ORIGINAL

MILITARY HIGHER EDUCATION: a feasibility study on the adoption of active learning methodologies in face of a new teaching scenario at AFA

ENSEÑANZA SUPERIOR MILITAR: una investigación de viabilidad para la adopción de metodologías activas de aprendizaje delante de un nuevo escenario de enseñanza en la AFA

ENSINO SUPERIOR MILITAR: um estudo de viabilidade para a adoção de metodologias ativas de aprendizagem diante de um novo cenário de ensino na AFA

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ABSTRACT

This article focusses on a feasibility study on the adoption of active learning methodologies in the military higher education of the Academia da Força Aérea (AFA), due to the social isolation, caused by the pandemic, which required urgent adaptations in the teaching-learning process. Starting from the application of a research composed of 178 cadets of the 2nd, 3rd, and 4th squadrons and 38 professors, who taught general field subjects during the first semester of 2021, through Google forms and WhatsApp. The methodology adopted was a bibliographic research and field research. The results showed that changes in military higher education have been occurring moderately, requiring urgent adaptations from the students in the teaching-learning process of AFA, so that it continues online, and the academic calendar is fulfilled. However, technological investments in infrastructure and professional training will be necessary for significant advances to occur. The adoption of active methodologies, added to the traditional methods already used, will generate more engagement of cadets. For this purpose, the predominant learning styles must be identified, both among cadets and among professors, because it will allow an understanding of how they interact with the learning environment and the teaching methods implemented. AFA military higher education is changing, and it is feasible to proceed with active learning methodologies. Thus, it is expected that this study can contribute to advance the actions already underway at AFA's Teaching Division, in a practical and applicable way.

Keywords: Military Higher Education; Teaching-Learning; Active methodologies.

RESUMEN

Este artículo trata de una investigación de viabilidad para la adopción de metodologías activas de aprendizaje en la enseñanza superior militar de la Academia de la Fuerza Aérea (AFA), pues el aislamiento social, causado por la pandemia, exigió adaptaciones urgentes en el proceso de enseñanza-aprendizaje. A partir de la aplicación de una encuesta compuesta por 178 cadetes del 2º., 3º. y 4º escuadrones y por 38 docentes que ministraron asignaturas del campo general en el 1er semestre de 2021, vía Google forms y WhatsApp, el método de delineamento adoptado fue una investigación bibliográfica y una investigación de campo. Los resultados mostraron que los cambios en la enseñanza superior militar vienen sucediendo de manera moderada, y exigen adaptaciones urgentes de los alumnos, en el proceso enseñanza-aprendizaje de la AFA, para que este siga en línea y sea cumplido el calendario académico. Pero serán necesarias inversiones tecnológicas en infraestructura

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y en capacitación profesional para que los avances significativos ocurran. La adopción de metodologías activas, sumadas a los métodos tradicionales ya utilizados, generarán más participación de los cadetes, para tanto deben ser identificados los estilos de aprendizaje predominantes, tanto entre los cadetes como entre los docentes, pues permitirá tener una noción de la manera como ellos interactúan con el ambiente de aprendizaje a la enseñanza practicada. La enseñanza superior militar de la AFA está cambiando y existe viabilidad para avanzar en las acciones sobre las metodologías activas de aprendizaje. De esa manera, se espera que este estudio pueda contribuir para avanzar las acciones ya en marcha en la División de Enseñanza de la AFA, de manera práctica y aplicable.

Palabras clave: *Enseñanza Superior Militar; Enseñanza Aprendizaje; Metodologías Activas.*

RESUMO

Este artigo trata de um estudo de viabilidade para a adoção de metodologias ativas de aprendizagem no ensino superior militar da Academia da Força Aérea(AFA), pois o isolamento social, causado pela pandemia, exigiu adaptações urgentes no processo de ensino-aprendizagem. Partindo da aplicação de uma pesquisa composta por 178 cadetes do 2º., 3º. e 4º. esquadrões e por 38 docentes que ministraram disciplinas do campo geral no 1º semestre de 2021, via Google forms e Whatsapp, o método de delineamento adotado foi uma pesquisa bibliográfica e uma pesquisa de campo. Os resultados mostraram que as mudanças no ensino superior militar vêm ocorrendo de forma moderada, exigindo adaptações urgentes dos alunos, no processo de ensino-aprendizagem da AFA, para que este continue on-line e seja cumprido o calendário acadêmico. Porém serão necessários investimentos tecnológicos em infraestrutura e em capacitação profissional para que avanços significativos ocorram. A adoção de metodologias ativas, somadas aos métodos tradicionais já utilizados, gerarão mais engajamento dos cadetes, para tanto devem ser identificados os estilos de aprendizagem predominantes, tanto entre os cadetes quanto entre os docentes, pois permitirá ter uma noção da forma como eles interagem com o ambiente de aprendizado ao ensino praticado. O ensino superior militar da AFA está mudando e existe viabilidade para avançar nas ações sobre as metodologias ativas de aprendizagem. Dessa forma, espera-se que esse estudo possa contribuir para avançar as ações já em andamento na Divisão de Ensino da AFA, de forma prática e aplicável.

Palavras-chave: *Ensino Superior Militar; Ensino-Aprendizagem; Metodologias ativas.*

1 INTRODUCTION

This article is the result of a theoretical and field research initiated before and concluded during the COVID-19 pandemic, which is the reason it has undergone some adaptations throughout its development.

A year and a half ago there were debates about the impact of Education 4.0 on military higher education of the Brazilian Air Force and the possibility of expanding the use of active methodologies to support the professors was contemplated, in order to meet specific pedagogical demands of the learning process of AFA cadets.

In the analysis of the impact of Education 4.0 on military higher education of the Brazilian Air Force, one of the points of consideration was referring to the fact that technology, in medium and long term, would lead traditional education to profound structural changes, reinforcing, increasingly, the use of hybrid teaching: partially face-to-face, partially remote.

During this period, the COVID-19 pandemic arose and before it, it was necessary to anticipate actions previously planned for the near future. The pandemic led schools and universities throughout Brazil to deal with their limitations and difficulties in teaching, one of them of technological nature and this was not different in the Brazilian Air Force Academy. Urgent adjustments and adaptations were necessary to meet the demands of remote learning, making it possible to complete the academic calendar and ensure the military and academic training of cadets.

In this context, the teaching-learning process has changed in its application, leading all those involved - the Teaching Division of AFA, professors, and cadets - to a greater engagement in the execution and fulfillment of the mission.

Considering that universities throughout the country had to close or adopt online or remote education, it should be noted that the efforts made by AFA met their need, even with the existing technological limitations in access and interaction with the contents taught.

The need for professional improvement had been questioned in the military higher education and provoked interest on all those involved in reassessing the methodological strategies in use and search for new approaches. Due to a restructuring of the military higher education, these facts have accelerated the search for more innovation and the reconsideration of several paradigms necessary to meet these new demands.

The pandemic changed the world and anticipated the technological revolution, which accelerated impacts

previously foreseen to occur in the long term and changed the way of thinking and conducting teaching in the military higher education at AFA. Therefore, this research came to fulfill a current general expectation in military higher education, of all involved in the academic education of cadets from the Brazilian Air Force - to innovate and promote changes and improvements in the process.

Therefore, this research aimed at conducting a feasibility study for the adoption of active learning methodologies in military higher education at AFA, in view of a new scenario. Bibliographic and field research was conducted with professors who taught subjects in the general field, in the 2nd, 3rd and 4th squadrons, during the first semester of 2021, with the cadets who attended these subjects.

This study will contribute to advance ongoing actions in the Teaching Division (TD), in a practical and applicable way, and may be a starting point for future debates that are aligned with the needs of the subjects of this process - the professors and cadets involved in the research.

2 HIGHER EDUCATION: THEORETICAL PERSPECTIVES AND PRACTICES IN HIGHER EDUCATION

According to Debald (2020), Brazilian education rarely experienced innovation processes, because Brazilian models used as reference those of economically developed European countries, indicating lack of priority in the promotion of innovative educational processes.

For the author, the pillars of higher education in Brazil were based on the transmission and reproduction of historically constructed and passed-on knowledge from generation to generation for several decades. The Brazilian educational field perceived some prospects of improvement in the passage from the Monarchy to the Republic, even without an education project.

> In the first decades of the 20th century, there was the intervention of the state in the school. It was a space for defending Republican principles, with the discourse of secular education, public and free. Then, we saw state education, influence of the military regime with redemocratization of the country, in the 1980s, the process of restructuring Brazilian basic education occurred, specifically marked by the new education law (LDB, 1996) and by the National Curriculum Parameters (PCN, 1998) (DEBALD, 2020, p. 2).

This citation makes clear the delay in the process of restructuring and innovation in education, showing that, although change occurs in this area, its pace is moderate. As a counterpoint to this issue, Debald (2020) comments that in the first decade of the 21st century there were signs of changes, as it was marked by the expansion of university places, the growth of private higher education institutions and the search for new forms of learning.

> Contemporaneity no longer includes the standardized and compartmentalized school, the teacher, centralizing the teaching-learning process, the student, deposit of information. The educational plans, the walls of the classroom, the vertical figure of the teacher and the student's supporting work need to be impacted and transformed by the freedom of emission that the generalized and open connection promoted, reconfiguring time, space, and forms of communication (NEVES; MERCANTI; LIMA, 2018, p. 17).

The world has changed a lot in recent decades due to technological innovation, with new communication and information systems, mobile digital devices, internet etc. In the 21st century, the worldwide computer network spreads information and relationships, leading to a rethinking of various paradigms, in several areas, including higher education. The growth of higher education institutions, technological advances, changes in students' profile, the search for new teaching practices to contain dropout rates, among other reasons, created reflections and searches for diverse ways of teaching and learning, in a rethinking of the traditional teaching model.

Many of the changes driven by technological innovation directly impacted the way teaching was conducted in the classroom, as the profile of students changed. Technology is one of the main responsible for creating the profile of young people. Millennials, born between 1980 and 1995, already involved in current technologies, tend to value innovative active learning methodologies in higher education, as they began to understand that changes were necessary to improve students' permanence rates in undergraduate courses and improve the quality of learning.

A considerable number of higher education institutions resist in promoting changes to the organizational and curricular structure of the courses they offer, as this situation generates insecurity about the new ways of thinking and acting in the classroom. There is not always a willingness to take on new challenges, especially those involving change, and starting over is complicated for teachers/professors accustomed to performing pedagogical practices in the same way for several decades. Therefore, breaking with centralized contexts is challenging, requires daring boldness and courage to promote transformations.

Higher education institutions need to modify their pedagogical practices, introducing innovations necessary to monitor changes in the professional field. Thus, it is perceived that an important change was established in the education of the twentieth century, since there was a shift from teaching to learning, in which school curriculum started to focus on learning and centrality in the process of knowledge production by the student, emphasizing the importance of developing pedagogical proposals that fulfill these innovative actions for the promotion of learning.

2.1 Military Higher Education

In the scenario presented on higher education contexts, there is military higher education that has been seeking new ways of thinking about the training of cadets of a new generation of young people, millennials, with a more initiative-taking profile, apathetic to traditional education, longing for innovative ways of learning the content focused on their academic training.

If the challenges before were impactful, with the pandemic they became even greater, which caused the links involved in this process the need to be reinvented within academic training and professional experience, in addition to the need to engage in a process of change.

Before the pandemic, at the Pedagogical Meeting of Military Higher Education (EPESM), Education 4.0 was spoken of as an active methodology strategy focused on hybrid teaching: face-to-face and remote teaching. Today, for sure, we must start talking about Education 5.0, upgrading this terminology, in face of the new scenarios experienced.

To this end, many actions need to be implemented, from the insertion of multiple resources, in which the student begins to live the learning experience through collaborative projects, to the creation of online platforms, more modern for Remote Learning, because it is believed that the category of teaching adopted by AFA, is still the traditional (Education 1.0), in which the student learns from the teacher that uses books, blackboard, chalk, etc., and is performed in a physical location. The idea of Education 4.0 is a consequence of the Fourth Industrial Revolution, which generated the fusion of technologies and integrated the physical, digital, and biological domains. While the first, second and third industrial revolutions had their milestones, respectively, in mechanization, electricity and automation, the present revolution is characterized by great speed, amplitude and impacts caused mainly by artificial intelligence and the increase in speed in data transmission.

It is perceived, therefore, that technologies and educational resources enable democratization and approximation to all types of information, which leads society to a higher level of access to knowledge. The impact of all this modernization on military higher education leads AFA Teaching Division to implement new educational strategies to generate more collaborative learning.

Taking the debate to the teaching at AFA, it should first be emphasized, that it is the result of a military education, that is, focused on the needs of the organization, given the specificities of this type of training. Therefore, the fulfillment of the mission will depend on a pedagogical planning, aligned with the Strategic Planning of the Ministry of Aeronautics (PEMAER) and the Strategic Planning in People Management, in which all the activities that the officer will conduct throughout his career are considered.

In light of the required skills for the future officer will ensure a professional ascent aligned with the ideal profile envisioned. According to Zarifian (2001), it will ensure a capacity to remake new situations that involve the context in which this military professional will perform his work. The development of skills is linked to the ability to learn in the face of experiences, in learning to face new challenges: learning to learn. Thus, teaching and learning should be reflected on all stages of the process, considering the internal and external factors that affect the military scenario and generate changes in the profile of human resources formed by FAB.

3 HYBRID TEACHING AND ACTIVE METHODOLOGIES

3.1 Blended Learning

A major trend in higher education and military higher education is hybrid education, which means mixed, blended, and it has created opportunities to start the dialogue in higher education institutions, bringing students closer to technological tools, diverse learning environments and personalized education, more suited to the space, time and need of students.

This hybrid perspective provides the planning of a lesson that addresses face-to-face issues and proposals simultaneously. In the blended proposal, teaching can take place in the classroom, at home or in any other place and involve different strategies and virtual or non-formal tools simultaneously.

> The technology today, carries the integration of all spaces and times. Teaching and learning takes place in a symbiotic, deep, constant interconnection between what we call the physical world and the digital world, an extended space, an enlarged classroom, which merges, constantly hybridizes. That is why formal education is increasingly blended, mixed, hybrid, because it happens not only in the physical space of the classroom, but in the multiple spaces of everyday life, which include digital. (SOUZA, 2018 apud NEVES; MERCANTI; LIMA, 2018, p. 48).

Higher education is increasingly hybrid, because it does not happen only in the physical space of the classroom, but in the multiple spaces of everyday life, which include digital. This mix, between classroom and virtual environments, is fundamental to open the school to the world and to bring the world into the school. It can be said that the distance learning that has occurred at AFA, due to the social isolation generated by the pandemic, created the appropriate scenario to make room for this debate.

According to Moran (2018), hybrid education happens when several areas of knowledge are integrated, whether in the model of disciplines or not. It can be a more flexible curriculum that plans what is basic and fundamental to everyone and allows, at the same time, personalized paths to meet the needs of each student. The hybrid also adds the integration of face-to-face and digital moments and activities. You can work with classes using traditional materials and activities from day to day and by digital means, always in a dynamic and integrated way.

Still according to Moran, education has always been hybrid, always combined several spaces, times, activities, methodologies, publics. This process, now with mobility and connectivity, is much more noticeable, broad, and deep, it is a more open and creative ecosystem. One can teach and learn in countless ways, at all times, in multiple spaces. Hybrid is a rich, appropriate, and complicated concept.

According to (NEVES; MERCANTI; LIMA, 2018), recent research has pointed out that, based on Bloom's taxonomy, created by Benjamin S. Bloom in the 1950s, individuals learn only 20% of what they read and hear, but can learn a lot if they perform practical actions. Introducing this question to the reality of military higher education, the closer the knowledge acquired by the cadet is to the experiences, perceptions and practical realities acquired during his teaching-learning process in the Teaching Division, the Cadet Corps, the Air Instruction Squadron (EIA), etc., the greater the chances of them absorbing information at the highest levels of cognition. There must be an empowerment of the cadet during his learning process. For this, active methodologies are crucial, because they provide opportunities for the cadet to be part of it and to be the main responsible for their learning and hybrid teaching can favor the realization of all this.

Moran (2013) points out that many educational institutions seek new paths with more flexible, more focused curriculum, in which students learn to integrate broader knowledge, values, life projects with real problems, relevant challenges, games, activities and individual and group readings, face-to-face and digital, and this is happening in the Brazilian Air Force Academy.

3.2 Active Methodologies

Life is an active learning process, facing increasingly complex challenges. Learning is active and meaningful when we advance in spiral, from simpler levels to more complex knowledge and competence in all scopes of life. These advances are made through several trails, with different movements, times and designs that integrate as dynamic mosaics with various focusses, results of personal, social, and cultural interactions.

We learn what interests us, what we find intimate resonance, what is close to the stage of development in which we are. According to Bacich and Moran (2018) the learning processes are multiple, continuous, hybrid, formal and informal, organized, and open, intentional, and unintentional. One learns in many ways, with various techniques and procedures more, or less effective to reach the desired goals.

Active learning increases our cognitive flexibility, which is the ability to switch and perform different tasks, mental operations, or objectives and adapt to unexpected modern situations, overcoming rigid mental models and inefficient automatisms. "Active methodologies are ways to advance deep knowledge, socio-emotional skills and new practices" (BACICH; MORAN, 2018, p. 21).

According to Neves, Mercanti, and Lima (2018), active learning methodologies are learning mechanisms that place the student directly and actively at the center of the knowledge acquisition process, because they concentrate teaching and learning in doing, so to deepen knowledge. Teachers and students engage in a process of searching, locating, and using information relevant to the teaching-learning process.

According to them the most relevant active learning is related to our life, our projects, and expectations. Using this reasoning in the military environment, if the cadet realizes that what he learned helps him to live better, in a direct or indirect way, he becomes more involved, that is, it is a change in the field of didactics by displacing it from teaching to learning, impacting on teaching practices and the way the cadet acquires his knowledge and processes his learning.

According to Souza (2018 apud NEVES; MERCANTI; LIMA, 2018), the new education, as opposed to traditional education, found in new information and communication technologies a strengthening link for active methodologies, with the shift from the emphasis on teaching, to learning. Active methodologies contribute to the training of students, but also challenge teachers to break traditional methods and change their attitude towards learning, since students and teachers are active subjects, and this partnership produces knowledge.

The benefits resulting from the use of active technologies are enhanced in relation to the traditional teaching methodology, focused mostly on the teacher's monologue within the classroom. In addition, they deepen knowledge; stimulate communication; expand the ability to hear the other person speak; stimulate the teamwork; develop individual and collective motivation; diversify individual learning styles.

The success of teaching-learning through active methodologies is only achieved with the full engagement of teachers and students in the proposed activities. In addition, the methods used should include the various learning styles present in the classroom, both by teachers and by students.

3.2.1 Active Methodologies Modalities

There are currently several modalities of active methodologies present in the teaching-learning process in undergraduate studies. It is intended to introduce here, the concept of only some of them that stand out in its use, with the purpose of praising the importance of its application in teaching today, remembering that, to promote meaningful learning, it is necessary to engage the student using methodologies that give him/her the leading role in his acquisition of knowledge.

The following active methodologies allow the development of critical sense, the attainment of competencies that associate student knowledge with real-world transformations. They are tools that create paths that allow the student to be installed at the center of their own professional training, strengthening knowledge through mediation and teacher's monitoring. Here are some of them:

a) social media as a pedagogical resource: according to Souza (2018 apud NEVES; MERCANTI; LIMA, 2018): education mediated by digital technologies is a major factor. Facebook is among the most used social media by individuals from various socioeconomic backgrounds in the 20th and 21st centuries, whether for means of contact, relationship purposes or for meeting broader institutional issues, such as information, communication, dissemination, and education. It is a tool with potential means of assisting the teaching-learning process to develop content, because they go beyond the boundaries of the classroom and the official study schedules in the institution. Other social media that should be cited as important for the teaching-learning process are YouTube, e-portfolio, Instagram, digital platforms, etc.

b) educational games: according to Neves, Mercanti, Lima (2018), when well planned and well applied, educational games favor the acquisition of knowledge and the development of skills in a pleasant way. It instigates the desire to overcome, boost the learning exercise, become less stressful, create greater interest and participation of students in the classroom and generate more participation among them. As a teaching resource, it brings many advantages to the teaching-learning process and constitute efficient instructional tools. The teaching of content through educational games play a vital role for student development, promoting personal and group initiative and solidarity, besides being a powerful element of motivation in the learning environment. It creates learning opportunities in a fun way, not only by traditional concepts and content, but also by the development of logical thinking. It has a close relationship with the construction of knowledge, it has an effective influence as an encouraging and motivating instrument.

c) Gamification: it is the use of mechanics and game characteristics to engage, motivate behaviors and facilitate the learning of people in real situations, making dense content more accessible, usually it is not associated with games. Developing new ways to engage participants in training or educational activities is always a challenge for any company

or educational institution. Its differential is to awaken the public's engagement and facilitate the measurement of the results of the action. To Carvalho et. al. (2018 apud NEVES; MERCANTI; LIMA, 2018), in the educational context, it emerges as a great contribution to the teaching-learning process, problematized in a playful and pleasurable way and with possibilities of modifying relationships inside and outside the classroom.

d) Problem Based Learning: it is a teaching mechanism that puts the student directly and actively at the center of knowledge acquisition, because it concentrates the learning in the pursuit of autonomous knowledge, stimulates cooperative coexistence among members of PBL groups and induces the student to acquire independence in the decision-making. It promotes the retention of long-lasting and fundamental knowledge to solve the real problems in the professional life. (NEVES; MERCANTI; LIMA, 2018).

e) Project-based learning: it is an active methodology that uses group activities focused on capturing students' attention for real problems. Students become the protagonists of their own learning through innovative projects. The teaching objective is to achieve learning with deep research and practical activities, which are responsible for the development and performance of the student.

f) Flipped classroom: it is the inverted organization of the classroom. According to Higashi and Pereira (2020 apud DEBALD, 2020), there is a previous study of the content that will be addressed, and the time used in the classroom transforms into dynamic activities, with the exchanges of experiences and different points of view on the theme, which contributes to the student prominence, because the construction of the knowledge occurs through individual characteristics, interests and learning styles.

g) Storytelling: it is the ability to convey the content through elaborate plot and engaging narrative, using words and audiovisual resources. The big differential is the format and resources used, that is, the included multidisciplinary, which aggregates different media resources, to make the story more dynamic. The technique is already applied in various media and channels, such as music, TV, theater, literature, journalism and is now present more strongly in digital marketing. Some characteristics of these videos are realistic dialogues, interactivity, exposed sentimentality, and the narrative of a story with cohesion and coherence.

h) Design Thinking: it is a methodology used to offer products and services according to the real needs of customers. It is increasingly used by companies that want to improve their services in a simple, agile, and well-planned way, since it takes advantage of characteristics of a design professional as their means of thinking, creative potential, and empathy throughout the business and not just in the creation of a sole product. It is a critical and creative thinking approach that makes it possible to generate and organize ideas and thus find solutions to the problems faced by the organization.

i) Project Based Learning (PBL): it has to do with the construction of knowledge through a long research work that answers a complex question, problem, or challenge. From this initial question, the students engage in a process of research, elaboration of hypotheses, search for resources and practical application of the information, until they arrive at a solution or product. It is directly related with the exploration of the context, peer communication and knowledge-based creation. It is also, especially at the final stages, the production of results, that the technology enriches the process: students can organize their findings in multimedia format, using charts and tables, videos, applications, tools.

j) Video Based Learning (VBL): focuses on producing practices that modify the passivity of traditional videos for others practices with high doses of interaction, qualifies the interaction with the students, it is of easy-access, intuitive and can be combined with other practices. As a teaching resource, therefore, the videos are produced in a format that stimulates interaction through texts and animations with infographics, scenarios, and explaining concepts through storytelling, although other visual and textual narratives can also be adopted.

k) Team Based Learning (TBL): seeks to create opportunities and obtain the benefits of teamwork by using small learning groups. One of its characteristics concerns the fact that the students involved in the groups do not prepare in advance for classes, as challenges can be introduced to the groups before, during or after classes. In addition, it is important to emphasize that there is no need for students to have previous knowledge on teamwork, as they will be submitted to activities that will make them develop these skills intrinsically.

l) Conceptual map: it is a graphic structure that helps to organize ideas, concepts, and information

in a structured manner, in which the content is classified and hierarchized to help with the understanding by the individual who analyzes it. It should be constructed in order to present the main ideas and their existing relations to make visible the context of the theme addressed. From an illustrative graphic representation, the conceptual map must create links between the different subjects that are part of a given knowledge.

According to Bacich and Moran (2018) active methodologies are ways to advance deep knowledge, socio-emotional skills, and new practices. The most relevant active learning is related to life, personal projects, and expectations. If the student realizes that learning helps him to live better, in a direct or indirect way he becomes more involved.

Gradually, higher education is migrating to models more focused on actively learning from real problems, relevant challenges, games, activities and readings, emphasis on values, combining individual times and collective times, personal life and learning projects, and group projects. This requires a reconfiguration of the curriculum, the participation of professors, the organization of teaching activities, the organization of spaces and times.

The results do not come from an individual effort, but from a collective effort, starting from a realistic diagnosis in the search for a path that enables short, medium, and long-term changes in a curriculum adapted to the needs of students, adding to this, the use of their life projects, active methodologies, hybrid models and digital technologies. In other words, there are several actions necessary for the fulfillment of the mission.

4 LEARNING STYLES

It is not enough to reflect on higher education and its new ways of teaching and learning, it is also necessary to analyze the different learning modalities existing in the student's profile. Therefore, to understand this process, it was considered as important to write about two approaches that indicate different learning styles. Knowing and identifying the student's learning style will facilitate the presentation of curriculum contents, considering how students learn, as well as their interaction in the teaching-learning process in expanding the possibilities of meaningful learning.

Therefore, two approaches were presented: Kolb (1984) on learning styles and Fleming's (2001) on the VARK method, first proposed in 1992.

Starting with Kolb's approach (1984) there are several ways of classifying the learning styles. He classified these styles from the theory of experiential learning, which starts from the premise that learning occurs when experiences are transformed into knowledge. How adults perceive and process reality directly influences how they learn.

To Kolb, adults learn in diverse ways, depending on how experiences are felt and understood. The basic principle of his theory is based on a model of learning styles, which divides the learning cycle into four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

Concrete experiences function as sources for the creation of observations and reflections integrated into abstract concepts, which are later transformed into actions actively assessed, thus producing new experiences. Complementary to his vision, Novaes (1986, p. 21), can be cited

> "... the educational process is basically based on life experiences, assuming a constant relationship between reality and action."

The concrete experience involves the infinite situations that students go through and function as sources for the creation of observations and reflections. After the experiences are felt and observed, they are thought and integrated into abstract concepts, which are transformed into actively tested actions, thus producing new experiences. It can be said that, when developing an activity in the classroom, whatever it may be, the adult student will absorb new concrete experiences, tending to treat situations more in observations and feelings than with a theoretical and systematic approach.

Thus, the cycle begins again, considering that the ideal situation would be one in which, during the learning process, people went through all stages of the cycle continuously, although some people have a preference for a certain stage, thus indicating their predominant learning style.

In reflective observation, the student begins to think and reflect on the activity he/she has developed. What were his feelings and emotions, if there was a disagreement, why it happened, how he behaved and how others behaved. Students participate in observing, reviewing, and reflecting on the concrete experience of the previous stage. Reflections and observations at this stage do not necessarily include performing any action.

In abstract conceptualization, students develop and act in the cognitive domain of the situation, using theories, hypotheses and logical reasoning to model and explain the events. The situational learning of the previous stage, centered on the moment of an experience, can be expanded in a great learning. This is the moment when the student begins to think logically and systematically. The understanding is based on intellectual understanding of a situation with a high level of abstraction.

In active experimentation students are involved in planning activities, experimenting with situations that involve changing scenarios and using theories to make decisions and solve problems. It is the moment to put theory into practice, seeking to exercise active learning and spend time with experimentation, influencing and changing variables in various situations.

From the experiential learning cycle, four learning styles arise, being:

a) Diverging: usually are people who see situations from different points of view, which gives them great capacity for imagination and creativity. They appreciate the creation of ideas and are more emotional. Their learning preferences include brainstorming, group work, and personalized feedback. Their strengths are creativity and imagination. They are known for being good in situations that need to generate a variety of ideas and alternative implications.

b) Assimilating: these individuals prefer theories and inductive reasoning to practical applications. They like to analyze the information and organize it in a logical and integrated way. They care more about abstract ideas and concepts than about people. They prefer to learn from readings, lectures, and exploration of analytical models. They are strong in the creation of theoretical models and inductive reasoning, not focusing on the practical use of theories.

c) Converging: seek the practical application of ideas, problem solving and decision-making. They prefer to develop technical and specific tasks than to solve interpersonal issues. Simulations, laboratory experiments, obvious real-world applications and objective tests are learning preferences. They stand out in problem solving, decision making and practical application of ideas. They use deductive reasoning and are given this name because they work best in situations where there is only one solution to a question or problem.

d) Accommodating: learn better with experiences rather than a theoretical approach, like challenges and new experiences in which they need to adapt and prefer to trust people and feelings to believe in logical and technical analyses. They prefer to learn from fieldwork, practical activities and role playing. They often take risks and solve problems in an intuitive way and in a trial-and-error approach.

Another approach is Fleming's (2001) on the learning style identified by the VARK test. This questionnaire was developed to create an interaction between learning, teacher-student, but can also be a catalyst for personal development. Although most students present all the sensory modalities worked on by the VARK, when the unconscious incorporation of information occurs, many prefer to use specific modalities.

Through these dimensions and thoughts, he created a learning style mapping technique called VARK (Visual, Aural, Reading/Writing and Kinesthetic) (VARK-LEARN, 2012). To Fleming, the human being has four learning channels, which are:

a) Visual: people who learn best visually prefer the information provided by visual demonstrations and descriptions. They like to use lists to keep their reasoning and organize their thoughts. They often remember the faces of people they know, but often forget their names. They are distracted by movements or actions, but if there are any disturbances caused by sounds, they usually ignore it.

b) Aural: these individuals learn by hearing, like to be provided by spoken instructions. They prefer discussions and dialogues, as well as solving problems, verbalizing them. In addition, they are easily distracted by sounds and prefer to learn with effective use of oral communication.

c) Reading/writing: these individuals like to take notes. During activities such as lectures and reading difficult materials, annotations are essential to them. They often draw plans and schemas to remember content.

d) Kinesthetic: people with kinesthetic learning prefer to learn by doing the tasks by themselves. They usually have a lot of energy and like to use touch, movement, and interaction with their environment.

5 CHALLENGES TO CADETS AND PROFESSORS OF MILITARY HIGHER EDUCATION

5.1 Challenge for cadets

In the military educational environment at FAB, professors and students belong, most of the time, to different generations. The professor generally tends to be from Generation X and the students, young millennials, that is, both tend to seek or create teaching-learning expectations associated with the application of methods and learning experiences typical of each generation.

At AFA, the probable cadet profile of the selected squadron is that of the digital native, they expect immediate results and like to test new possibilities and solutions, and the professor's profile, for the most part, is that of the Generation X, or even "y", linked to a traditional view of teaching. This means that there are many obstacles to overcome, especially for the professor to provoke new challenges and organize personalized learning itineraries.

With the volume of information in the networked world, cadets need to develop the ability to assess the importance of learning something. Virtualization allows the search for information wherever it is, however, it should be used for personal and professional projects. It is not enough to have access to information; it is essential to know what to do with it.

The possibility of learning in virtual environments reconfigured the paths outlined by cadets to acquire knowledge. Cadets learn from their professors and books, but also on Google, in library databases, blogs, websites, YouTube, formal and informal conversations, WhatsApp, social networks, forums, Skype. They receive and produce information in various virtual spaces. Such information and connections significantly expand and enrich the individual's learning process.

The new technological context makes AFA cadets relate to the world differently and seek to learn with intent, since they do not only learn by stimulus and responses, action, and reaction, but by countless learning possibilities that the modern world presents.

> Learning, to the students, is something pragmatic, which involves a vision of learning and means exercising, practicing, seeing. Practical knowledge, when lacking in reflections, moves away from understanding and approaches knowledge. However, it is a knowledge that meets immediate needs and does not provide meaningful learning. (LIMA; CLAPIS, 2020 apud DEBALD, 2020, p. 44).

According to (LIMA; CLAPIS, 2020 apud DEBALD, 2020) students learn with intent meaning that they develop an educational process related to the social context, scenarios, the agents involved and the previous knowledge of the learner. It means that the meaning is constructed and varies according to its purposes. In the military environment, which means that the cadet's prior knowledge serves as the basis for his inclusion, understanding and retention of new learning, provided that it is potentially significant or relevant to him in the acquisition of knowledge.

Thus, the challenge of the cadet is linked to that of the teacher, because, in order for this new knowledge to acquire meaning and become clearer, creating more interaction, it will be necessary that the professor defines objectives and learning strategies that demonstrate a connection with the needs of the cadet, because, when the proposed activity is not related to the corresponding purposes, it leads to a superficial approach, as the task is seen as external imposition, not linked with the context of their career. It is necessary to create a bond between cadet, the professor, and methodological strategies.

> A person can go through life repeating practices with great skills without, however, showing significant progress in knowledge. Therefore, when the subject reflects, he motivates and extrapolates the perception of physiological senses, so that he perceives, through thought, several aspects of the world and of others, going towards potential significant learning. (SOUZA; LEE; SILVA, 2013 apud DEBALD, 2020, p. 45).

Learning by doing, with meaning, based on reflection, will therefore involve a constant questioning on the part of the cadet, because he must ask himself: what am I doing? Why am I doing it? Understand the act of learning to have meaning.

5.2 Challenge for teachers

The traditional view of teaching, in which the teacher speaks, and the student passively listens to the information, taking notes in his material, no longer meets the teaching expectations of a new generation of students. In this model, the student does not feel motivated to face 4 or 5 years of an undergraduate study with emphasis on a more theoretical than practical teaching.

> The second decade of the 21st century marks the teaching and methodological advances in the conception of student learning, permeated mainly by technological advances and practical and experimental educational processes. At the same time, this advance requires from the teachers' new attitudes in educational actions, valuing problematization and the resolution of real situations that challenge students, mobilizing them in the construction of learning. (BERGONSI, 2020 apud DEBALD, 2020, p. 29).

According to Debald (2020) the disruption of traditional pedagogical practices is a dilemma for the teachers, because, in their initial training and during several years of their professional practice, they were guided by this modality of education. When challenged to think differently, they face difficulties, so innovative practices usually show results only after a while. The passage of prominence in the classroom space modifies the teachers' profile required in innovative spaces of higher education.

The formation of a qualified team is one of the greatest challenges to promote changes in educational processes at the higher education level, especially when it seeks to innovate or change pedagogical practices. Thus, investing in the training of teachers and employees, in addition to managers, should be the first step for those who wish to promote changes in higher education.

> The role of the teacher today is much broader and more complex. It is not focused so much on only transmitting information from a specific area; he is primarily a designer of personalized and group learning scripts and advisor/mentor of professional and life projects of students. (MORAN; BACICH, 2018, p. 21).

The new role of the educator in the face of these new realities is to develop interdisciplinary projects through the maker culture, understand its role, and adapt to the current context, in which the learning environment now follows technological innovations, and the teaching practice change its meaning. This rethinking, however, in the form of the teaching practice depends on institutions, such as AFA, to invest in monthly meetings to debate the search for new learning environments, in periodic courses for professors from different areas, because the professor's profile, although indispensable, is in the transformation phase.

Although the disruption of traditional pedagogical practices is a dilemma for the professors at AFA, it is a matter of survival as well. To do so, it must be seen as a challenge so that they are not rejected by their classes, in the squadrons.

In this scenario, the professor needs to change his attitude and seek a new trajectory so that significant changes can arise in his way of teaching. The way out of this is the search for continued education in the use of active technologies and active methodologies, and the disruption of educational processes based on reproducing and memorizing to build new knowledge, but for this, in addition to a professional investment by the professor, it is necessary an institutional investment by AFA.

Micheletto (2020 apud DEBALD, 2020) says that the present time requires a new profile of teacher, qualified and able to act in scenarios that are in transformation, because its new function requires focus on learning and knowledge about the various ways in which one learns in higher education courses, mainly due to the multitude of information available virtually.

In the military environment, the new teaching practice is in process of adapting to new formats of knowledge production by breaking with the traditional expository class, with proposals for challenges and stimulating thinking, a counterpoint to the reproducing and memorizing educational formats in the country.

In this environment, the transformation process in the acting of the teacher has increasingly required a professional with an innovative vision and horizontal relationship with the cadet, establishing new forms of communication and collaborating to facilitate their learning with guidance and motivation.

6 METHODOLOGICAL APPROACH

To achieve the proposed results, several approaches of active learning methodologies were studied. The research was divided into two parts, one of literature review and another on the field, with the cadets and professors involved.

The main idea was to study teaching strategies to support teachers in the classroom, to meet the teaching expectations of this generation, especially in relation to the new demands of remote learning, and to compare the perceptions of teachers and cadets about the methods and learning styles adopted.

6.1 Study population: the target audience defined for this study is composed of professors and cadets from the Brazilian Air Force Academy. The sample consisted of 178 cadets from the 2nd, 3rd, and 4th squadrons and 38 professors who taught classes in general field subjects during the first semester of 2021 to the cadets of these squadrons. This table indicates the disciplines of the professors involved in the research, divided by subject.

Table 1 - Disciplines of teachers involved in the research by subject.

AREA 1 (Exact sciences)	AREA 2	AREA 3	AREA 3
Operational research	Institutional Com. 2A/B/C	Psychology: 2A/B/C	LIN1:/LIN3: 2C/D/F
Calculus 1: 2A/B/C	Acc. and Budget: 2F	World Military History: 2nd/B/C	LIN3: 2A/B/C/E
Tech. information: 2nd/B/C	Control and Audit: 4th	Economy: 3A/B/C	LIN1/LIN3: 2C/D/F
Introduction to Robotics: 2E/F		Microeconomy: 3E	LIN7: 4A/B/C/D/ E/F
Stat. and Probability: 2E/F	Accounting and Finance: 2E	International relations: 3A/B/C	LIN7: 4C/D/E/F
Applied Physics	Costs: 3A/B/F	Airspace power and IVR	
Applied Chemistry: 2F	People Management: 2nd and 2C	General Law: 2A/B/C	
Operational research: 4F	Op. and Process Management: 3A/B/C	Methodology: 3E/F	
General Mechanics: 3A/B/C	Project Management		
Scientific Methodology 1	Log. and Sup Management:3A/B/C.		
Air Space Power IVR: 4A/B/C/D/E/F	Scientific Methodology 1: 3E/F		

Source: Search Database.

6.2 Search Tools: the search took place through digital means, with the application of a questionnaire, via Google Forms and WhatsApp. These two categories of questionnaires were created.
a) for professors: using Google Forms and composed of 13 closed questions.
b) for cadets: using Google Forms and composed of 10 closed questions.

6.3 Result analysis: all collected data were summarized, analyzed, and presented graphically. The analysis of these data considered the following classification:
a) analysis of the data obtained by the professors: by area.
b) analysis of the data obtained by the cadets: by squadron.
c) comparison of some data obtained by professors and cadets.

7. ANALYSIS OF THE RESULTS

In the presentation of the results, the initially considered data was obtained from the answers of the professors and, later, the data obtained from the answers of the cadets and, finally, a comparative analysis of some of the researched questions.

7.1 Results of the tabulation of the professors' research

The majority of the respondents were civilian professors concentrated in the area of Administration Sciences - Area 2.

The professors revealed an elevated level of academic training in their areas of activity with great participation in courses, lectures, congresses, seminars, in the last 10 years, on teaching-learning methods.

It is noticeable that professors from different areas researched have sought professional qualification in different teaching-learning methods, mainly in active learning methodologies, with emphasis on participation in lectures, courses and seminars in gamification, flipped classroom, conceptual map, storytelling, project-based learning, among others.

The researched faculty has great professional experience, which positively impacts the level of classes taught. specially in area 1, with 37% of professors with an experience ranging from 20 and 25 years. In other areas they have experience raging from 35 and 40 years of experience.

It is noticeable that, even before the pandemic, the professors surveyed had already been modernizing their teaching practices in the classroom, with the adoption of active methodologies added to the traditional methods already utilized. Area 1 highlights the application, in some disciplines, of problem-based learning. In area 2, the use of the flipped classroom, area 3 in team-based learning and conceptual map, and in area 4, problem-based learning, flipped classroom, and video-based learning - VBL.

It was observed that, during the pandemic, the professors continued to adopt the same combination of methods used above, with a focus on modernization by adopting teaching practices aimed at active methodologies added to the traditional methods already used. Area 1 still highlights, the application, in some disciplines, of problem-based learning; for area 2, the use of flipped classroom; for area 3, team-based learning and conceptual map; for area 4, problem-based learning, inverted classroom and video-based learning - VBL.

Regarding the methodologies used in the online classes with the best results, expository classes stand out, with 66.3% of indications, in addition to specific exercises on the discipline, group work, seminars, case studies, movies and flipped classroom. It is important to highlight that each area has its specificities, perceiving, for example, that in area 4, skillful use of gamification, video-based learning, inverted classroom, in addition to specific exercises of the discipline.

Among the difficulties encountered in online classes, technology problems stand out, with justifications such as: internet connection problems, audio problems, lack of adequate equipment maintenance, outdated technology, lack of adequate technological resources and communication failures. It is noteworthy that the infrastructure and behavioral problems also greatly influenced the achievement of the objectives proposed in the teaching-learning process. The perception of the professors is that to assimilate the content, the profile of the cadets is that of the converging, visual, accommodating and assimilating, mostly, remembering the specificities of each discipline regarding the content and identification, even if a smaller percentage, of all learning styles researched in all profiles presented.

There was unity in all areas surveyed regarding suggestions for improvement actions, with suggestions for investments in infrastructure, technology, and teacher training.

7.2 Results of the tabulation of the cadet's researc

Most of those surveyed focused on aviation and the 3rd Squadron. The age range of the cadets surveyed is between 17 and 25 years.

The largest number of subjects surveyed is in area 1. Among the most cited methods, the expository classes, followed by group work, stands out; discipline-specific exercises; case studies; seminars and problem-based learning.

Before the pandemic, it is observed that the most used methods were the ones mentioned here, including seminars, group dynamics, directed study and movies.

Among the methodologies adopted by the teachers, the cadets liked the most the case studies, movies, expository classes, discipline specific exercises, group dynamics and group work. It is noted that some active methodologies considered trending currently are not among the most voted, such as Storytelling, gamification, flipped classroom, games, conceptual map, team-based learning, project-based learning, and problem-based learning. Among the three squadrons surveyed, there was consensus on pointing that the technological and infrastructure problems as one of the great difficulties of online classes.

In the surveyed cadet's perception, the dominant profiles are the assimilating, the converging, the visual and the accommodating, although the other profiles also obtained many answers.

There was unanimity of responses in the three squadrons regarding the contributions of the Teaching Division to the adoption of new methodologies within AFA. They are Their suggestions include training courses, investments in technology, and improvements in infrastructure.

7.3 Comparative analysis of the results tabulation of the research of teachers and cadets

It is perceived that, even before the pandemic, the professors surveyed had already been modernizing their pedagogical practices in the classroom, with the adoption of active methodologies (problem-based learning, flipped classroom, team-based learning, conceptual map, problem-based learning, and video-based learning - VBL), added to the traditional methods already utilized.

These data can be confirmed by the responses of the cadets, who highlight, among the practices adopted by the teachers, traditional methods, and active methodologies, such as: expository classes,

group work, seminars, case studies, exercises on the discipline, group dynamics, directed study, movies, and problem-based learning.

During the pandemic, the professors surveyed continued to adopt the same combination of methods previously used, maintaining the focus on modernization by adopting teaching practices aimed at active methodologies along with traditional methods already used.

The perception of cadets is that most of the applied methods still followed a traditional approach, which indicates a tendency to begin the use of active learning methodologies, with focus on expository classes, group work, discipline specific exercises, case studies, seminars, and problem-based learning.

Regarding the methodologies used in the online classes with the best results, expository classes stand out, with 66.3% of indications, in addition to discipline specific exercises, group work, seminars, case studies, movies and inverted classroom. This data is also confirmed by the responses of the cadets, which also indicate methodologies such as case studies, movies, expository classes, discipline specific exercises, group dynamics and group work as the most effective methodologies during classes.

Some active methodologies considered trends today are not among the most voted, such as: Storytelling, gamification, inverted classroom, games, conceptual map, team-based learning, project-based learning, and problem-based learning, indicating possibilities for innovation in the teacher's didactics.

Among the difficulties encountered in online classes, there was consensus by professors and cadets regarding technology problems, with justifications such as: interruptions in the internet connections, audio problems, lack of adequate equipment maintenance, outdated technology, lack of adequate technological resources and communication failures. It is noteworthy that the infrastructure and behavioral problems also greatly influence the achievement of the objectives proposed in the teaching-learning process.

Both the professors and the cadets surveyed see as dominant profiles in the cadets, for assimilating the content, the styles of the converging, visual, accommodating and assimilating in the vast majority, although in a different percentage order. While the highest percentage was for the converging among professors, for the cadets remained the assimilating, that is, the professors surveyed believe that the cadets better understand the content with practical applications of ideas, in problem solving and decision-making, while the cadets believe that they better understand the content using inductive theories and reasoning and practical applications. In addition, they also better understand, when using images, diagrams, challenges, and new experiences. This indicates that there are several possibilities for the adoption of active methodologies to fulfill those needs, such as: design thinking, project-based learning (PBL), among others, and this adaptation is necessary since the other profiles also obtained a percentage of the responses.

In conclusion, it can be said that there was unanimity in all the areas surveyed regarding the suggestions of improvement actions in infrastructure, technology, and teacher training, considering the improvement of the Teaching Division so that it reflects on the learning of the cadets.

8 FINAL CONSIDERATIONS

Breaking the traditional teaching paradigms is a challenge for both professors and cadets, especially in the military higher education, which is guided by a rigid academic background. The proposal of adopting active methodologies can contribute to the formation of a future officer with proficiency in scientific knowledge required by the guidelines of the Professional Profile of Aeronautical Officers (PPOA) and the Strategic Plan of the Brazilian Air Force (PEMAER).

Although changes in military higher education have occurred at a moderate pace, it can be said that it is experiencing an opportunity to promote transformations in its infrastructure and, especially, in its technology, because during online classes, there were internet connection problems, problems with audio, lack of adequate equipment maintenance, outdated technology, lack of adequate technological resources and communication problems. Behavioral problems were also pointed out, such as demotivation of the cadet regarding the teaching methods, the disciplines, personal and health problems.

Modernity has required changes for civil and military professors of the faculty of the Brazilian Air Force Academy, as it is up to them to be more audacious in the classroom, surpassing rooted practices and using innovative teaching resources, aligned with their learning styles and the learning styles of the squadrons they teach. The results of the research showed that this already occurs in AFA, because, regarding the teaching methods, it can be said that the professors surveyed are already modernizing their pedagogical practices, with active methodologies along with traditional methods already in use, such as:

expository classes, group work, seminars, case study, exercises on the discipline, group dynamics, directed study, movies, and problem-based learning.

Observing the results of the search for professional qualification by the surveyed, these data are even more evident, because, in the last 10 years, many of them participated in courses, lectures, congresses and seminars on the teaching-learning subject. In addition, the majority of them have an elevated level of academic training with master's, doctorate, and post-doctorate degrees in their area of training and great professional experience in higher education teaching.

Breaking traditional teaching practices can be a dilemma for a teacher, as most of them have several years of professional practice rooted in traditional teaching methods and, when challenged to think differently, they might face difficulties, so innovative practices have, in general, results only after some time. Although inserting active methodologies is a challenge, it is noted, on the part of the civilian and military professors of AFA, proactive attitudes in the search for updating new scenarios due to the changes imposed by education 4.0 during the pandemic and in accordance with the requirements of the military higher education.

The need to transform the teaching-learning method is evident, and the longer the delay in applying these changes, the greater the damage to the adequate professional training of the cadet. It is about breaking paradigms without generating the rupture of the essential values of AFA. All this requires continuous investments in training teachers in active learning methodologies and digital technologies as the formation of a qualified team will innovate pedagogical practices.

In this proposal for changes, existing structural and technological deficiencies should be addressed to guarantee the adequate results, and the field research indicated that AFA professors have been applying several of them during online classes.

Another factor of significant importance to be considered is also the identification of the predominant learning style, both among cadets and professors, because it allows a sense of how cadets interact with the learning environment provided by the Teaching Division of AFA and how they respond to the teaching processes practiced by professors. It is important to note that, regardless of the teaching-learning methodology used, each cadet has a different learning style, and this diversity requires professors and the Teaching Division to use methods that identify them and seek their characteristics to better work development of them.

It is also necessary that the surveyed professors know their own learning style because they influence the way the class is organized, plan different strategies, select material resources, and relate to cadets. professors often teach according to their own learning style, disregarding the specific learning styles of the cadets.

The analysis of this aspect of the study indicated that both professors and cadets surveyed see as dominant profiles, in the cadets surveyed, the styles of the converging, visual, accommodating and assimilating, and the highest percentage was for the converging between the professors and the assimilating, for the cadets. In other words, the professors surveyed believe that cadets better understand the content with practical applications of ideas, problem solving and decision-making, while cadets believe they better understand the content using inductive theories and reasoning and practical applications. Therefore, practical applications for the content taught appears as a common denominator among the surveyed, in addition to the use of images, diagrams, challenges and new experiences. To this end, one can think about the adoption of several categories of active methodologies, such as: design thinking, project-based learning (PBL), among others.

Knowing the learning profile of these cadets and professors involved with teaching of these squadrons will enable diversification of their way of teaching. This resignification of pedagogical practices, considering the learning style of cadets and professors, will result in greater engagement in the classroom, leading to better results in the teaching-learning process.

All the data analyzed indicate that there is a strong tendency for military higher education to go through profound structural changes in its traditional teaching and return differently to the returning classes, after the social isolation caused by the pandemic, no longer as a face-to-face teaching, but as a hybrid teaching: part face-to-face and part remote.

Finally, it can be said that military higher education is changing and there is feasibility for the adoption of active learning methodologies within AFA, because the new scenario is promising. It is expected that this study can contribute to advancing actions already underway in the Teaching Division of AFA, in a practical and applicable way, and may be a starting point for future debates that are aligned with the needs of the subjects of this process: the professors and cadets involved in the study.

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