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THE ENTREPRENEURSHIP OF THE FUTURE IN THE BRAZILIAN PUBLIC SECTOR: FROM ACADEMIC VISION TO TRANSFORMATIVE MODELS

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Fernanda Marques Caldeira[1], Jeicielly Maximiano Rodrigues Velter[2], Victor Félix Arinos[3], Matheus Magalhães de Souza[4] and Fernanda Maria Batista Almeida Matias[5]

ABSTRACT

This article analyzes the role of the entrepreneurship of the future in the context of the Brazilian public sector, exploring its construction from the concepts of self innovation, startup innovation and corporate innovation. The research demonstrates that the formation of entrepreneurial skills, through education and the popularization of science, proved to be essential for the development of creative and technological solutions in the public sector. In addition, the integration between universities, startups, and public organizations fosters collaborative ecosystems that enhance innovation, generate strategic connections, and expand the reach of scalable solutions. The analysis also highlights the relevance of socio-environmental impact entrepreneurship, which combines technological innovation with responsible practices, contributing to the reduction of inequalities and the confrontation of global challenges. Through a qualitative approach based on literature review and document analysis, the study identifies how these researched dimensions can be interrelated to transform administrative practices and promote social and economic impact. It is concluded that the public entrepreneurship of the future requires the integration of creativity, technology and social impact as fundamental pillars for the transformation of public institutions. Therefore, it is recommended to invest in consistent public policies, training of civil servants and strengthening of collaborative networks, in order to consolidate a robust entrepreneurial ecosystem aligned with the demands of the twenty-first century.

Keywords: Entrepreneurship of the future. Startups. Government innovation. Government entrepreneurship.

[1]Ma.
Federal Institute of Mato Grosso - IFMT Campus Várzea Grande
[2]Esp.
Federal Institute of Mato Grosso - IFMT Campus Várzea Grande
[3]Esp.
Federal Institute of Mato Grosso - IFMT Campus Várzea Grande
[4]Esp.
Federal Institute of Mato Grosso - IFMT Campus Várzea Grande
[5]Ma.
Federal Institute of Mato Grosso – IFMT

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INTRODUCTION

Entrepreneurship, in its historical evolution, has played a transformative role in the economic, social, and technological spheres. In Brazil, the teaching and practice of entrepreneurship initially emerged as isolated initiatives, but quickly consolidated themselves as essential tools for sustainable development. Proof of this, in public universities, the integration of entrepreneurial concepts with scientific production has been promoting innovative solutions to social and economic challenges, especially in areas such as technology and sustainability (GOMES; LIMA, 2023).

With the rise of what is called entrepreneurship of the future, new concepts, such as *self innovation*, *startup innovation,* and *corporate innovation*, stand out as strategic approaches to reimagining the role of entrepreneurship in the public sector. These strands not only redefine management and innovation practices, but also encourage a systemic vision, where individuals, startups, and public organizations act collaboratively to address global challenges, such as climate change, social inequality, and especially digital transformation (SCHLEP, 2009).

In this context, entrepreneurial education has been occupying a primordial space, where public universities have adopted innovative approaches to enable individuals to develop creative, technological and social skills, demonstrating how scientific knowledge and entrepreneurial practice can be combined to generate significant impact.

However, some challenges persist, including structural and cultural barriers in public institutions, in addition to the need for greater articulation between actors in the entrepreneurial ecosystem, such as universities, startups, and government. These challenges reinforce the importance of exploring integrated approaches that combine creativity, scaling, and socio-environmental impact as pillars for the development of the public entrepreneurship of the future.

Thus, this article seeks to demonstrate how the entrepreneurship of the future has been consolidating in the Brazilian public sector, and through entrepreneurial education, based on its constituent factors such as *self innovation*, *startup innovation* and *corporate innovation*, Brazilian public organizations can become more inclusive, sustainable and efficient.

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EMERGENCE AND HISTORY OF ENTREPRENEURSHIP: FROM PRACTICAL INITIATIVE TO THE ACADEMIC ENVIRONMENT

The term "entrepreneurship" has its origins in the French word "*entreprendre*", which means "to start something", originally this concept was used in the field of economics, being associated with the individual who took risks in search of profit, changing the existing economic structure. The entrepreneur was considered to be an individual who was responsible for organizing and gathering the resources necessary for the production of goods and services, with the aim of generating value (Say, 1803).

Over the years, entrepreneurship has become more discussed and recognized in academia and economics, especially after the studies of economists such as Joseph Schumpeter. In the work *Theory of Economic Development* (1911), Schumpeter stated that the entrepreneur is the engine of innovation, being responsible for the "creative destruction" that favors the advancement of economies by introducing new products, processes and markets, Schumpeter also considered that the entrepreneur, through his ability to innovate, was fundamental for the development and competitiveness of capitalist economies.

Subsequently, throughout the twentieth century, the concept of entrepreneurship evolved and came to be associated not only with the creation of new companies, but also with the implementation of changes and innovations within established organizations. From the 1950s and 1960s, entrepreneurship began to be explored more systematically in the academic environment, initially in the United States, as a field of study within universities. Since then, the entrepreneur has come to be seen as someone who not only takes risks, but also uses a combination of creativity, innovation and vision to achieve success in the market, thus initiating the incorporation of specific characteristics and skills to the profile of this individual.

Also in the United States, specialized programs and study centers focused on the subject began to emerge in the 1970s, such as the Institute of Entrepreneurship at Harvard University, founded in 1985, where entrepreneurship began to be approached as an academic discipline, focusing on the study of specific skills, such as leadership, risk management, and business strategies. This academic movement fostered and reflected the growing importance of small businesses and *startups* in global economic development.

Since then, entrepreneurship has been progressively incorporated into university curricula, especially in business courses. Academia, by adopting a more systematic and

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scientific approach to the subject, has allowed the emergence of a new generation of entrepreneurs who are better prepared for the market, based on formal strategies and planning, which has enabled the formalization of entrepreneurial practices that were previously seen in an empirical and informal way.

Analyzing the Brazilian scenario, the teaching of entrepreneurship has relatively recent roots, compared to more developed countries, as it gained prominence only from the 1980s onwards, as a reflection of the worldwide recognition of the role of entrepreneurs in economic development and job creation. The introduction of entrepreneurship as an academic discipline occurred for the first time at the School of Business Administration of São Paulo (EAESP) of the Getulio Vargas Foundation (FGV), with the course "Creation of New Businesses" in 1981, with the objective of enabling students to identify market opportunities and develop their own businesses, going beyond the traditional executive training that existed until then (MARTINS, 2008).

This pioneering initiative paved the way for the teaching of entrepreneurship in other Brazilian institutions, such as the University of São Paulo (USP), which in 1994 began to offer entrepreneurship courses, integrating theoretical and practical studies into its courses. At the same time, the Brazilian Micro and Small Business Support Service (SEBRAE) introduced entrepreneurial training and new business promotion programs in Brazil, such as Empretec created by the United Nations (UN), using behavioral methodologies to train entrepreneurs to develop critical skills, such as proactivity, persistence, and the ability to take calculated risks (SEBRAE, 2021).

The 1990s marked a period of consolidation of entrepreneurship in Brazilian higher education, when several institutions began to implement courses and activities related to the theme. In this scenario, there was an increase in the creation of business incubators, such as the first technological incubator at the State University of Campinas (Unicamp), with the main activity of fostering the transformation of academic ideas into innovative businesses. These initiatives have become fundamental to bring the university environment closer to the labor market, in addition to creating conditions for, in the future, the emergence of *technological startups* that have contributed to the national economy (MUNIZ, 2020).

Subsequently, in the 2000s, entrepreneurship began to be integrated as a curricular component in courses in various areas of knowledge, from administration to engineering, marking an expansion of the entrepreneurial culture in higher education, being

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accompanied by the creation of new programs and initiatives. In 2004, the Getúlio Vargas Foundation inaugurated the Center for Entrepreneurship and New Business (CENN), which supported innovative projects, such as the organization of the first business plan competitions and the holding of academic events focused on entrepreneurship, events that are now consolidated and held throughout the country. These efforts were essential to strengthen the entrepreneurial culture in universities, bringing students closer to entrepreneurs and investors (SILVA; PEREIRA, 2021).

The role of public universities was also expanded in this context, from 2005 onwards, institutions such as the Federal Institute of Ceará (IFCE) created incubator systems that supported the development of innovative companies, such as the mototaximeter, developed by AED Tecnologia, a company incubated at IFCE. This provision has had a significant impact on the transport sector, while highlighting the ability of public educational institutions to transform knowledge into practical and scalable innovation (VASCONCELOS; ALMEIDA, 2018).

More recently, the expansion of programs aimed at teaching entrepreneurship has reflected the growing demand for professionals capable of innovating in an increasingly competitive and globalized market. Programs such as the "Entrepreneurial University Challenge", promoted by SEBRAE, and initiatives such as Startup Brasil, fostered by the federal government, have contributed to young entrepreneurs developing essential skills and creating businesses that generate economic and social impact (SEBRAE, 2023).

Another important aspect of entrepreneurship education in Brazil has been the adoption of active learning methodologies, such as problem-based *learning* (PBL). These approaches have been applied from high school to higher education, encouraging students to work on real projects and solve practical challenges, a strategy that not only contributes to learning, but also forms individuals who are better prepared to deal with the complexities of the contemporary labor market (GUIMARÃES, 2002).

Currently, entrepreneurship in Brazil is recognized as an essential factor of economic and social development, in addition to generating jobs and wealth, it promotes innovation and the country's competitiveness on the international stage. In this way, through the training of new entrepreneurs, universities and other educational institutions play a crucial role in creating an environment favorable to innovation and sustainable growth.

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Despite the significant evolution, entrepreneurship education in Brazil still faces significant challenges. In public institutions of higher education, for example, issues such as lack of infrastructure, shortage of trained professors, and little integration with the market still limit the potential for expansion in this area of knowledge. In addition, the predominantly academic culture in some educational institutions makes it difficult to accept entrepreneurship as a legitimate area of study and professional practice, even so, the advances achieved in recent decades demonstrate significant progress and the consolidation of this area of study within universities.

THE EVOLUTION OF ENTREPRENEURSHIP EDUCATION: FROM TRADITIONAL TO INNOVATIVE MODELS

The traditional model of entrepreneurship education, predominant until the 1990s, was based on disciplines such as administration, accounting, and strategic planning, with an emphasis on static and pre-defined business models. This approach, although important to consolidate basic concepts, limited the students' creativity and ability to adapt, in addition, many programs had no link with practice, which restricted the application of knowledge in real scenarios.

Entrepreneurship education has transformed significantly over the last few decades, while the traditional model was focused on theoretical concepts and business management, the 2000s marked the transition to more dynamic approaches, centered on innovation, creativity and real problem solving. This evolution reflects the growing complexity of global markets and the need to train entrepreneurs prepared to deal with volatile, uncertain, complex and ambiguous environments (VUCA[6]) (DORF; BYERS, 2005).

From the 2000s onwards, entrepreneurial pedagogy began to include methodologies such as *design thinking*, *lean startup*, and project-based learning, transforming the student's role from passive receiver to protagonist of the learning process (RIES, 2011). According to Filion (2008), this change was driven by the perception that entrepreneurship is a practical skill, which demands not only technical knowledge, but also creativity, adaptability and market vision.

[6] The term VUCA was born from the acronym of the English words Volatility, Uncertainty, Complexity and Ambiguity (in Portuguese: volatility, uncertainty, complexity and ambiguity, respectively). It is an expression commonly used in the entrepreneurial environment, especially in the digital age, where new technologies and new business models have further challenged entrepreneurs in the "VUCA World".

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Pioneering programs, such as SEBRAE's Empretec, introduced and contributed to popularizing active methodologies in the teaching of entrepreneurship, being a reference in the training of entrepreneurs, using interactive dynamics and case studies to develop skills such as leadership, resilience, and negotiation (SEBRAE, 2021). Likewise, academic projects began to gain prominence, such as entrepreneurship initiatives offered in public universities, through technological innovation laboratories, which became part of their teaching, research, and extension actions (KRAUSE et al., 2015).

The emergence of technology parks and incubators also played a crucial role in this transition, spaces such as Porto Digital, in Recife, and the São José dos Campos Technology Park, in São Paulo, became references in the articulation between universities, government and the private sector. These environments provided students and researchers with the opportunity to develop real projects and interact with entrepreneurs and investors, expanding the reach of entrepreneurship education beyond the classrooms (TORKOMIAN; GIRARDI, 2019).

The transition to innovative teaching models was accompanied by the advancement of digital technologies, which revolutionized the entrepreneurial ecosystem, tools such as *crowdfunding*[7] platforms, business modeling software, and market simulators began to be incorporated into academic curricula, allowing students to test their ideas in controlled environments and receive *feedback* in real time. In addition, events such as *hackathons* and startup competitions encouraged the practical application of the knowledge acquired, promoting interaction between different areas of knowledge (ALMEIDA; FARIAS, 2020).

Another important aspect of this transition was the integration of concepts such as socio-environmental impact entrepreneurship and social innovation in education, where from the 2000s onwards, entrepreneurship programs began to address issues such as sustainability, social inclusion, and business ethics, aligning with contemporary demands for businesses that generate shared value. Projects such as "Engineers Without Borders", present in several public universities, illustrate how the teaching of entrepreneurship can contribute to solving social and environmental problems, promoting sustainable local development (SANTOS et al., 2019).

Entrepreneurship education in the twenty-first century has also begun to emphasize interdisciplinary collaboration, promoting the combination of artistic, human, and

[7] *Crowdfunding* is a form of collective financing, where the objective is to raise funds to finance projects or businesses through the contribution of several people in various formats.

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technological skills, becoming a competitive differentiator and preparing students to operate in global and diversified markets. This can be seen when looking at projects such as "Inova IF", which demonstrates how interdisciplinary learning can foster creativity and innovation, connecting students from areas such as engineering, design, and administration to develop scalable technological solutions (COSTA et al., 2021).

With the evolution in teaching and in the approach to entrepreneurship within educational institutions, especially public ones, it is increasingly essential that public policies are directed towards teacher training, the creation of more dynamic learning environments, in addition to strengthening partnerships between universities, government, and the private sector, as highlighted by Torkomian and Girardi (2019), Thus, historically known problems in these institutions, such as the lack of adequate infrastructure and cultural resistance, do not compromise the evolution of entrepreneurship education, in addition to the economic and social development of the country.

THE FORMATION OF A NEW ENTREPRENEUR PROFILE

With the evolution of education and the model of entrepreneurship, it has become necessary to develop new skills in the figure of the entrepreneur, such as artistic, human and technological, which has stood out as an essential factor in the training of the professional who wishes to undertake. These interdisciplinary skills are essential to meet the demands of the contemporary market, which has been demanding more and more creativity, the ability to solve complex problems, and technological mastery. In addition, such skills have driven universities to play a more active role in promoting innovation in their services and socioeconomic development.

Creativity, often associated with artistic practices, plays a crucial role in identifying opportunities and generating innovative solutions to complex problems. Studies show that the incorporation of artistic activities in the academic environment can stimulate originality, imagination and divergent thinking, fundamental qualities for entrepreneurial success (FLEMING, 2017). Institutions such as the Federal University of Minas Gerais (UFMG) have implemented initiatives that integrate art and entrepreneurship, such as creative laboratories and *design thinking workshops*, promoting an environment conducive to innovation (SILVA et al., 2020).

In addition, disciplines involving music, visual arts, and theater contribute to the development of emotional intelligence, a skill that is increasingly valued in the job market

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and essential for the development of the entrepreneurial profile. This ability combined with effective communication, the ability to work in a team and to understand different cultural perspectives are often highlighted as pillars of success in entrepreneurial initiatives (GOLEMAN, 2015).

The entrepreneurial profile also depends on the development of human skills, such as empathy, leadership, and teamwork, these competencies allow individuals to understand the needs of others, whether consumers or members of a team, and to act in an empathetic, ethical, and collaborative manner. Several entrepreneurial training programs focus on the development of human skills, such as Empretec, promoted by SEBRAE, which develops skills such as resilience, assertive communication, and negotiation (SEBRAE, 2021).

In this context, technological skills have increasingly become indispensable in a widely digitized and interconnected world, where mastery of digital tools, programming, data analysis, and automation not only expands the range of entrepreneurial opportunities, but also strengthens students' ability to develop innovative solutions. In this way, the academic environment becomes a precursor in the promotion of programs that connect universities to applied research initiatives and *startup development*, demonstrating how technological knowledge can be converted into practical innovation (COSTA et al., 2021).

In this current scenario, where the mastery of emerging technologies, such as artificial intelligence, *blockchain,* and the internet of things, is encouraged through *hackathons* and innovation competitions organized by universities, these initiatives not only develop technical skills, but also teach complementary skills, such as problem-solving, interdisciplinary collaboration, and strategic thinking (ALMEIDA; FARIAS, 2020).

Although artistic, human, and technological skills are often treated as distinct areas, the integration between them is what really defines an entrepreneurial personality in the 21st century. In the academic environment, interdisciplinary initiatives should be aimed at preparing students for the challenges of the market, combining the teaching of creative *design*, collaborative leadership, and technological prototyping in a single training program, for example, as stated (FREIRE et al., 2021).

In addition, research indicates that the interaction between creative and technological skills can lead to more innovative solutions, such as the use of digital technologies to create interactive narratives in cultural projects, which has opened up new

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possibilities for entrepreneurship in the creative sector, generating significant economic and social impact (OLIVEIRA; RIBEIRO, 2020).

In this sense, strengthening the entrepreneurial profile of students brings benefits that go beyond the individual sphere, hoping to train professionals who are better prepared to create businesses that generate jobs, promote innovation and contribute to the sustainable development of their communities. In the public environment, this profile should contribute to the provision of public services that generate more positive impact on society, in addition to greater efficiency and effectiveness in these services.

It is expected, therefore, that with the focus on the development of these joint skills, it will contribute to the formation of more critical and engaged professionals, capable of leading social changes and acting in areas that require creativity, empathy and technological mastery, whether in the public or private environment.

THE ENTREPRENEURSHIP OF THE FUTURE: *SELF INNOVATION, STARTUP INNOVATION* AND *CORPORATE INNOVATION*

The entrepreneurship of the future is intrinsically linked to the ability to adapt and innovate in a global scenario marked by rapid technological, economic and social transformations. And it is in this context that terms such as *self innovation*, *startup innovation*, and *corporate innovation* represent the introduction of complementary approaches that shape the future and drive entrepreneurial initiatives. When applied to the public environment, these concepts not only drive the creation of new businesses, but also promote improvements in services and the management of public resources.

When addressing the theme of entrepreneurship of the future from personal development, the expression *self innovation* is used, which refers to the process of continuous improvement and high investment in skills and competencies. In this sense, *self-innovation* prepares individuals to lead innovative projects where they can work, whether in *startups*, corporations, or the public sector (COSTA et al., 2021). This approach has become fundamental for public agents to develop the resilience and creativity necessary to face complex challenges, being essential in the public environment, to train leaders who promote significant changes in society, based on the development of skills and behavioral methodologies, such as initiative and planning, as well as technical management skills.

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The term startup innovation*, on the other hand* , represents the essence of the entrepreneurship of the future, in the context that *startups*, by their nature, are organizations focused on creating disruptive solutions to specific problems, often using emerging technologies. In the public environment, the potential of *startups* lies in the ability to collaborate with governments and educational institutions to solve, mainly, urban, environmental, and social challenges.

A *widely* disseminated and already consolidated startup innovation model is the Startup Gov program, an initiative that connects *startups* to public management demands, encouraging the development of technological solutions for the Federal Government, such as in the areas of health, education and security, in this program, emerging companies have created applications that optimize the allocation of resources in public hospitals, reducing costs and improving the efficiency of service to citizens, for example (ALMEIDA; SANTOS, 2022).

Another model related to *startup innovation* is the support for projects to create innovation environments, using partnerships between public universities, state and municipal governments, companies from different areas, research and development centers, incubators and accelerators of technology *startups*. The greatest example of this initiative in the country today is Porto Digital, one of the largest technology parks in Brazil, which is the result of collaboration between the Federal University of Pernambuco (UFPE), the local government and private companies, this enterprise is home to hundreds of *startups* that develop technological solutions with a direct impact on the economy and the quality of life of the population (SILVA et al., 2020).

The practice of *corporate innovation* has been adopted by Brazilian public companies with the aim of promoting efficiency and innovation, and one of the best models ever implemented is that of Petrobras, which invests in open innovation laboratories to integrate *startups* and universities in the development of sustainable technologies for energy exploration (PETROBRAS, 2021). This approach allows large public corporations to act as catalysts for innovation, fostering the entrepreneurial ecosystem around them.

While *startups* seek agile innovation, in the public sector changes occur at a different pace, however, actions such as *corporate innovation* are increasingly being implemented and can be adapted to modernize administrative processes, increase transparency, and improve the provision of services to society. In the private sector, this

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concept is more directed to the need to adopt entrepreneurial practices for companies to reinvent themselves and maintain their relevance in competitive markets.

In addition, the concept of *corporate innovation* can also be observed in companies such as Banco do Brasil, which has been implementing internal innovation programs to train employees and develop technological solutions aimed at the financial inclusion of vulnerable communities. The initiative demonstrates how public organizations can adopt corporate innovation practices to generate social impact (GOMES; LIMA, 2023).

The concepts of *self-innovation*, *startup innovation,* and *corporate innovation* should not be seen or used in isolation, they complement each other and strengthen the entrepreneurial ecosystem as a whole. While *self-innovation* provides the necessary personal foundation for entrepreneurs and leaders to be able to innovate, *startup innovation* brings agility and creativity, and *corporate innovation* offers resources and scalability to turn ideas into real impact.

In the public environment, this integration is especially necessary, as it is an environment where public universities can act as bridges between these three concepts, training innovative individuals, fostering startups, and collaborating with public organizations to solve problems, from the simplest to the most complex, and build greater efficiency in the provision of public services (MORAES et al., 2022).

In this sense, the entrepreneurship of the future in the public sector will be defined by the ability to integrate *self-innovation*, *startup innovation,* and *corporate innovation* into coherent and collaborative strategies, where governments and public institutions increasingly invest in programs that encourage personal development, support the creation of new businesses, and adopt corporate innovation practices to face the challenges of the 21st century.

METHOD ADOPTED IN THE RESEARCH

To answer the problem question of this article, we initially seek to demonstrate how entrepreneurial education has become the main formative element of the entrepreneurship of the future, in the public context, exploring the way in which the concepts of *self innovation*, *startup innovation* and *corporate innovation* can be interrelated and applied to promote innovation, efficiency and social impact in Brazilian public institutions. It also sought to identify the main practices and strategies that can be implemented in the public

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environment, highlighting the formation of entrepreneurial skills and the economic and social impacts generated by this integrated approach.

Thus, the research used a qualitative approach, from an extensive bibliographic review and documentary analysis, the data collection was carried out from specialized scientific articles in the area of entrepreneurship and innovation, reports from public institutions and government initiatives, published in the last 4 years, ensuring the timeliness of the information.

The bibliographic review was carried out through the survey of scientific articles that brought studies on the themes of *self innovation*, *startup innovation* and *corporate innovation*, with emphasis on their applications in the public environment, using as a source the *Scopus databases* and the Brazilian Digital Library of Theses and Dissertations.

Searches were carried out for innovation projects and actions developed in public institutions, mainly universities and federal institutes. To complement the documentary research, reports from institutions such as SEBRAE, the Ministry of Education (MEC) and the Ministry of Science, Technology and Innovation (MCTI) were analyzed, focusing on the identification of public policies to encourage entrepreneurship.

Based on the academic and scientific materials found, comparing them to the practices observed in organizations, we identified patterns, challenges and opportunities for the development of public entrepreneurship of the future and especially for the consolidation of the dynamic teaching of entrepreneurship of the future within public educational institutions.

The analysis followed the content analysis technique, categorizing the information into three main axes: skills development (related to *self-innovation*), creation of *startups* (linked to *startup innovation*) and innovation in public organizations (aligned with *corporate innovation*).

DATA ANALYSIS

Based on the assumption that the entrepreneurship of the future depends on the interaction between the three researched approaches (*self innovation*, *startup innovation* and *corporate innovation*), even in the public context these practices can be implemented to create more innovative and efficient environments, with benefits for civil servants, citizens and society as a whole. It was identified that the greatest link between the

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approaches is entrepreneurial education, since from the training of public agents in this theme combined with incentives and innovative projects, the public environment is modified, making it more creative and innovative.

In this sense, it was identified that the main actions linked to the approaches to entrepreneurship of the future in the public sector, related to *self-innovation* are linked to the development of entrepreneurial leaders, with the objective that they can act as agents of transformation, for this, the training of public servants in skills such as leadership, creativity and resilience, has shown positive results in the modernization of administrative practices and in the improvement of citizen service.

The use of *startup innovation* has been used to solve challenges in the public sector, through the development of agile and technological solutions, observing a wide variety of projects related to *startup innovation*, where the government, in some way, fosters the creation of new businesses to solve its technological demands. In this way, some public organizations use universities and research centers, others seek to encourage their own servers to develop targeted projects, while others open their demands so that *startups* can propose solutions, regardless of how it is executed, *startup innovation* uses the result of entrepreneurial education to seek qualified professionals and promote the transformation they need.

In this sense, *corporate innovation* in the public sector, although still little implemented, is an emerging strategy with the aim of promoting structural changes. Experiences of large public companies, such as Petrobras and Banco do Brasil, have shown that the implementation of internal innovation laboratories and corporate training programs can be adapted to modernize public management, making it more efficient and innovative (PETROBRAS, 2021; GOMES; LIMA, 2023).

The *corporate innovation* programs developed by these public organizations have similarities in innovative initiatives in their internal policies, significant investments in entrepreneurial education for their employees, and the creation and promotion of collaborative networks between universities, *startups* and other public organizations. In this way, it is even more evident that despite the differences between public organizations that adopt the entrepreneurship of the future, all of them somehow integrate their actions of *self innovation*, *startup innovation* and *corporate innovation*, which allows us to affirm that the entrepreneurship of the future is built, mandatorily, from entrepreneurial education actions.

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It can be observed that the entrepreneurship of the future, when applied to the public sector, has demonstrated a potential to profoundly transform the way public management is done and services are provided to society. The integration between *self-innovation*, *startup innovation,* and *corporate innovation* can form a dynamic ecosystem, in which creativity, technology, and leadership converge to solve complex problems, as well as serve as models for replication in different contexts. And it is in this scenario that public universities play a central role, as catalysts for innovation and strategic partners of *startups* and government organizations.

THE REALITY OF ENTREPRENEURSHIP OF THE FUTURE IN THE PUBLIC SECTOR

In addition to the understanding that the concepts researched, which build the entrepreneurship of the future, depend on the way of undertaking in the public sector and the profile of the professionals who engage in entrepreneurial actions, we see that each of these terminologies is explored in an interconnected way with the reality of organizations, highlighting their relevance and impact on public institutions and society.

It is noteworthy that actions that promote the strengthening of connections between different actors in the entrepreneurial ecosystem were essential for the creation of an innovative and collaborative environment, as already observed by Costa et al. (2021), which reinforce the theory that collaboration networks between universities, companies, startups, and the public sector enhance the exchange of knowledge and resources, generating more effective solutions to social and economic problems.

As we have seen, models such as the initiatives of Porto Digital (SILVA et al., 2020) and the São José dos Campos Technology Park (MORAES et al., 2022), exemplify how well-structured connections can boost regional development, fostering strategic partnerships that combine scientific research, entrepreneurship, and innovation. These connections also facilitate the popularization of science, by bringing researchers closer to society and transforming academic knowledge into practical solutions, directly impacting the economy and social development of the region in which they are inserted.

As a driving force for the entrepreneurship of the future in the public sector, innovation and creativity have been applied to modernize processes and services, as we have identified in open innovation laboratories, such as those promoted by Petrobras (PETROBRAS, 2021), where the union of *startups* and universities seek to develop sustainable and technological solutions that positively impact society.

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In this sense, we can understand that creativity, when combined with innovation, is essential to solve complex problems in the public environment, and the existence of a synergy is essential, which is especially evident in socio-environmental impact entrepreneurship, and which combines creative and technological practices to face global challenges, such as climate change and social inequality.

By observing the main challenges faced in the construction of the entrepreneurship of the future, it can be identified that the scaling of entrepreneurial solutions proves to be the main factor, in addition to being one of the central objectives of its construction. In this sense, it is noted that projects developed in partnership with universities have demonstrated that scalable solutions can generate significant impacts on a large scale, in addition to increasing the chances of replicability and adaptation of solutions.

Another point identified as relevant and cohesive between the authors and institutions researched is the socio-environmental impact entrepreneurship model, which has been gaining prominence with an approach that combines innovation and social responsibility, we observe this when analyzing the Startup Gov program, which focuses on encouraging the development of solutions aimed at sustainability, social inclusion and accessibility in public organizations.

Allied to socio-environmental impact entrepreneurship, we observe that actions to popularize science play a crucial role in this context, by bringing scientific knowledge closer to society and ensuring that it is applied to solve real problems. It can be observed that interdisciplinary projects developed in public universities have used science as a basis for the creation of innovative solutions, contributing to the democratization of access to knowledge and the generation of positive social impact.

INTERRELATIONSHIPS AND PERSPECTIVES

When we observed the actions and research on connections, innovation, creativity, scaling and entrepreneurship with social impact, it was found that they are not carried out in isolation, on the contrary, they are interdependent and mutually strengthen the public entrepreneurship ecosystem of the future. Robust connections between ecosystem actors allow the exchange of knowledge, promote innovation, and create opportunities for scaling solutions. It is in this sense that the interrelationship with entrepreneurial education provides the necessary basis for the development of creativity and innovation, while

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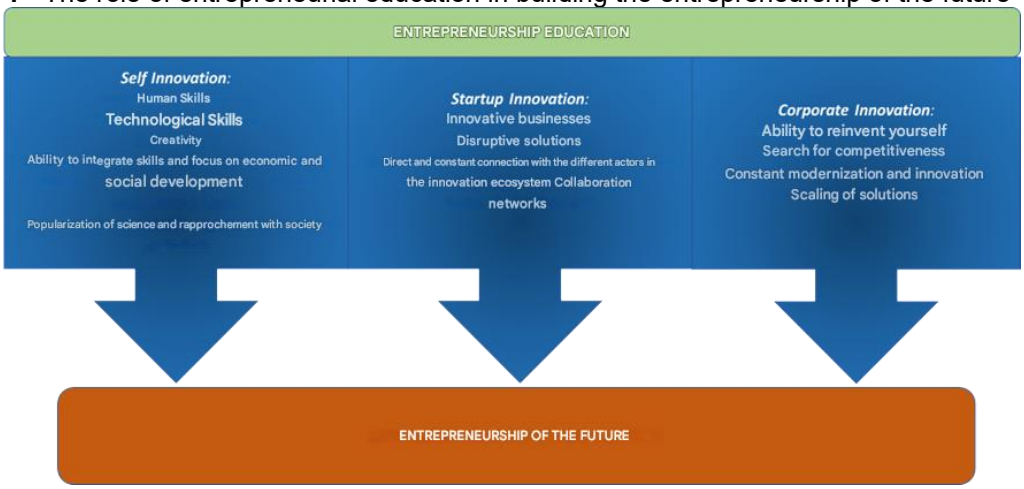
technology-based entrepreneurship and socio-environmental impact ensures that solutions are scalable and contribute to a fairer and more sustainable society.

This is the role that entrepreneurial education plays in the construction of the entrepreneurship of the future, by uniting the formative pillars of *self innovation*, *startup innovation* and *corporate innovation* , it makes a new model of entrepreneurship consolidate, as described in Figure 1 of this article.

Figure 1 - The role of entrepreneurial education in building the entrepreneurship of the future



Source: Prepared by the authors (2025).

The public sector, by adopting these approaches, not only modernizes its processes, but also acts as a catalyst for the economic and social development of the country, where successful initiatives demonstrate that it is possible to integrate these concepts to generate large-scale impact (FERREIRA; ROCHA, 2022).

The analysis also shows that concepts such as connections, entrepreneurship, education, ecosystem, innovation, creativity, scaling, socio-environmental impact, popularization of science and technology-based entrepreneurship were present in several stages of the organizations' action reports and especially in the scientific studies researched, being essential in the construction of the public entrepreneurship of the future. When strategically integrated, these elements create a dynamic and collaborative environment, capable of generating innovative and scalable solutions to complex challenges.

Thus, we can say that the success of these initiatives depends on consistent public policies, investment in entrepreneurial education, and the creation of robust collaboration

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networks. By aligning these elements, the public entrepreneurship of the future can transform the public sector, making it more efficient, inclusive, and sustainable.

FINAL CONSIDERATIONS

Entrepreneurship, from its conception to the present day, has evolved from an informal and individual practice to an academic discipline and later to a tool for public development. The introduction of government entrepreneurship in Brazil, still in the growth phase, is essential for strengthening the economy, creating new business opportunities and improving public policies. By integrating the vision of entrepreneurship into the governmental context, the country can generate a more favorable environment for the emergence of new entrepreneurs and businesses, boosting economic and social growth.

In this sense, the public entrepreneurship of the future, shaped by the integration of concepts such as *self-innovation*, *startup innovation,* and *corporate innovation*, represents a transformative opportunity for the modernization and expansion of the social impact of Brazilian public institutions. The results of this study highlight that the formation of entrepreneurial skills, the creation of collaborative ecosystems and the adoption of innovation strategies are central elements to face the challenges of the public sector in the 21st century.

It was observed that the connections between universities, startups, public corporations and society emerge as one of the fundamental pillars to promote innovation and creativity in the public environment, and that already consolidated models such as Porto Digital and initiatives such as Startup Gov demonstrate how interinstitutional collaboration and the sharing of resources can foster scalable and technological solutions, that benefit not only public agencies directly, but also society as a whole.

In this scenario, entrepreneurial education, especially that carried out in universities and federal institutes, plays an essential role in training individuals to lead changes and face global challenges, bringing with it the popularization of science, combined with technology-based entrepreneurship, which contributes to the democratization of knowledge and the development of sustainable and inclusive solutions. These advances become even more relevant when associated with socio-environmental impact entrepreneurship, which aligns technological innovation with social and environmental responsibility.

Although the advances identified are promising, challenges persist, such as the need for greater investment in technological infrastructure, long-term public policies, and

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training of civil servants to act proactively in innovative ecosystems. Overcoming these barriers requires a collective commitment between public managers, academic institutions, entrepreneurs, and society.

It is therefore concluded that the public entrepreneurship of the future is more than a trend, it is a necessity to ensure the efficiency, inclusion and sustainability of public institutions in a world in constant transformation. By integrating creativity, technology, and social impact, the public sector can not only meet the demands of society but also position itself as an engine of economic and social development.

Thus, it is expected that public policies and educational initiatives will continue to evolve, encouraging innovation and collaboration between the various actors involved, in this way, it will be possible to consolidate a robust entrepreneurial ecosystem, capable of facing the challenges of the present and building a more inclusive and sustainable future.

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REFERENCES

1. Almeida, J. P., & Farias, M. S. (2020). Hackathons como estratégia de aprendizado em instituições públicas de ensino superior. Revista Brasileira de Educação Tecnológica, 10(3), 50–65. https://doi.org/10.3895/rbet.v10n3.12345

2. Almeida, W., & Santos, E. (2022). A emergência da educação online: Narrativas docentes-discentes de uma educação online por/em outras presencialidades. EaD Em Foco, 12(3), 1–14. https://doi.org/10.18264/eadf.v12i3.1234

3. Brasil, Ministério da Economia. (2021, Março). Programa Startup gov.br impulsiona inovação e transformação digital no governo. https://www.gov.br/economia/pt-br/assuntos/noticias/2021/marco/programa-startup-gov-br-impulsiona-inovacao-e-transformacao-digital-no-governo-1

4. Brasil, Ministério da Gestão e Inovação em Serviços Públicos. (s.d.). Startup gov.br. https://www.gov.br/governodigital/pt-br/estrategias-e-governanca-digital/startupgovbr/startup-gov.br

5. Costa, L. H., & outros. (2021). Sistemas de irrigação automatizados: Uma solução inovadora para a agricultura. Revista de Inovação e Sustentabilidade, 8(2), 23–37.

6. Dorf, R. C., & Byers, T. H. (2005). Technology ventures: From idea to enterprise. McGraw-Hill.

7. Ferreira, R., & Rocha, P. (2022). Acelerando a inovação no setor público: O papel das startups. Revista Brasileira de Administração Pública, 56(2), 135–150. https://doi.org/10.1590/0034-761220220123

8. Filion, L. J. (2008). Empreendedorismo: Empreendedores e proprietários-gerentes de pequenos negócios. RAUSP Management Journal, 43(4), 1–10. https://doi.org/10.1590/S0080-21072008000400001

9. Fleming, P. (2017). The human capital hoax: Work, debt and insecurity in the era of Uberization. Organization Studies, 38(5), 691–709. https://doi.org/10.1177/0170840616686123

10. Freire, P. D. S., Alvares, L. M. A. D. R., Rizzatti, G., Bresolin, G. G., Martins, G. J. T., Kempner-Moreira, F., & Silva, T. C. (2021). Glossário: Governança multinível do conhecimento e da aprendizagem e seus mecanismos de universidade corporativa em rede e de comunicação dialógica. CRV.

11. Goleman, D. (2015). Liderança: A inteligência emocional na formação do líder de sucesso (1st ed.). Objetiva.

12. Gomes, A. L., & Lima, C. R. (2023). Educação empreendedora e inovação em universidades públicas brasileiras. Revista de Administração Contemporânea, 27(2), 233–250. https://doi.org/10.1590/1982-7849rac2023220123

Revista ARACÊ
ISSN: 2358-2472

13. Guimarães, L. O. (2002). Empreendedorismo no currículo dos cursos de administração: Uma análise da organização didático-pedagógica. Revista Economia e Gestão, 4, 78–95.

14. Krause, D. R., & outros. (2015). A evolução do ensino de empreendedorismo no Brasil. Revista de Educação Empreendedora, 2(1), 15–30.

15. Martins, P. F. (2008). História do empreendedorismo no Brasil. Editora Atlas.

16. Moraes, J. C., & outros. (2022). O impacto de startups de base tecnológica em ecossistemas empreendedores. Revista de Inovação e Negócios, 15(4), 245–260.

17. Muniz, P. R. (2020). A criatividade como diferencial no empreendedorismo contemporâneo. Cadernos de Empreendedorismo, 7(3), 105–120.

18. Oliveira, G. A., & Ribeiro, M. F. M. (2020). Formação para a docência na pós-graduação em ciências biológicas e da saúde: Uma autoavaliação. Revista Brasileira de Pós-Graduação, 16(36), 1–43. https://doi.org/10.21713/2358-2332.2020.v16.1712

19. Petrobras. (2021). Relatório de sustentabilidade 2021. https://static.poder360.com.br/2023/06/relatorio-sustentabilidade-petrobras-2021.pdf

20. Ries, E. (2011). The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses. Crown Business.

21. Santos, A. C., & outros. (2019). Engenheiros sem Fronteiras: Impacto social e aprendizado prático. Revista Brasileira de Engenharia Social, 5(4), 78–90.

22. Say, J. B. (1803). Tratado de economia política. Guillaumin.

23. Schlep, A. M. (2009). O empreendedorismo no Brasil: Desafios e oportunidades. Editora FGV.

24. Schumpeter, J. A. (1911). Teoria do desenvolvimento econômico. Editora Nova Cultural.

25. Sebrae. (2021). Empretec: Programa de capacitação empresarial. https://www.sebrae.com.br

26. Sebrae. (2023). Regulamento Desafio Universitário Empreendedor. https://uploads.brasiljunior.org.br

27. Silva, A. W. P., & outros. (2020). Comportamento empreendedor: Um mapeamento da produção científica nacional (2000-2020) e proposição de uma agenda de pesquisa. Revista de Administração da Unimep, 18(1), 155–191. https://doi.org/10.15600/1679-5350/rau.v18n1p155-191

28. Silva, J., & Pereira, M. A. (2021). A integração de metodologias ativas no ensino de empreendedorismo. Revista de Educação Empreendedora e Inovação, 9(1), 34–48.

Revista ARACÊ
ISSN: 2358-2472

29. Torkomian, A. L. V., & Girardi, J. (2019). Parques tecnológicos no Brasil: Um estudo de caso. Revista Brasileira de Inovação, 18(1), 45–63. https://doi.org/10.20396/rbi.v18i1.8654698

30. Vasconcelos, M., & Almeida, C. H. (2022). Popularização da ciência como pilar para o empreendedorismo público. Revista Brasileira de Políticas Públicas, 12(2), 67–84. https://doi.org/10.5102/rbpp.v12i2.7890