** qualitative and descriptive study with the participation of eight undergraduate nursing students from a public university located in the northern region of Brazil. Data collection was carried out through interviews, following the phases of open and axial coding from the method of constant comparisons using the trial version of Atlas TI® software. **Results:** five categories were constituted: Preferences; Students' perception of inverted class; Facilitated learning process; Difficulties and challenges; and Suggestions and estimates. There is no consensus among participants about candidates, particularly if faced with inverted classroom methods versus traditional teaching methods. By analyzing the methods used in the course, students perceive the promotion and development of knowledge and skills, as well as the difficulties and challenges for their study routine. **Conclusion:** The study revealed that students have a reasonable understanding of flipped classroom when they demonstrated knowledge, skills, as well as difficulties and challenges related to the experimentation of the method. However, it is considered necessary to investigate the experiences of nursing students in other environments for a deeper understanding of how learning is affected by this model.
Key-words: Nursing; Teaching; Methods.

RESUMEN
Objetivo: conocer la percepción de los estudiantes de pregrado sobre el uso de métodos de aula invertida en la disciplina de Enfermería. **Método:** estudio cualitativo, descriptivo, con la participación de ocho estudiantes de pregrado de enfermería en la universidad pública de la región norte de Brasil. La recolección de datos se realizó a través de la entrevista de análisis seguida como fases de codificación abierta y axial, el método de comparaciones constantes ordenado en la versión de evaluación experimental del programa Atlas TI®. **Resultados:** se constituyeron 5 categorías: preferencias; percepción de los estudiantes sobre la clase invertida; proceso de aprendizaje facilitado; dificultades y desafíos; sugerencias y presupuestos. No hay consenso entre los participantes sobre las preferencias, particularmente si se enfrentan a métodos de aula invertidos versus métodos de enseñanza tradicionales. Identifiqué que, a través de los métodos utilizados en la disciplina, los estudiantes perciben la promoción y el desarrollo de conocimientos y habilidades, así como las dificultades y desafíos para su integración con la rutina de estudio**. Conclusión:** el estudio reveló que los estudiantes tienen una comprensión razonable de la clase invertida, cuando demuestran conocimiento, habilidades, así como dificultades y desafíos relacionados con la experimentación del método. Sin embargo, se considera necesario investigar las experiencias de los estudiantes de enfermería en otros entornos, para una comprensión más profunda de como este modelo afecta al aprendizaje.
Descriptores: Enfermeria; Enseñanza; Métodos.

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INTRODUCTION

The Brazilian higher education brings, along its trajectory, the need for understanding different pedagogical trends that influence the educational process. A trend can be understood as an inclination, propensity, linked to the current discourse, explicitly manifested in documents, such as the educational legislation, the pedagogical projects, or tacitly, professors' work. In nursing, different pedagogical trends permeate the education, understanding that some may contribute more or less to the development of students' skills and abilities, before the established in the National Curricular Guidelines of the Nursing Undergraduate Course (DCNs) of 2001[1].

According to the Nursing DCNs, the education aims to equip the professional with knowledge to develop and exercise general and specific competences, namely: health care, decision-making, leadership, management and administration, continuing education, as well as competences and specific skills. For this reason, the education should ensure a critical, reflective and creative teaching process[1].

In each area of the Nursing knowledge, aiming to achieve the goals of each subject and lesson taught, professors use a set of teaching methods, articulated with pedagogical strategies to facilitate the students' learning process[2]. In the area of Administration, in particular, the methods most commonly used are exposure, situational strategic planning, problem-solving methodology, through the Arc of Maguerez, adopting the use of educational technologies[3]. There are also little used strategies; among them is the Flipped Classroom model.

The flipped classroom is a pedagogical model characterized by a change in the traditional order of learning activities, transformed from classroom-study-test to study-test-classroom, and the study can occur individually, in pairs or even in groups[4]. This class has been used in courses in the health area, even in nursing courses[5-7]. The model has been used both to facilitate the theoretical learning as to develop practical skills[8]. This flexibility is explained because the flipped classroom model comprises a set of methods, such as: Just-in-Time-Teaching (JITT) Team Based Learning (TBL) and Peer Instruction (PI). The flipped classroom model is believed to have the potential, depending on the methods used to promote the development of competences and general and specific skills to students in the nursing course.

Regardless of the professor's final choice for one or other model, it is important to highlight that there is always the presence of explicit or implied pedagogical trends[9]. Currently, the trend consists of student-centered teaching approaches, with a stimulus to the use of educational technologies and blended learning, combining, for example, virtual learning environments and online lessons with in-person moments[3].

The adoption of new models implies an investment of study, planning and adaptation of the professor to design different strategies and the use of new methods, as they demand the adaptation and planning of the student to perform the resulting tasks. The application of the flipped classroom model, for example, faces difficulties due to the existence of very strict and content-centered curricula and the need for the greater responsibility of the student, in relation to the previous study, for the success of the methodology, because not everyone has the discipline of studying at home[10-11].

In methods whose student participation is required, at various times, as in those inspired by the flipped classroom model, initial investments, this process of adaptation, are relevant, in particular, because some studies show that some students may prefer traditional teaching methods instead of the flipped classroom, although demonstrating that it (flipped classroom) contributes to the learning process[10].

The flipped classroom, while innovative pedagogical model, has great potential to contribute to the formation of critical-reflective and autonomous individuals. In this sense, considering that the methodological choice can interfere in the learning process and, consequently, in professional training, the following question arises: what is the perception of students of the use of flipped classroom methods in the Nursing Administration subject?

For this purpose, the objective of this study is to understand the perception of students of the use of flipped classroom methods in a Nursing subject.

METHOD

This is a descriptive study with a qualitative approach based on the perspective of Data-Grounded Theory (DGT). Developed in the 1960's, DGT differs from other approaches by not using

pre-determined procedures but by discovering concepts, hypotheses and theories through data. The reality is understood from the knowledge of the person's perception of a certain context[12]. The analysis was based on the DGT, but followed only the phases of open and axial coding.

The study was conducted in the year 2018, with Nursing students at a Public University, located in Northern Brazil, who were attending the Nursing Administration subject, inserted in the fifth semester of a total of nine, because, in this subject, professors use flipped classroom methods in all content units.

This subject was intentionally chosen because it works with methods that are not the pedagogical trend in the course in question. Therefore, its implementation was assumed able to generate some resistance from students by being considered a change to the culture of subjects and college. Considering these aspects, this work arose, originally presented as a course completion work, linked to the research macro-project "Nursing Management: New Approaches of Training and Work in a Public University and Teaching Hospitals", approved under REC opinion n. 2.165.945.

The Nursing Administration subject is composed of four theoretical units and, in the strategy drawn, three methods of flipped classroom were chosen for their development, namely: Just-in-Time-Teaching, Peer Instruction and Team Based Learning, as can be seen in (Chart 1).

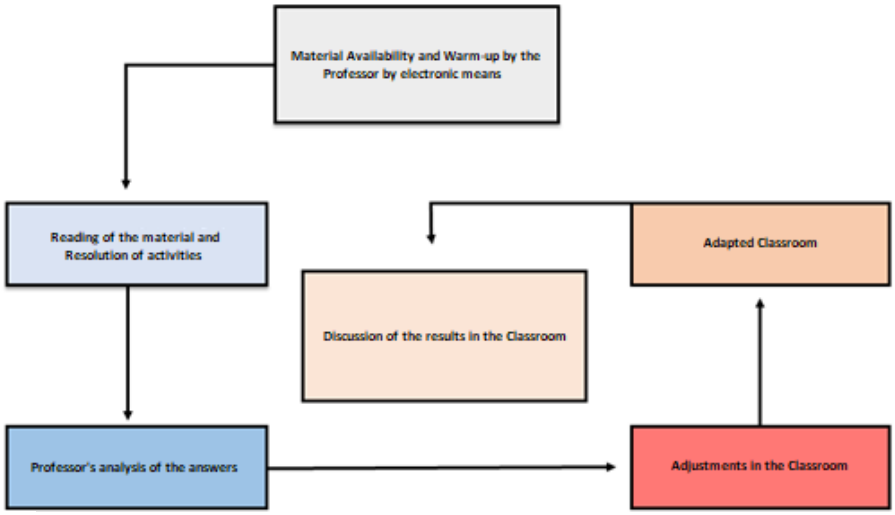
Chart 1 - Contents and methods used in the subject

Content	Method used	Number of tasks
Unit I - Society, Institution and Organization	Just-in-Time-Teaching	2
Unit II - Theoretical-Philosophical Basis of Administration and Relations with Nursing Practical Management	Peer Instruction	2
Unit III - Managerial Nursing Work	Just-in-Time-Teaching	2
Unit IV - Administrative or Managerial Process	Team Based Learning	4

Source: Created by the authors.

The three methods keep the principles of the flipped classroom model, but have special features that distinguish them. The Just in Time Teaching (JiTT) method was proposed by a professor at the Purdue University of Indianapolis in the United States in the 1990's. Its pedagogical sequence consists in making materials in advance to classes (or sessions), resolution of questions sent by the professor by electronic means, analysis of students' responses and reformulation of the lesson plan by the professor, and, finally, the lesson adapted according to the responses of students from the previous step [13]. The JiTT was used in Units I and III. In unit I, one task was requested and, in III, there were three tasks. Figure 1 shows the pedagogical sequence of the JiTTmethod.

Figure 1 - Just-in-Time-Teaching steps.

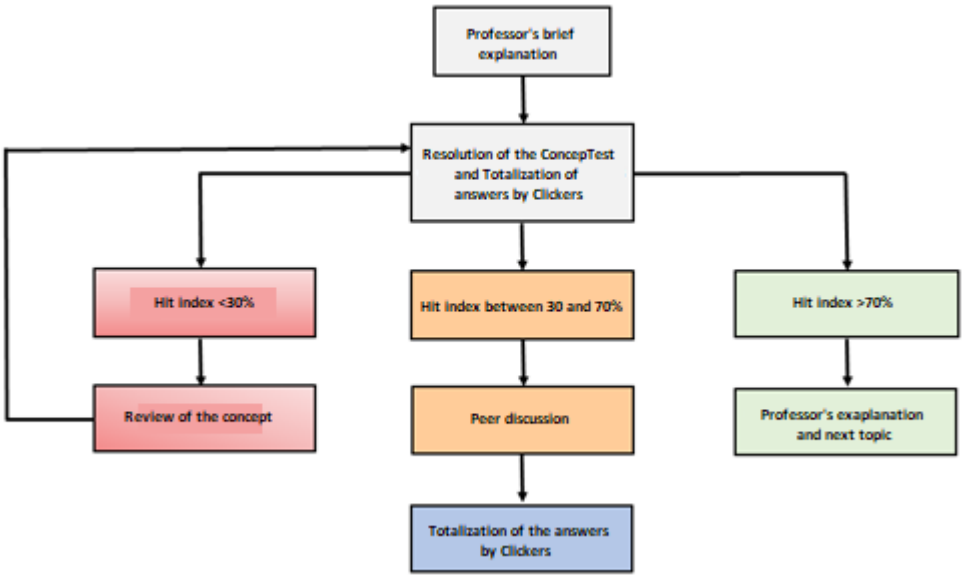


Source: JiTT steps [4].

Developed by a professor at the University of Harvard, the PI method is characterized by promoting the teaching among peers, as evidenced by greater interaction among students in the learning process and discussions about the contents studied[14].

The PI is composed of five steps, namely: 1- Initial exposure of the content by professor; 2- Application of a conceptual question (ConcepTest) - multiple choice question that must be answered individually within time pre-determined by the professor; 3- Mapping of answers by means of Clickers or flashcard; 4- Totalization of answers and decision-making based on the percentage of students who answered correctly the question of the first step; 5- Finalization of the session that will depend on the rate of hits: if below 30%, the professor will review the concept, between 30% and 70%, there will be the open discussion among peers and, if over 70%, the professor will make his/her final thoughts and follow to the next topic of discussion[13]. The PI was used in unit II (Chart 1), with the completion of one task. Figure 2 shows the pedagogical sequence.

Figure 2 - Peer Instruction steps.



Source: Peer Instruction steps[4].

The Team Based Learning was developed in the 1970's. The TBL proposes students' previous preparation for the activities in class, learning with group interaction and the resolution of problems of professional routine[15]. It is composed of three steps: 1- Individual preparation, in which the professor assigns a pre-class activity that can be attending a conference, watching a movie, observing an experiment, among others; 2- Guarantee of Preparation, in which, at first, some questions are answered individually (Guarantee of Individual Preparation), and then in a group (Guarantee of Group Preparation).

At the end of this step, an immediate feedback of the correct response must be guaranteed; 3- Application of the concepts, characterized by the practical application of the concepts discussed in the previous steps. Students are invited to reflect on situations related to their future professional activity, i.e., which they will probably face some day[16]. The PI was used in unit IV (Chart 1) with the implementation of four tasks.

The participants were eight students from a 29-student class, who attended the subject in question in the second half of 2017. The inclusion criteria were: attendance greater than or equal to 75% and complete at least 70% of the activities per subject unit.

The minimum frequency chosen, in each subject unit, was 75% for being the minimum required by the institution and because for understanding that, for the participant express better his/her understanding about the theme, he/she would need a participation in most of the classes. This is the same reason for completing at least 70% of the tasks, per each subject unit, since all the theoretical activities of the subject used flipped classroom methods.

Data were collected from January to February 2018, after the completion of the subject. The first step was the construction of a chart to check the inclusion criteria and to select participants. The second phase consisted of interviews using a guide, which were recorded with the aid of a voice recorder and transcribed to the software Microsoft Word. After the transcription, they were sent by e-mail to each participant so that they could make the validation of the content.

Data analysis followed the phases of open and axial coding, of the method of constant comparisons[17] ordered in trial version of Atlas TI® program. The method of constant comparisons indicates that the analysis process is dynamic and fluid, however, to clarify each moment, the understanding is necessary, which is the unfolding in certain activities and phases[17].

The open coding generated, at first, 25 codes, however, some codes represented the same phenomena and others had an insignificant number of quotations. After a detailed review and unification of codes that addressed the same phenomena, 22 codes were generated, which were read, considering their properties and dimensions, common features and differences, events and happenings, for their subsequent incorporation into one another by similarity.

The creation of categories (axial coding) arose from the close relationship that the quotations of certain codes keep between themselves. It was possible to group the codes into categories, for representing the same phenomena, even though not always entirely equal. Thus, during the axial coding, the codes were articulated in five categories: Preferences, Students' perception of flipped classroom; Facilitated learning process; Difficulties and Challenges; Suggestions and evaluations.

All participants signed the informed consent form and were informed about their rights. To preserve their anonymity, their names were omitted, describing a fictitious name. The participants are described in this study with the letter P, followed by the numerals 1 to 8 (for example, P1, P2, P3...). In addition to this explanation, in view of the language used in this text, there is need for a small glossary.

Furthermore, according to the concept of pedagogical trend, already presented at the beginning of this article, throughout the text, the concepts of model, strategy and method were employed. The first is the representation of the understanding of how to teach; the second is the way elected by the professor to coordinate this model, by means of various methods in its context; and the third is the step by step of applying the model and strategy. There is, therefore, an understanding of hierarchy, represented in the following way: trend (student-centered approach) > model (flipped classroom) > strategy (combination of methods employed in the Nursing Administration subject) > method (PI, JiTT, TBL).

RESULTS AND DISCUSSION

The five categories articulated during the analysis will be presented and discussed. The first is the category Preferences, because it is, at first, for understanding the student's perception. It is necessary to understand what their didactic-methodological and learning predilections are.

Then, Flipped classroom - students' perception, because that is how students understand the pedagogical strategy and their first impressions of their development during the implementation of the subject. Next, Facilitated learning process, because the students' preferences and their understandings about the method already understood, some of the benefits related to the strategy implemented in the subject and personal development of skills and values can be analyzed.

Then, Difficulties and Challenges, which unveils the difficulties and challenges found during this entire process, acting as a diagnosis and, finally, Suggestions and evaluations, in which some of these difficulties and challenges are discussed, evaluated, even suggesting some changes to improve the development of the subject.

Preferences

To analyze the use of flipped classroom methods, it is necessary to consider that, regardless of the strategy and the methods chosen, students have different means of perceiving, grasping, processing and organizing the knowledge[18]. Thus, the student's preference relates to his/her learning style. Although recognized, in this category, the participants will not be separated by styles (visual, auditory and kinesthetic, for example), but the reports of preferences of study will be listed, seeking to understand relationships between them and what is required from the student in flipped classroom methods.

The prior reading is regarded by students as important to learning, "I learn better when I make a prior reading of the subject. Then, when I come to the class, the professor explains, I can already make questions about what I was reading and can ask other questions throughout the lesson" (P2).

This is important if considering that, in the flipped classroom, the individual study is, in general, the first step of the process. A student who has the habit of reading the content previously may face fewer difficulties in integrating flipped classroom methods into his/her routine study. To stimulate the individual study, multiple strategies have been used to supply the content virtually, including audios, videos, interactive online modules, which provides the student with flexibility during the learning process, at the same time they increase the student's autonomy in the learning, allowing for a greater dialog with the professor in the classroom[19].

In addition to the preference for previous readings of the content, some students prefer to make notes during the theoretical classes, for later study, write and read their own notes on certain content, relating them to any situation or real context and simply attend classes.

The variety of preferences may have relation with the preferred teaching methods. In this sense, students who mention making their own notes, instead of only copying those posed by the professor on the chalkboard, prefer student-centered methodologies, as is the case of the flipped classroom, observed in the speech "I think that when the class is a little far from traditional, the student tends to pay more attention to the class, then the methodologies that are more innovative, they draw more my attention" (P4).

On the other hand, some students who say that they learn better just by attending the classes and making notes of the professor's explanations show predilection to traditional teaching methods, for example: "since my whole life I have been studied by the traditional method, I sort of created a system where I can learn better by it, but having this, that contact is not, with this new methodology, right from the beginning I felt it quite difficulty, but after I got it, let's say, but, if I had a choice, as it is a method I am already used to, I choose the traditional[P7].

The learning process is personal, thus a different process for each individual. In this context, it is important that the professor know the class and consider students' preferences, for greater effectiveness in the teaching and learning process, since the effectiveness of teaching methods is related to the intensity of how each individual learns in a different way, which makes certain methods effective for an audience but not for another[18].

Furthermore, some statements suggest the students' comprehension that there are better teaching strategies and methods for each content and/or context. In this way, the choice of the best teaching strategy may vary in each situation, as observed in the speech "in some contents, the professor should really choose the traditional classroom, everybody is there, listening, he transmits it, or a form, for example, a teaching technique such as the laboratory (P1).

However, it is necessary to understand how students see the flipped classroom for a better understanding about their preferences, because they can list how they observe the method. This view of students is discussed in the next category.

Students' perception of flipped classroom

Flipped classroom is a pedagogical model characterized by a change in the traditional order of learning activities, transformed from classroom-study-test to study-test-classroom, and the study can occur individually, in pairs or even in groups[20]. Students learn new content, in general, at home, by means of texts and tutorial-videos online, and what used to be a homework begins to be developed in the classroom, with personalized guidance and interaction with students[21].

In relation to the characteristics of the flipped classroom, the participants understand the essence of the pedagogical model, which is the inversion of the traditional sequence "Well, I understand that it is inverted in the sense that before, traditionally first, we attended the class and we would study for a test or study just because I wanted to. The flipped classroom is the opposite, I first study the subject to then attend the classroom" (P3) as well as in "(...) It is, when we have access to the material before the class and the opportunity of studying before the class itself and, thus, being able to discuss the matter" (P3).

Each method has generated a set of inter-related statements. The Just-in-Time-Teaching is cited with a series of statements about considering the students' knowledge, when in the professor's work, to develop the method: "They also heard our information, what we collaborated with the classroom, they highlighted and commented on our opinions, always respecting

the student's opinion, but leading the student to reflect on what he had previously thought in that context[P6]. These data reflect a characteristic of this method, since, according to its methodological steps, the professor needs to read the students' responses and build a lesson directed to their needs[13].

Moreover, as this approach promotes the students' grasp of learning, through the completion of the preparatory work and for being more interactive, during the actual time of the lesson[22], suggesting, in the context studied here, the involvement of students in the development of methods, as well as the understanding about the importance of their participation before the class and interaction with professors, during the pedagogical meeting, although not necessarily being the methods and activities that correspond to the preference of some of the participants.

Facilitated learning process

This category addresses students' perception of the process of learning contents by the methods, as well as the students' personal development of skills and the improvement of some values.

The first point highlighted by the participants refers to the development or the exercise of autonomy in relation to the learning process. The flipped classroom model requires the student a previous preparation, but, without the obligation of reading the material before the class, or answering the pre-class questionnaires (in the case of JITT).

The autonomy can be observed in the speech "(...) then it came to help us become autonomous in our learning. This proposal makes teaching and learning more participatory, placing the student as the main responsible for his learning (...)" [P1]. It is worth remembering that the flipped classroom model is student-centered[20]. Thus, the assumption of responsibility for the part that belongs to them suggests its acceptance, even facing a process of change, considering the culture of use of traditional teaching methods.

The current pedagogical trend proposes to promote collaborative skills or the team learning as one of the learning skills in the XXI century, but, in order to do so, professors need to promote collaborative learning processes to students[22]. In this sense, the TBL was among the methods used most cited by students as a stimulator and developer of skills to group work and accountability for their tasks. The TBL was the method most commented by participants and the favorite among the three developed: "I understand that the TBL is also very important, because, sometimes, the professor's language is not so accessible to everybody, but when you are talking with a friend, sometimes, you can open more, so you can share and build that knowledge. In the TBL, we have a discussion group and can share it among peers, among equals to be able to discuss with the professor"[P1].

The TBL proposes the previous preparation of students for the activities in class, learning with the group interaction and the resolution of problems of the professional routine[14]. For this purpose, the TBL can stimulate the group work by its methodological sequence: individual resolution of exercises and then group resolution of exercises[15]. In the group stage, students can discuss among themselves and choose a response, which may be different from those chosen individually [16].

This discussion can be better understood from the speech "(...) we have an individual moment and we have to be aware that if we do not study, we can harm the whole group. When everyone studies, there is the success of the group: each one has their ability, their competence in anything, thus making a team (...)" [P1]. Achieving this level of responsibility for the development of the learning process favors the dialog between the students, allows listening to and issuing an opinion, as well as leadership in the development of the ability to work in a team.

Such statements are in line with the DCNs, mainly in what refers to the skills and abilities of the Nursing graduates: listening and also being able to convey their opinion (communication skills), leadership and the ability to work in group[1].

Difficulties and Challenges

Even though the participants' perception of the flipped classroom methods has been mostly positive, some students reported initial difficulties and challenges, a fact corroborated by another study[20]. They listed the challenges initially seen as difficulties, but overcome by the participants, in addition to those perceived as insurmountable difficulties until completing the subject. Among the difficulties, we analyzed those directly related to methods and personal difficulties.

In this sense, there stands out the challenge of working with teaching methods different from the conventional methods, i.e., the challenge to go

through a process of change noticed in "I felt challenged primarily because I had never heard of these ways of applying a class, then, for me it was challenging" [P4] and in "(...) and also because as we come from an education in which we are basically massacred only with the traditional classroom, suddenly changing, without having a more fluid process, I think it jeopardizes a bit" [P7].

The feeling of "strangeness" is considered common in a process of change, especially when it comes to changing a culture[23]. It is the resistance to unknown teaching methods, the learners are usually familiar with traditional methods and lack experience with student-centered approaches[6]. Part of university professors still use traditional teaching methods. Moreover, students who have become accustomed to hearing exactly what they needed to know feel uncomfortable, when realizing that, in fact, their learning is mostly their responsibility[19].

The introduction of new habits in the study routine was simultaneously a challenge and a difficulty, like the need for prior reading, which proved to be cumbersome for some students "(...) and as I spoke before, this habit of reading is not common for us, it is no culture, so, well, I think that this is one of the challenges that professors face (...)" [P1]. In view of this, in order to fully benefit from the approach of the flipped classroom, the additional benefits of combining the previous study with the classroom education need to become clear to students and be constantly stimulated, so that these moments are not displayed separately, or as an alternative to other, denying the value of reversing the classroom[24].

The group work was mentioned as a difficulty in the learning process, resulting from the methods used "(...) as it was divided into groups, with different characteristics, it was complicated because the characteristic of my group was leadership, then there were some external shocks, where, being honest, one wanted to be the leader, but there was no leader, there was a group"[P4].

In the context of the stimulus to the development of team work, generally, the designation for the formation of random groups is initially not well regarded, students prefer to sit with their friends; however, throughout the semester, they become more interactive, becoming more at ease and feeling a greater need to share their collective work and activities[18].

The difficulty of access to materials by e-mail, due to the lack or absence of internet access, as demonstrated "(...) in relation to the exercises by the internet, it was quite difficult for me because not always do I have internet access (...)[P7]. In general, these difficulties are related to the model, due to the characteristics of the methods developed. There is need for a previous study, the materials are made available by the internet, e-mail, cloud, drive, among others, and, in the case of the TBL, during its stage of preparation, there is a group activity[15]. Nevertheless, the method can be adapted to the characteristics of the students and the context, in that sense, the strategy used by professors for students with difficulty accessing the internet was providing the material printed.

Of the difficulties not directly related to the model, what stands out is reconciling the activities of all the subjects of the semester, suggesting that the absence of integration in the construction of the planning: "(...) it was difficult to reconcile the activities, besides those people who do not get involved with the activities, which ends up overloading you (...)"[P2].

These difficulties may be related to the challenge that students have to keep organized with their academic activities outside the college environment and by sometimes considering excessive the extra-class study, in general, because they do not consider the need for an hour load for their preparation outside the traditional context of the classroom[18].

Evaluations and Suggestions

The implementation of strategies, based on the flipped classroom model, still suffers from certain shortcomings identified in the description of these practices. There is no pattern to the intervention[6], even using well-delineated methods, such as those used in the context studied here. Therefore, testing specific elements or components of the model and assessing experiences is essential to achieve the expected efficacy in the use of these methods.

To do so, this category covers the set of students' evaluations: of the subject's faculty, of the strategy, of themselves, providing suggestions for improving the teaching and self-improvement.

The students evaluated, most of the times, in a positive way, commenting on their behavior and performance throughout the subject. These data suggest a personal satisfaction with their development, as can be observed in "I think that

(my) note would be 7.0 (points), maybe I should have read more, more other things: have sought more, not focusing only on what was given, got it? I could have searched more, deepened more, since it was something of my interest"[P4] and the speech "(...) I think I have always been very curious, you know? I have always showed great interest in searching, knowing things and bringing it to the practice, so I get the theoretical foundations, so I propose to read the texts, got it? (...)"[P6] and also in "Look, I evaluated myself very well, I have in mind that although it is a subject that does not inspire much of curiosity, is very bureaucratic and does not have this factor of taking us to the hospital for direct assistance, it inspired me a little bit of curiosity (...)[P7].

In another reality of Nursing education, students understand the responsibility as a central part of the experience in the flipped classroom model, in reference to themselves, to other members of the group or to the professor and, when framed positively or negatively, the responsibility often coincided with the student's willingness to learn in the context of experience[6].

In this perspective, regarding the implementation of the strategy and the methods by professors, the evaluations were more critical, suggesting that students have greater ease of evaluating professors than themselves: "I cannot explain, I think she (professor) lacks a little bit of eloquence, the development of reasoning within the vision that she wants to show to the student and sometimes she sort of gets lost in the classroom, I think that even the content becomes a little hard to be transmitted, so sometimes she ends up not reaching the students' knowledge"[P6] and in "Professor (removed) is very communicative...and we talk to her, she already introduces other points, which we had not thought about, I think that it is quite critical, this helps us develop and see other points of view and create situations also involving resolution" [P2] also in "(...) Professor (removed) is extremely methodical, organized and competent. I think that the two complement one another and can transmit precisely what was proposed for this semester of organization of health services"[E5].

Students perceive the professors of the subject in different ways. It is important to reflect that each professor has the own didactics in a same subject and each student perceives the phenomena around them in a different way. In this sense, the existence of differing assessments is not strange. Nonetheless, in subjects with division of activities and a set of professors, the planning must involve the pedagogical training and constant dialog.

In the use of flipped classroom methods, the responsibility of the student and the professor is intrinsically linked. While the student raises the responsibility for the own learning, in moments of individual study or by peers, the professor devotes to using the time with the students in the classroom to assist them in the implementation of knowledge of a higher order, in place of lectures with directive knowledge, which involve the minority of students[25].

In this context, students also presented suggestions, emphasizing the suggestions for the improvement of the strategy "I think some contents of the subject should have been taught but were not, for example, we went to practice and could not develop (...)"[P1] and in "I think that she has worked very hard with the pure content and forgot to bring it a little for nursing, or could have been worked like: "what is the relationship with the UHS? (...)"[P6].

The statements suggest the inclusion of other contents, for the better development of practical lessons, and addressing them in a wider context related to nursing. Some students were more critical than others were, despite working the same strategy with everyone, thus reflecting that the pedagogical experience is individual. In this perspective, other studies suggest the development of a research instrument to evaluate the learning style of students, to enlarge the capacity of collecting data on the values, preferences and experiences of students regarding flipped classroom[6].

FINAL THOUGHTS

The study uncovered that students have a reasonable understanding about the flipped classroom, when demonstrating knowledge, skills, as well as difficulties and challenges relating to the experimentation of the method. For them, among the tested methods, the TBL is what most stimulates and enables the development of skills to work in-group and accountability for tasks. As challenges, they realize the strangeness in using the new in relation to traditional methods and, in consequence, difficulty relating to personal organization regarding the activities proposed by the flipped classroom.

Most students evaluated positively the use of the methods and diverged in the evaluation of professors, being worth reflecting that the

pedagogical experience is individual. As improvements, they suggest that other contents related to the subject, which favor the practical classes and are more related to the nursing context, are incorporated to flipped classroom.

The use of flipped classroom methods represents an innovation in the context of Nursing education, thus, estimating students' perception of the use of this pedagogical model reflects an impact, not only for the context in question, but to encourage and expand the deployment and implementation of such methods aiming to meet the needs of teaching, ensuring that students are being prepared for the complex nursing practice, in different health centers.

It is important to consider the impact of the study to the subject, since it is a source of indicators about its development and, therefore, can be used as an instrument for changes and improvements. Furthermore, for being one of the only subjects of administration of the institution, its constant development can affect even more the education of the next students. The study has the potential to stimulate further researches in this area, and encourage professors to know and begin to use the flipped classroom model in their institutions.

As limitations, there is the fact of being a local study and the impossibility to interview students who regular concepts as originally intended. This factor may have biased the achievement of students that had more affinity for the flipped classroom model. In addition, the only data collection instrument used was a semi-structured interview. Perhaps the use of non-participant observation could have helped better understanding the phenomena reported here.

The study is expected to able to contribute with new researches in the thematic area, as well as encourage professors to use (or at least try) other methodologies. Researches in the teaching area are believed to contribute to a better engagement of students, and thus assist in the processes of teaching and learning. It is necessary to investigate experiences of nursing students, in other environments of the flipped classroom, for a deeper understanding of how learning is affected by this model.

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