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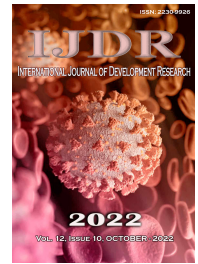
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## FORMATIVE PROCESSES: STUDENT PERCEPTION ON ACTIVE METHODOLOGIES IN THE PHARMACY COURSE

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### ABSTRACT

In this article we present the results of a Scientific Initiation research, which starts from the hypothesis that formative processes based on active learning methodologies allow a better perception of students regarding their learning in the Pharmacy course. The objective was to investigate what is the perception of students of the Pharmacy course at a university in the interior of São Paulo/Brazil, regarding their learning and appropriation in the area. This is a qualitative, descriptive-analytical research. For data collection, an electronic questionnaire was developed and applied, validated by three judges and composed of 23 questions, 5 of which are general and specific on a Likert scale. The questionnaire was applied in April 2021 to students of the Pharmacy course at a university in Presidente Prudente/Brazil. Regarding the results, there were 40 participants, with an average age between 17 and 23 years old, all students of the night shift and who report that the university experience is challenging. As for the effectiveness of active methodologies, participants agree or fully agree. The methodologies that are applied in the course, according to them, are cases, PBL and TBL. Regarding their learning in classes based on active methodologies, the perception of the majority is that they learn the contents better in these classes. The study concluded that students know the active methodologies and realize that this contributes to the creation of the aforementioned professional skills that a health professional. The research contributed to innovation in the sense of allowing new knowledge about effective methodologies for student learning.

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## INTRODUCTION

The initial training of a health care professional has shown a diversity of pedagogical models and formative processes that characterize the way they work with their future patients. Interdisciplinarity has been present in health courses and with that, the use of active methodologies in the field of Pharmacy has been used to promote relatively new practices that add a set of skills to be developed for the training of a better qualified professional to the world of work.

Active methodologies in the context of training a health professional in a general perspective, have become increasingly integrated and interdisciplinary to ensure comprehensive care for patients through the vision of professionals, aiming at the skills to be acquired. Throughout Brazilian history in health education in universities, for a long time, the empiricist (or expository) medium was used, in which the teacher was the center and holder of knowledge and students needed to assimilate, understand and reproduce what was exposed so that they could be examined and reach the necessary "scores". Most students who enter universities come from a reality in which there is not the much-needed stimulus for the construction of knowledge. On the contrary, generally, until high school, Brazilian students are, as a

rule, trained to memorize and repeat formulas that, when properly learned, will be their chance of passing the entrance exam, which would result in an ideology of domination, authoritarian, predominant in the school of the capitalist world. However, from the implementation of the Organic Health Laws, Law n°8.080/90 and 8.142/90, a new paradigm emerges in the educational scenario in the health area, reflecting in the actions and permanent training of professionals who work in this area, as well as in the training of future professionals. Topics such as humanization, interdisciplinary work, development of skills and attitudes, aiming at the promotion and recovery of health, responsibility and commitment to the subject, and professional ethics are incorporated into professional training, resulting in new requirements for education and health. "Health is the most complete state of physical, mental and social well-being, not merely the absence of disease", according to the WHO (World Health Organization), in its letter of principles of April 7, 1948, emphasizing the right to health and the State's obligation to promote and protect it. Thus, from the 1990s onwards, in Brazil, higher education in health has undergone profound transformations in order to meet the new requirements in the academic training of students, and, for this, it needs to incorporate pedagogical teaching strategies with an approach centered on the student as a promoter of his own educational action, in which he moves from the teacher's dependence to autonomy and

develops his knowledge in the fulfillment of the proposed educational activities. In this context of transformations, Active Methodologies (AM) aim to improve the student's awakening to the importance of seeking their own knowledge, supported and guided by their tutor or teacher, to direct the way in which teaching is effective and satisfactory. Active Methodologies offer a wide range of proposed methods for each form of learning. There is, for example, the method based on the construction of a problem situation (SP), in which the student undergoes a critical reflection that mobilizes him to seek knowledge in order to solve or find the best solution for the SP. In the problem-based learning (PBL) approach, the teacher presents a problem close to the real one in his area of knowledge, with fundamental themes that provide the opportunity to prepare the student for his future professional life. There are also other methods of MA, ABP, as mentioned, PBL (Problem Based by Learning), in which a case/problem is given and students are led to solve it, TBL (Team Based Learning), in which the case/problem is exposed to the students who try to solve it in a group, with each one expressing their opinion based on data.

There are also other methods of Active Methodologies such as Arch of Charles and Maguerez and PBL (Project-Based Learning), in which the teaching and learning processes address the challenge of situations, with the aim of promoting encouragement in the student who, faced with a problem, explores, investigates and establishes decisions about that situation, portraying and displaying their resourcefulness within the training process, all of this characterizing an active methodology strategy [1]. The problematizing AM is based on Paulo Freire's theoretical framework, whose conception is based on a liberating, dialogical, reflective, awareness-raising, transformative and critical education, in which problems start from a reality. In the Pharmacy course, as of 2019, integrative disciplines were created such as Collective Health, Comprehensive Health Care, Human Development, Integrating Project, among others, which include Active Methodologies, aiming at the integration of knowledge, points of view from various angles, which favor the development of skills that will allow the student to solve problems alone or in a group.

Therefore, it is considered here the need for such methodologies to be evaluated from the student's point of view, so that they can be qualified, improved and encouraged, so that students do not depend only on the teacher or tutor to acquire information necessary to enable the development of their professional skills. Thus, with the objective of elucidating the perception of the students of the Pharmacy course of a university in the interior of the State of São Paulo, regarding their learning, appropriation in the area, as well as their conceptions about the effectiveness of Active Methodologies in their training, the following research questions were structured: What is the evaluation of active methodologies, according to the student's view of the Pharmacy course? How to create a technological instrument to carry out this survey? The objectives of the present study consisted of: Investigating the perception of students of the Pharmacy course at a university in the interior of the State of São Paulo, regarding their own learning and appropriation of concepts and knowledge in the area; Identify the students' knowledge in relation to the Active Methodologies applied in the course, and how they contribute to creating the aforementioned professional skills necessary for a health professional; Understand the students' perception of the different Active Methodologies applied in the Pharmacy course; and, Contribute to the construction of knowledge about the training processes permeated by Active Methodologies in the area of health and the students' perception of it. This article will describe: the methodological procedures, the presentation of data (results), the discussion and the final considerations of the research carried out.

## METHODOLOGY

Faced with the need to elucidate constitutive aspects of the perspective of Active Teaching Methodologies, both in its origin and in its operationalization in the Brazilian context, a qualitative

approach study was chosen, with a descriptive-analytical methodology, which consists of identifying, recording and categorize data for reflection and/or synthesis of scientific production in a given area, for a given period of time, through the application of questionnaires, data analysis and development of indicators. The questionnaire, according to [2], can be defined "as the investigation technique composed of a more or less high number of questions presented in writing to people, with the objective of knowing opinions, beliefs, feelings, interests, expectations, situations experienced, etc.". The questionnaire, in the case of this research, was built on a technological basis, applicable in scale and a product generated from the theoretical framework on Active Methodologies and from the Pedagogical Project of the Pharmacy Course, that is, its construction will be part of the process of data collection.

[2] outline the planning of qualitative research in:

- research preparation: at this stage, the research project was reviewed and submitted to the Research Ethics Committee, whose CAEE protocol obtained was nº 31626920.3.0000.5515.
- research phases: in this stage we worked with the organization and structuring of the questionnaire, which was validated by three expert judges in the research topics and composed of 23 questions, 5 of which are general and the specific on a Likert scale.
- execution of the research: in this stage, we proceed with the application of the questionnaire, collection and analysis of data. The application of the questionnaire was carried out in April 2021 with students of the Pharmacy course at a university in Presidente Prudente. We obtained 38 participants.

From the data collected, three steps were developed to carry out the analysis:

**Full reading:** The first way to analyze survey data is pretty basic for any type of analysis: read everything. Doing a thorough reading of all the responses collected is the first step to begin to understand the results, even if in a general way. As it is being read, make notes of the insights (ideas) that arise. If your survey was intended to collect suggestions, you will need to read each of the responses to evaluate the suggestions. And to make a decision, always take the majority opinion into account, not isolated notes. Assuming that a single person has said it as true can pose a great risk.

**Grouping:** Another way to analyze the data in the survey is to group it. In a satisfaction survey, for example, you might want to group positive, negative, and neutral responses and then look at each group separately. Don't just seek to consider the positive answers and ignore the negative ones. Also be sure to indicate which answers you consider most relevant, whether positive or negative.

**Word cloud:** In this third way, it is taken into account and very useful when there are open answers. The word cloud is a visually hierarchical list. It highlights the terms most cited in the respondents' responses.

## RESULTS

As described in the methodology, before being applied, the questionnaire was constructed and validated by expert judges in the thematic axes. Three PhD professors were invited, in the areas of Pharmacy, Biomedicine and Education. The judges received the questionnaire by text editing document, by email, and had 3 to 4 weeks to return. Validation was completed in the second half of 2020 (Figure 1).

As can be seen in Figure 1, the questionnaire was composed of a brief contextualization of the research, followed by general and specific questions. Questions on a Likert scale were prioritized, but open questions were also inserted. After the review and validation, the questionnaire was implemented in a technology-based tool.

The Google Forms Tool was chosen (Figure 2), and the application with the support of the coordinator of the Pharmacy course at the University in question, in April 2021, with students of the Pharmacy course at a university in Presidente Prudente. We obtained 38 participants.

**Breve explicação**

Caro(a) participante, Ao responder este questionário você **estará contribuindo** para a compreensão sobre qual é a visão que o estudante tem, ao estudar em curso de Farmácia, disciplinas que utilizam metodologias ativas de aprendizagem. A sua percepção é muito importante e irá auxiliar-nos a traçar uma explicação quanto a essa visão/percepção e apresentar melhorias, caso seja necessário. O questionário é composto de 22 questões. Inicialmente, nas questões gerais, você deve responder discursivamente ao que perguntamos. Nas questões específicas, você deve ler as afirmativas e indicar se concorda inteiramente, concorda mais ou menos, nem concorda e nem discorda ou discorda inteiramente com as sentenças.

Muito obrigado.

**Questões Gerais:**

Qual é a sua idade?

Em qual termo/ano do curso você está matriculado?

Você estuda no período diurno ou noturno?

Figure 1. Validation of the questionnaire by the judges



Figure 2: Questionnaire implemented in Google Forms

From the students' answers to the questions, graphs were generated in order to facilitate the analysis of the answers obtained. The analysis of the collected data indicates that, regarding the age profile, the respondents are mostly students who are directly entering high school and are between 17 and 20 years old, therefore, quite young. As for the Pedagogical Project of the Course and National Curricular Guidelines, the data revealed interesting information. Most strongly agree or agree that the methodology developed by the teachers integrates theoretical and practical knowledge. Regarding this same question, it was possible to verify that there is a portion of students, who declare themselves neutral, that is, they neither agree nor disagree with the fact that during classes they actively participate in the process of construction and dissemination. Knowledge that teachers address. Thus, it can be said that these students, even though they consider that the methodologies integrate theory and practice, are not always fully aware of their role in these proposals. When asked which Active Methodologies are applied in the course, it was left open. The responses were categorized by Word Cloud (Figure 3).

As shown in Figure 3, students are clear about the names of Active Methodologies used in classes, prevailing Problem Based Learning (PBL), followed by Team Based Learning (TBL) and clinical cases, in addition to scenarios and laboratories. The data are consistent with the methodologies recommended in the National Curriculum Guidelines for the Pharmacy Course. As for the Active Methodologies, several data draw attention in the analysis of the graphs. However, it is worth mentioning the fact that students fully agree or agree that during the Active Methodologies classes, situations contextualized with reality are presented, exploring practical situations of the pharmaceutical professional. This data is quite important, as it demonstrates that the use of Active Learning Methodologies allows the contextualization with practical situations of specific training. Finally, regarding the experience (feeling) of

classes based on Active Methodologies, the question was left open and the answers were also categorized in Word Cloud (Figure 4):



Figure 3. Word Cloud (Active Methodologies)



Figure 4. Word Cloud (Sensation Active Methodologies)

Based on what can be seen in the cloud, it is possible to affirm that the students consider that the experience with the use of Active Methodologies is good, challenging and brings learning. The word experience appears prominently, because it was inserted in the question; Words such as: struggle, excellent, great, in addition to the word stressful, which also appear with some prominence, also call attention.

## CONCLUSION

Based on the information obtained in this study, it was possible to identify that the students know about the Active Methodologies and realize that this contributes to creating the aforementioned professional competences necessary for the health professional. Thus, the research contributes to innovation in the teaching and learning process of students of the Pharmacy course, as it offers new knowledge about the use of Active Methodologies in the initial training course of future professionals in the area, as it allows the replicability of the use of the instrument created. In view of the investigative path described, throughout the methodological design process, there was a systematized reflection, which allowed, as far as possible, to also perceive the researchers' learning "in relation to the development of the ability to write with production of meaning, which tends to favor intellectual autonomy" [3]. It was possible to verify, therefore, a progressive appropriation of scientific writing, essential for the researcher when he is dedicated to communicating the path taken during the study, the reasoning used along the way, the answers obtained and the new questions that were established from of the production of new knowledge.

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