Active learning methodologies in higher education: state of knowledge in scientific production

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Abstract: This article presents the partial results of a research project carried out at the State University of Maringá (UEM), whose main objective is to build a knowledge base of scientific production related to active methodologies, focusing on the publications of the ESUD and CIESUD congresses from 2017 to 2020. These events, organized annually by the University Network Association (UniRede) in partnership with Brazilian higher education institutions, are prominent in the national research scenario in Distance Education. The research seeks to identify the state of knowledge on active methodologies, analyzing the evolution of research during the five years of data collection. It

can be seen that in 2020, when the event was held in online format, there was a decrease in the presentation of papers related to the topic due to discussions on Emergency Remote Teaching (ERE) driven by the Covid-19 pandemic. The first reflections highlight the urgent need to establish dialogues and research on Active Methodologies in the Brazilian educational context. Regional and local intellectual production is emphasized as essential since the data indicate a predominance of studies with a foreign approach. This research aims to fill this gap and contribute to the effective adaptation and implementation of Active Methodologies in the Brazilian educational context.

Keywords: Active Methodologies; Higher Education; State of Knowledge.

Metodologias Ativas no Ensino Superior: Estado do Conhecimento da produção científica

Resumo: Este artigo delineia os resultados parciais de um projeto de pesquisa conduzido na Universidade Estadual de Maringá (UEM), cujo objetivo principal é construir um Estado do conhecimento da produção científica associada às Metodologias Ativas, com foco nas publicações dos congressos ESUD e CIESUD no período de 2017 a 2020. Esses eventos, organizados anualmente pela Associação Universidade em Rede (UniRede) em parceria com instituições de ensino superior do Brasil, são destacados no cenário nacional de pesquisas em Educação a Distância. A pesquisa busca identificar o estado do conhecimento sobre Metodologias Ativas, analisando o desenvolvimento das pesquisas ao longo dos cinco anos de coleta dos dados. Observa-se que em 2020, quando o evento foi realizado no formato on-line, houve uma diminuição na apresentação de trabalhos relacionados ao tema devido às discussões sobre Ensino Remoto Emergencial (ERE) impulsionadas pela pandemia da Covid-19. As reflexões iniciais destacam a necessidade urgente de estabelecer diálogos e pesquisas sobre Metodologias Ativas no contexto educacional brasileiro. A produção intelectual regional e local é enfatizada como essencial, uma vez que os dados indicam uma predominância de estudos com uma abordagem estrangeira. Essa pesquisa visa preencher essa lacuna e contribuir para a adaptação e implementação eficaz de Metodologias Ativas no contexto educacional brasileiro.

Palavras-chave: Metodologias Ativas; Ensino Superior; Estado do Conhecimento.

Metodologías activas en la Educación Superior: Estado del Conocimiento en la producción científica

Resumen: Este artículo delinea los resultados parciales de un proyecto de investigación llevado a cabo en la Universidad Estatal de Maringá (UEM), cuyo objetivo principal es mapear la producción científica asociada a las Metodologías Activas, con enfoque en las publicaciones de los congresos ESUD y CIESUD en el período de 2017 a 2020. Estos eventos, organizados anualmente por la Asociación Universidad en Red (UniRede) en colaboración con instituciones de educación superior en Brasil, destacan en el escenario nacional de investigaciones en Educación a Distancia. La investigación busca identificar el estado del conocimiento sobre Metodologías Activas, analizando la evolución de las investigaciones a lo largo de los años. Se observa que en 2020, cuando el evento se realizó en línea, hubo una disminución en la presentación de trabajos relacionados con el tema debido a las discusiones sobre la Enseñanza Remota de Emergencia (ERÊ) impulsadas por la pandemia de la Covid-19. Las reflexiones iniciales enfatizan la necesidad urgente de establecer diálogos e investigaciones sobre Metodologías Activas en el contexto educativo brasileño. Se destaca la importancia de la producción intelectual regional y local, ya que los datos indican una predominancia de estudios con un enfoque extranjero. Esta investigación tiene como objetivo llenar esta brecha y contribuir a la adaptación e implementación efectiva de Metodologías Activas en el contexto educativo brasileño.
Palabras clave: Metodologías Activas; Educación Superior; Estado del Conocimiento.

1 INTRODUCTION

Digital Information and Communication Technologies (TDICs) have recently become commonplace in all sectors of society, changing the way people communicate, relate, and learn. As the world moves rapidly towards digital media, the integration of technologies into teaching and learning processes is becoming increasingly important. It should also be noted that the use of these technologies has had an undeniable and innovative impact on the Brazilian educational scene.

Today, technology promotes the integration of all times and spaces. Thus, the act of teaching and learning takes place in an interconnection between physical and digital spaces, in other words, the classroom can be expanded and enhanced with hybrid and virtual education. However, for this to happen, new learning strategies need to be tested and evaluated. This is where the term Active Methodologies comes from.

Although in many ways we can trace the foundations of these approaches back to authors such as John Dewey, Jean Piaget, William James and Édouard Claperède, the concept of Active Methodologies must be understood within the new dynamics present in the educational processes of the 21st century (OLIVEIRA et al., 2023). Although we know that these are pedagogical approaches and that their practices can take place outside the technological space, we agreed to call the interrelationship between TDICs and student-centered practices Active Methodologies. Meanwhile, they enhance both pedagogical practices focused on student participation and the use of technological resources that support these practices.

In this sense, it fell to us as part of our research to create and carry out a project that could analyze and outline strategies for understanding the relationship between technologies and pedagogical practices for the classroom in the context of contemporary society. Thus, some of the central objectives of the proposal were outlined: through the research project in question, the aim is to learn about the discussions and experiences developed in Brazilian Higher Education Institutions, through the analysis of papers presented at five editions of an international scientific event that annually brings together hundreds of national and international researchers to discuss issues directly related to educational technologies, including Active Methodologies.

Thus, this article seeks, through the partial results obtained from the tabulation of the data presented in the project in question, to identify and analyze the

experiences with Active Methodologies that have been developed in the Brazilian educational scenario. One of the specific objectives is to identify dominant and emerging themes and approaches to the subject of research, and to support the development of studies that analyze activities using Active Methodologies in Higher Education from the perspective of their contribution to improving the quality of education in Brazil.

The objective of this analysis is also to tabulate the number of articles and experience reports presented in the different editions of the Brazilian Congress on Higher Distance Education (ESUD), which since 2015 has been held in parallel with the International Congress on Higher Distance Education (CIESUD). The period defined was 2017-2020, with a detailed analysis of the proceedings of each event, but in this article, we will focus specifically on the proceedings published in 2020, when the event was held in an online format due to the health crisis caused by Covid-19.

Finally, we will briefly outline the scenario of research presented in the annals of the events as a cross-section of scientific production between 2017 and 2020 on the topic of Active Methodologies. In outlining this panorama, we believe we are talking about the possibilities of pedagogical practices that involve the exploration and adaptation of new pedagogical demands and strategies for contemporary education permeated and marked by TDICs.

2 DEVELOPMENT

Bastos (2006) defines Active Methodologies as interactive processes of knowledge, analysis, study, research and individual or collective decisions, to find solutions to a problem.

According to Valente (2018), Active Methodologies are pedagogical alternatives that put the learner at the center of the teaching and learning process, involving them in learning through discovery, investigation, or problem-solving. These methodologies contrast with the pedagogical approach of traditional teaching, which focuses on the teacher, who is the one who transmits the information to the students.

However, it is important to emphasize that a pedagogical practice must take into account the different methods and ways of learning that have a pedagogical intent. In this sense, these active approaches are not a proposal to replace what already exists, but rather a process of building on and complementing existing practices. In other words, it is not a change in the educational paradigm, but possibilities for integrating more forms of teaching and learning, as Costa and Oliveira (2021) state:

> It should be emphasized, however, that we don't mean to imply that adherence to new pedagogical practices disqualifies existing ones. It should be noted that our stance is not simply aimed at separating what works and what doesn't in the teaching-learning process. Far from it. What we are trying to emphasize is that the different theoretical-methodological conceptions, when combined, contribute to a broader and more plural school/university, because they respect other times and ways of knowing, in which the concern must go beyond the merely present fields (COSTA; OLIVEIRA, 2021, p. 238, translated by us).

It is important to point out here that the idea of using technology is also inextricably linked to the proposition of Active Methodologies, which is false from a methodological point of view if this technology is not used with pedagogical intentions focused on the student. In other words, it won't be with the insertion of technologies that we will have active learning approaches because for this to happen it is necessary to think of technological tools not just as teaching resources, but as methodologies. To this end, Costa and Oliveira (2021) state that:

> Therefore, TDICs should be included in educational planning, not only as teaching resources, but as methodologies. In other words, the use of technology should not be concentrated in the hands of the teacher alone, but should also be present as a learning resource for the student. The learner must also have the possibility to use these tools within the different learning tools (COSTA; OLIVEIRA, 2021, p. 242, translated by us).

Therefore, it is worth noting that this factor not only emphasizes the part of the learning process in students' actions but also encourages the use of technological resources. It is through the use of technology that is oriented and directed toward learning that students will be able to dimension their practical reality and develop digital literacy.

Students' involvement in the proposed pedagogical practices must also be considered. In other words, the use of TDICs combined with Active Methodologies in this scenario can get closer to the practices experienced by students outside the school environment, bringing, from this perspective, a more real dimension to the school content. According to Borges et al. (2021), Active Methodologies, supported by the use of TDICs, can provide more interesting classes, in order to train professionals who integrate the labor market already in the school environment in their knowledge acquisition processes.

Various Active Learning Methodologies, such as blended learning, flipped classroom, peer instruction, problem-based learning, project-based learning,

game-based learning and gamification, have contributed to the innovation of activities developed in Higher Education, both in presential and distance education courses.

The use of Active Methodologies changes the role of the teacher in a conventional or virtual classroom. When using Active Methodologies, the teacher's role is no longer only to teach, but also to facilitate the process of knowledge acquisition, in other words, to help the student learn. It is up to the teacher to organize the process, make the environment more dynamic, and encourage student collaboration in the classroom environment.

For example, the Flipped Classroom requires the teacher to prepare a set of texts, videos, tutorials, study guides, and other materials for the students to study in advance. In meetings with the teacher, examples and practices are discussed based on the materials the students have accessed. In other words, the teacher is less concerned with teaching concepts and focuses on problem-solving and getting students to think about possible solutions.

Regarding the Flipped Classroom, Valente (2018) states that:

> In the flipped classroom approach, the content and instructions received are studied online before the student attends class using TDIC, especially in virtual learning environments. The classroom becomes the place to work on the content already studied, carrying out practical activities such as problem-solving and projects, group discussions, and laboratories. However, the fact that the activities carried out online by the student can be recorded in the virtual learning environment creates the opportunity for the teacher to make an accurate diagnosis of what the student has been able to achieve, the difficulties he has encountered, his interests and the learning strategies he has used. Based on this information, the teacher, together with the student, can propose activities and create fully personalized learning situations (VALENTE, 2018, p. 27, translated by us).

On the other hand, peer instruction assumes that learning takes place through interaction among the students themselves. Having read the content in advance, they answer a few simple questions about the material they have studied using software and applications that give the teacher instant access to each student's performance via the computer. In this way, it is possible to see where the main difficulties lie and then explain the lesson topics accordingly. In this scenario, new conceptual tests are used to assess the student's level of understanding. Students first answer the questions individually, then interact and discuss their answer choices with their classmates, before answering again, now collectively.

Problem-Based Learning (PBL) focuses on developing the skills of each subject in the teaching

and learning process through problem-solving. One of the foundations of PBL is that it allows students to acquire knowledge through their search for it. More specifically, as they develop a plan to solve a given problem situation, they develop skills such as teamwork, creativity, innovation, systemic vision, independent study, and others.

On the other hand, in storytelling, learning is developed by narrating events through images, words and sounds, often based on improvisation. In this scenario of Active Methodologies, storytelling generates spontaneity and enables the teacher to transmit theoretical content, since it consists of an opportunity to narrate such content through entertainment. The active role focused on the student is a strong point of this methodology, which seeks to develop the power of synthesis, group work, creativity, and involvement with other forms of language, which are some of the skills enhanced by storytelling.

Finally, Gamification, which is linked to the idea of play, and which distances itself from the idea of work as something difficult that requires hard work, presents itself to students as a new proposal in the teaching and learning process. However, gamification is something that has always been present in teaching; in fact, the very form of passing grades can be seen from a gamified approach. In this modality, applied to school spaces, players-students spend hours formulating strategies, defeating their opponents, collecting items, and even creating negotiations for a pleasing outcome. The development of concentration, dedication, and intelligence are strong points of this methodology, which aims to integrate entertainment as an educational paradigm.

In this sense, when we think of Active Methodologies, we don't just have in mind a lesson in which students participate in solving problems, in constructing their story, and/or in the learning path. We are referring to practices that go further. For active approaches to be effective in teaching and learning processes, pedagogical strategies must be aligned with the goals of the subject, and the class, in short, with the intended educational objective. In fact, if the goal is student proactivity within a pedagogical intent, these methodologies must be aligned with the intended goals. In other words, it's not the use of methods for methods' sake, but rather the potential of these methods combined with the potential of TDIC to achieve participatory student learning.

2.1 Methodological design - The state of knowledge of scientific production

In recent years, there has been a significant increase in what is known as "State of the Art" or

"State of Knowledge" research. These studies have gained ground in the academic world because they are developed in partnership with government agencies and by researchers who consider it important to know what scientific articles published by specialists in the field have achieved in terms of discoveries and innovations for science.

It is possible to see that several authors, including Romanowski and Ens (2006) and Teixeira (2006), agree that in recent years there has been an expansion of programs, courses and seminars, with both quantitative and qualitative growth, covering different aspects and topics in all fields of knowledge. This increase in publications raises questions and concerns that make researchers and society feel the need for studies that can take stock and map the knowledge that has been built and developed, in order to show "the approaches, the most researched topics, and the existing gaps" (ROMANOWSKI; ENS, 2006, p. 38, translated by us).

Bibliographical research of the State of the Art or State of Knowledge type aims to map and discuss a certain format of scientific production. This type of study is not limited to identifying a specific production in a specific field, which could be considered a literature review or a simple mapping, but a state of the art. Therefore, it is necessary to analyze and categorize the productions that reveal multiple approaches and perspectives from which the phenomenon has been analyzed.

It seems to us that the terms "State of the Art" and "State of Knowledge" are different terms for the same type of study. As can be seen, we find the names State of the Art and State of Knowledge used by different authors to refer to studies that seek to identify and summarize the scientific production in a given area, within a defined time frame. Picheth (2007, p. 27, translated by us) states that "the expression 'state of the art' reflects the 'state of knowledge', in other words, the progress that a given field or object of knowledge has made in a given period of time".

Among these authors, Romanowski and Ens (2006) provide a more specific and differentiated definition between State of the Art and State of Knowledge. These authors state that studies based on the systematization of State of the Art data can only be called such "if they cover an entire field of knowledge, in the various aspects that have generated productions" (ROMANOWSKI; ENS, 2006, p. 39, translated by us). Thus, in order to carry out a state of the art, it is necessary to study all the publications in a given field, such as theses and dissertations, articles in periodicals and magazines, communications and publications in the proceedings of congresses and seminars, in what Teixeira (2006, p. 60, translated by us) calls "a kind of cultural exhumation".

According to Romanowski and Ens (2006), the study that looks at only one sector of publications is called the State of Knowledge. Thus, in State of Knowledge research, the material to be analyzed is disaggregated according to the category in which it is grouped, for example, extended abstracts, articles, proceedings, dissertations, theses, or others. We understand that, as the nomenclature suggests, when we use this type of research, we tend to check, through the publications made, what the state of knowledge is on a given topic, in order to evaluate and learn from the scientific production published so far.

Morosini and Fernandes (2014) point out that research on the state of knowledge has formative and instrumental characteristics, as it helps us to read reality through the publications of the academic community. In addition, learning about writing and methodological formalization is established for the development of the investigative path, because when we look at what peers have published about the knowledge we are researching, we see their methodological preferences and the discoveries they have made; thus, we learn from the published studies to move forward in proposing our research.

Morosini (2015) collaborates with the reflections on the relevance of carrying out a State of Knowledge when she explains the need for every researcher to go through a process of rupture of social knowledge to make it scientific. According to the author, the study of published knowledge contributes to the paths of this rupture and supports the exploration of the scientific field, so that research is based on theoretical foundations that have been consulted and verified.

In this sense, the proposal of the research carried out - which generated this article - reinforces the commitment to scientific dissemination committed to a coherent and ethical episteme. Thus, based on the results obtained, we aim to collaborate with the field of educational research, highlighting the publications in the section selected for this investigation.

2.2 Mapping scientific production

We adopted the definition of the State of Knowledge to develop the institutional research project that precedes the partial results presented in this article. In this context, we highlight the methodological procedures adopted to search for data, taking into account our objective to find out about publications in the Brazilian Congress of Higher Distance Education (ESUD) and the International Congress of Distance Education (CIESUD).

In this event, researchers can present papers in two categories, one for scientific articles and

the other for experience reports. In this research, the papers published in the proceedings of each edition were previously selected using the descriptor "Active Methodologies" in the plural and singular forms.

In a first search, the descriptor should be present in the title of the scientific article or experience report, but if the number of papers was considered small, the search could move to the abstract and then to the keywords.

In the period 2017-2019, the group of researchers noted a gradual increase in the number of selected papers, and it was expected that this number would increase each year due to the more intensive use of technologies in teaching and learning processes. In 2017, for example, 185 papers were submitted, of which 106 were articles and 79 were experience reports. Of these, three papers were found with the term Active Methodology in the title, one with the descriptor in the abstract, and none in the keywords. At the time, this result was considered satisfactory because the discussion on the topic was still emerging. Then, in 2018, there was a decrease in these publications, because out of 123 papers presented, 2 articles mentioned the term Active Methodology, one in the title and the other in the abstract.

In 2019, 107 articles and 38 experience reports were submitted, bringing the total to 145. The analysis found 3 articles and 2 experience reports with the term Active Methodology in the title. The group expected to find a larger number of articles in the following year, which could contribute to the discussion on the use of more innovative strategies in the teaching and learning process.

However, in 2020, the world experienced an atypical situation due to the health crisis caused by Covid-19, which required physical social distancing as well as radical changes in the daily lives of people all over the world. As a result of this event, the 17th Brazilian Congress on Higher Distance Education and the 6th International Congress on Higher Distance Education were held online for the first time in their history.

The event was organized by the Federal University of Goiás (UFG) and its theme was "Online Teaching and the Challenges of Networked Education". After the submission period and the evaluation of the papers by the invited referees, 76 papers and 38 experience reports were accepted for presentation, resulting in a total of 114 papers published in the proceedings of the event.

After analysis, it was found that only one article and one experience report had the term Active Methodologies in the title. The article, by researchers from the Federal Institute of Rondônia (IFRO),

is entitled "Main Active Methodologies Applied to Distance Education" and presents some possibilities for innovation in Higher Education.

The experience report presented by researchers from the University of Midwest of Paraná (Unicentro) focuses on the process of organizing an event that dealt with flexibility in the planning of the National Symposium on Active Methodologies.

In the annals, we also found 9 papers that had the term Active Methodologies in the abstract or keywords, either articles or experience reports, as shown in Chart 1.

Chart 1 - Articles and experience reports found

Title*	Type	Institution
2017		
METODOLOGIAS ATIVAS EM EXPERIÊNCIAS DE EDUCAÇÃO A DISTÂNCIA	Article	IFRS/PUC-RS
METODOLOGIAS ATIVAS E USO DE TECNOLOGIAS NA EDUCAÇÃO SUPERIOR	Article	UNIFTEC
O USO DA TECNOLOGIA EM SALA DE AULA COMO **METODOLOGIA ATIVA** DE ENSINO E APRENDIZAGEM	Article	FAQI
AMBIENTES VIRTUAIS DE APRENDIZAGEM (AVA): INOVAÇÃO EDUCACIONAL E TECNOLOGIAS	Article	UNB/UFPI
2018		
O USO DAS **METODOLOGIAS ATIVAS** NO PROCESSO DE APRENDIZAGEM NA EDUCAÇÃO A DISTÂNCIA	Article	UNIFAMMA/ UNICESUMAR/ UNOESTE/ UEM
DINÂMICAS NA EDUCAÇÃO EM REDE: TENDÊNCIAS TECNOLÓGICAS EDUCACIONAIS E MÍDIAS SOCIAIS	Article	UFSC/IFC
2019		
CURSO DE ESPECIALIZAÇÃO DE PRECEPTORIA EM SAÚDE: AS **METODOLOGIAS ATIVAS** NA PRÁTICA DO PRECEPTOR	Report	UFRN
UMA EXPERIÊNCIA DE UM GRUPO DE ESTUDOS COM ALUNOS DE EDUCAÇÃO A DISTÂNCIA E AS **METODOLOGIAS ATIVAS**	Report	UAB
METODOLOGIAS ATIVAS NA FORMAÇÃO CONTINUADA DE DOCENTES PARA A MODALIDADE A DISTÂNCIA	Article	IFES

INOVAÇÃO EDUCACIONAL: INTEGRAÇÃO PRESENCIAL E *ONLINE* NO ENSINO E APRENDIZAGEM NA EDUCAÇÃO SUPERIOR	Article	UnB
CONSTRUÇÃO DE UM CURSO DE FORMAÇÃO CONTINUADA NA MODALIDADE A DISTÂNCIA PARA PROFESSORES DA EDUCAÇÃO ESPECIAL	Article	UFSC
2020		
PRINCIPAIS **METODOLOGIAS ATIVAS** APLICADAS À EaD	Article	IFRO
FLEXIBILIZAÇÃO NO PLANEJAMENTO DE UM EVENTO: O CASO DO SIMPÓSIO NACIONAL SOBRE **METODOLOGIAS ATIVAS**	Report	UNICENTRO
AULA TRIMEMBRADA: INSTRUMENTALIZAÇÃO DOCENTE PARA A PERSONALIZAÇÃO *ONLINE*	Article	UniDomBosco
ENSINO REMOTO DE EMERGÊNCIA E EAD: TRANSFORMANDO OS PROCESSOS DE ENSINO E APRENDIZAGEM MEDIADOS POR TDICS DURANTE O AFASTAMENTO SOCIAL	Article	IFRS
A DISTÂNCIA QUE APROXIMA: PROCESSO FORMATIVO PARA A DOCÊNCIA NO ENSINO REMOTO	Article	UFRN
RELATO DE EXPERIÊNCIA: GESTÃO DE UM CURSO A DISTÂNCIA DE EXTENSÃO BILÍNGUE (PORTUGUÊS E LIBRAS) EM INSTITUIÇÃO PÚBLICA	Report	UFG
EDUCAÇÃO INCLUSIVA NO ENSINO MÉDIO EJA EM ATIVIDADES NÃO PRESENCIAIS	Report	SEE-MG

Source: Information from the Brazilian Distance Higher Education Congress (ESUD) and the International Distance Higher Education Congress (CIESUD) (2017; 2018; 2019; 2020). *Titles have been kept in Portuguese to maintain originality.

Of the 7 papers selected in 2020, it can be seen that 2 allude to Emergency Remote Teaching in their titles, and one of them uses the term non-presential activities; 2 reports deal with experiences developed in the organization of an extension course; and one of the articles deals with the use of

Active Methodologies in distance learning courses.

Still concerning Emergency Remote Teaching, it is important to emphasize that reading the abstract of the paper entitled "Aula Trimembrada: instrumentalização docente para a personalização online" shows that it sought to present the strategies used to create a lesson plan for Higher Education, based on a fraction of the inverted classroom methodology, such planning being applied to remote teaching due to the Covid-19 pandemic, although the term Active Methodologies and Emergency Remote Teaching is not present in the title.

The experience report presented by researchers working for the Minas Gerais State Department of Education (SEE-MG) focused on the academic performance of a student diagnosed with cerebral palsy who was enrolled in a high school class in Youth and Adult Education, to rethink the methodologies used with this student during the period of non-presential that began in Brazil due to the risk of contamination by the Covid-19 virus.

Finally, it is important to note that most of the articles and reports are the result of activities carried out by researchers from public institutions at different levels and in different teaching modalities. They are reports and articles that focus on the activities taught and studies carried out during the pandemic period.

3 CONSIDERATIONS

As already explained, Active Methodologies have been conceived as contemporary pedagogical possibilities that combine TDICs and greater student participation in the process of constructing their educational experiences. These methodologies mean that the student is at the center of the teaching and learning process, and the teacher, as mediator, can make it more dynamic and enhance it with the use of digital tools, promoting more attractive and engaging teaching, since it provides students with active contact with some of the contemporary technologies that can be used for learning. These methodologies also bring with them, from this dynamic relationship between TDIC and student practice, the possibility of insertion into the digital world critically and autonomously, accompanied by the teacher, generating what we believe to be fundamental for a good integration between school and society, namely digital literacy.

Thus, when thinking about improving the quality of education, a lot of research has been done on the subject. However, most of this research is based on international studies. As we have seen,

almost all the Active Methodologies presented in this work had to be adapted to the Portuguese language, such as: blended learning, flipped classroom, peer instruction, problem-based learning, storytelling, among others, which shows how much Brazilian education still needs new research and studies on the subject.

In the mapping carried out in the Annals of the Brazilian Congress of Higher Distance Education (ESUD) and the International Congress of Distance Education (CIESUD), organized annually by the University Network Association (UniRede), from 2017 to 2020, it was possible to verify that, as of 2017, research and studies on Active Methodologies have increased significantly. The expectation was that the topic would emerge more and more over the years and that it would not only remain in academic productions but that it would go beyond these boundaries and be implemented in classrooms.

Even though the production of Active Methodologies progressed slowly until 2019, in 2020 the expectations were shattered by the arrival of the health crisis caused by Covid-19, in which people had to maintain physical social distance. As a result, students and teachers were forced to exchange the physical school for the digital classroom in an unprecedented situation in the history of education and the world. Consequently, the challenges in education have changed and researchers have turned their attention to the analysis of this problem, noting that various researches and studies are being carried out on Active Methodologies, contributing to new perspectives in the light of post-pandemic experiences, as well as possibly pointing to a change in profile and behavior in their use.

For future research, we suggest broadening the scope of studies to include, in addition to the diversity of active methodologies, the study of their impact and their possible outcomes in higher education; to relate the experiences and perceptions of actors involved in active methodologies in higher education; to study the conditions and factors that distinguish or limit the implementation of active methodologies; to relate and articulate active methodologies in higher education to public education, science and technology policies. These are some examples of future studies and research that could be carried out on active methodologies in higher education, from the perspective of the results presented in the article, based on the research carried out in this study.

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