The innovative classroom: pedagogical strategy to promote active learning – Fausto Camargo, Thuinie Daros. Porto Alegre: Penso, 2018. e-PUBFausto Camargo, Thuinie Daros. Porto Alegre: Penso, 2018. e-PUB

Jandeson dantas da Silva
Wênyka Preston Leite Batista da Costa
Manoel Pereira da Rocha Neto

The book deals with topics related to the possibilities of innovative education, organized by authors Fausto Camargo and Thuinie Daros, whose objective is to help with active learning through their experiences.

Confirming the statements by Mitre *et al*. (2008), authors such as Berbel (2011), Borges and Alencar (2014), Colares and Oliveira (2018) highlight that active methodologies are a set of practices used in the learning process that aims at developing the individuals' critical training, which results in autonomy and influences them to choose the best alternative in any situation, enabling learners to self-manage their training process and be a transformation tool in the solution of several social practice issues involving them.

The work deals with the need to change traditional patterns. It also acknowledges the relevance of the traditional method by emphasizing that the access to information transformed society and the way of learning and teaching.

Unpredictability, impermanence and the liquid stage of relationships and things have stood out in the contemporary society. In this setting, education is found with its processes and individuals exposed to changes (DIESEL, BALDEZ, MARTINS, 2017).

Submitted: 12/19/2019
Accepted: 04/12/2020

Jandeson Dantas da Silva
jandeson.dantas@gmail.com
Master in Administration - UFC
Mestre em Administração - UFC
Universidade do Estado do Rio Grande do Norte
Mossoró/RN - Brazil

Wênyka Preston Leite Batista da Costa
wenykapreston@hotmail.com
PhD in Administration - Universidade Potiguar
Doutora em Administração - Universidade Potiguar
Universidade do Estado do Rio Grande do Norte
Mossoró/RN - Brazil

Manoel Pereira da Rocha Neto
manuneto@yahoo.com
PhD in Education - UFRN
Doutor em Educação - UFRN
Universidade Potiguar
Natal/RN - Brazil

The technological evolution that took place in the end of the 20th century also brought changes in the educational area. Information, knowledge and technological evolution define the shape of network organization, the economic growth, the pattern and the way of social life (CASTELLS, 2010). In this sense, Penof, Leonardo and Farina (2020) explain that it is hard to understand all the issues concerning the organizations' daily activities from a single and specific knowledge perspective.

The first part of the book portrays the students and teachers' dissatisfaction and presents research data about the knowledge and the competencies achieved by the Organization for Economic Cooperation and Development – OECD (2015), which ranks Brazil as the 60th out of 76 countries, and it is necessary to find an alternative that contributes to improving these indexes.

Upon confirming the need of change, the authors suggest modifying the practice and the development of strategies as a focus on the interactive learning connected to real events where innovation is the tool that is necessary to transform education. The teachers must know their students and create an environment of trust, promote discussions, creativity and reflection by providing the establishment of relationships between what is taught/learned and the practical daily situations that make learning so meaningful.

In this sense, Dewey (2008) states that practice is a simple way to understand doctrines, their objectives, moves, and to avoid misunderstandings. It enables discoveries that are useful to society and allows parameters to establish the survival of new beliefs. Dewey defended that an educational approach should be based on activity to solve problems, and that the learning environment should be a democratic space of discoveries where students are interested in searching for knowledge through their experiences and share it with all those involved. This way, education could reach several and unpredictable objectives (CARON, SOUZA, SOUZA, 2016; D'AGNESE, 2019).

Kilpatrick, on the other hand, developed activities based on the students' interests with the objective to make them more meaningful (BEYER, 1997). In the Kilpatrick approach, education was attributed with the responsibility to increase the learners' capability to judge and coordinate the environmental influences, so as to expand the individuals' experience process. Thus, education should be part of life itself. He defended the practice in the educational context by exposing what was

needed to be learned by doing, highlighting the learner's experience in the learning process (MARQUES, 2016).

With the intention to make learning meaningful, Ausubel suggests that the learners' previous knowledge must be validated in order to improve teaching efficacy and content satisfaction (PELIZZARI *et al*., 2002). Ausubel also suggests that the teaching material should be meaningful to the learners and that they should manifest their interest to learn, thus improving the learning development (OSTERMANN, CAVALCANTI, 2011; SILVA, SCHIRLO, 2014). Moreira (2000) states that this type of learning enables the strengthening of existing knowledge and makes it stay for a longer period of time with the student.

This chapter is relevant because it shows the current Brazilian educational context in relation to the rest of the world, the desires of those involved and an alternative to change such setting. Despite the consistent theoretical foundation upon searching for an innovative alternative in the learning process, the authors could show more solid results in relation to the benefits that come from the application of their proposals in other environments worldwide, thus showing how the application of pedagogical strategies improved the results in countries that rank higher, and which strategies they have used.

The second chapter focuses on historical aspects from the beginning of the 20th century and current challenges. It shows the concept foundations by relating theory and practice with daily issues. Another work proposal is based on the students' interest centers, which address transdisciplinarity and student-centered globalized teaching, valuing previous knowledge.

The suggestion to apply innovative methodologies aims at making the individual someone critical, reflexive, transformative and humanized, as well as improving the capacity to solve problems through a teaching system that is centered on creativity, self-teaching and student's prominence.

In this sense, it is possible to notice the presence of the characteristics of Paulo Freire's liberating, problematizing and enlightening theory, where the theoretical principle of the student searching for autonomy can be mentioned, as well as the effort to overcome challenges and solve problems, and the use of learners' experiences in order to create new knowledge that is able to transform their social reality (MITRE *et al*., 2008; BERBEL, 2011; CAMPOS, PARO, 2019).

Further on, the authors emphasize society's demand for qualified employees, and it is necessary to improve educational projects, which highlights the role of quick technological innovations that will change the way knowledge is developed, as well as including the teacher's role in the learning process. This way, active methodologies are an alternative for education and society's demands.

Confirming Paranhos and Mendes (2010), authors such as Prado *et al*., (2012) and Paiva *et al*., (2016) state that there are internal and external demands for the improvement of pedagogical projects with the inclusion of an active methodology that is aligned with the job market needs, which brings together theory and practice. Such alignment enables the meaningful learning that will contribute to the professional's training through expertise (knowing), skills (know-how) and attitudes (knowing how to be and live with), which turns autonomous learners into individuals who are responsible for and the main agents of their own learning, one that is critical-reflexive and able to change their social reality.

In this chapter, the authors establish the theoretical foundation in order to propose active methodologies by retrieving consolidated authors such as Dewey, Ausubel and Paulo Freire, among others, with the clear intention to bring together theory and practice and place the learners as the ones responsible for their own training. However, it is believed that it would be possible to go deeper into the perspective of society demand for an alternative professional model, which highlights the critical-reflexive and autonomous profile the teaching environments must shape.

The third chapter deals with "Why use active methodologies in teaching?" and it shows society's changes due to technology, which is necessary in order to change education and its teaching methods. Another reason is the discouraged, distracted and sleepy students concerning the traditional teaching model.

The authors state that the use of active methodologies allows the student to act with autonomy and protagonism by learning and developing competencies and skills in a collaborative and interdisciplinary way. These two attributes are key for the effective development of competencies for professional and personal life, and provide a transdisciplinary view of knowledge by placing the student as the subject of learning.

From the teacher's perspective, there is the development of a new attitude that will act as the facilitator and mediator of knowledge creation.

Although it is short, this chapter portrays the motivations to use active methodologies based on scientific researches through different methodologies. Even though they present consistent results, the authors chose to prioritize arguments over a specific group of students researched with a little exploration of the reasons for using active methodologies in other audiences and environments. Furthermore, the advantages could have been expanded into social, professional and academic aspects concerning the use of active methodologies in the individuals' training.

The second part of the book deals with pedagogical strategies for active learning and highlights 43 strategies followed by educational competencies and strategies for the conception of each strategy, as well as the presentation of models of job roles, teachers' recommendations, and classroom layout for strategy completion.

The strategies ranked by the book start off with a "learning contract activity", whose objective is to call the students' attention for their accountability in the learning process for professional practice, which has been considerably used to create student's accountability, awareness and empathy. The use of such strategy is able to develop the capacity of cooperation and socialization, besides promoting the learner's autonomy, and these are aspects the job market demands more and more.

The second strategy, "analysis of every factor or idea", must consider the factor upon taking decisions and planning the topic of the class. It has an impact on professional training, as long as it provides information management and exchange, improves teamwork, causes reflection focused on solving problems and helps in the decision-taking process.

The third strategy, on the other hand, deals with the "[…] applicability of a concept by visual representation involving a case study", which must develop the practice of something that exists in the plan of ideas. In this context, it contributes to the learner's training concerning the applicability of theory in the professional field, and gets the individual in touch with a real market issue structured through theory, thus expanding their expressing capacity.

Strategy number four deals with "education applications", which are creatively, critically and widely used as a pedagogical resource in education due to their several use possibilities. They are able to develop useful skills and knowledge for

practical applicability in the job market, besides potentially expanding the learner's concentration and participation capacity.

The fifth strategy concerns individual perception, analysis, comparison, pair discussion, concept expansion, doubt explanation and group summary about a certain topic, named spiral learning. It is characterized by expanding analysis capacity, synthesis, knowledge, comparison, and idea association; it improves communication and the capacity to listen to others.

Issue tree is the sixth strategy addressed by the authors and it aims at analyzing problems through the identification of the causes and consequences that pertain to an issue. It contributes to training by improving the way the team works and their analysis capacity; it also expands the reflection and the taking of decisions of future professionals.

The seventh strategy is brainstorm with post-it notes, which must be used when the problem is unknown and, as such, more information on the topic is sought with the objective to create spontaneous ideas, without any judgements or critics. This strategy encourages creativity, enables information exchange, idea association and development, enables teamwork, leads to reflection and improves the taking of decision.

Brainwriting consists of carrying out debate and discussion of ideas about a certain topic or problem by promoting the students' individual and collective protagonism, and encouraging them to suggest solutions to the group. It encourages the skills highlighted in the job market such as information exchange, idea development, teamwork convenience, and it enables the taking of better decisions.

Building a wall is the ninth strategy and it enables students to consider which points are more relevant in the development of a question or in the solution of a problem. They must prioritize ideas and information. Moreover, they must discuss and justify their choices. It helps with the development of ideas and with the consequent taking of decisions, and it encourages teamwork.

The tenth strategy concerns the development of problem situations which must be cases that are characterized as a problem for the students and which must have a very well defined beginning, middle and end. This strategy is able to place the students as the protagonists in the solution of problems by developing a critical analysis.

The eleventh strategy deals with the "development of a case study", which aims at presenting a problem to be solved and which has no pre-defined solution. It is very useful to prepare the candidate to solve problems, take decisions, and improve argument and, when applied to a group, it enables the capacity to work as a team.

The twelfth strategy, "gamified intellectual race", concerns a competitive group play. This strategy enables the students' engagement and motivation and it can increase communication and the capacity to work as a team.

"Double, quadruple, whole-group discussion" is the thirteenth strategy. It enables content reflection, debate and the sharing of ideas. It also contributes to training the learners' argument capacity and expands the way of thinking and acting with the inclusion of a critical perception, besides enabling teamwork.

The fourteenth strategy concerns "smart debate", where students must prepare their arguments logically and rationally in order to defend their opinions. This strategy enables the development of rational arguments based on scientific researches. It also gathers different ways of qualified thinking by contributing to the professional training and to the social environment. Thus, it will be possible to expand the capacity to take reasonable decisions.

The strategy concerning "short-term design thinking" is creative and practical and focuses on collaborative work. It comes from understanding the others' needs through quick idea development for the production of innovative solutions. Organizations and professionals in the business world have used this strategy as a way to solve problems. It contributes to improving communication, enables idea development, expands the capacity to work as a team and promotes the leadership spirit by leading the learners to solve problems in certain contexts.

The sixteenth strategy deals with the "five whys diagram". It starts with the establishment of a problem and asks how this problem took place and, depending on the causes, each one of them is questioned again. It is very useful to develop teamwork, create an environment for new ideas, and it is a moment of reflection and analysis to take decisions. These are the competencies the learners will be expected to develop.

Further on, the seventeenth strategy, "different perspectives of a text", is presented. It enables the students to expand their personal view by complementing it with their colleagues' view on the same text. Through this strategy it is possible to

understand a text from several different points of view, establish a personal opinion concerning the topic studied, perform a critical analysis, expand the summary capacity and, especially, strengthen teamwork through cooperation.

The eighteenth strategy concerns the "argumentative dispute with flashcards", which includes the realization of argumentative debates in an auditory-like environment where the audience decides either for the solution of a problem or for the product. It is very useful to improve argumentation and also to solve problems. Besides, it improves the taking of decisions and the capacity to work as a team.

On the other hand, "hybrid teaching" is the formal education program where the student learns on-line, in part, at least. Such methodology has been very used due to the technological advancement, the low cost and also to the high capacity of reaching people and the convenience of time, which is, oftentimes, flexible. Its use was intensified during the COVID-19 pandemic time by private and public teaching institutions as well as by entrepreneurial organizations. Its potential consists of producing classes, information exchange and experiences by promoting debates that end up becoming meaningful learning, at the same time students are prepared for a corporative environment connected to technological progress.

The "case study" enables the confrontation of realities that enable challenges and allows the proposition of solutions or the expression of substantial arguments. Case studies provide students with the autonomy to analyze problems more efficiently and effectively with the capacity to solve them. It also offers experiences with professional issues from the corporate world besides providing a systematic and integrating topic view, and developing the learner's critical argumentation

The twenty-first strategy, "geek", which demands the students to solve each issue together and is used as a diagnosis evaluation or a grading attribute, is an alternative to deal with topics that need the solution of a lot of exercises. It contributes to the student's training process as it enables information exchange, the development of new ideas, creates an atmosphere for reflection in the search of results, and benefits the reach of a better decision-taking process and, primarily, the collaboration among the participating members.

The "collaborative round" collects ideas and enables the sharing of opinions. It highlights the competencies of teamwork and also makes room for reflection in the search to reach a better alternative for the taking of decision.

"Author interchange" establishes a dialogue between the author and the reader, where learners are challenged to discuss with the author by gathering thoughts and ideas about the text. It forces learners to improve their synthesis capacity through comprehensive content reading and leads them to reflection and to the consequent determination of an opinion concerning the text.

The twenty-forth strategy, "card game", allows students to learn about a topic through a set of cards with questions about such topic. This strategy's relevant contributions are channeled into the management and information exchange area and prioritize team work, besides enabling reflection and the taking of decisions.

The "true, false or discussion pedagogical game" promotes teaching-learning situations by developing an active and motivating action. It leads the learner to develop empathy and comprehension, and to relate to other colleagues by creating an environment of cooperation, besides enabling the analysis of the setting to use the best available information for the taking of decisions.

The twenty-sixth strategy consists of "mapping of causes" and contributes to considering the direct and indirect causes of an event over a problem. This strategy may be used in entrepreneurial organizations since it can be applied in the search for solutions to a problem of any kind by creating benefits for the management of information which, in turn, strengthens teamwork and produces new thoughts, besides training learners for the taking of decisions.

"Matrix problems" enables the classification of problems according to the following criteria: important and urgent, urgent but not important, important but not urgent, and not important and not urgent. It's about another possibility that can be useful not only in the academic environment, but also in the entrepreneurial and governmental environments for the construction of more efficient and effective public policies turned to meeting society's needs. The skills processed in this activity are: setting analysis, content synthesis, communication, problem solution and, primarily, teamwork.

"Mind maps" are useful to memorize contents and allow quick and brief content reviews. Learners are forced to expand their synthesizing capacity, and organize and connect their thoughts, thus becoming a more objective professional but keeping their quality.

The "news and notice board" provides the debate and discussion of topics and a wider view concerning the theme. It can also be applied into other environments, besides the educational one, as a way to discuss a relevant topic. This strategy tests the students' analysis and comparison capacity, expands their communication and argumentation capacity, which may be the main legacy of such activity, besides exchanging information, connecting and developing ideas.

The "color palette with the use of a scientific article" teaches to look at and helps with scientific production initiation, where the student uses a specific color to identify part of the article processed. It can be used with the objective to enable the skill concerning formal and scientific writing, as well as idea association, and it is very useful for the student's training.

Concerning the "academic dare or double dare", there is a quiz with questions and answers about knowledge on a certain topic. It is an interesting option to develop teamwork, communication and the taking of decision, but the focus surely consists of the development of reflections on the content and the development of new thoughts.

"Peer instruction with the use of flashcards or clicker-type applications" is developed through the application of conceptual tests that promote debate and idea exposure. It works on cooperativism skills in the construction of knowledge turned to solving a problem. Therefore, it develops the skill concerning comprehensive reading, mastery of multiple language forms and teamwork. Since it is a flexible activity, it can be adapted to the different environments and the audiences it is working on.

The thirty-third strategy concerns the "pyramid of priorities", which allows students to consider which points are more relevant in the development of an issue or in the solution of a problem. It is one more example of activity that can be adapted to the entrepreneurial environment and audience in the search for problem solutions. Among the possibilities developed by those involved, there is the expansion of the capacity to work as a team and the development of new thoughts, room for reflection about contents, and the improvement of taking decisions.

"Scientific writing planning through a diagram" aims at helping college students in the process of organizing and triggering ideas. It becomes relevant since it contributes to improving the skill concerning organizing and planning the student's writing.

The thirty-fifth strategy concerns "daily issues", which causes involvement, interest and creativity by creating a challenging and reflexive situation that refers to the mastery of content information. This activity can be adapted into other contexts, such as the corporative one, and can be a generating potential of competitive advantages if it is well used. It refers to the learner's autonomy in the sense of creating challenging and reflexive situations, expanding the mastery skill and information organization, and the argumentation capacity. It increases the intelligence to solve problems and the applicability of theoretical concepts in the professional field.

The "synoptic board" is a schematized review of the main ideas, text or document, and it organizes contents. Through it, it is possible to expand synthesis capacity, thought organization and content memorization. It demands the expansion of reflection capacity from the learners at the same time it provides them with the freedom to think, making learning more meaningful.

The thirty-seventh strategy concerns a "puzzle" in which each student or group is responsible for the explanation of part of the content. It carries out specific tasks in order to master the concepts regarding their share of knowledge, and teaches other colleagues what they learn. Through this strategy, learners can improve their comprehensive reading skills and their capacity to solve problems. Therefore, the teaching task has a problematizing characteristic. It is also possible to notice the student's reflexive development potential about the content.

The "reminiscent" strategy allows the students to think, reflect and record their level of knowledge as well as their progress after the study. This strategy is based on the students' previous knowledge, which is typical of theories by Ausubel and Paulo Freire. It also enables teamwork, information management, self-diagnosis and self-awareness, which are typical of market demands, and aligned to the learning theories previously mentioned.

Under "didactic clock", the teacher sets a time to answer each question and, in the end, a new question is presented. The learners are brought to a problematizing situation that expands their capacity to solve problems and their analytical capacity, which makes the student apt to work collaboratively.

"Storytelling" consists of telling a story by building characters which are, then, placed into certain situations in the search for causes and solutions. It provides a creative and collaborative environment. In this case, argumentation skill, creativity,

cooperation and sympathy stand out. This has a direct impact on the learner's behavior, making learning more and more meaningful.

"Team-based learning" is done through preparation (pre-class), preparation assurance (in the class) and concept application (in the class), through team management, task accomplishment, and the assignment of concepts and evaluation. Based on the previous study and on the learners' autonomy, it has some characteristics of the theories by Ausubel and Paulo Freire. Besides expanding the capacity to take decisions, solve problems, improve argumentation and expand critical sense, it significantly contributes to making the student apt to teamwork.

"Timeline" encourages succession perception and events' duration. It is widely used to encourage creativity, argumentation, and aptitude to synthesize and cooperate. Its main characteristic consists of the interpretation of the reality based on previous facts, which enable social, political and cultural transformations. Here, once again, it is possible to see the presence of basic foundations of the learning theories previously mentioned.

Finally, "relevance zones" allow the students to consider the most and least important points concerning a topic. The skills developed are teamwork, thought development, reflection expansion and improvement in the taking of decisions.

The second part of the book is the most important, and it encompasses around 90% of the content. It is clear that it addresses several possibilities of applying active methodologies. The convenience of application is a common ground, besides the fact that the teaching method chosen for the presentation leads the teachers to use it.

The possible attributes that are highlighted by the applicability of active methodologies are aligned with academic wishes, private and public organization desires and especially with society yearnings. Upon confirming such understanding, Macedo *et al.* (2008) state that, since they address critical and reflexive education characteristics and place the learner as the protagonist in the learning process, active methodologies are suggested by the Ministry of Education. Moreover, these characteristics are noted by teaching institutions due to their efficiency, and society needs them to bring theory close to practice in real daily issues.

However, the authors chose not to present the results of their classroom experiences with the applicability of active methodologies. This fact can inhibit its applica-

tion for, if the teachers were given feedback, they could see how other experiences went and identify potential problems in other moments that could be avoided. They could also feel the applicability atmosphere of such methodology with another group and even compare it with their teamwork concerning the development of the activity.

Generally speaking, the work is academically relevant, for it contributes to the advancement of science, especially in the education area, and specifically in the learning process. However, since it deals with teaching, it ends up being trans-disciplinary and contributes to the teaching-learning process in several areas of scientific knowledge, including applied social sciences, with a special focus to administration.

Training is part of the entrepreneurial environment. Therefore, the book contributes to the professional aspect from the conception of the desired associate's profile, going through the training expected to continuous education. Thus, it is possible to note three steps where the active methodologies can be applied in the training of the professionals who are expected from the job market. In this sense, and based on their acquired competencies, skills and aptitudes during their training process, the individuals are expected to be able to generate results to the organization in order to obtain a competitive advantage in the market.

From the social point of view, however, the learning process can be considered a continuous process. Therefore, man is a developing organism. Their knowledge, skills and aptitudes acquired in life will enable them to live in society and take the best decisions in the cultural aspects based on their characteristics over autonomy and their capacity of critical-reflexive analysis. Thus, if these attributes can be developed during the learning process through the use of active methodologies, may they be exhaustively used in the search for a more free and autonomous man concerning their taking of decisions.

As a conclusion, the proposals presented by the authors are relevant to researchers, educators, corporative team coaches, developers of human resources, personnel management, professionals from several areas and citizens, generally speaking, since they promote active learning through the search of an innovative classroom that is able to influence the teaching-learning process.

Besides, the book addresses one of the community's most common complaints: the continuity of traditional methodology in the classroom, even before the confirmation of the alteration need due to social changes.

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