

The use of active methodologies as a means of promoting autonomy to higher education students

O uso das metodologias ativas como meio de promover a autonomia ao aluno do ensino superior

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ABSTRACT

The world is constantly evolving in the technological sense and the educational area must follow these processes so that it does not become outdated and to keep training quality professionals, who attract the attention and interest of the market. This study aimed to observe the appreciation of students' autonomy in their learning process when using the rotations modality by stations related to active methodologies in remote education. The modality was applied to students of higher undergraduate courses at a private university. Data were collected through observation in the classroom, interaction of the subjects in the proposed activities, narratives of the participants, and questionnaires. There was greater support on the part of the students to the activities, stimulating the autonomy of the students, and consequently, improvement in the process of construction of learning of the proposed concepts.

Keywords: Active Methodologies; Autonomy; Teaching and Learning.

RESUMO

O mundo está em constante evolução no sentido tecnológico e a área educacional deve acompanhar estes processos para que não se torne ultrapassada e para que se mantenha formando profissionais de qualidade, que despertem a atenção e interesse do mercado. Este estudo teve como objetivo observar a valorização da autonomia dos alunos em seu processo de aprendizagem quando utilizada a modalidade rotações por estações relacionada às metodologias ativas, no ensino remoto. A modalidade foi aplicada em alunos de cursos superiores de graduação de uma universidade privada. Os dados foram levantados por meio de observação em sala de aula, interação dos sujeitos nas atividades propostas, narrativas dos participantes e questionários. Observou-se maior adesão por parte dos alunos às atividades, estímulo a autonomia dos discentes, e consequentemente, melhora no processo de construção da aprendizagem dos conceitos propostos.

Palavras-chave: Metodologias Ativas; Autonomia; Ensino e Aprendizagem.

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INTRODUCTION

Active learning methodologies are relevant in the educational process, contributing to the breadth of education and providing greater participation, commitment, and engagement of students, collaborating in the process of knowledge construction.

When considering active pedagogies, one can describe how teaching directed to the construction of an autonomous individual, based on their abilities and needs (MARTINS, 2002).

Among the modalities of active methodologies, Rotation by Stations offers a relevant co-work, the measure that proposes the involvement, proactivity, and engagement of students in the proposed activities. According to Moran (2017), the values the use of mechanisms in the teaching process, which motivate the student to be the protagonist of his process of knowledge construction.

The theme is constantly addressed in the construction of theories that are based on the so-called libertarian pedagogies, active pedagogies and also identified in the processes of individualization or embodiment of teaching (UNESCO, 1981).

In this sense, this article aims to observe the conception of the application of the phase rotation modality by stations, an active methodology modality, to observe the valorization of students' autonomy in the learning process.

It is intended to work with the process of learning and training of students of higher technology courses of a higher education institution deprives the generating ina virtual learning environment (AVA), a collective vision of learning, using the ICTs - Information and communication technologies in a way that is directed to active teaching methodologies, generating a favorable climate to arouse the interest, interaction, and autonomy of those involved in the process.

It is based on the theoretical framework around the keywords with observations about creativity and innovation in education, active methodologies, the rotation modality by stations, and finally in autonomy. Next, in the methodology, the didactic sequence used based on Rotation by Stations and applied to students of higher education is expressed remotely. It follows with the presentation of the results and the final considerations of the research.

THEORETICAL REFERENCE

Information and Communication Technologies

Society is observed in a continuous flow of evolution, including technological vision, in which digital technologies demonstrate significant and constant advances in a short period.

According to Cannatá (2017), Information and Communication Technologies (CITs) should be considered a possible ally to the teaching-learning process.

[...] one tends to think that digital information and communication technologies give rise to new paradigms or educational perspectives and help explain why virtually all perspectives on teaching and learning can argue that they find an invaluable ally on the computer. (SANCHO; HERNÁNDEZ, 2006, p. 20)

Through THE TICS it is possible to customize, by teachers, their classes, besides, the various available technologies contribute to a methodological approach of teaching that better adapts to a generation that has greater interest and interaction with technological means.

Studies show evidence of improved student performance when using ICTs in their learning practices – as long as teachers seek to increase students' awareness of ICT use and improve their skills related to critical Internet use (COMI *et al.*, 2017).

Souza *et al.* (2018), evidence in this context the importance of teacher education. For significant transformations in the process, teachers must develop knowledge and skills, not only around the contents they teach but also that they have the knowledge and technological skills, so that, effectively, they integrate THETs in their daily educational practices.

Another discussion refers to the new generations who interact constantly with technologies. Brasil (2013) shows that digital technologies present themselves as a relevant constitutive element of youth culture and identifies multiple possibilities for guiding personal and professional life (BRASIL, 2013). Therefore, the use of IT Is seen

as a strategic point for this public, as it will contribute to greater involvement in the activities involved in the teaching and learning process (MOREIRA; MONTEIRO, 2010).

Mason (2006) addresses that making use of ICTs in the teaching and learning process, promoting pedagogical activities consistent with the virtual environment, motivates, by nature, students to develop autonomous aspects, helping in broader learning.

Active Methodologies

The school anchored in the principle of reading, writing, counting and passively receiving the content made available by the teacher reflects the past. These days, one can no longer be stuck with this limited thought of the teaching-learning process (CARBONELL, 2002).

Merely exhibition teaching is no longer sufficient for school success and there was only some sense until now that access to information and technologies was not available through digital culture (MORAN, 2015; SANTOS, 2019).

Leal, Miranda, and Casa Nova (2017) describe that the knowledge society and the information age require active participation by students every day and that for this, teachers must develop methodologies that prepare them for the challenges of the market and life.

The current situation regarding teaching practices is directed to an education that values the digital concept, focusing on the student and that promotes their interaction and constant collaboration in the learning process (FONSECA; ALENCAR, 2016).

According to Diesel (2017), education is an autonomous process not performed by others, being the action of the subject himself, but it is carried out in the relationship of historical subjects through their words, actions, and reflections. With this vision as a focus, the reflection on active methodologies is present:

> While the traditional method prioritizes the transmission of information and has its centrality in the figure of the teacher, in the active method, students occupy the center of educational actions and knowledge is built collaboratively. (DIESEL, 2017, p. 270)

Active methodologies can be seen as a process that opposes the traditional teaching method, because students are identified as historical subjects and able to assume

several roles that demonstrate their active vision in the learning path, considering that their experiences, visions, and opinions are valued as a relevant focus in the face of the construction of knowledge (DIESEL, 2017).

Moran (2017, p. 4) approaches the concept of active methodologies as "guidelines that guide teaching and learning processes, which are implemented in concrete, specific and differentiated strategies, approaches and techniques" and that emphasize the protagonist role of the student, for their active and reflective involvement throughout the learning process.

Rotation by Stations

The models called rotation initially presented themselves as a hybrid teaching model process and involve four submodels: Rotation by Stations, Rotational Laboratory, Inverted Classroom, and Individual Rotation (CHRISTENSEN; HORN; STAKER, 2013).

Among the four rotational models described, this article is directed to the use of the rotation modality by stations, the submodel used in the subjects of this research.

The R-appropriation model by Stations is understood by "any course or subject in which students alternate - in a fixed sequence or at the teacher's discretion - learning modalities in which at least one is online" (HORN; STAKER, 2015, p. 37).

In the rotation modality by seasons, students are divided into teams and take advantage of activities subordinated to a fixed period, determined by the teacher. The tasks include group discussions, written tasks, readings and interpretations, and, necessarily, at least one online activity (BACICH, 2016). Andrade and Souza (2016) show that in the rotation modality by stations the class must be divided into the same number of stations so that each group of students occupies a station with the task of performing the task associated with it.

These activities may include the presence or not of the teacher, which generates greater autonomy for the students involved.

The teacher is considered a mediator of the teaching and learning process, allowing the student to learn in a more personalized way, as well as autonomy to design and program their learning based on the appreciation of their skills and competencies (JUNGER *et al.*, 2018).

Students' Autonomy

It is understood that it is necessary to broaden the horizons regarding the pedagogical process developed in Brazil, especially considering the moment of the pandemic, which leads us to the encounter with what Valente *et al.* (2017) describe that education has the challenge of generating reflections on new educational proposals that overcome the dilemma of instructional use of the textbook, the teacher-centered class and the passivity of students.

The concept of autonomy and self-determination was inspired by the work of DeCharms (1984). The author presents self-determination as an innate human need, related to intrinsic motivation, so it is observed that people act intentionally with the focus of generating productions that lead to changes in society (GUIMARÃES, 2013).

As for autonomy, Diniz and Guilhem (2008) show that their base suggests the freedom of choice of the people involved, their independence from certain conditions.

The use of active methodologies contributes to the development of autonomy, especially with the help of digital technologies and the experiences it promotes by relating various environments, knowledge, daily life, and cultures (MARIN *et al.*, 2019).

According to Berbel (2011), active methodologies enhance curiosity, the contributions of students who are valued, feelings of engagement, perception of competence and belonging. Besides, learning through problematization is enabling the active involvement of students in their training process, highlighting their autonomy.

It is observed that the active methodologies allow the displacement of the protagonist's gaze of the teacher (teaching) to the student (learning), which greatly favors the student's autonomous performance.

Prensky (2001) shows that students of today's generations, called digital natives, do not know the world without interaction with the Internet and are constantly encouraged to develop different forms of the search for information, stimulating greater independence.

However, sometimes it is observed that youth has greater proximity to technologies than most of their teachers, which can generate for some teachers a supposed threat in the face of power relations and classroom knowledge hierarchies, after all, cyberculture supposedly would threaten the position of the teacher as the exclusive holder of knowledge (BRASIL, 2013).

Teachers need to reflect more on the use of methodologies that bring innovations and contribute to teaching practice, generating autonomy to students on the path of gaining new knowledge and, consequently, in the evolution of the flow of learning (ZIMPEL *et al.*, 2017).

METHODOLOGY

This article presents the conception of the application of the modality of Rotação by Estações to observe the valorization of the autonomy of students in the learning process.

It is worth describing that the Season Rotation model was originally designed to be applied in a hybrid way, however considering the time of the pandemic triggered on March 11, 2020, by the World Health Organization (WHO) and the suspension of classroom classes, authorizing the transfer by remote classes, subsidized by Ordinance No. 343 of March 17, 2020of the Ministry of Education and Culture (BRASIL, 2020), the modality was applied entirely remotely and with the use of a virtual learning platform.

The modality was applied to 148 students from a private university and in the higher technology courses in Human Resources Management and Logistics Management, from different semesters.

For the elaboration of the learning objectives, the contents of the discipline Knowledge Management were based for the classes of the Human Resources Management course, and for the Log management course, the view of the contents of the disciplines Logistics Management and International Logistics was directed. The choice of subjects was made because one of the researchers acts as a teacher in these classes.

The classes were taught using the remote system on a virtual learning platform called Collaborate offered by the educational institution.

Initially, the guiding content of the active methodology modality that would be used - Rotation by Stations was taught.

With a focus on achieving the objectives of observing the autonomy and learning of the proposed contents, the teacher suggested the division of each of the rooms into groups taking as reference the autonomous decision of the components and also considering the number of students enrolled per room, taking into account equivalent amounts of students.

The teacher elaborated a sequential trail of divided learning and called "stations", being: visual resource station, empathy map station, feedback station, and station rubrics.

The students were in a virtual environment, separated into teams, and were able to dialogue and perform searches on the Internet network on the topics covered, as well as consult the materials available, directed to the development of the activity in each station.

The activities required a specific amount of time (20 minutes per station), which as it was exhausted, resulted in the transfer of students to the next station.

The aim was also to observe the students' performance in an environment that promoted the autonomy of their actions in a class taught through a virtual environment and with the use of ICT, in addition to replacing habits acquired in face-to-face and traditional teaching.

At the end of the activity of each of the proposed stations, the students accessed a questionnaire about the system used, about their view of the rotation modality by stations, and other questions related to the acceptance and use of the active methodology in the remote system.

All students actively participated in the activities and questionnaire and, in the end, returned to the main remote room and were encouraged by the teacher to give statements that described their opinion about the use of rotation mode by stations, the use of TICS, and their opinion about autonomy in the learning process.

The data obtained have a qualitative and quantitative nature, were compiled, led, and will be presented in the form of texts and graphs in the discussion and analysis session of the results, to enable the understanding of the theme and its effects on the students' learning process.

DISCUSSIONS AND ANALYSIS OF RESULTS

Through the observations made in each of the stages of Rotation by Stations, in addition to the analysis of the results produced by the students, and finally, through the questionnaire of self-assessment and narratives of the students, present them and in this chapter the results of the applied research.

No student had previous knowledge of the modality nor of the contents addressed in the class, so the exposure and explanations developed by the teacher at the beginning of the activities offering the basic support for understanding and performing the tasks within what was desired to be observed contributed greatly to the students' performance.

It was possible to observe the active participation of the students in all the proposed stages, both individual, in the answers of questionnaires and narratives, as well as collective in the four seasons. besides the involvement of the students in the teams and activities proposed in each season was evidenced, observed in the reflections made in the groups, in the achievement of the objectives of each task, in the fulfillment of time, and even in the diagnostic evaluation.

At the end of each season, the groups delivered a finishing activity, allowing the teacher to develop the monitoring of content absorption and participatory action of the components. The students also developed a final evaluation, where they could evaluate not only the concepts but also the method, their participation, and the participation of their colleagues.

Regarding the perception of students regarding the use of the Rotation byStation'ss modality, a high satisfaction index was observed, shown through Figure 1.



Figure 1 - Student satisfaction with the use of Rotation by Seasons

The student was challenged with the use of the rotation modality by stations and corresponded with participation, presenting himself as an active and autonomous actor in the learning process, which reflects on the construction of knowledge and improvement of the absorption of the contents addressed. Besides, the development of learning generated in a research environment (Skovsmose 2000) is promoted. Of the total number

of respondents, 92.8% agree or fully agree that the use of the modality contributed to them learning without further content (Figure 2).



Figure 2 - Students' perception of the contribution of Rotation by Seasons to better content learning

According to Santos (2008, p. 33) "learning only occurs if four basic conditions are met: motivation, interest, ability to share experiences and the ability to interact with different contexts", which reminds us of the view at the group of students showed interest in analyzing that in all seasons the interaction between the students involved was observed, represented in Figure 3; 85% agreed or fully agreed that there was in the rest of the team members in the solution of the tasks proposed.



Figure 3 - Students' perception of the group's interest in carrying out the activities

Fonte:

Fonte:

Considering the autonomous view, regarding the dedication and interest in the class proposed using Rotation by Stations, it was identified that 89.6% fully agreed or agreed that there was dedication on their part in the performance of the activities, which represents that the Methodology of Rotation by Stations held the interest of the students in the class as presented in Figure 4:



Figure 4 - Students' perception of their interest in carrying out activities



The students were led to explore the autonomous concept in the development of the various activities to solve the problems presented, stimulating participation and collaboration both individual and collective and it is worth valuing the work of the teacher who developed a creative process and that stimulated the student, in the elaboration of the stations, to motivate the students to achieve the proposed objectives.

Even the Rotation by Stations being used in only one class for each class, it is observed or the effectiveness in the potentiation of the students' learning identified in the preparation of the activities delivered after the passage in each season, in the evaluation at the end of the class and, also, in the statements and feedback received.

The modality proved to be dynamic and with several possibilities of learning strategies, contemplating the concept of stimulating the student's autonomy as a source of greater participation and interest in the subjects addressed and promoting reflective thinking in the participants.

FINAL CONSIDERATIONS

This article aimed to present the conception of the application of the modality of Rotation by season considered an integral modality of the actives is methodologies, to observe the valorization of the autonomy of students in the learning process.

It was intended to contribute to the process of learning and training of students of higher technology courses of a private higher education institution generating in a remote environment, a collective learning scenario, contemplating the use of TICS directed to active teaching methodologies, promoting a cycle of interest, interaction, and autonomy of those involved in the process.

It is believed that the Model of Rotation by Stations applied to the classes, contributed to the improvement of the absorption yield of the contents addressed and mainly offered the participants the opportunity to act autonomously.

The active methodology modality used increased curiosity, promoted a feeling of engagement, and also, through problematization, enable or the active and autonomous involvement of students in their training process.

Many students in the use of the Rotation by Estações modality described themselves as participative in the activities, proposing that this type of class is repeated more often and that during the class they created creative solutions to plan and to act with the proposals.

Most of the participating students narrated that they understood the class as dynamic, motivating, and innovative. They also said that it provoked them to work autonomously.

The modality proved to be dynamic and with several possibilities of learning strategies, contemplating the cognitive needs of the group and promoting reflective thinking in the participants.

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