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Linograbado sobre lienzo

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ENCUENTROS

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Encuentros es una revista académica, interdisciplinar y multicultural de la Universidad Autónoma del Caribe, Colombia. Reconocida por su producción crítica e intelectual en torno a las ciencias sociales y humanas en los campos científicos regionales, nacionales e internacionales. La revista se convierte en un escenario permanente de respuesta a los retos de la investigación, la cual contribuye al desarrollo de los temas sociales que exige la humanidad.

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Encuentros é uma revista de divulgação do conhecimento e informação científica, onde participam estudiosos e pesquisadores das ciências sociais e humanas, que a partir de resultados de pesquisas, reflexões teóricas, resenhas de livros e artigos acadêmicos, contribuem para a construção e difusão de novos conhecimentos, em torno dos eixos temáticos da comunicação, educação, cultura e tecnologia.

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Encuentros is a journal for the dissemination of knowledge and scientific information, by means of which participating scholars in social and human sciences contribute to building and spreading of new knowledge in the areas of communication, education, culture and technology. This knowledge is the result of research, theoretical reflections, critical reviews, and academic endeavors.

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Encuentros will be a multicultural and interdisciplinary academic space, recognized for its critical and intellectual production about social and human sciences in regional, national, and international scientific areas. Encuentros will constitute a permanent response to the challenges posed by research, which will contribute to the development of the social issues that mankind poses.

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Encuentros será um espaço acadêmico interdisciplinar e multicultural. Reconhecida por sua produção crítica e intelectual sobre ciências sociais e humanas nos âmbitos científicas regionais, nacionais e internacionais. Encuentros se constituirá em um cenário de resposta permanente para os desafios colocados pelas pesquisas, que contribuirão para o desenvolvimento de questões sociais demandadas pela humanidade.

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Reframing the voices of Social Sciences in Latin America

The diversity and richness of research in Latin America is equipped to address a wide range of themes that reflect the inherent complexities of its social, political, and cultural context. This holistic approach is reflected in the emerging scientific output of Latin American academies, characterized by their commitment to exploring local problems with global reach, while maintaining a critical and transformative stance towards established knowledge.

This issue of our publication is a testament to this research tradition, offering a selection of works that, from various latitudes and disciplines, converge in both a broad and specific thematic symbiosis. These works not only adhere to the formal rigor of academic research but also adopt a rebellious and tenacious posture in their quest for new knowledge horizons. In this sense, we seek to meet at the frontiers; not only geographical and disciplinary, but also those epistemological borders that challenge the traditional conception of education as merely a vehicle for knowledge transmission, to reimagine it as a powerful tool for mediating social transformation.

Our call to the academic community is an invitation to dive into this search, one that transcends superficiality to delve into the depths of a social deontology committed to change and justice. The variety of articles presented in this issue relate not only through geographical and disciplinary distance but also through their ability to dialogue with each other, establishing unexpected connections and fostering an enriching discussion space.

Each contribution, with its unique focus and particular perspective, adds to the mosaic of knowledge that defines Latin American research. From the analysis of the social dynamics underlying environmental regulation to the exploration of the role of self-control in academic performance, the presented works span a thematic spectrum that is as diverse as it is relevant to the contemporary challenges of the region. These investigations not only stand out for their academic excellence but also for their courage in addressing critically important issues with a critical and transformative eye.

Therefore, this issue is not just a celebration of academic research in Latin America but also a call to action. It is a reminder of the responsibility we hold as academics, researchers, and citizens to contribute to the development of more just, equitable, and sustainable societies. Through dialogue and interdisciplinary collaboration, we can overcome the barriers that separate us and find innovative solutions to the most pressing problems of our time. Ultimately, this publication stands as a beacon of hope, illuminating the path towards a future where knowledge transcends borders and becomes a vehicle for positive social change.

Resignificando las voces de las Ciencias Sociales en América Latina

La diversidad y riqueza de la investigación en América Latina se encuentra en capacidad para abordar una amplia gama de temáticas. Se reflejan así las complejidades inherentes a su contexto social, político y cultural. Este enfoque holístico se manifiesta en la producción científica emergente de las academias latinoamericanas, las cuales se caracterizan por su compromiso con la exploración de problemas locales con un alcance global. Manteniendo al tiempo una postura crítica y transformadora frente al conocimiento establecido.

El presente número de esta publicación es un testimonio de esta tradición investigativa. Ofrece una selección de trabajos que, desde diversas latitudes y disciplinas, convergen en una simbiosis temática tanto amplia como particular. Estos trabajos que se adhieren a la rigurosidad formal de la investigación académica y que adoptan una postura rebelde y tenaz en su indagación de nuevos horizontes del conocimiento.

En este sentido, buscamos encontrarnos en las fronteras no solo geográficas y disciplinarias, sino también en aquellas fronteras epistemológicas que desafían la concepción tradicional de la educación como mero vehículo de transmisión de conocimiento. Es una incitación a reimaginarla como una herramienta poderosa de mediación para la transformación social.

Este grupo de artículos es una invitación, a la comunidad académica, a sumergirse en esta búsqueda. A trascender la superficialidad para adentrarse en las profundidades de una deontología social comprometida con el cambio y la justicia. Los manuscritos, aunque distantes en sus lugares de concepción, se relacionan desde la multidisciplinarietà sino a través de su capacidad para dialogar entre sí, estableciendo conexiones inesperadas y fomentando un espacio de discusión enriquecedor.

Cada contribución, con su enfoque único y perspectiva particular, aporta al mosaico de conocimiento que define la investigación latinoamericana. Desde el análisis de las dinámicas sociales que subyacen a la regulación ambiental hasta la exploración del papel del autocontrol en el rendimiento académico, los trabajos presentados abarcan un espectro temático que es tan diverso como relevante para los desafíos contemporáneos de la región. Estas investigaciones no solo destacan por su excelencia académica, sino también por su valentía al enfrentar cuestiones de importancia crítica con una mirada crítica y transformadora.

Por lo tanto, este número no es solo una celebración de la investigación académica en América Latina, sino también un llamado a la acción. Es un recordatorio de la responsabilidad que tenemos como académicos, investigadores y ciudadanos de contribuir al desarrollo de sociedades más justas, equitativas y sostenibles. A través del diálogo y la colaboración interdisciplinaria, podemos superar las barreras que nos separan y encontrar soluciones innovadoras a los problemas más acuciantes de nuestro tiempo. En última instancia, esta publicación se erige como un faro de esperanza, iluminando el camino hacia un futuro donde el conocimiento trasciende las fronteras y se convierte en un vehículo para el cambio social positivo.

Ressignificando as vozes das Ciências Sociais na América Latina

A diversidade e riqueza da pesquisa na América Latina estão capacitadas para abordar uma ampla gama de temas que refletem as complexidades inerentes ao seu contexto social, político e cultural. Essa abordagem holística é refletida na produção científica emergente das academias latino-americanas, caracterizadas pelo seu compromisso em explorar problemas locais com alcance global, mantendo ao tempo uma postura crítica e transformadora em relação ao conhecimento estabelecido.

Esta edição de nossa publicação é um testemunho dessa tradição de pesquisa, oferecendo uma seleção de trabalhos que, de várias latitudes e disciplinas, convergem em uma simbiose temática tanto ampla quanto específica. Esses trabalhos não só aderem ao rigor formal da pesquisa acadêmica, mas também adotam uma postura rebelde e tenaz na busca por novos horizontes do conhecimento. Nesse sentido, buscamos nos encontrar nas fronteiras; não apenas geográficas e disciplinares, mas também aquelas fronteiras epistemológicas que desafiam a concepção tradicional da educação como mero veículo de transmissão de conhecimento, para reimaginá-la como uma ferramenta poderosa de mediação para a transformação social.

Nosso chamado à comunidade acadêmica é um convite para mergulhar nesta busca, uma que transcende a superficialidade para se aprofundar nas profundezas de uma deontologia social comprometida com a mudança e a justiça. A variedade de artigos apresentados neste número se relaciona não só através da distância geográfica e disciplinar, mas também através de sua capacidade de dialogar entre si, estabelecendo conexões inesperadas e fomentando um espaço de discussão enriquecedor.

Cada contribuição, com seu foco único e perspectiva particular, acrescenta ao mosaico de conhecimento que define a pesquisa latino-americana. Desde a análise das dinâmicas sociais subjacentes à regulação ambiental até a exploração do papel do autocontrole no desempenho acadêmico, os trabalhos apresentados abrangem um espectro temático que é tão diversos quanto relevante para os desafios contemporâneos da região. Essas investigações não só se destacam pela excelência acadêmica, mas também pela coragem de enfrentar questões de importância crítica com um olhar crítico e transformador.

Portanto, este número não é apenas uma celebração da pesquisa acadêmica na América Latina, mas também um chamado à ação. É um lembrete da responsabilidade que temos como acadêmicos, pesquisadores e cidadãos de contribuir para o desenvolvimento de sociedades mais justas, equitativas e sustentáveis. Através do diálogo e da colaboração interdisciplinar, podemos superar as barreiras que nos separam e encontrar soluções inovadoras para os problemas mais prementes de nosso tempo. Em última análise, esta publicação se ergue como um farol de esperança, iluminando o caminho para um futuro em que o conhecimento transcende fronteiras e se torna um veículo para mudança social positiva.

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Political Science Education in the Digital Age: Perspectives for Higher Education



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ABSTRACT

This paper starts from the task of finding pedagogical circuits that contribute to the improvement and innovation of pedagogical conditions that appeal to the latent potential of students. The question that serves as a beacon is: How are recent waves of change in the political and university arena shaping pedagogical strategies in political science, and what innovations could trigger an optimization of student training? Within this journey, the analysis flows into several estuaries: the current trends in political science education, the challenges that stand as hills in its university teaching, and the seismogram of technological innovations in political science pedagogy. At the same time, pedagogical strategies are outlined, and research tools are proposed as cartographies for political science education. In a last section, the knot of the political science curriculum in higher education is unraveled under the guidance of a qualitative methodology.

Keywords: Political Science, Higher Education, Pedagogy, Educational Innovation, Digital Era.

La Enseñanza de la Ciencia Política la Era Digital: Perspectivas para la Educación Superior

RESUMEN

La presente parte del cometido de hallar circuitos pedagógicos de aporten a la mejora e innovación de condiciones pedagógicas que apelen al potencial latente de los estudiantes. La interrogante que sirve de faro es: ¿Cómo están moldeando las recientes olas de cambio en el terreno político y universitario las estrategias pedagógicas en ciencia política, y qué innovaciones podrían desencadenar una optimización de la formación de los estudiantes? Dentro de este periplo, el análisis desemboca en diversos estuarios: las tendencias actuales en la enseñanza de la ciencia política, los desafíos que se yerguen como colinas en su enseñanza universitaria, y el sismograma de las innovaciones tecnológicas en la pedagogía de la ciencia política. A su vez, se dibujan estrategias pedagógicas y se proponen herramientas investigativas como cartografías para la formación en ciencia política. En un último tramo, se desenreda el nudo del currículo de la ciencia política en la educación superior, bajo guía de una metodología cualitativa.

Palabras clave: Ciencia Política, Educación Superior, Pedagogía, Innovación Educativa, Era digital.

O Ensino da Ciência Política na Era Digital: Perspectivas para o Ensino Superior

RESUMO

A presente parte tem o compromisso de encontrar circuitos pedagógicos que contribuam para a melhoria e inovação das condições pedagógicas que apelam ao potencial latente dos estudantes. A questão que serve de farol é: Como as recentes ondas de mudança no terreno político e universitário estão moldando as estratégias pedagógicas em ciência política, e que inovações poderiam desencadear uma otimização na formação dos estudantes? Nesta jornada, a análise conduz a diversos estuários: as tendências atuais no ensino da ciência política, os desafios que se erguem como colinas no seu ensino universitário, e o sismograma das inovações tecnológicas na pedagogia da ciência política. Por sua vez, estratégias pedagógicas são delineadas e ferramentas investigativas são propostas como cartografias para a formação em ciência política. Em um último trecho, desfaz-se o nó do currículo da ciência política no ensino superior, sob a guia de uma metodologia qualitativa.

Palavras-chave: Ciência Política, Ensino Superior, Pedagogia, Inovação Educacional, Era Digital.

1. Introduction

Political science, since its recognized consolidation as an academic and theoretical field, has maintained a rich and diverse tradition in terms of its approaches and, of course, its different areas of study. Its interdisciplinary nature allows us to explore fundamental dimensions of society, encompassing the study of government systems, the analysis of behaviors and trends in the political sphere, as well as the detailed examination of the exercise and distribution of power and resources of various kinds.

In the effervescent 21st century, political science unfolds as a great spectacle, a dance of shadows and lights that tells the human stories that shape our globalized society. It is not simply a cold examination of power structures or a disquisition on government policies. Rather, under the umbrella of this academic discipline, we explore the fascinating and sometimes bewildering complexity of life itself.

Undoubtedly, politics also functions as an ecosystem, or a whirlwind of practices that sprout and intertwine, creating patterns of change and frequent evolution. But, like any ecosystem, it is not without its challenges. Under the cloak of the 21st century, the resurgence of nationalism, the rise of populist movements, the constant struggle for democracy and human rights, and the unstoppable advance of technology become storms that rock our boat.

Regarding the theoretical field, Guevara, (2020) points out.

In recent years, within the field of social sciences, the so-called decolonial turn has gained presence, which develops an epistemological critique of the paradigms centered in Europe and the West, including Marxism, Critical Theory and post-structuralism, which have established a commitment to the emancipation of human beings and, likewise, have developed a critique of inequality and domination (p. 132).

Now, starting from the premise outlined by Ángel, (2020), “the development of Political Science programs in Colombia has not brought with it the consolidation of an institutionalized discipline, but of multiple knowledge about the political, grouped around different nomenclatures and different epistemological traditions”. (p. 20). This discipline undoubtedly represents a critically important component in the vicissitudes of contemporary higher education, forging individuals capable of decoding the complexities of the political world while preparing them for a wide range of careers in the public sector, government, politics, law, and beyond.

However, the teaching of political science in university settings and contexts is not without its thick challenges and dilemmas. In recent years, profound and accelerating changes in the university and political landscape have generated a new set of challenges and opportunities for political pedagogy. For example, the notorious and acute peak of the digitalization of public debate, the growing diversification of the student body, as well as the increase in political polarization, are structural factors that have substantially modified the dynamics in the classrooms where political science is taught and learned.

The analysis of the discipline of Political Science reveals that gender as a transversal analytical category and women as protagonists of knowledge are essentially absent from the official curriculum of the degrees, as shown by the scarcity of gender competencies included in the teaching guides, the low inclusion of references to inequalities or the under-representation of women in the bibliography. (Verge & Alvarez, 2019, p. 11).

With this understanding, the broad spectrum of academic literature has paid considerable attention to the various facets at the margins of teaching in the fields of political science, of course, from the centrality of the effectiveness of traditional teaching techniques to the impact of technological innovations on student learning, there is a compact gap in the study of how these recent changes are influencing the teaching of the discipline addressed by this study in the face of this galloping reality, the present article aims to investigate the current practices of teaching political science, with the objective of identifying areas for improvement and innovation, and outlining pedagogical strategies that can contribute to optimize the training of students.

For this purpose, we will resort to the dynamics of the qualitative methodological approach, which will necessarily include a bibliographical review, as well as the proposal of a pedagogical scheme for the indissolubly dialogical teaching of political science. Consequently, we hope that this study will contribute to the existing body of literature and generate new views, perspectives and ideas in order to enrich the teaching of political science in higher education. From the above, the following question arises: how do the recent transformations in the political and university environment impact the pedagogical strategies in political science, and what innovations could optimize the training of students?

Theoretical approaches to political science in the light of modern pedagogy

Political science, in its deepest essence, navigates on a permanent and meticulous search of the political task in its multiple dimensions, offering a detailed dissection of political and governmental regimes, decision-making processes, political behavior and, as mentioned in previous paragraphs, the distribution of power.

During the last twenty years, the social sciences and especially the political sciences have questioned the object of the disciplines; they have questioned whether the object of these disciplines and their methodological approaches are relevant for scientific work (Córdoba, 2019, p. 199).

As an academic field, political science navigates the unfathomable ocean of the political, trying to decipher the mysterious dynamics underlying the webs of governance and the exercise of power. As expressed by Chinkes and Julien, (2019), "These elements, related to the generation and appropriation of knowledge, make up a totally different scenario to that to which universities have been accustomed for centuries." (p. 26).

Within the vast domain of political science, several theoretical approaches have emerged that give visibility to various aspects of political practice. Each of these theoretical prisms presents us with a particular perspective on the tangled world of politics, providing valuable analytical tools that enrich our understanding of politics.

Critical (radical) knowledge aims not only to describe a phenomenon but seeks to reach an understanding of its causes. It does not treat the phenomenon in isolation, autonomously, as self-determined, but seeks to appropriate its multiple determinations, inserted in a reality that contains and determines it. (Montaño, 2019, p. 12).

One of these far-reaching approaches is Rational Choice Theory, which starts from the premise that individuals, imbued with an imminent, hence intrinsic, rationality, seek to maximize their own interests, whether collectively or individually driven, in the unstable arenas of politics. This approach sheds light on a wide range of political behaviors, from the motivations underlying a citizen's vote to the strategic machinations that take place in the legislators' chambers.

From another area of knowledge, the Theory of Political Behavior explores the depths of the collective psyche, seeking to decipher the hidden forces that drive individuals, groups and organizations towards certain political actions. This approach seeks to unravel the motivations and impulses that give rise to specific political behaviors, providing a deeper understanding of the social and cultural dynamics that shape politics.

Then then, the full scope of political science, in its entire theoretical evolution, strives to provide tools in the heat of analysis that allow us to navigate the turbulent waters of politics, illuminating the darker angles of decision-making, the distribution of power and the dynamics of political behavior. As a field of study of an interdisciplinary nature, political science draws on multiple perspectives and approaches to build an increasingly sophisticated and complex understanding of politics and its many manifestations. Entering the heart of the theoretical fabric of modern pedagogy, we find ourselves in a vast labyrinth of ideas, an ecosystem of practices and theories in constant evolution. This intricate educational landscape feeds and grows in response to the dizzying social, technological and cultural changes that shape the fabric of our contemporary reality.

Within this nebula of concepts and practices, some theoretical luminaries emerge that articulate the conceptual body of modern pedagogy:

One of the most brilliant constellations in this educational spectrum is, without a doubt, Constructivism. This paradigm situates learning as an active and vigorous process, where students become the architects of their own knowledge. This principle rejects the view of the learner as a mere passive recipient of information, and instead celebrates the learner as a sculptor of knowledge, shaping his or her understanding through experience and critical reflection.

Continuing in this orbit, we find *Learner-Centered Pedagogy*, a powerful lens that focuses educational attention on the individual learner. This perspective advocates a tailored educational approach, sensitive to the particularities, interests, and abilities of each student. Here the integral development of the learner is deeply valued, a harmonious balance between the academic and the socioemotional.

At the same time, in an increasingly digitalized world, technology and information pedagogy is emerging as a milestone in the path of modern education. This approach values and appropriates the leading role that information and communication technologies (ICT) play in our social fabric. “Such integration of ICT in the constructivist methodology is optimal for motivating, creating experiences, and, as a joint result, for teaching to think, teaching to learn and increasing knowledge through meaningful learning.” (Reyero, 2019, p. 111).

Its goal is not simply to teach with technology, but to form citizens capable of understanding, criticizing, and transforming this digitalized world. With the same theoretical stature, there is *Collaborative Learning*. This approach defends the value of collective work, of learning as a joint effort in which each piece adds and multiplies. Here dialogue is honored, relationships are strengthened, and essential teamwork skills are cultivated.

Therefore, modern pedagogy, with its theoretical and practical richness, is a sort of multifaceted polyhedron, an entity that lives and breathes in tune with the demands and challenges of our time. Its task is none other than to form well-rounded, critical and creative individuals, capable of navigating skillfully in the sometimes-turbulent waters of our contemporary era.

Teaching Political Science in Higher Education: Current trends in political science education

The pedagogy of political science, immersed in the sphere of higher education, has undergone a significant metamorphosis considering the evolution of recent decades. The etiology of this transformation is to be found in the structural and conceptual changes that have been delineated in the vast canvas of the global educational landscape. Through the eyes of the analysis and exploration of these current trends, we are given a broader, more lucid, and precise view of the contemporary context of this discipline and its future projections and typologies.

With the structuring of learning outcomes according to university syllabi, which addresses the new procedures, actions and opportunities in the educational process that arise as ICT (Information and Communication Technologies) advance and become more present in the academic system. (Cuenca, Álvarez, Ontaneda, Ontaneda, & Ontaneda, 2021, p. 12).

Experiential immersion: simulations and role-plays

The pedagogical resource of simulation and role-playing has gained significant momentum in the teaching of political science. These playful-experiential pedagogical approaches allow students to transcend the passivity of theory and enter the active dynamics of practice. By simulating political situations, debates and conflicts, students are challenged to activate and apply their theoretical knowledge and to develop a range of practical skills and essential competencies such as negotiation, problem solving and leadership.

Disciplinary polyvalence: the interdisciplinary approach

The teaching of political science, in tune with current times, has adopted an interdisciplinary vision that expands the cognitive horizons of students and brings them closer to a more complete and nuanced understanding of political phenomena. Political science is enriched and strengthened through the links established with other disciplines, such as economics, sociology, history, and psychology, to unravel the intricate dynamics of power, ideology, and political behavior.

The digital revolution: the use of digital technologies

The digitization of education has introduced a schism in the traditional teaching of political science. Information and Communication Technologies (ICTs) are metamorphosing teaching and learning methods, broadening access to knowledge, encouraging active participation and democratizing the ability to analyze large volumes of data. Virtual environments constitute vigorous learning tools, MOOCs, podcasts, social networks, and online databases are some of the digital tools that are reshaping the didactics of political science.

Regarding social networks and education, exposes Belanche, Lozano & Perez, (2019).

It has facilitated the learning of the theoretical aspects of the subject, giving the student a more active role both in the elaboration of the content and in its evaluation. In addition, it has helped the student to improve transversal competencies (innovation, communication, creativity, teamwork). (p. 207).

Towards a pragmatic pedagogy: competency-based education

The growing shift towards a pragmatic, competency-oriented pedagogy, as opposed to an approach centered on the mere transmission of content, is highlighted. This approach places a strong emphasis on the development of skills and abilities that students will need in their professional and civic life, such as critical thinking, analytical skills, effective communication skills, participation and truly informed decision making.

Challenges and dilemmas of teaching political science at the university level

Navigating the fragile strait between tradition and modernity, the teaching, and didactics of political science at the university level is facing a tangled web of challenges. This discipline, whose roots are deeply rooted in an intellectual heritage impregnated with a plurality of approaches and areas of study, is compelled to face the thorny dilemma of preserving its intangible essence while simultaneously adapting to the mutating demands of the present. According to Casasola, (2020), "General didactics allows a comprehensive understanding of the fundamental pedagogical resources in the teaching and learning planning process, and special didactics focuses on the creation of specific strategies to optimize this process". (p. 40).

This educational crossroads, which oscillates between the valorization of classical knowledge and receptive openness to emerging currents of thought, demands a meticulous balancing act. The task of accommodating these dynamics without distorting the epistemological framework that is the latent heart of the discipline stands as a challenge of Herculean proportions, although unavoidable.

According to Borgobello, Sartori, and Sanjurjo, (2019), “universities currently promote the implementation of virtual environments in their pedagogical practices. However, at the local level the development of experiences of this type is still incipient.” (p. 40).

Moving into the digital sphere, the undisputed heyday of information and communication technologies has given rise to a reshaped educational landscape, in which virtual learning environments and online learning resources have become protagonists. However, the transition to virtuality is not without its intricate dilemmas, especially regarding the quality of student interaction and participation. Although digital tools provide accessibility and flexibility, their use can diminish the depth and richness of face-to-face interactions, so crucial for learning a discipline as discursive and debatable as political science.

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In addition, the rise of political polarization, a phenomenon that is not only shaping political reality but also permeating university classrooms, raises serious questions about how to manage sensitive debates and how to teach political science in an increasingly charged and divisive environment. The increasing diversification of the student body adds another layer of complexity, challenging educators to cultivate a learning environment that is inclusive and receptive to a wide range of perspectives and experiences.

In this regard, Chuliaquer and Vommaro, (2020) argue, “The debates on the role of the media in the construction of political polarization were revolutionized by the emergence and centrality acquired by social networks as a public space and as a vehicle for information consumption worldwide”. (p. 237).

The orbit of these challenges are not mere stumbling blocks on the cobblestone road, but rather catalysts for change and transformation in political science education. While each undeniably poses considerable challenges, they also represent a worthy opportunity to reevaluate and reinvigorate the spires of political science pedagogy, seeking to dig into innovative solutions and more inclusive and effective teaching methods for the formation of future political leaders and conscientious citizens.

The resulting march towards digitization, while posing challenges, also opens a door to a field of possibilities for innovative teaching in political science. The creation of blended learning environments, which take advantage of both face-to-face interactions and digital resources, could be a viable strategy. For example, the use of digital technologies should not be limited to the systematic transmission of information but should actively promote student engagement and interaction. Online discussion platforms, discussion forums, virtual policy simulations, and other digital and interactive tools can be entirely useful to provoke in-depth discussion from the perspective of collaborative learning, thus restoring the dialogic spirit and dialectic to the pulse of political science education.

There is a strong relationship between flexibility, the Concept of Teacher Training and creativity, demonstrating that disciplinary and didactic management are necessary to lead to processes of reflection, which requires an opening of knowledge that lead to specialize and seek collective work to obtain more evident and contextualized products to their reality. (Mendoza, 2019, p. 90).

On the other hand, with regard to increasing political polarization, the classroom must be a safe place for open discussion and the necessary respectful and dialogic exchange of opinions. This requires, however, careful management by the faculty to ensure that all points of view are considered and fully respected. In addition, the curriculum should be designed to cultivate science, critical thinking, and ethical reflection, thus encouraging students to question and examine their own political positions without losing that of others, that is, the encouragement of plurality.

The inclusion of modules or units that resonate under the premises of communication skills, debate, negotiation, and conflict resolution, as well as empathy and intercultural understanding, could go a long way in preparing students to engage with infinite passion in politics in a critical and constructive manner. Based on the findings of Benavides and Ruiz, (2022), “One of the most relevant challenges facing teachers in this new technological age is teaching students to think independently.” (p. 76).

However, for approaches to the diversification of the student body, in general terms, it is crucial to understand political science education to be inclusive and to reflect the rich diversity of student experiences and perspectives. This involves not only weaving inclusion from a wide range of varied voices and experiences into the curriculum, but also the necessary adaptation of teaching methods to accommodate different learning styles and readiness levels. Tools such as differentiated instruction, formative assessment and project-based learning can provide a sure path in this regard. In addition, the co-creation of a learning community in which all students feel deeply embraced by dynamics of respect for difference, and in which they can learn from their professors as well as from their peers and the different strata that give life to the university’s work, should be promoted.

On Technological Innovations and their impact on pedagogy in the light of political science

The imbrication of technology in the tapestry of education has generated a digital mirage, whose possible replicas are felt in the pedagogy of political science. This paradigm shift, the result of the confluence of the influx between technological innovation and academia, has carved new roads of knowledge that lead to an ocean of pedagogical possibilities. However, this exploration of the unknown also raises profound questions that call for critical analysis.

ICTs have caused profound transformations in various sectors of society, including education. In the teaching and learning process, the inclusion of technological tools has facilitated communication and understanding of the numerous contents taught in academic training. (Villarreal, García, Hernández, & Steffens, 2019, p. 12).

Data analytics, for example, has become a powerful beacon that illuminates the complexities inherent in political science. Data visualization and analysis tools have opened the doors to interactive and participatory learning, where students can uncover hidden patterns and trends, connecting the abstract world of political theory with tangible reality. A new pedagogical model is thus emerging, where learners are active explorers of knowledge rather than mere passive receivers.

At the forefront of this revolution is artificial intelligence and machine learning. These technologies are building a series of mirrors that reflect the intricacies of politics. The simulation of political scenarios serves as a bridge for students to have the opportunity to experience the palpable consequences of different political decisions, thereby gaining a deeper and more nuanced understanding of political dynamics and cycles of power.

However, the promise of technology comes with its own shadow. The digital divide, a chasm separating those who have access to technology from those who do not, threatens to exacerbate existing inequalities in political education. Moreover, the pervasiveness of misinformation and the continued bid to inoculate fake news on social media introduces a new, walled-off challenge to the battlefield of political science education, forcing educators to equip their students with dense, razor-sharp critical thinking.

Information and digital competence (IDC) are not just another competence, but a complex reality that involves the entire university organization, the ways of learning and teaching, and citizen training the ACRL/ALA defined information and digital competence (IDC) as a competence for survival in the information age. (Sales & Gómez, 2020, p. 3).

In this new scenario, technological innovations have become double-edged. On the one hand, they bring renewed vitality to the teaching and learning of political science, but on the other hand, they raise profound questions about the equity, ethics, and social impact of technology. As custodians of knowledge construction, political science educators have the challenge and responsibility to navigate this mined territory, to ensure that technology is a compass that guides their students to knowledge, rather than a maze that confuses them.

Research skills as a beacon for teaching political science in university settings

In the vast arena of political science, the ripples of inquiry tend to reverberate in the recesses of our understanding of human complexities. It is an intricate terrain, where political theories, government systems, comparative politics, international relations, public policy, public administration, and the kaleidoscopic nuances of identity politics converge.

The advent of the digital age has brought about a quiet revolution in the contours of competencies. Data analytics tools, which spread their power like a beacon, are dispelling the shadows that once hid patterns and trends in large data sets. This irruption has opened up the possibility of understanding political phenomena through a more detailed, refined and nuanced lens.

International organizations that direct educational policies in Latin America have emphasized that the training of competent professionals committed to social development is an essential mission of contemporary higher education in order to achieve quality levels in the preparation of young citizens. (García and García, 2022, p. 2).

At the same time, technological innovation has engendered a new cosmos, a digital scenario in which an unprecedented dimension of political activity is developing. Areas of study such as cyber politics and information politics are emerging as new frontiers in political science, mapping phenomena such as the influence of social networks on electoral processes, the spread of fake news, or the use of algorithms and big data in political decision-making.

But technology is not a panacea. With it emerge challenges that urge critical examination. Ethical and privacy issues proliferate as data collection and analysis penetrate the privacy of individuals. Researchers must navigate the pitfalls inherent in data-driven methods, aware that results can be skewed by flaws and biases in the data itself.

Beyond technology, changing global dynamics are making their mark on political science. Issues such as increasing political polarization, the resurgence of nationalism, shifts in the global balance of power, and

migration and refugee crises are gaining prominence in political science research. These issues demand an interdisciplinary approach and a critical analysis that considers both current and emerging power structures.

It is necessary to emphasize the idea that political science research is a turbulent and turbulent river that flows through the intersection as well as the concurrence of technology, society, and power. Researchers plunge into it, with the inescapable task of unraveling the political dynamics of our world, illuminating dark corners, and contributing to the building of more equitable societies. In this context, political science is more than a mere academic discipline: it is a 'well-squared mirror reflecting the multidimensional pulse of our times.

Pedagogical strategies and research tools to optimize the training of students in political science

We live in a world in constant change and development, where knowledge and information have become decisive factors for individual and collective progress. In this context, the university, as a central axis in training and intellectual growth, must adapt and evolve according to the demands of today's world. This leads us to the following reflection: According to Guzmán, Herrera and Espinosa, (2020).

Analytical reflection and critical debate about the characteristics and the need to develop research competencies in the University is an imperative of the current times, where information technologies, the media and the expansion of interconnections on a global scale extraordinarily dynamize scientific knowledge. (p. 84).

Having said this, it is worth noting that immersing oneself in political science is like opening a window to a horizon of infinite opportunities. This discipline, rich and multifaceted, constitutes the conceptual apparatus that allows us to decipher the mosaic of society, politics and power. In this sense, the training of students in this discipline requires an elaborate pedagogy, a refined dance between theory and practice, between the legacy of the past and the uneasiness of the present.

Pedagogy in political science must elucidate a window of opportunity, a space that not only illustrates but also instills motivation and hunger for learning. The classroom, from this logic, becomes a living laboratory where ideas come to life and theories are subjected to scrutiny. Using debates, simulations and case studies as mediation, students can deploy the conceptual apparatus of political science, testing it and at the same time enriching it with their own experiences and interpretations.

Emerging technologies, in turn, offer a new horizon of possibilities for teaching and research. Drifting under the umbrella of digitalization, educators can make use of online learning platforms, MOOCs, data analysis and visualization tools, to create a more interactive and enriching learning environment. In this context marked by the digital, pedagogy becomes an organ of convergence between humanism and technology, where both complement each other offering a meaningful didactic type of education.

The application of escape room has promoted different types of emotions, highlighting the fun, motivation and anxiety for the resolution of the proposed enigma. Regarding the resolution of clues, collaboration and teamwork have been key aspects guaranteed by this game (Sierra & Fernandez, 2019, p. 113).

This means that training in the frameworks of political science must be imbued with a compact culture of active and always creative research. Political science is a field of study characterized by its broad and eloquent dynamism, its constant change. Students, then, must be more than mere consumers of knowledge;

they must be generators of ideas, critical analysts, tireless detectives in search of answers. Research tools, both quantitative and qualitative, are the essential equipment they need for this intellectual adventure.

It is essential to work with authentic and diverse texts to favor the development of skills that allow understanding, analyzing, and constructing different types of texts according to the dissimilar communicative situations that speakers must face and the diversity of discourse (Jadán, Zambrano & Becilla, 2018, p. 8).

This means that in terms of challenges and opportunities, pedagogy, research tools and emerging technologies are the instruments that allow us to turn this march into a journey necessarily full of discoveries and frequent learning. In this dance between teaching and research, we not only train students in political science, but also forge critical, conscious and committed citizens.

The new challenges of higher education demand the acquisition and development of research competencies that can be useful to respond to the new demands of the work environment, which is a strong motivator to rethink the pedagogical strategies used, given that new ways of achieving knowledge in students are required, integrating methodologies based on teamwork, as is the case of cooperative learning (Hernández, Herrera & Rodríguez, 2021, p. 242).

The Curriculum of Political Science and Pedagogy at the university level

Political science, such a broad and diverse sphere of knowledge, a discipline that is a melting pot of thought, analysis and debate, requires an educational strategy that is equally thoughtful and nuanced. In this section of the present dissertation, we will delve into the tricky terrain of developing a political science curriculum in university settings, explore the complex confluences between the branches of pedagogy and political science, and seek to understand how these intertwined threads can be skillfully woven together under the spotlight of effective learning. According to Cangalaya's assertion, (2020), "the shallowness of research topics during regular basic education generates a void in students in the first cycles of universities." (p. 148).

The political science curriculum is a delicate balance, an intellectual puzzle, that must radiate and encompass the vast landscape of the discipline. From political theory to public policy, from comparative politics to international relations, each piece is crucial in shaping a complete view of the political mosaic. However, the task is not limited to a languid listing of content; it requires careful consideration of how these elements interact, overlap, and reflect each other.

Once we enter into the creation of the curriculum, every step, every decision, must be taken with an eye to the learners, their most felt needs, their capabilities and their aspirations. This is not a pale exercise at the mercy of the theoretical, it is an intellectual and also a socio-emotional journey, a continuous dialogue between the educator and the learner. An effective curriculum is, therefore, a reflection of this dynamic conversation and of the multiple dimensions of political science, from the global spheres to the most intimate corners of local and personal politics. In the words of Quero, (2021), "New technologies have proven their worth in the process when applied in a timely and appropriate manner." (p. 215).

Pedagogy, that beautiful art that surrounds teaching, becomes a powerful tool in the hands of a political science educator. It is not just a matter of transmitting knowledge, but of igniting a spark, of fostering a passion for analysis, debate and understanding. Simulations, role-playing, problem-based learning, become the brushes with which we paint a vivid picture of politics in the student's mind. But we must always

be aware that this painting is never finished; it is always evolving, always responding to change. In the analysis of Cruz and Hernandez, (2022), "At present, the focus on competencies can reorder the curriculum in the wake of the school emergency resulting from the pandemic." (p. 18).

Therefore, we must subject it to regular scrutiny, looking at it critically and willing to see its strengths as well as its weaknesses. And when change is exposed as an imperative need, we must be ready to build it, no doubt under the guidance of students' interests, advances in the discipline and of course changes in our political and social scaffolding. The construction of the political science curriculum at the university level is, therefore, a fine and complex skein.

But if done with care, with respect and with passion for the discipline, it can produce an educational experience that not only bets on mechanical training, but also inspires, not only transmits knowledge, but also fosters understanding and engagement.

3. Discussion

5 pillars for the debate on the teaching of political science in university contexts

Digital adaptation stands as the first pillar in the debate on the teaching of political science in higher education. It is imperative that this discipline embrace the digital transformation and take advantage of the benefits it offers for the creation of innovative learning environments. Educators must actively promote student engagement and interaction through online discussion platforms, discussion forums, virtual policy simulations, and other digital tools.

The use of emerging technologies becomes the second pillar in this discussion. Adapting to change also involves the adoption and use of these technologies in teaching and research. From various online learning platforms to data analysis and visualization tools, it is vital that educators are aware of the latest trends and consequently apply them in their various teaching methods.

The third pillar, pedagogy, becomes a point of convergence between the threads of humanism and technology. During the digitalization, it is imperative that teaching in political science frameworks maintains a healthy balance between both aspects. Educators should not only focus on technological tools but should also strive for a deep and meaningful understanding of political science subjects.

The comprehensive curriculum emerges as the fourth pillar in this debate. It should encompass all aspects of the discipline, from political theory to public policy, comparative politics, and international relations. Educators must provide students with a holistic, pluralistic, as complete, and multifaceted as possible view of the field of political science.

The fifth and final pillar concerns the interconnectedness of content. Beyond providing a list of content, political science educators must demonstrate how these elements interact, overlap, and reflect each other. In teaching political science, it is critical to highlight the inherent connections between different areas and topics and to foster in students a holistic understanding of the discipline.

In terms of assessment Digital tools can offer more engaging and personalized assessments, allowing students to demonstrate their understanding in more creative and contextual ways. The use of online platforms, adaptive testing, data analytics, and other emerging technologies can improve the accuracy and effectiveness of assessment. Unlike summative assessment, which measures learning at the end of

an instructional period, formative assessment is an ongoing process that helps educators understand and improve student learning as it unfolds.

This form of assessment requires students to use their skills and knowledge in tasks that reflect real-life situations, while Constructive Feedback. Feedback plays a crucial role in assessment and in learning in general. Educators must provide students with timely and constructive feedback to help them understand their strengths, identify areas for improvement, and chart a clear path for progress.

4. Conclusions

In conclusion, there is no doubt that the teaching of political science in higher education has undergone a series of profound and arduous transformations. With this perspective in mind, digitization, far from being a mere appendix, has become a protagonist in this process, bringing new opportunities and challenges to educators and students alike.

At the heart of this metamorphosis is the imperative need to generate blended learning spaces, in which both traditional and digital interactions take on a balanced role. Online discussion platforms, discussion forums, virtual simulations, among other resources, emerge as valuable tools in the search for a teaching that encourages active participation and reflective depth of students. A critical point in all this, then, is for educators to appropriate these tools to enhance the interaction and engagement of their students, enriching their learning experience and reviving the dialogic and critical spirit of political science.

In parallel, emerging technologies continue to expand the horizon of what is possible in teaching and research. The adoption of online learning platforms, MOOCs and data analysis tools not only facilitates the creation of more enriching learning environments, but also opens the door to a form of pedagogy in which humanism and technological frameworks merge in a harmonious symbiosis, consequently giving rise to a deeply critical as well as meaningful education.

In this scenario, political scientists are not superfluous spectators. They are both meticulous analysts and enthusiastic citizens, deciphering the complexity of this political landscape and, at the same time, guiding society through the changing winds of our time. As the backdrop of history unfolds, these scholars act as beacons, guiding us amid the growing complexity.

A window is opening in this digital information age, providing political scientists with powerful new tools to explore this vast terrain. We now have an unprecedented wealth of data and information, allowing us to unravel the intricacies of contemporary politics. However, this same window confronts us with ethical dilemmas about privacy and data security, adding an extra layer of perplexity to our journey. As it is, political science in the 21st century becomes a labyrinthine march of ideas and heated debates that become entrenched in the veins of our societies and cultural system. It is not a static discipline, but a dynamic and constant conversation that invites us all to participate, to question, to weave reflections and, ultimately, to act. Political science, as a witness and participant of our times, accompanies us on this journey, providing valuable insights, provoking necessary and enriching debates.

Finally, the political science curriculum emerges as a complex pulse that spans the vast landscape of the discipline. The shaping of this mosaic requires more than a simple uncritical enumeration of content. It is essential that careful attention be paid to how these elements relate to each other, overlap, and reflect each other. Only then will it be possible to propose to students a holistic view of political science that resonates

with the complexity and richness of its natural object of study. Therefore, the fruit of these reflections show us the possible expeditious path towards a teaching of political science that adapts to the times and prepares students for the amalgam of challenges that are opening in the present and the future, always with an eye fixed on the infinite possibilities that the angles and synergy of this discipline has to offer.

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Governance and school performance in Colombia: A subnational look from the new institutional economy



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ABSTRACT

The article examines from a contractual logic the problems of quality and equity of education in the Colombian educational system, within a subnational context. The study applies a mixed and sequential approach considering the transaction and its attributes as the basic unit of analysis. The findings suggest that more autonomous educational systems are associated with better performance and indicate that the risks of inequity in performance are greater when the organization mode of the educational system has greater autonomy.

Keywords: School governance, School outcome, School autonomy, New Institutional Economy.

Gobernanza y desempeño escolar en Colombia: una mirada subnacional desde la nueva economía institucional

RESUMEN

El artículo examina desde una lógica contractual los problemas de calidad y equidad de la educación del sistema educativo colombiano, bajo un contexto subnacional. El estudio aplica un enfoque mixto y secuencial considerando la transacción y sus atributos como la unidad básica de análisis. Los hallazgos sugieren que sistemas educativos más autónomos se asocian con un mejor desempeño, y apuntan a su vez a que los riesgos de inequidad en el desempeño son mayores cuando el modo de organización del sistema educativo ostenta mayor autonomía.

Palabras clave: Gobernanza escolar, Resultado escolar, Autonomía escolar, Nueva Economía Institucional.

Governança e desempenho escolar na Colômbia: uma visão subnacional a partir da nova economia institucional

RESUMO

O artigo examina, sob uma lógica contratual, os problemas de qualidade e equidade da educação do sistema educativo colombiano, num contexto subnacional. O estudo aplica uma abordagem mista e sequencial considerando a transação e seus atributos como a unidade básica de análise. Os achados sugerem que sistemas educativos mais autônomos estão associados a um melhor desempenho, e indicam ao mesmo tempo que os riscos de inequidade no desempenho são maiores quando o modo de organização do sistema educativo apresenta maior autonomia.

Palavras-chave: Governança escolar, Desempenho escolar, Autonomia escolar, Nova Economia Institucional.

1. Introduction

An examination of various empirical studies reveals that school resources (spending per student, class size, instructional materials, infrastructure, etc.) do not satisfactorily explain school outcomes (Woessmann, 2016). Institutional changes as determinants of this outcome and governance factors associated with education policies oriented towards decentralization in resource management gain relative importance¹. This article examines the governance structure of the official educational system of the Atlántico department (a subnational territory in northern Colombia) and its relationship with school outcomes, appealing to the New Institutional Economy (NEI), which includes the Agency and Transaction Cost approach, better known as the North-Williamson school (Parada, 2003).

Helping to resolve the dilemma between autonomy or centralization of the educational system and school organizations and to glimpse the risks of deepening it at the public policy level is a central aspect from the contractual logic of the NEI. In other words, it seeks to contribute to explanations about the risks of adopting administrative decentralization policies in the educational systems of developing countries, in terms of quality and equity, and knowledge about the reasons that may motivate these results, mostly adverse compared to developed countries, as evidenced by results in national and international tests (Melo, Hahn, Ariza, and Carmona, 2016; Sánchez, 2014; Galvis and Bonilla, 2014; Ayala, 2015; Barrera, 2014; Cortés and Vargas, 2012).

The Atlántico department, for its part, with about two million inhabitants and made up of 23 municipalities, records results in standardized national tests for middle education, Saber 11, in critical reading, mathematics, and natural sciences below the national average. The gaps between the official and non-official sectors are noticeable and more pronounced for the rural official sector. The results at the primary and secondary levels maintain similar behavior. These results occur within the institutional framework of regulation and operation of the Colombian educational system, based on the 1991 Constitution and the 1994 General Education Law, which can be defined as decentralized with a duplication of functions, a performance incentive structure, and accountability mechanisms with an emphasis on evaluation.

¹ In this work, the terms “school,” “college,” “organization,” or “educational center” are used interchangeably.

This constitutional and legal framework gave Colombian subnational territories [departments and municipalities] the responsibility to guarantee educational services from primary to secondary, and in turn delegated the task of supervising private institutions. The administration of personnel and educational funds also remained in the hands of subnational territorial entities (MEN, 2016).

Although there are a large number of entities involved throughout the system, responsibility is concentrated between the Ministry of National Education (MEN) and the Certified Territorial Entities (ETC), which are the highest expression of administrative autonomy in managing education at the subnational level. This certification process can be accessed by departments and municipalities and depends on factors such as physical and financial resources, a basic information system, and the ability to manage teaching staff (MEN, 2016).

The Ministry of National Education (MEN) has the power to determine the guidelines of national education policy, define standards, guarantee access, support territorial entities, and evaluate the quality of the system (Decree 5012 of 2009). However, schools have significant autonomy regarding the curriculum and evaluation, through the definition of Institutional Educational Projects (PEI), in which the adoption of national standards and curricular guidelines is reflected. On the other hand, the management of official schools in Colombia has little autonomy over the management of teaching staff. They have the power to distribute the workload and evaluate teacher performance, but they have no control over their hiring, dismissal, and remuneration. Education funding is highly centralized.

The incentive structure of the official basic and secondary education system can be classified into financial incentives for the management of educational establishments, incentives for the teaching profession, and incentives for students. In the first group, the distribution of general resources from the General Participation System (SGP) is included, which, in addition to socioeconomic conditions, is also conditioned by fiscal performance indicators and net coverage indicators by territorial entities (Barrera, 2014). The second group corresponds to incentives for the teaching profession in terms of entry into the profession, promotions, retirements, remuneration, and performance evaluation. Here two schemes coexist: in the first, where promotion and remuneration depend on the scale and promotion obeys criteria of time of permanence without evaluations (Decree 2277 of 1979). While in the second, entry, permanence, and promotion of the teaching career are subject to evaluation and merit as a fundamental element (Decree 1278 of 2002). In the last group, there are student performance incentive programs², especially focused on granting scholarships and loans under flexible conditions.

Regarding accountability mechanisms, both education secretariats and educational establishments follow some MEN guidelines to submit to the scrutiny of the educational community and society in general about actions taken in the education management process (MEN, 2010), focused on quality, access and permanence, efficiency, educational infrastructure, use of ICT, training of students and teachers, enrollment, school transport, food, adult education, bilingualism, and free education. For public educational establishments, the same guidelines are set as for education secretariats, and they are required to carry out an annual mandatory self-assessment exercise on the quality of the service provided, which should lead to an institutional improvement plan. The self-assessment includes the evaluation of resources, processes, and results.

² The “Ser Pilo Paga” program, which was introduced in 2014, is highlighted in this work. It offered 10,000 scholarships per year for entry into higher education to low-income secondary school students who achieved outstanding scores in the Saber 11 exams. This program was discontinued in 2018, making way for another program called “Generación E” with a similar purpose but with resource rationing.

In the above context, two hypotheses are proposed to contrast: 1) greater school autonomy as a mode of organization of the educational system is associated with better school outcomes because decentralization improves the quality of decisions and promotes competition, however, 2) it can lead to a greater risk of inequity in achievement. The latter is explained because autonomous adaptation (Williamson, 1999) drives gaps between local and global goals; among which the inequity in achievement linked to socioeconomic and sociodemographic factors stands out. The nature of autonomy in this case is understood in terms of responsibility for centralized decision-making—national or subnational authority—versus those that are the responsibility of the school organization. The concept has been used extensively in various theoretical and empirical developments (Balu et al., 2009; Hanushek and Woessmann, 2010), and its theoretical basis is the agency approach (Bishop and Woessmann, 2004).

Theoretical Considerations on Agency and Transaction Cost Economics

Bishop and Woessmann (2004) synthesized a principal-agent theoretical model, based on certain governance factors as determinants of performance. Specifically, these factors are: 1) central exams, 2) centralization of responsibilities versus school autonomy, 3) influence of teachers, 4) influence of parents, 5) competition in the educational system, and 6) the incentive system. The latter is a direct consequence of the prevailing institutional structure.

Table 1 summarizes the main effects highlighted by the authors and an explanation from this theoretical line on transmission mechanisms. For some factors, such as school autonomy and the influence of teachers, there are two potentially contradictory effects of greater decision-making power at the school level. On the one hand, school autonomy and decentralization of responsibilities improve the quality of information and therefore the quality of decisions, having positive effects on performance. However, the authors warn about the risk of greater school autonomy, teacher autonomy, and greater decentralization at the subnational level due to the increased leeway to act opportunistically in a possible diversion of educational resources intended for teaching towards other objectives of self-interest of education producers, unless decisions can be fully monitored and the extent to which educational objectives are met can be fully assessed, and unless there is a credible threat of sanctions for opportunistic behavior (Bishop and Woessmann, 2004, p. 17).

On the other hand, the general feature of Transaction Cost Economics (TCE) is risk mitigation through ex-post governance, starting from the premise that contractual relationships are inevitably incomplete and therefore the ex-ante incentive alignment of agency theory is not sufficient (Williamson, 1989). In summary, the general reasoning is that national authorities, subnational governments, and school organizations face incomplete contracts in managing the educational system. Consequently, governance structures or modes are debated between autonomy, becoming more important as contractual risks increase, resulting from opportunism, bounded rationality, and asset specificity.

Table 1. Bishop and Woessmann Model. Institutional Effects on Educational Performance from the Principal-Agent Perspective

Institutions	Transmission mechanism	Effect
Central exams	The external standard promotes competition and makes it observable and transparent. It simplifies performance tracking for students, teachers, and schools.	Positive
Distribution of responsibilities for tasks between schools and administrative authorities.	School autonomy should enhance the quality of information for decision-making and improve educational outcomes.	Positive
	School autonomy increases the school’s possibilities to act opportunistically. For example, resource diversion or pursuing objectives different from those agreed upon.	Negative
Distribution of responsibilities among administrative authorities.	Increased decentralization enhances the quality of information.	Positive
	It increases the possibilities of opportunism and collusion of local interests.	Negative
Teacher influence	Teacher autonomy improves the quality of information and enhances teaching.	Positive
	It increases the possibilities of opportunism and their interest in enhancing their own financial well-being while reducing their workload.	Negative
Parents influence	Increased parental involvement in the administration and teaching processes elevates the political priority of enhancing education quality.	Positive
Private schools	It intensifies competition as well as parental influence. Offers greater monetary incentives for school management and reduces the principal-agent relationships.	Positive

Source: Authors’ elaboration based on Bishop and Woessmann (2004).

From this perspective, adaptation, not maximization, is the central problem of economic (public or private) organization, from which two types are distinguished: autonomous adaptation and cooperative adaptation. Markets, for example, exhibit greater autonomous adaptation, but move to hierarchy as the needs for cooperative adaptation increase (Williamson, 1999). Thus, “the recurring dilemma with which transaction cost economics deals is, therefore, between the benefits/costs of autonomy and cooperation” (p. 312). Alternative governance modes differ in structural forms, incentive intensity, more or fewer administrative controls, and the contractual law regime; these are the key attributes with which governance operates (Table 2).

Table 2. Attributes of public order governance structures

Governance structure			
Attributes	Privatization	Regulation	Public agency
Instruments			
Incentive intensity	++	+	0
Bureaucratization	0	+	++
Performance			
Autonomous adaptation	++	+	0
Cooperative adaptation	0	+	++
Contract law - Employment relationship			
Executive autonomy	++	+	0
Staff safety	0	+	++
Legal dispute resolution	++	+	0

Source: Authors' elaboration based on Williamson (1999). Conventions: Strong = ++; Semi-strong = +; Weak = 0.

The above summarizes a simple scheme of governance structures and alternative contracting relationships for the public sector, which in general can be used to examine educational governance. The study of contractual relationships between the central government, subnational governments, and school organizations in the education sector focuses on the transaction costs that may arise from the interdependence of tasks (greater or lesser autonomy); tasks that, due to their degree of complexity, can be carried out jointly, individually, or in a mixed manner, such as policy setting, supervision, organization, evaluation, and administration of the educational system.

The typology of governance structures can differ due to the magnitude of hierarchical controls that can be imposed on a subnational entity or a school organization and can explain the higher or lower levels of autonomy and contractual relationships, influenced by perceived transaction costs and concerns about the appropriation of resources and efficiency outcomes (Gulati and Singh, 1998).

Without limits on rationality, organizing an educational system to optimize global public policy objectives, for which the national authority is responsible, would be less complex. However, barriers to rationality and opportunism threaten this coherence between intermediate or local objectives versus global ones. The pursuit of global goals becomes complex when strategic efforts are employed to gain a local advantage using asymmetric information or the exploitation of contractual imprecisions or uncertainties that un-

dermine strategic cooperation. This approach warns that for types of transactions like education, greater or lesser autonomy depends on a compliance matrix that implies moving away or not from local goals to global ones; to the traditional contractual risks identified by TCE such as asset specificity (human in the case of education), cost overruns, and bilateral dependence, risks of inequity could be added that manifest in access and quality gaps associated with socioeconomic, sociodemographic, and gender factors.

From this theoretical perspective, it is deduced that the autonomous adaptation of educational systems tends to better cost control (due to higher incentives, fewer administrative controls, and executive autonomy) but increases the risks of non-cooperation and inequity, while governance modes of cooperative adaptation weakly control costs, but bilateral dependence works better, and the risks of inequity in the system are reduced.

2. Methodology and Data

We employed a mixed approach to address the relationship between governance and school outcomes, following a sequential and evidentiary logic. The population of interest consisted of the official school organizations of the Atlántico department (a subnational territory case in Colombia), prior to sample design. In this regard, we designed and applied to each school principal a structured instrument that first relates the level of relative responsibility of the school organization in the main administrative tasks compared to national and local authorities; subsequently, the mechanisms of accountability, evaluation, incentives, and finally, the level of parental participation, as the most relevant variables. The population of interest that we identified from the ICFES³ databases was 144 official schools with secondary education in the Atlántico department, excluding its capital Barranquilla, which accounts for approximately 60% of the entire population and warrants separate analysis.

The calculated sample size was 32 schools⁴, and the questionnaire was applied to the acting principals of the selected official schools from the sample frame using Simple Random Sampling (SRS) and the questionnaire's validation was carried out through expert judgment⁵. In summary, the sample design is simple and representative of the total population of official schools located in the subnational territory of Atlántico, but not at the municipal level. Of the total sample, more than half of the educational centers (56%) correspond to schools with a full or single day, 41% provide service in the morning, and only 3% operate in the afternoon. 100% serve the secondary education level and 71% of the schools that made up the sample have a student population of more than 1000 students⁶.

The qualitative approach was carried out based on convenience sampling where three principals of official schools from the Atlántico department, an executive from the departmental Education Secretariat, and an expert academic were interviewed. The inclusion criteria for the selection of the non-probabilistic sample and the application of the unstructured interview were derived from the survey application to principals, which required complementary explanations.

3 It corresponds to the Colombian Institute for the Evaluation of Education [ICFES]. Its databases are public and can be accessed directly at: <https://www.icfes.gov.co/web/guest/investigadores-y-estudiantes-posgrado/acceso-a-bases-de-datos>. The population of public schools in the department of Atlántico corresponds to the applicants for the Saber 11 exam in the second semester of 2018.

4 Using the formula for finite populations with a variance of 3%, a confidence level of 95%, and a sampling error of 5%.

5 Content and construct validity (Weir, 2005) were evaluated using the expert judgment technique; in this case, recognized and active researchers (with publications) in the fields of education, education economics, and governance. The prototype of the questionnaire, both structured and unstructured, was analyzed by three assessors using standardized observation sheets, based on which adjustments were made until final approval.

6 The total population served by the 31 schools is 34,104 students.

Through Ordinary Least Squares (OLS) regression, we modeled the performance of the departmental schools using as the dependent variable the average score obtained by each school in the Saber 11 Test in the period 2016 (2) - 2018 (2), in the areas of science, mathematics, and critical reading⁷, and the unit of analysis is the official school organization. The results of the standardized tests for school i are described as:

$$Y_i = Q_0 + Q_1A_i + X_iQ_2 + Q_3Z_{ij} + C_iQ_3 + \epsilon_i \quad (1)$$

Where Y_i is the average score in the test of school i in Saber 11; A_i is the school autonomy indicator; X_i is a vector of accountability indicators, represents parental participation and incentives; Z_i captures the average effect of socioeconomic backgrounds extracted from the ICFES databases per student and an average is constructed for each school; C_i is the usual vector of control variables that includes quality of infrastructure indicators, class size, type of school, proportion of women, and school climate, among others; and ϵ_i is the error term.

3. Discussion of Results

Table 3 provides a summary of the measures of central tendency and dispersion for all variables included in the models. Scores in mathematics, reading, and science are shown on a scale of 0 to 100, where a higher score indicates better performance. On the other hand, control variables such as time in the position of rector, experience, and time as an employee are expressed in years. The variable Religious Organization is a dichotomous variable that expresses the presence or absence of this type of organization in relation to school administration. In those variables where the mean is not presented, it is due to their categorical nature, such as class size, teacher's educational level, and distribution of the teaching staff by type of decree supporting official appointments.

The artificial indices or variables, such as the infrastructure index, parent participation index, and accountability index, are constructed using the Principal Component Analysis (PCA) methodology, taking negative and positive values. Their interpretation in the positive direction of the scale indicates better infrastructure, higher parent participation, and higher levels of accountability. As for the climate variable, it was constructed using the same PCA methodology, but the scale's direction is interpreted in reverse, where higher values indicate poor school climate. The socioeconomic level index (INSE) is extracted from the 2018 ICFES databases and aims to summarize the student's sociodemographic and economic characteristics on a scale of 0 to 100, aggregated at the school level through a simple average.

The results of the regression estimations by Ordinary Least Squares (OLS) of the average student performance by school on various explanatory variables in different specifications of equation (1) are presented in Annex 1, 2, and 3 for each of the evaluated knowledge areas. In all specifications, the dependent variable is the average performance of public schools in the subnational territory (Atlántico department) in the mathematics, reading, and science tests, and the sample includes the 32 randomly selected schools from different municipalities.

⁷ Just like in the case of the PISA data, for the Saber 11 tests, the latest data available at the time of writing this document extended up to 2018.

Table 3. Descriptive Statistics of Variables, Atlántico Department

Variables	Observ.	Mean.	Std. Dev.	Min.	Max.
Mathematics Score	32	43,97	4,89	37,2	57,1
Reading Score	32	47,94	3,77	42,3	58,2
Science Score	32	46,06	3,86	41,5	57,4
Total Number of Students	32	1065,75	735,64	250	2675
Time as Rector	32	6,62	6,75	1	28
Religious Organization	32	0,06	0,24	0	1
Experience as Rector	32	9,18	6,75	1	28
Time as Employee	32	7,53	8,95	1	41
School Existence Time	32	43,03	24,85	3	110
% of Female Students	32	54,46	9,72	40	80
Class Size	32	-	-	1	8
Infrastructure Index	32	0,00	0,42	-0,77	1,01
School Autonomy Index	32	0,00	0,58	-1,62	0,62
Parental Participation Index	32	0,00	0,42	-0,66	1,07
School Climate Index	32	0,00	0,51	-0,98	1,16
Accountability Index	32	0,00	0,42	-0,84	0,7
Socioeconomic Level Index	32	46,26	3,21	41,62	56,52
Teacher Postgraduate	32	-	-	1	5
Teacher Distribution by Decree	32	-	-	1	5
	32	0,44	0,32	-0,68	1,42
	32	0,11	0,1	0,00	0,57

Source: Authors' elaboration based on survey to rectors in the Atlántico department, 2019, and ICFES data.

The findings show that governance factors such as autonomy and standardized tests applied by external parties to students can reflect effects of the institutional structure on educational performance. The differences in the orientation and implementation of *de facto* educational policy are consistent with differences in results and suggest, through general relationships, the potential effect of an incentive framework aimed at preserving school autonomy by encouraging certain actions of school organizations aimed at achieving policy objectives.

Considering the above, it is useful to apply the econometric strategy of Woessmann (2007) through basic models of 32 observations that maintain parsimony; being as small as possible and without omitting variables that show independent significant effects. Thus, fourteen specifications are presented because of different controls and revisions with different variables, making it clear that socioeconomic background, school autonomy index, and the variable related to the number of standardized tests applied to students, once included in the models, hardly allow any other available measure to enter significantly or manage to change the essential results. Together, these three variables explain between 60 and 70 percent of the total variation in the results obtained by schools in the Atlántico department in the Saber 11 test during the study period.

Two-thirds of the schools under study contract standardized external tests for their students at least once a year, and this can be done five to six times in exceptional cases. It can be inferred from the NEI approach that state exams like the Saber 11 test at the end of secondary education function, on one hand, as accountability mechanisms to the school community, and on the other hand, as incentives that influence the behavior of students, parents, teachers, and principals to improve learning outcomes, especially when these results determine entry into higher education (universities and technical institutes).

Additionally, the quality resources of territorial entities that official institutions may receive are tied to classification standards of the institution and indicators of dropout rates, as confirmed by the perceptions of the school principals under study:

“Additional resources (own resources) are provided to help schools finance their investments. These resources are tied to the classification of the institution, Saber 11 results, and dropout rates. (...) At this moment, there is no balance, official schools with a favorable socioeconomic environment have a greater chance of accessing these resources, with some exceptions (official, regional administrative authority).

Yes, and there are other resources that come from the general system of allocations, the product of the interests generated by the SGP, these resources by law must be allocated to quality, and these resources go to the territorial entity, and this has the discretion to distribute them. So, it is clear that the trend that has occurred in recent years is this discretion, at least for schools that perform better, they receive more resources in terms of quality, and those that perform worse, receive fewer resources” (Principal 1).

Programs like “*Ser pilo paga*” and “*Generación E*,” offered as fully condonable credit-scholarships, are part of the intensity of incentives that characterize autonomous governance structures referred to by Williamson (1999). In line with autonomous adaptation, most school organizations choose the most expedient path, which is to prepare students for the test, often financed by parents, giving rise to a parallel market of organizations specialized in conducting standardized tests of this kind. If this decision yields the desired marginal results, the number of tests per year increases. Two interviewed principals express it as follows:

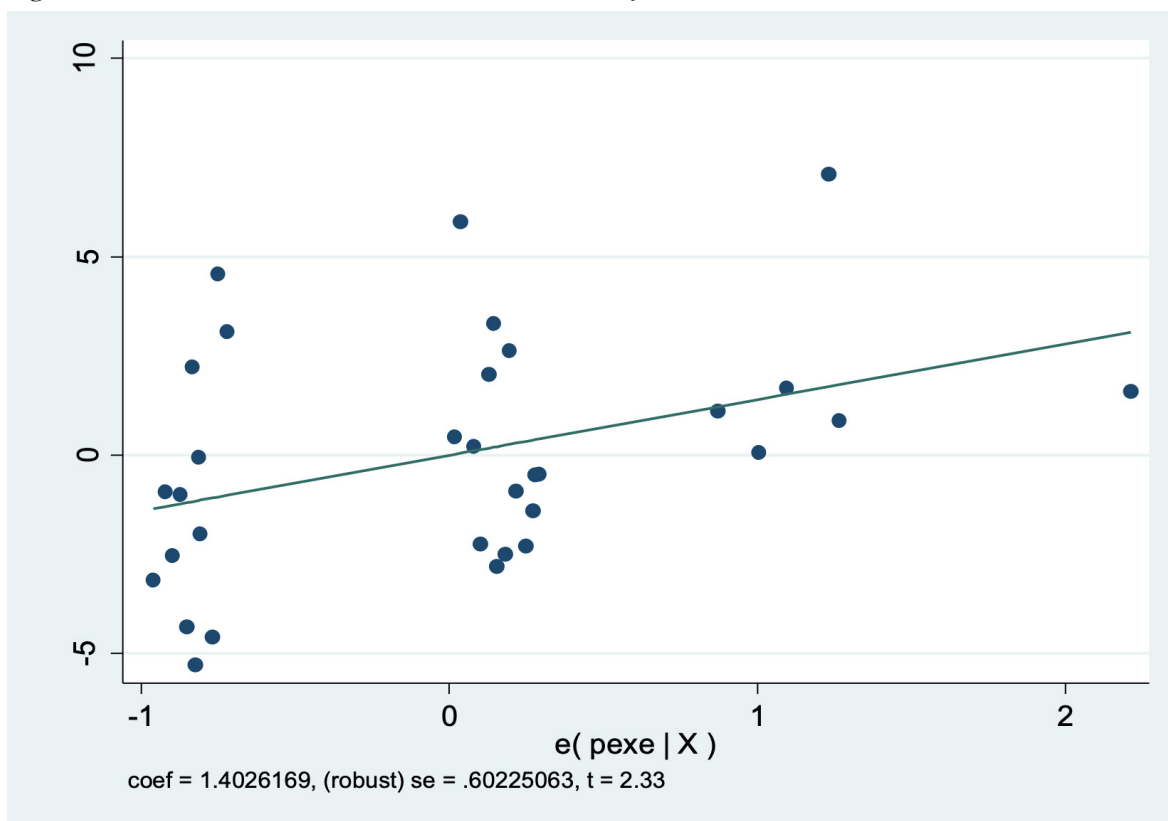
“We try to do one test per term, but it depends on the parents who pay for the test. So, in parent assemblies, we have considered having one test, last year we wanted to have two, and the parents agreed, but we didn’t

have enough time due to various reasons. But for now, we are doing only one test from first to tenth grade. In the case of eleventh grade, the education department supports the process, so the students prepare with a group sent by the department, but there are parents who also make a maximum effort to prepare the tenth-grade students and pay external companies for pre-ICFES preparation” (Principal 2).

“I internally arrange with my teachers, as long as the parents agree, and I give them, in addition to the full-day schedule, two additional hours three times a week, in other words, three times a week I stay with them, giving them two additional hours of different subjects with the same teachers, but as long as the parents cooperate. How do they cooperate? A small course is done and they pay for it, but of course, well below the market price, for example, an ICFES course is in the market for 450 or 380 thousand pesos, but they do it for 50 thousand pesos and they already have that preparation until August, which is when the ICFES exams are” (Principal 1).

As expected, the number of standardized tests administered in a year is statistically related to better student performance, and its effect is positive once controlled for socioeconomic background. If we compare, for example, the average performance in mathematics between schools that do not administer external standardized tests to their students and those that do, there is a seven-point difference on average and an eleven-point difference between higher-performing public schools that do not conduct tests and those that conduct up to four tests per year.

Figure 1. Standardized External Tests and Mathematics Performance



Source: Authors' elaboration based on survey to rectors in the Atlántico department, 2019

Figure 1 represents the partial regression between mathematics scores and the number of standardized external tests per year. It shows the association between two variables after eliminating the influence of control variables, in this case, the autonomy index and socioeconomic background. The schools on the left with a value of -1 are the ones that do not administer standardized external tests to their students. On the right, with a value greater than or equal to 0, are the schools that conduct these types of tests. It is clear that at least in six schools, tests are not conducted, yet they achieve or surpass the scores of schools that do administer tests. However, the trend appears to be that schools employing this strategy improve significantly, with adverse cases positioned on the left side of the diagram.

The result is crucial because if the funding for these tests often comes from parents, the institutional capacity of some schools could be undermined due to the inability to cover the test costs. A preliminary conclusion can be drawn that autonomy in admission processes and the excessive demand focused on certain schools encourage a certain selectivity that ensures the educational organization maintains or improves its standards. One of the key interviewees expresses the following:

“Because there are also variables that are directly related, for example, the economic situation of the family members, family status, and the level of family education are directly related to student performance. (...) Given this, in schools that are of level A, which are mostly from stratum 3, it’s difficult to find stratum 2; it’s a possibility, but not the majority. So, these schools will have the ease of buying pedagogical elements. For example, most category A schools use a software that costs 450,000 pesos per year” (Principal 1).

Regarding the autonomy index, once socioeconomic backgrounds are controlled, it is associated with an improvement in scores of one to two points on the test across all specifications. This result in some way proves that although regulations govern levels of autonomy in different tasks, *de facto* functions carried out by educational organizations differ in degree, often depending on contractual risks perceived by national and regional authorities that increase hierarchy at the expense of autonomy. In other words, *de facto* school autonomy, understood as the relative level of responsibility that the school organization has in practice in various tasks, is not inherently an exogenous process in the development of functions.

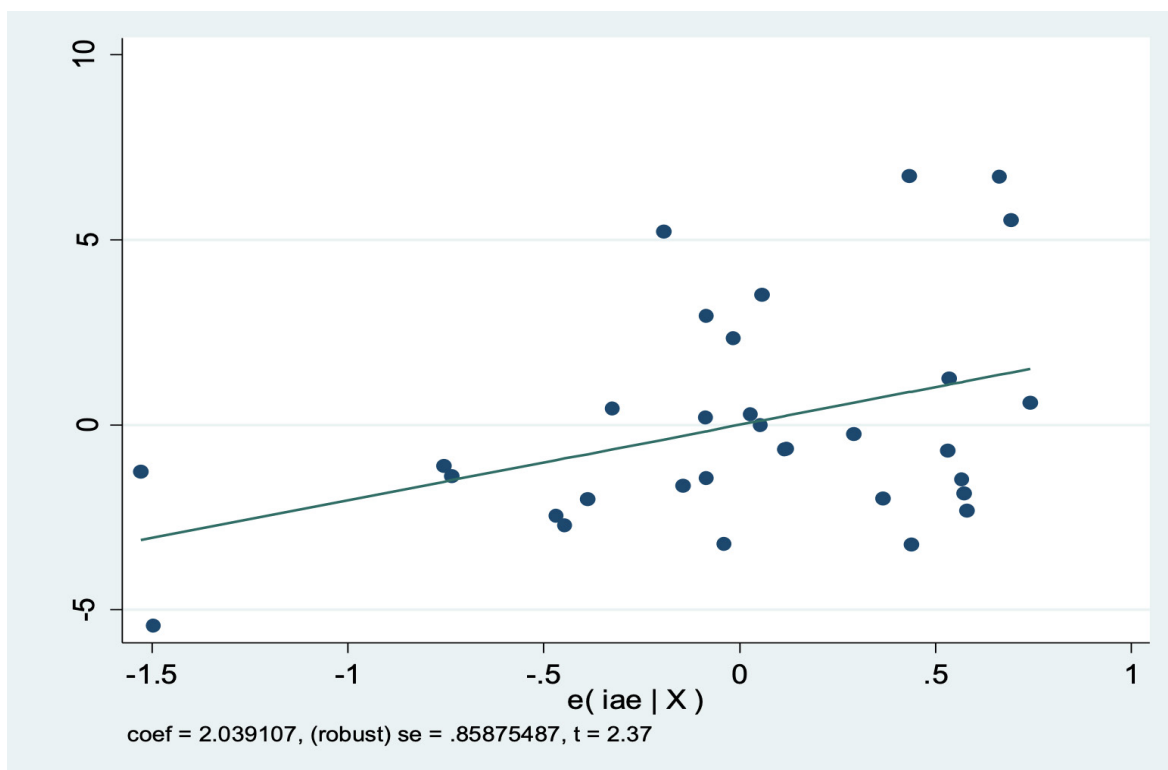
The influence of national, regional, and local authorities in various tasks, from the development and execution of the Institutional Educational Project (IEP), execution of quality improvement plans, execution of investment projects, to the control of teaching functions, is perceived less intensely in those schools where certain standards adjusted to policy goals have been achieved. Some testimonies from interviewees can reinforce this point:

“We do intervene. We review the IEPs of schools with the lowest achievement results to verify that their IEP and their curriculum and classroom plans comply with MEN criteria. We hold strategic planning meetings with schools where we look at the institutional horizon and there are outdated visions. Together with them, we reconstruct the IEP. Similarly, when they transition to full-time schooling, we review the IEPs (official, regional administrative authority).

For example, we have the case of school X (with a socioeconomically disadvantaged population), it has always been in category D, and last year its infrastructure was changed, with the commitment of the principal to engage in the development of the formative processes that we propose for the students, the reinforcements that we provide in basic skills so that the students perform the saber tests. And the school managed to move out of category D, our commitment is for that school to continue in that process and it transitioned to full-time schooling (official, regional administrative authority).

There are a series of factors that, combined, can allow for improvement. But you can't apply the same recipe to all schools and say that all schools with this recipe will rise or improve. You have to be there (the administrative authority), immersed in the process, in the sector, in the institution, to know what the real shortcomings are and to be able to work on each of them. That's why on-site support has been really important, being there" (Regional administrative authority).

Figure 2. Autonomy and Mathematics Performance



Source: Authors' elaboration based on survey to rectors in the Atlántico department, 2019

Figure 2 shows the significance of this relationship after controlling for socioeconomic factors and the potential effect of external standardized tests. The relationship is clear and reinforces how greater autonomy is associated with better performance in mathematics.

On the other hand, variables like parental involvement and accountability did not yield significant results in any specification, even when tested in accordance with the theoretical line of interaction with school autonomy. However, qualitative information collected from various principals highlights the role of the school community in improvement processes:

"I would say that 70% of participation comes from the community because they believe in the institution, in what we do, in the transparency regarding the growth and beautification of the institution, so they believe in us and give their best" (Principal 2).

"The vast majority. There are even some who don't pay attention to this, and I proceed in a way that I alert the parent for not attending meetings, and if that person (parent) doesn't attend the next meeting, their child will be reported to the ICBF. We need to be committed" (Principal 3).

“Yes, I say this from my experience, students who are supported and monitored by their parents have better behavior and therefore better academic performance. Students where you can see that parental involvement and monitoring is minimal or absent, are students with poor behavior and academic performance” (Principal 1).

Similarly, whether incentives for quality from national, regional, or local authorities (e.g., by ISCE) were received did not explain performance differences, nor did reporting teacher disciplinary violations to the competent authority, suggesting that regulated administrative control processes or sanctions for teaching staff do not constitute mechanisms influencing their behavior to enhance performance.

Only in the case of mathematics scores as the dependent variable, the administration of entrance exams (dichotomous variable) was significant. This suggests that autonomous adaptation can increase contractual risks when the organization uses its autonomy to select certain students to reduce agency problems (adverse selection) and fulfill quality goals, potentially at the expense of equity, a public policy objective in education.

Another important aspect of the model concerns the results of variables that could be called customary in this analysis, such as the socioeconomic level index provided by ICFES, and indices like infrastructure, school climate, average class size, and teacher training, constructed from primary information. The socioeconomic level index captures variables like parents' educational level and occupation, housing stratum, household income, and related endowments such as computer and internet access and ownership of certain appliances. This measure entered the model as statistically significant as expected, with a positive relationship to average student performance. This finding aligns with a wide range of literature on the substantial effects of these characteristics on performance and leaves no doubt, even though in official schools in the Atlántico region, socioeconomic disparities reduce, resulting in less variability of these factors.

But beyond this result, it is confirmed that variables associated with school resources such as infrastructure, class size, and teacher training are not significant or fail to explain the behavior of the variable of interest, opening the door to institutional factors.

Lastly, we included two variables that have yielded results in some empirical documents, such as the principal's experience and years of service in this position. Although they produce significant coefficients in some specifications, their relationship with performance is negative and therefore counterintuitive. However, there is a consensus about the maturity a school reaches over time, which inevitably influences the functionality of various instances of school governance and affects performance. At this point, the gaps between what is written and what works in practice are notable:

“For instance, a school that has reached maturity is a school that not only has the presence of governing bodies within its institution but also has them in continuous improvement. I mean they have them at a higher level, which means they act and at the same time review their actions to enhance them; for example, selection and admission committee, teacher selection and evaluation committee, academic council, coexistence committee, student spokesperson committee, student representative, board of directors. These bodies are established by law, but schools have different levels. For example, you go to a school and they might say, ‘Here are committees,’ but they show them to you at the level of existence; there might be a mere formality” (Principal 1).

Other Institutional Factors:

An institutional characteristic that distinguishes some public schools in the department of Atlántico and throughout Colombian territory is the administration by a religious organization. Only two schools from the selected sample have this characteristic, with high levels of autonomy (the highest indices in the selected sample) that allow for a selective system, sometimes quite different from purely public schools. They conduct between 1 and 4 standardized external tests per year in secondary education and have a relatively appropriate school climate (very low indices).

The model in column 3 (see Appendices 1, 2, and 3) demonstrates how religious administration is associated with an improvement in the average scores by five to seven points depending on the subject area once the possible effects of socioeconomic level are controlled for. These characteristics of schools managed by religious organizations raise the possibility of questioning whether institutional governance factors such as standardized tests, school autonomy, student selection, or evaluation weigh more in their relationship with performance, or if it involves some influence of what could be termed religious values. As explained in the historical overview, conservative values in Colombia have shaped the evolution of education, and despite the spaces gained by the State, a large portion of high-quality private education remained in the hands of experienced religious organizations in the sector. These organizations aim to replicate their framework and results in the public sector with the approval of certain public administrations.

Unfortunately, from an empirical perspective, it is very challenging to contrast the above, and only the fictitious variable used leaves the notion that there is a relationship between administration by a religious entity and educational performance.

4. Conclusions

This study was based on the premise that the governance structure of the educational system is a fundamental determinant of educational performance in subnational territories in Colombia. School autonomy constitutes one of those variations in institutional arrangements (Balú et al., 2009). The importance of socioeconomic background as a source of better or worse performance was confirmed, as well as the limited explanatory power associated with so-called school resources. However, once socioeconomic, and cultural factors were controlled for, various institutional aspects appear to have strong links with performance variables. Hypothesis (1) is confirmed, indicating that greater school autonomy—as a mode of organizing the educational system—is positively associated with educational outcomes. The findings suggest that more autonomous educational systems are associated with better performance, but the practice of autonomy could be related to the actions of national or local authorities regarding *de facto* control over school tasks. Other results suggest and tend to confirm hypothesis (2) that the risks of inequity in performance are higher when the mode of organizing the educational system has greater autonomy. This dilemma between autonomy and equity, where equity refers to the extent to which achievement results are explained by socioeconomic backgrounds, reinforces the idea that equity issues can be understood from a contractual perspective where the agent can leverage their position to select students who meet certain standards aligned with their local goals, to the detriment of global objectives.

This is crucial because the goods and services provided by the state with distributional or equity considerations lead to the problem of agency not being solely reduced to disciplining the agent to meet standard indicators to make them visible to the respective authority and interest groups. In the case of education, autonomous adaptation can have various implications that might go against those distributive interests and systematically increase transaction costs. Consequently, a school with the autonomy to exercise ad-

mission controls might select students aligned with organizational quality objectives or certain skills or knowledge through standardized tests, choose them based on religious affinity with parents, fail them based on certain internal standards or those distant from system objectives, etc. All these strategies can have implications for the equity of the system if admission or retention criteria are in turn associated with the socioeconomic and cultural background of the individual. Therefore, monitoring actions are required to prevent or address these issues, and such actions come at a cost, which could be substantial for schools and/or the educational system of the subnational territory (department or municipality).

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Self-control and academic performance: a comprehensive review and empirical study



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ABSTRACT

Self-control, a pivotal determinant in the regulation of human behavior, has consistently demonstrated a strong association with a plethora of advantages, particularly notable in the context of academic accomplishments. This scholarly article presents a comprehensive literature review that delves deeply into the multifaceted construct of self-control, shedding light on its intricate psychological underpinnings. Furthermore, it offers an extensive descriptive study with the principal objective of scrutinizing the interrelationship between self-control and academic performance, as assessed by academic grades, within a carefully selected sample of 161 students pursuing degrees in business engineering. The evaluation hinges on the deployment of the Abbreviated Self-Control Scale. The research findings divulge a moderately robust and positively significant correlation between these key variables, characterized by a Spearman's r_s coefficient of 0.317, signifying statistical significance at a 99% confidence level. These outcomes undeniably substantiate a meaningful connection between self-control and academic performance, thereby contributing to an enhanced understanding of the profound impact of self-control on academic success. This study constitutes a valuable addition to the existing body of knowledge and paves the way for future research endeavors within this domain.

Keywords: Education; Self-Control; Academic Performance; College Students.

Autocontrol y rendimiento académico: una revisión exhaustiva y estudio empírico

RESUMEN

El autocontrol, un determinante crucial en la regulación del comportamiento humano, ha demostrado consistentemente una fuerte asociación con una plétora de ventajas, especialmente notables en el contexto de logros académicos. Este artículo académico presenta una revisión de la literatura exhaustiva que profundiza en la construcción multifacética del autocontrol, arrojando luz sobre sus complejas bases psicológicas. Además, ofrece un estudio descriptivo extenso con el objetivo principal de examinar la interrelación entre el autocontrol y el rendimiento académico, evaluado a través de las calificaciones académicas, en una muestra cuidadosamente seleccionada de 161 estudiantes que cursan ingeniería comercial. La evaluación se basa en la aplicación de la Escala Abreviada de Autocontrol. Los hallazgos de la investigación revelan una correlación moderadamente robusta y positivamente significativa entre estas variables clave, caracterizada por un coeficiente de correlación de Spearman de 0.317, lo que indica significancia estadística a un nivel de confianza del 99%. Estos resultados indudablemente sustentan una conexión significativa entre el autocontrol y el rendimiento académico, contribuyendo así a una comprensión mejorada del profundo impacto del autocontrol en el éxito académico. Este estudio constituye una valiosa adición al cuerpo existente de conocimiento y allana el camino para futuros esfuerzos de investigación en este dominio.

Palabras clave: Educación; Autocontrol; Rendimiento Académico; Estudiantes Universitarios.

Autocontrole e desempenho acadêmico: uma revisão abrangente e estudo empírico

RESUMO

O autocontrole, um determinante crucial na regulação do comportamento humano, tem demonstrado consistentemente uma forte associação com uma miríade de vantagens, particularmente notáveis no contexto de realizações acadêmicas. Este artigo acadêmico apresenta uma revisão da literatura abrangente que se aprofunda na construção multifacetada do autocontrole, iluminando suas complexas bases psicológicas. Além disso, oferece um estudo descriptivo extenso com o objetivo principal de examinar a inter-relação entre autocontrole e desempenho acadêmico, conforme avaliado por notas acadêmicas, dentro de uma amostra cuidadosamente selecionada de 161 estudantes que cursam engenharia de negócios. A avaliação depende da utilização da Escala Abreviada de Autocontrole. Os resultados da pesquisa revelam uma correlação moderadamente robusta e positivamente significativa entre essas variáveis chave, caracterizada por um coeficiente de Spearman r_s de 0.317, significando significância estatística a um nível de confiança de 99%. Esses resultados indubitavelmente comprovam uma conexão significativa entre autocontrole e desempenho acadêmico, contribuindo assim para uma compreensão aprimorada do impacto profundo do autocontrole no sucesso acadêmico. Este estudo constitui uma valiosa adição ao corpo existente de conhecimento e abre caminho para futuras pesquisas nesse domínio.

Palavras-chave: Educação; Autocontrole; Desempenho Acadêmico; Estudantes Universitários.

1. Introduction

The comprehensive exploration of self-control represents a prominent theme within the realm of psychological literature. This exploration primarily stems from the perspective that conceives self-control as a pivotal mechanism. This mechanism serves the purpose of constraining impulsive tendencies while facilitating the alignment of behaviors with societal and cultural norms (Freud, 1913/1991, 1915/1992, 1921/1992, 1930/1992). The foundational construct of self-control is rooted in empirical evidence that underscores individuals' remarkable ability to refrain from engaging in behaviors when confronted with emotionally charged stimuli (Loewenstein, 1996; Del Valle et al., 2019). Moreover, it involves their cognitive capacity to deliberately modify intuitive thought processes (Kahneman, 2003; Bago & De Neys, 2019).

However, the purview of self-control surpasses the confines of mere inhibition. It extends into the realm of constructive discipline, empowering individuals to harmonize their actions with long-term objectives. This empowerment engenders a continuum of value-based and future-oriented behaviors. Notable examples of such behaviors encompass compliance with prescribed speed limits, diligent wealth accumulation via systematic savings, and the pursuit of exemplary academic performance through unwavering commitment to a structured educational curriculum.

The core objective of this scholarly article is to embark upon an extensive exploration of the multifaceted construct of self-control. In order to achieve this objective, we endeavor to delineate two interrelated yet distinct facets that constitute self-control: impulse control, intricately linked to the mitigation of impulsive behaviors, and future-oriented self-discipline, which encompasses the cognitive capacity to meticulously plan and consistently uphold behaviors that harmonize with enduring aspirations. To facilitate this exploration, we have directed our focus toward examining the intricate correlation between self-control and academic performance. Our study cohort consists of students pursuing business engineering, and our methodology incorporates a descriptive research framework.

The quantitative analysis of the data is executed by employing the Spearman correlation coefficient. Additionally, we implement a tailored questionnaire that derives its foundations from the Abbreviated Self-Control Scale formulated by Tangney et al. (2004). This instrument has been thoughtfully adapted for the Spanish-speaking population by Del Valle et al. (2019).

It is imperative to acknowledge the inherent constraints associated with this methodological approach. As a primary consideration, our research findings are confined to the scope of the sampled participants, and thus, the generalizability of our results may be limited. Furthermore, it is essential to underline that our research methodology does not empower us to establish causal relationships. As such, the nature of our inquiry is intrinsically exploratory, with a concentrated focus on the elucidation of the conceivable relationship between the independent variable of self-control and the dependent variable of academic performance.

The preliminary findings emanating from our research inquiry have offered valuable insights into the intricate dynamics of self-control and its intricate interplay with the domain of academic achievements. These preliminary results serve to affirm our underlying hypothesis, robustly establishing the existence of a meaningful relationship between the individual characteristics of self-control and the attainment of academic excellence. The empirical evidence, rigorously analyzed, illuminates a moderately practical and statistically significant correlation that binds these key variables together. This binding is prominently evident through the calculation of the Spearman's r_s coefficient, which emerges with a significant value of

0.317. This compelling statistical indicator firmly asserts the presence of a significant correlation, thereby endorsing the established statistical significance at a 0.01 significance level, a representation of the highly robust 99% confidence level.

Within this intricate and multifaceted context, the empirical findings we've uncovered serve to highlight and underscore the strength and unwavering consistency of the initially postulated relationship. This, in turn, goes a long way in not only affirming its considerable practical significance but also shedding a more comprehensive light on its importance, especially within the specific milieu of university students who are fueled by an unrelenting drive to excel in their academic pursuits.

These results, which emerge as a testament to the empirical foundation of our research, play a pivotal role in enriching the body of knowledge within the scholarly realm. They contribute to a deeper understanding of the intricate workings of self-control and its profound influence on the attainment of academic success. Moreover, these findings not only provide a valuable steppingstone for future research endeavors within this domain but also underscore the need for continued exploration and inquiry into the nuances of self-control and its impact on the academic landscape.

Theoretical framework

Self-control is understood as repressive operations, a signification associated with the psychoanalytic literary tradition, operating as a restrictive mechanism that inhibits impulses, allowing adaptation to the normative requirements of culture (Freud, 1913/1991, 1915/1992, 1921/1992, 1930/1992). This is supported by evidence concerning the capacity for self-control defined as the abstention from behaviors in the face of emotionally intense stimuli (Loewenstein, 1996; Del Valle et al., 2019). In this sense, it involves a deliberate correction of intuitive processes (Kahneman, 2003; Bago and De Neys, 2019).

From this corrective notion, the capacity for self-control would be an evolutionary outcome of human psychology, allowing individuals to adjust their behavior to the opportunities and threats of their environment (Tangney et al., 2004). It is a fundamental part of the human species. However, there is also a complementary concept to this restrictive signification associated with the psychological repression of the self against impulses (Freud, 1915/1992; 1930/1992). This concept refers to the ability to act according to long-term goals in an effective and efficient manner, a behavior of perseverance oriented towards the future, distinct from the process of impulse control in the present (Del Valle et al., 2019; Duckworth and Kern, 2011). In this sense, self-control is not only restrictive or repressive in the face of automatic or unconscious processes, but it is also a productive or creative discipline with a positive signification. For example, it is the ability to maintain a vehicle's speed within rational standards established to contribute to road safety, guided by cultural values that influence decisions based on classification or codification behaviors (Douglas, 1973). Another example is the generation of financial capital through monthly savings planning or achieving academic excellence as a student due to adherence to the educational program.

In this way, there is not only a higher-order cognitive process aimed at controlling stimuli derived from lower-order automatic or intuitive processes, making corrections (Tangney et al., 2004; Kahneman, 2003; Bago and De Neys, 2019), but there is also a deliberative process that operates through mental models that provide sustainability to courses of action (Crusius et al., 2012; Del Valle et al., 2019), composed of a hybrid processing of multiple psychological processes.

From a synthetic notion, self-control is operationalized based on the idea of deliberate self-government or self-regulation, which allows for decision-making based on long-term goals and rationalizations, involving

the alteration of one's own behaviors to align them with long-term interests. This recognition reveals a duality in the processes involved in self-control: a deliberate process that plans and corrects behavior, and automatic processes that generate impulses that can be moderated (Duckworth and Kern, 2011).

The concept of consciousness refers to the ability to think and act under control, facing unconscious impulses. However, it is also understood that consciousness is based on unconscious and automated processes, even generating limits to self-control and structuring behavior in an irrational manner (Freud, 1913/1991), leading to a conflict between conscious and unconscious processes, and diminishing the power of the human distinction as a rational subject from the modern tradition (Descartes, 1637/1937). It is also possible to question the exclusivity of self-control in the face of impulses as a distinctive human rational capacity, as animals, such as chimpanzees, have the capacity to develop rudimentary higher-order mental processes similar to human capacities (Evans, 2008). In this conceptual framework, like in the case of some animals, self-control would involve multiple mental processes that blend logical reasoning, impulse repression, and future thinking, among others, allowing the control of behavior, correction of practices, and the guidance of conduct toward the future based on rational planning and normative standards.

Alongside cognitive processes that repress stimuli, processes based on mental models composed of cultural contents or values are structured, articulated by language and logical thought (Douglas, 1973; Denes-Raj and Epstein, 1994; Evans, 2008; Duckworth and Kern, 2011; Crusius et al., 2012). In this regard, the rational and emotional dimensions of self-control based on moral codes play a prominent role in enabling stimuli such as shame and guilt, which are adaptations of behavior in response to mistakes. This governance is oriented towards normative compliance (Tangney et al., 2004), involving different psychological processes and demonstrating the existence of hybrid processing in self-control.

In this sense, in psychological processes (Hogarth and Reder, 1986), mental models based on cultural realities and mediated by language operate. This type of self-control is rooted in the learning or identification of moral codes, establishing a value-based commitment to normative duty that can lead to rational choices based on motives and the establishment of practices founded on value standards (Kant, 1785/2012; Douglas, 1973; Denes-Raj and Epstein, 1994; Evans, 2008; Duckworth and Kern, 2011; Bago and De Neys, 2019). This creates a psychological operation that guides choices through the identification of legitimate causes or moral duties that justify behavior, independent of whether it is satisfactory or unsatisfactory for the agent and establishes the alignment of behavior with normative parameters that guide human conduct according to a cause-based logic, emphasizing that moral consciousness serves not only to restrain impulses but also to promote valued behaviors.

On the other hand, in comparison with the regulation of behavior by moral duties described in the previous paragraph (Kant, 1785/2012), it is possible to contrast a second model of rational choice that controls behavior based on effects and interests, without the need to consider prescriptive norms. These processes are referred to as instrumental or utilitarian (Bentham, 1836; Anderson, 1983; Greene, 2007) because behavior is instrumentally governed by expected results and interests associated with satisfaction, without the need to consider moral motives that legitimize behavior. This orientation is towards outcomes, subordinating behavior as a means to a happy and reasonable end (Mill, 1831; Bentham, 1836; Mill, 1863/1891). While both processes can function together, the moral and the instrumental, their contents differ and are mutually independent. Controlling behavior for moral reasons associated with normative duty implies accepting undesirable or unsatisfactory consequences from an instrumental perspective because decision-making is not based on self-interest. Choosing rationally to control behavior due to interests associated with the consequences of control, i.e., the effects of behavior such as satisfaction or

future benefit, does not require reflection on normative moral motives or duties that guide and validate behavior. Therefore, utilitarian choices have cognitive motives centered on achieving objectives, justified by the consequences of actions, establishing the foundation of behavior and decision-making as satisfactory outcomes for which behavior is exclusively a convenient means, without the need to resort to a moral motive a priori or considering what is morally right based on the achievements in satisfaction resulting from behavior.

The ramifications of this comprehensive theoretical contemplation extend to the recognition of a binary framework within the domain of self-control, entailing two interrelated facets: 1) the domain of impulse control, intricately connected with automatic or emotionally charged processes; and 2) the domain of behavior control, characterized by self-discipline and a future-oriented perspective. In parallel to these facets, there manifest two distinct categories of purposive regulatory mechanisms: 1) behavior governed by moral principles that operate as a priori underpinnings justifying the choices made; and 2) behavior steered by instrumental objectives, rationalizing conduct through the gratifying outcomes it engenders, thereby eliminating the necessity for normative directives. These multifaceted determinants collectively orchestrate the intricate landscape of self-control, generating hybrid and nuanced mechanisms in the process (Duckworth and Kern, 2011).

The scope of our research endeavors finds its anchorage within the expansive conceptual framework delineated above. Our foremost aim is to embark upon a comprehensive expedition, driven by the pursuit of in-depth inquiry into the intricate interconnectedness that characterizes the amalgamated processes within the ambit of self-control. We posit a conjecture that posits a correlative propensity between elevated levels of self-control and the augmentation of academic performance, thus unequivocally accentuating the promise of a positive and affirmative relationship within this domain.

The intellectual voyage upon which we now embark stands as a pivotal and foundational cornerstone, underpinning forthcoming empirical inquiries and scholarly pursuits that are poised to unfold. This initial exploration not only constructs the scaffolding for an enhanced understanding of the intricate and multifaceted interplay between self-control and the realm of academic accomplishments, but also presages a forward-looking and sagacious examination. This foresighted perspective illuminates the path for subsequent investigations, which will plumb even greater depths in the intricate network of interrelations shaping the landscape of self-control and its impact on academic achievements. Consequently, it presents an arable and promising expanse for burgeoning research endeavors, acting as the driving force propelling the field ahead with novel insights and revelations.

2. Methodological framework

This descriptive research endeavor employs quantitative research methodologies, primarily characterized by the application of structured questionnaires as data collection instruments. In the context of this study, the quantitative method involves the utilization of the Likert scale questionnaire, further complemented by the robust Spearman correlation coefficient as a statistical tool applied to the dataset. The principal objective of this research is to explore and unravel discernible associations within the context of the Abbreviated Self-Control Scale, a psychometric instrument originally developed by Tangney et al. (2004). This scale has been thoughtfully adapted to the Spanish language by Del Valle et al. (2019) and methodically validated for research purposes within this specific academic inquiry by Duckworth and Kern (2011).

The core research aim is to scrutinize the intricate relationship between the self-control variable and academic performance, primarily delineated through students' academic grades. The overarching research

hypothesis underpinning this investigation centers on the interpretative assumption of causality, positing that self-control, as an independent variable, exerts a consequential impact on academic performance, a variable assumed to be dependent in this context. The choice of the Spearman correlation coefficient was deliberate, as it is tailored to accommodate data that does not adhere to a normal distribution pattern, which was the case with the academic performance variable, as confirmed by the Shapiro-Wilk normality test.

However, it is incumbent upon us to exercise prudence and recognize the inherent constraints associated with the methodological paradigm we have embraced. Firstly, it is imperative to acknowledge that the findings emerging from this study are inherently delimited in their applicability, encapsulated within the confines of our select cohort of participants. Consequently, the extent to which our findings can be extrapolated to a broader population is inherently circumscribed. It is a fundamental facet of this pragmatic approach that it refrains from embarking on the quest to establish causal relationships, as the very essence of our investigative pursuit is unequivocally exploratory in nature.

The overarching research query that has steered the trajectory of our data collection process can be succinctly articulated as follows: “What facets comprise the comprehensive characterization of the intricate psychological processes that underpin self-control decisions, in tandem with the academic performance grades they yield?” This research inquiry unfurls systematically, commencing with a scrupulous scrutiny of the undergirding theoretical frameworks. This theoretical groundwork is the bedrock upon which we erect the empirical phase of our study. This empirical segment is meticulously crafted to furnish empirical substantiation to the conjectured correlations.

Indeed, we remain steadfast in our commitment to the prescribed methodological parameters, positioning this research within the distinct paradigm of a case study. The carefully selected sample, composed of 161 students specializing in the field of commercial engineering, has been meticulously culled from the vast landscape of higher education institutions. This exacting process of participant acquisition was facilitated through the deliberate adoption of a purposive and convenient sampling methodology, a choice predicated on the proactive willingness of individuals to participate in our scholarly exploration.

It is crucial to emphasize that the criteria guiding this judicious participant selection were deeply rooted in practical considerations, foremost among them being the accessibility of pertinent data. These pragmatic choices were underscored by an overarching aspiration – an aspiration that underpins the fundamental thrust of our research endeavor. We are resolutely dedicated to making a substantial contribution to the enhancement of academic performance. We envisage the realization of this noble aspiration through a comprehensive understanding of the direct and profound interconnections that underlie the intricate relationship between self-control and academic achievement.

Within the broader contours of our chosen methodological framework, we wholeheartedly embrace the principles of research-action. This paradigm, steeped in the ethos of disseminating research findings, is uniquely poised to not only advance the boundaries of academic scholarship but also to foster a deeper and more nuanced comprehension of the multifaceted interplay between self-control and academic performance. Our commitment is firmly anchored in the idea that the participants themselves, who form the bedrock of this study, are best positioned to benefit from an enriched understanding of this complex relationship.

This approach, rooted in the active engagement of participants in the research process, creates a dynamic feedback loop that facilitates a co-creation of knowledge. By involving the very individuals whose expe-

riences and behaviors we seek to comprehend, we not only ensure the relevance and applicability of our findings but also empower these participants to take an active role in shaping the discourse and outcomes. It's a collaborative endeavor that bridges the gap between theory and practice, allowing for a holistic exploration of self-control within the real-world context of academic pursuits.

In essence, the research-action paradigm, as we embrace it, embodies a commitment to not only expanding the horizons of scholarly knowledge but also to making a meaningful and positive impact on the lives of those who contribute to the rich tapestry of our study. It's a synergistic journey towards a deeper and more comprehensive understanding of the intricate dynamics that underlie academic success, with the ultimate goal of enhancing the well-being and achievements of the individuals involved.

3. Results analysis

The obtained findings encompass a body of evidence extracted from a deliberately chosen sample of 161 students specializing in commercial engineering. The data collection process encompassed the methodical administration of a survey to individuals who, while remaining anonymous, were registered in specific courses within the commercial engineering program at three distinct higher education institutions situated in Santiago, Chile.

This procedure entailed the meticulous implementation of the Abbreviated Self-Control Scale, a construct developed by Tangney et al. (2004). In tandem, data was also compiled pertaining to academic performance, chiefly in the form of grade reports, which were diligently provided by the participating students. In total, 163 willing participants were actively engaged in this data collection process. Nevertheless, it is imperative to note that two individuals were subsequently excluded from the analytical dataset. Their exclusion was necessitated by either their non-responsiveness or by the presence of unsuitable responses within the administered instrument.

As an initial step, the amassed data was subjected to the Pearson correlation coefficient, which was deemed the suitable statistical approach. However, upon detailed examination, it was discerned that the variable associated with academic performance did not adhere to a normal distribution, rendering the chosen parametric test unsuitable for this specific context. Consequently, the analytic approach transitioned towards the more appropriate non-parametric Spearman correlation test, as executed through the utilization of the SPSS software. It is essential to emphasize that this research, by virtue of its descriptive nature, does not aspire to attain a level of generalizability. Furthermore, the specific analytical framework is fundamentally exploratory, focusing on establishing the existence of a relationship between the self-control level as the independent variable and academic performance as the dependent variable. It is essential to underscore that future research undertakings should be positioned to definitively corroborate this hypothetical causal relationship.

The results of this comprehensive analysis unveiled a statistically significant positive correlation, signified by $r_s = 0.317$, 99% confidence level, linking the aggregated item scores to academic performance. This observed correlation, while manifesting as moderately positive, is slightly lower than the initial expectations elucidated within the research hypothesis. Nonetheless, it establishes a robust foundation for an interpretation that aligns with the core proposition postulated in this research, suggesting that higher levels of self-control are demonstrably linked to superior academic performance.

In this nuanced and intricate academic context, a comprehensive and meticulous examination of the relationship between self-control capacity, as assessed by Tangney et al.'s (2004) Abbreviated Self-Control

Scale, and Academic Performance, as diligently reported by the participating students, reveals a noteworthy deviation in the distribution pattern of the academic performance variable from the typical normal distribution. In light of this non-normative distribution, our analytical approach required recalibration, and the non-parametric Spearman correlation emerged as the most suitable method to explore the interconnectedness of these variables. This analytical recalibration resulted in the identification of a robust, moderate, and statistically significant positive relationship, as indicated by an r_s coefficient of 0.317, denoting the strength of the correlation.

The statistical significance of this relationship was established at a 0.01 significance level, thus establishing a solid 99% confidence level.

Table 1: Correlation between Abbreviated Self-Control and Academic Performance

Correlations				
			Academic Performance	Self-Control
Spearman's Rho	Academic Performance	Correlation coefficient	1,000	,317**
		Sig. (two-tailed)	.	,000
		N	161	161
	Self-Control	Correlation coefficient	,317**	1,000
		Sig. (two-tailed)	,000	.
		N	161	161
**. The correlation is significant at the 0.01 level (two-tailed).				

Source: Author's own work.

In the process of data collection for this research procedure, the Abbreviated Self-Control Scale by Tangney et al. (2004) was systematically administered. This scale is composed of 13 items that are extracted from the Complete Self-Control Scale, which is a comprehensive 36-item instrument designed to assess an individual's distinct capacity to alter or interrupt specific behaviors. It is noteworthy that this instrument has undergone rigorous critical reviews and adaptations for the Spanish language (Duckworth and Kern, 2011; Del Valle et al., 2019), and the insights from these processes were meticulously incorporated into the methodology adopted for this research.

The instrument encompasses a set of attitudinal statements, and each respondent is tasked with evaluating their degree of identification or rejection regarding the object or concept elucidated within the particular item's sentence. To facilitate this evaluation, a five-point Likert scale, as introduced by Likert (2017), was employed. In this context, the number 1 serves to denote an absolute absence of identification by the survey participant with the conveyed attitudinal statement. On the other end of the scale, the number 5 is employed to signify a strong or full identification with the statement. In parallel, a declarative assessment of academic performance was structured, with a specific focus on scholastic achievements, particularly in terms of grades. The assessment hinged upon an attitudinal statement that emphasized academic excellence, which was also evaluated by the respondents through a binary identification or rejection of the statement using a numerical scale, ranging from 1 to 5. This approach mirrors the methodology applied in the Self-Control Scale instrument. As an illustrative example, one of the items in this section articu-

lates: “I have very good grades,” thereby directing attention towards the identification of individuals who acknowledge their exemplary academic performance, particularly with regard to their grades.

The empirical data gathered through the application of the *Abbreviated Self-Control Scale* instrument was meticulously recorded within a data matrix implemented in the SPSS software. Notably, for ease of interpretation and analysis, the attitudinal items were subjected to an inverse recoding process within the table. This deliberate recoding procedure was undertaken to ensure that higher scores on these items correspond to elevated levels of self-control across all dimensions. The adaptation of the *Abbreviated Self-Control Scale* to the Spanish language context involved a selective reduction of two items, a modification in alignment with the recommendations provided by Del Valle et al. (2019). As a result of this adaptation, the dataset under analysis was structured around a total of 11 items, each of which is thoughtfully delineated in the following Table 2, further noting their original sequential designations from the comprehensive 36-item version of the scale:

Table 2: *Abbreviated and Adapted Self-Control Scale in Spanish*

Número Original	Oración constitutiva del ítem
1	Soy bueno o buena para resistir tentaciones
3	Soy haragán, vago o vaga.
4	Digo cosas inapropiadas.
6	Si me gustan o me divierten, hago ciertas cosas, aunque sean malas para mí.
17	Me gustaría tener más autodisciplina.
22	La gente diría que tengo una autodisciplina de hierro.
28	El placer y la diversión a veces evita que haga mi trabajo.
29	Tengo problemas para concentrarme.
30	Soy capaz de trabajar eficientemente con metas de largo plazo.
31	A veces no puedo dejar de hacer ciertas cosas, incluso si sé que están mal.
32	Usualmente actúo sin pensar bien en todas las alternativas.

Source: Tangney et al., 2004; Del Valle et al., 2019.

The findings obtained from the questionnaire, administered using the *Abbreviated Self-Control Scale* adapted for the Spanish-speaking population, were subjected to correlation analysis in relation to self-reported data employed to evaluate academic performance. However, it is worth noting that the observed positive correlation, while present, exhibits a moderate strength. The anticipated magnitude for this study was set at an r_s value exceeding 0.5, yet the actual correlation stands at a Spearman's r_s of 0.317, coupled with a significant correlation level of 0.000 at the 0.01 (99%) threshold. In light of these results, it is evident that the identified relationship, though somewhat below initial expectations, is both discernible and statistically significant.

Interpreting these outcomes within the context of future-oriented self-discipline reveals key insights. Specifically, items 3, 17, and 22 manifest the most substantial correlations, signifying the exertion of effort, perseverance, and the maintenance of specific behaviors. These findings are possibly linked to moral principles or instrumental interests. However, the observed correlation results do not permit a causal analysis. The absence of an established cause for self-control prevents endorsement of the hypothetical relationship between the dependent and independent variables. Consequently, this gap in causation analysis may influence the interpretation of the observed effects on academic ratings. Nonetheless, these findings

facilitate an exploratory interpretation, suggesting the presence of a relationship supported by existing literature. This, in turn, provides exploratory support for the research proposition, implying a connection between self-control attributes and academic performance, as indicated by formative evaluations.

In this context, the significance of this correlation extends to the opportunity it offers for a more profound understanding of the self-control construct. The adapted abbreviated instrument identifies two core factors that constitute self-control: firstly, self-discipline, defined as the capacity to work efficiently and commit to personal objectives, and secondly, impulse control, which pertains to an individual's general ability to manage behaviors and impulses (Del Valle et al., 2019). This supports the theoretical differentiation between psychological processes (Hogarth and Reder, 1986) oriented towards guiding behavior based on external parameters such as moral obligations or expected outcomes, and processes designed to moderate impulses originating from automatic mechanisms linked to instincts or emotions. Nonetheless, it is essential to highlight that when measuring these factors independently in relation to academic performance reports, the correlation values exhibit a significant decrease. This underscores the relative importance of future-oriented self-discipline when considered independently, in comparison to impulse control. While this is an interpretative insight, it does not provide a conclusive confirmation, underlining the notion that self-control's effectiveness is rooted in the integration of both these factors.

It is of paramount importance to emphasize and delve into the inherent limitations associated with the utilization of the Likert scale (Likert, 2017) within the realm of scientific research pertaining to the complexities of human behavior. A particularly salient limitation concerns the intricacies of numerical coding. Owing to its mathematical form, the Likert scale is frequently and inaccurately misconstrued as affording interval data properties, thereby engendering the potential for extensive mathematical manipulations. Nevertheless, it is imperative to recognize that when addressing the magnitudes of the Likert scale within the context of gauging subjective attitudes, they should steadfastly be categorized as ordinal data, as opposed to interval data. This categorical distinction underscores the fact that the Likert scale constitutes an ordered series without a genuinely quantifiable interval that demarcates disparate response options. As a plausible alternative to numerical coding, the adoption of a nominal coding system is a viable approach. In this system, letters (e.g., A-B-C-D-E) are employed in lieu of numerical values (1-2-3-4-5). This strategic shift, while precluding extensive mathematical computations, retains the scale's descriptive attributes. Consequently, the Likert scale, if correctly construed as interval data, would imply an equivalent quantitative distance between each response category. However, a more nuanced understanding reveals that the actual separation between these options is better elucidated as a qualitative disparity, as opposed to a quantitative differential. Thus, this qualitative perspective renders the Likert scale more suitable for nominal or ordinal scaling, as opposed to interval or ratio scaling. It is imperative to underscore that this elucidation should not be misconstrued as implying that the data is unsuitable for rigorous statistical analyses. This assertion is substantiated by the outcomes of the conducted study, which yielded significant and conclusive findings pertaining to the correlation under investigation.

Nonetheless, it is crucial to approach these outcomes with an understanding that they should be interpreted as preliminary and exploratory in nature. These findings can be further investigated and expounded upon utilizing an array of measures of central tendency, encompassing the median, mode, and mean. Furthermore, augmenting the analytical arsenal with additional tools and interpretive frameworks is essential to bolster and elucidate the research findings. The descriptive nature of this research underscores the revelation of a statistically significant relationship, prominently exemplified by a Spearman's correlation coefficient (r_s) of 0.317. This coefficient signifies a noteworthy correlation that attains statistical significance at the 99% confidence level.

In light of these empirical findings, it is both rational and justifiable to maintain the theoretical hypothesis postulating a causal relationship between the two principal variables under scrutiny. Within the confines of this theoretical framework, self-control level assumes the pivotal role of the independent variable, whereas academic performance is assigned the fundamental status of the dependent variable. However, it remains the solemn duty of the academic community to acknowledge and embrace the reality that this theoretical proposition remains unverified and unvalidated. The intricacies and constraints of the statistical instruments employed in this research study preclude the unequivocal establishment of causal relationships. As such, these findings should be duly recognized as foundational and exploratory insights, establishing the groundwork for forthcoming comprehensive investigations into the intricate dynamics that characterize the relationship between self-control and academic performance.

4. Conclusion

This research study has made substantial and profound contributions to the comprehensive characterization of the intricate relationship existing between self-control and academic performance. The study has cast a discerning light on the multifaceted interplay of diverse psychological processes within this context (Evans, 2008), culminating in a richer understanding of the multifaceted nature of this nexus. Notably, it has meticulously elucidated at least two complementary self-control mechanisms: self-control aimed at ameliorating impulsive behaviors and self-control geared towards regulating behaviors through meticulous planning and future-oriented self-discipline. The strategic employment of a meticulously designed self-control questionnaire has effectively and convincingly substantiated the presence of a notable and statistically significant correlation between varying levels of self-control and the academic achievements of individuals. In so doing, this research underscores the invaluable and tangible benefits that self-control imparts to individuals operating within the academic realm.

The research study findings, through rigorous empirical investigation, have unveiled a compelling and positive inclination between the levels of self-control and academic performance. This is vividly illustrated by the statistically robust Spearman's r_s coefficient, a meaningful 0.317, and a correlation of high significance at the 99% confidence level. This robust statistical evidence not only supports but underscores the profound connection existing between self-control and academic performance, emphasizing the advantageous role that self-control plays in the academic milieu.

It is important to underscore that, despite the inherent constraints associated with a descriptive study design, the present research has made highly valuable and significant contributions to advancing our understanding of the intricate and multifaceted psychological processes underpinning the relationship between self-control and academic achievement. By providing a more nuanced and clarified comprehension of this intricate nexus, particularly when evaluated through the lens of academic grading, the study has illuminated and emphasized the pivotal role of self-discipline within the broader framework of self-regulation. This finding highlights a moderately strong and empirically supported connection between this particular facet of self-control and academic performance. Within this scholarly framework, we lend our theoretical endorsement to the proposition that human behavior, within the context of self-control, consists of distinct yet intricately interconnected processes (Hirschman and Holbrook, 1982; Denes-Raj and Epstein, 1994; Loewenstein, 1996; Evans, 2008; Duckworth and Kern, 2011; Evans and Stanovich, 2013). Collectively, these processes converge to enhance performance, especially in the academic domain. Fundamentally, the results arising from this empirical inquiry, in conjunction with the scholarly revelations gleaned from this dedicated research undertaking, emphatically underscore the intricate and multifarious nature characterizing the nexus between self-control and academic performance. These findings, while undeniably informative and enlightening, constitute the foundational building blocks upon which

forthcoming research initiatives can be erected, with the primary objective of delving even further into the complexities of the intricate interplay between self-control and academic achievements.

Consequently, this research not only sets the stage for a continuous scholarly exploration but also paves the way for the augmentation of our understanding of the multifaceted and nuanced relationship that underlies the dynamics of self-control and academic success. The robust foundation laid by these findings serves as a beacon guiding future investigations into the multifarious facets of self-control and its profound implications for educational accomplishments. It propels the scholarly community towards a more comprehensive grasp of the intricate web of factors that influence academic achievement, ultimately enriching the scholarly landscape and driving further progress in this field of study.

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Knowledge management in the construction of peace in territories made up of Groups of Special Constitutional Attention in Colombia



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ABSTRACT

The article focuses on a theoretical reflection on Knowledge Management in the construction of peace from a Human Rights perspective in Constitutional Attention Groups in Colombia. The relationship and dynamic interaction of the Knowledge Management, peace and Constitutional Care Groups categories is proposed through the redefinition of social processes and interactions from the conception of territory. Among the results, it was possible to show that Knowledge Management becomes a powerful process for the recognition of community knowledge, dialogue with different cosmologies and the generation of new knowledge with the possibility of incidence and social transformation.

Keywords: Knowledge Management, peace building territory, human rights, Groups of Special Constitutional Attention.

Gestión del conocimiento en la construcción de paz en territorios conformados por Grupos de Especial Atención Constitucional en Colombia

RESUMEN

El artículo se centra en una reflexión teórica sobre la Gestión del Conocimiento en la construcción de la paz desde una perspectiva de Derechos Humanos en los Grupos de Atención Constitucional en Colombia. Se propone la relación e interacción dinámica de las categorías de Gestión del Conocimiento, paz y Grupos de Atención Constitucional a través de la redefinición de procesos e interacciones sociales desde la concepción del territorio. Entre los resultados, se pudo demostrar que la Gestión del Conocimiento se convierte en un proceso poderoso para el reconocimiento del conocimiento comunitario, el diálogo con diferentes cosmologías y la generación de nuevo conocimiento con la posibilidad de incidencia y transformación social.

Palabras clave: Gestión del Conocimiento, construcción de paz territorial, derechos humanos, Grupos de Atención Constitucional Especial.

Gestão do Conhecimento na construção da paz em territórios compostos por Grupos de Atenção Constitucional Especial na Colômbia

RESUMO

O artigo foca em uma reflexão teórica sobre a Gestão do Conhecimento na construção da paz a partir de uma perspectiva de Direitos Humanos nos Grupos de Atenção Constitucional na Colômbia. Propõe-se a relação e interação dinâmica das categorias de Gestão do Conhecimento, paz e Grupos de Atenção Constitucional através da redefinição de processos e interações sociais a partir da concepção do território. Entre os resultados, foi possível demonstrar que a Gestão do Conhecimento se torna um processo poderoso para o reconhecimento do conhecimento comunitário, o diálogo com diferentes cosmologias e a geração de novo conhecimento com a possibilidade de influência e transformação social.

Palavras-chave: Gestão do Conhecimento, Construção de paz territorial, Direitos Humanos, Grupos de Atenção Constitucional Especial.

1. Introduction

This article offers a reflection on the linking of processes related to knowledge management as a fundamental element for the construction of peace and the defense of Human Rights in Groups of Special Constitutional Protection in the Colombian context. This process requires thinking about the category of territory, its interactions, and dynamics as a starting point.

In knowledge management in differential contexts, the territory is considered (Llanos-Hernández, 2010) as a scenario for interaction, development of activities and exchange of resources by different social groups. In simple terms, the territory is assumed as a portion of terrestrial space claimed by people, groups, organizations or institutions (Paasi, 2003). For the purposes of this article, the territory is assumed as a place, includes land and water, and is characterized by being a generator of meanings, relationships, interactions, links, and roots. This perspective is very close to Bonnemaison's proposal, who defines it as "a place in which the subject and the community take root and affirm their values, thus being able to speak of a process of territoriality." (1981, p. 249 cited in Sánchez, 2015, p. 175) In short, a territory is a delimited space of meanings, defined as context, place and matrix of diverse social relations.

However, Knowledge Management processes transcend administrative and curricular practices within the teaching-learning dynamics possibly given in various places, contexts, and social interactions. Knowledge Management "refers more to the strategic decisions of knowledge and learning, than to its programmatic and curricular contents". (Sandoval, 2014, p. 178). On this basis, the dynamics of peace building assume that it is essential to consider the territories in which knowledge and social interactions emerge. This process is linked to the category of territorialization, which represents much more than a spatial control process or strategy, or in the case of Knowledge Management, a curricular procedure. In a broad way, it is pertinent to affirm that it is through the territory where the cosmologies, the meanings, and the communication processes of the knowledge of each subject, of each community, of each group come to life.

This article is committed to thinking about the social relations that, from living, plural and diverse territories located in the Colombian context, emerge in connection with knowledge and local and own knowledge relevant to the construction of peace and the defense of Human Rights ¹ of the Groups of Special Constitutional Protection (Political Constitution of Colombia, Art. 7, Art. 13). In this sense, the territories

... involve and are implicated with ways of thinking and acting, as well as with worldviews constructed and grounded by culturally and historically contingent beliefs and ways of knowing (Delaney 2005, 12). The territory is a spatial entity that serves as a communication instrument that makes visible and tangible social structures, such as authority, identity, rights, aspirations, prejudices, among many others. (Sanchez, 2015, p. 176)

However, the Political Constitution of Colombia in 1991 assumes cultural diversity in articles 7 and 70 as a matter of promotion and protection. The concept of difference makes a direct allusion to the criterion of singularity as the biological, personal and cultural stakes of human beings should be understood.

Attending to this singularity is the universal value that lies in the desires for social justice with equity that they believe can be achieved with respect for differences and their convergences among human beings, and, consequently, a central indicator in the trends that could lead to essential changes. in the way of governing the destinies of the Social States of Law. (Zambrano 2001, 157)

In coherence with the above, it is proposed to assume the social fabric through processes of understanding and experience of networked relationships, that is, “in the framework of decentralized cooperation for local human development, to contribute to the conception of forms of more horizontal and democratic communication with the ability to strengthen institutions, social organizations and strengthen their bond with citizens”. (White, 2021, p. 57). In this way, a link is established with the dynamics of science and technology associated with the concept of Knowledge Management, which is in turn linked to praxis and production of social meaning (Barkin et al., 2019).

This approach becomes a manager and promoter of new forms of scientific and technological management and contributes to the consolidation of a scientific culture. These processes allow a group to define itself, create identity and distinguish itself from other groups, all through assuming access to education as a Human Right (Varela, 2019, p. 22). From this perspective, the construction of peace and the approach of Human Rights in Groups of Special Constitutional Attention require, from the local and own territories, a differentiation that arises from philosophical, psychological, cognitive and social processes. “Peace is universally qualified as a human right and a necessary requirement to exercise the other rights and duties of individuals and citizens” (Hernández, Luna and Cadena, 2017, p. 156). However, tensions and debates about the territory also emerge, which affect the generation of new knowledge and the construction of peace.

The territory forms a fundamental element for the existence of these societies and, in most cases, is related to a series of struggles and conflicts for its defense. In a broader and stricter sense, post-capitalist societies

1 According to Sánchez-Rodríguez, D., Acosta-Prado, J., and Tafur-Mendoza, A. (2021), las puntuaciones obtuvieron adecuados niveles de fiabilidad. Se concluye que los puntajes de los grupos de investigación en las escalas desarrolladas poseen propiedades psicométricas adecuadas. Por tanto, estos instrumentos pueden ser utilizados en instituciones de educación superior. Palabras clave: educación superior; gestión del conocimiento; trabajo en equipo; validez; fiabilidad; container-title: "Formación universitaria", DOI: "10.4067/S0718-50062021000100157", ISSN: "0718-5006", issue: "1", note: "publisher: Centro de Información Tecnológica", page: "157-168", source: "SciELO", title: "Prácticas de gestión del conocimiento y trabajo en equipo en instituciones de educación superior: escalas de medición", title-short: "Prácticas de gestión del conocimiento y trabajo en equipo en instituciones de educación superior", URL: "http://www.scielo.cl/scielo.php?script=sci_abstract&pid=S0718-50062021000100157&lng=es&nrm=iso&tlng=en", volume: "14", author: [{"family": "Sánchez-Rodríguez", given: "Dayanna"}, {"family": "Acosta-Prado", given: "Julio C."}, {"family": "Tafur-Mendoza", given: "Arnold A."}, {"family": "Sánchez-Rodríguez", given: "Dayanna"}, {"family": "Acosta-Prado", given: "Julio C."}, {"family": "Tafur-Mendoza", given: "Arnold A."}], accessed: {"date-parts": [{"2023, 7, 30}]}, issued: {"date-parts": [{"2021, 2}]}, locator: "8", label: "page"}, schema: "https://github.com/citation-style-language/schema/raw/master/csl-citation.json"} Human Rights are defined as "... inherent to all human beings, without any distinction of race, sex, nationality, ethnic origin, language, religion or any other condition" (p.8).

should have full control over the territory they inhabit; However, until now the State, in complicity with the big capitalists, is the one who makes decisions about it; A clear example are the many concessions granted to private industry. (Barkin et al., 2019, p. 53)

In relation to this, it is assumed that Knowledge Management is the process of identification, capture, development, transfer and application of knowledge to improve the performance and competitiveness of the subjects (Muñoz, L., Toledo, C., Urdaneta, G., Gordon, Y., De La Hoz, et al, 2019) . On the other hand, according to Prieto (2016) the Groups of Special Constitutional Attention are characterized by their state of vulnerability from which protection is demanded by the State, especially towards the strengthening of the principle of equality and non-discrimination. The relationship between these categories is proposed below. On Knowledge Management in peacebuilding contexts

Knowledge Management is defined from various theoretical positions. Authors such as Rodríguez and González (2013) describe it as “a recurring and cyclical process of data and information administration and processing for its dissemination, understanding, application, analysis, evaluation and creation of new knowledge that allows the generation of practical solutions to everyday problems in the educational context” (Cited in Urdaneta, Pitre and Hernández, 2018, p. 253). For his part, Nagles (2007) defines Knowledge Management as an active and permanent source of innovation whose main aim is to eliminate barriers to knowledge integration, transfer to all levels of the organization and the possibility of designing new products and services for Solve context problems. However, Knowledge Management as a process linked to the construction of peace implies recognizing that reality is a social construction and that it must be understood in its own context and characteristic.

Knowledge management encompasses different activities, processes, and areas: from its generation to the formalization of processes through which the members of the organization access it and use it, through its structuring and incorporation into the value chain or the transfer mechanisms from some teams, people or levels to others (Pérez, 2002, 19).

In this sense, Knowledge Management fulfills a strategic role for decision-making and contribution to the solution of social problems, always based on teaching-learning processes and academic management that leads to the generation of new knowledge.

This does not mean that training is only an internal process; rather, it is a complex work, where the interior and the exterior merge irremediably. If a temporary meaning is allowed, formation is the incarnated drama of culture. Expressed in this way, it has relations with school contexts, but it is not reduced to them. (Hincapié-García, Cossio -Sepúlveda, Giraldo-Urrego, 2023, p. 23)

From the perspective of Ortega-Carbajal, Hernández-Mosqueda and Tobón-Tobón, Knowledge Management “leads to the planning, management, feedback and evaluation of actions and decisions to find and apply solutions to a set of problems associated with learning and the way to mediate teaching in the classroom to prepare people capable of facing the demands of today’s society” (2015, p. 172). In the Colombian context, and its corresponding peacebuilding agenda within the framework of the Final Agreement to end the conflict and build a stable and lasting peace (2016) , Congress approved in July 2012 a constitutional reform known as the Legal Framework for Peace , with the objective of facilitating negotiations with the Revolutionary Armed Forces of Colombia, the People’s Army, and building the foundations for a political response to the armed conflict in Colombia. “. . .to lay the foundations for formal negotiations, culminating in the approval of the General Agreement to end the conflict and build a stable and lasting peace on August 26, 2012”. (Hernández, 2019, p. 11).

This reform has been the subject of criticism and questioning, but it seeks to guarantee the rights of victims to truth, justice, and reparation within the framework of transitional justice. The Constitutional Court of Colombia endorsed this reform in August 2013, endorsing the efforts of the government of Juan Manuel Santos to achieve peace with the guerrilla groups.

Despite the criticism that the approval of this Framework has received, it represents an attempt, not exempt from risks and contradictions, to lay the foundations for a political solution to the internal armed conflict that has devastated Colombia for more than fifty years and to the guarantee of the rights of the victims (Hernández, Cerpa, and Molina, 2020, p. 236).

In turn, the Single Space for Concord is a transitory body established in the Peace Treaty signed between the Colombian Government and the Revolutionary Armed Forces of Colombia. This treaty recognizes the importance of Knowledge Management in addressing sociopolitical issues (Art a , 2017) .

From this point of view, the peace agreements as instruments, whether definitive or transitory, must be debated by the whole of society, and the university must have a primary participation as a space for academic reflection that leads to a true transformation of the community from the conscious and respectful debate of the various ideological positions (Tarazona, 2017, p. 141)

The relevance of Knowledge Management for the process of building peace and defending Human Rights is reaffirmed in the need to address socio-political issues in an articulated manner that allow the academy and the territories to think about reconciliation, forgiveness and memory as supports of a society that has overcome all its forms of armed conflict. (Riano, 2009)

For this purpose, the theories and methodologies of the social sciences become a fundamental point of reference so that society can be erected from the restorative action of memory, and, above all, we recognize that all Colombians can be human actors. carved in accordance with peace to cement a society in accordance with the demands of the 21st century in terms of social welfare and construction of the truth. (Tarazona, 2017, 141).

In a complementary way to the above, Knowledge Management includes the relationship of a variety of resources of social organizations, territories and the communities themselves. "It is a combination of experiences, values, knowledge as a result of the different interactions developed through the operational history of the organization, on which the organization develops each of its actions for participation and incidence in the public sphere" (García, 2017, p. 8). The Colombian case provides a model that can be applied in the management of other sociopolitical problems in Latin America and the world. However, the processes of social appropriation of knowledge, the dissemination of methodologies and the interrelation of the various actors and contexts are relevant.

Transversally to this process, appropriation mechanisms and cultural and historical schemes intervene as determinants of discourse production. Therefore, this process of construction of representations is, on the one hand, political, due to the particular interests that intervene and that they have in pressure groups (political, religious, government institutions, armed groups, criminals, etc.) their major transformation agent; on the other hand, it is a cultural process, because, firstly, it sees the conflict as a social fact that is semiotically constructed and, secondly, because it exposes discourses and takes them to the scene of struggles for the significance and meaning of an event. or subject (Penagos 2013, p. 159)

In this way, the information generated by the Colombian Government and its corresponding Knowledge Management actions is considered a crucial system in the non-aggression treaty agreed with the FARC-EP.

All this, given the relevance of generating new ways of interpreting the national reality, alternative methods of justice and emerging possibilities to educate the population now immersed in a context of peace building. This system has influenced the development of agreements and conversations in the political, legal, economic and media fields.

Building peace from a human rights perspective

The construction of peace requires a proposal for interaction and consolidation of social and cultural practices consistent with the transformation of previously violent environments, the possibility of social change and ways of assuming life. Multiple variables of social life and various ways of interpreting the human condition intervene in this process (Arendt, 1958).

The culture of peace is, therefore, a culture that includes lifestyles, belief patterns, values, and behaviors that favor the construction of peace and accompany institutional changes that promote well-being, equality, and the equitable administration of resources. , security for individuals, families, the identity of groups or nations, without the need to resort to violence (Fisas V., 2006, cited in Cabello, et al, 2016, p. 25)

This is relevant to the extent that armed conflicts have devastating consequences in terms of civilian casualties, massive displacements, and human rights violations. To understand these conflicts, the conflict theory is used, which highlights the existence of disputes between groups and the struggle for interests and values. "Conflict is a natural phenomenon in every society, that is, it is a social fact inherent to life in society. Likewise, disputes are a historical constant, since they have appeared in all eras and societies throughout time" (Silva, 2008, p. 29). The characteristics and causes of armed conflicts in Colombia are complex and difficult to categorize in advance, but it is essential to analyze the difficulties and inequalities faced by ordinary citizens (Dahrendorf, 1962; García, 2008; Valcárcel, 2007).

As a counterproposal to the various types of conflict, it is crucial to guarantee the right to education of all communities, considering their cultural and social characteristics. In some cases, this implies the implementation of ethnoeducation to preserve the particularities and customs of ethnic communities. (Grace-Rincon, 2015). Given this scenario, the construction of peace is proposed as a challenge that requires the full inclusion and consideration of these communities in the educational system.

The peace-building approach opens the way to the possibility of generating territorial planning processes, in accordance with the existing capacities and scope to generate territorial and community protection scenarios, in the face of possible risks in terms of violation and violation of Human Rights, which they can experience collective or individual subjects. In the Colombian context, the construction of peace as an approach for the integral planning of the territory is strengthened by the Peace Agreement and the need to develop public and territorial policy processes based on truth, justice and guarantees of non-repetition and reparation for the victims. of the armed conflict. (Aldana, 2021, pp. 131-132)

However, UNESCO in a document entitled *The Culture of Peace and UNESCO Action in the Member States* (1998) is committed to building a culture of peace and sustainable development, prioritizing education in Human Rights, skills for peace, good governance, conflict prevention and peace building. Peace is sought through dialogue, negotiation and the rejection of violence. Peace is sought through dialogue, negotiation and the explicit rejection of violence.

...another important term in the process is the culture of peace, which according to UNESCO corresponds to a set of values, attitudes and behaviors of the human being in society, which simultaneously create and cause

interrelationships and social interactions based on the principles of freedom, justice, democracy, tolerance and solidarity; who reject their causes; solving their problems through dialogue and negotiation; while guaranteeing all people the exercise of all rights, providing the possibility of fully participating in the endogenous development of their societies (Arteaga, I., Hernández, J. and Chala, M., 2017, p. 157).

The promotion and construction of peace are achieved through practices that promote it, specifically through actions that claim respect for human dignity among all people and the various groups that make up society. In these practices, the person is the protagonist of their own history, a political subject (Habermas, 1999) and a builder of change (Freire, 1970). For its part, education (Kaplún, 1978) is assumed as the central, transversal and binding process of the Knowledge Management processes in correspondence with a construction of peace that assumes the Groups of Special Constitutional Attention as protagonists. "Social Education must be transversal in all budgets and policies that touch the personal and the community from the socio-pedagogical". (Del Pozo, Jiménez and Barrientos, 2018, p. 49). In coherence with the above, it is the social actors who become the protagonists of the process. The promotion of peace and respect for human dignity goes through educational processes that emerge from their own histories, local processes, and the possibility of social change. (Navarro, 2016).

Education for peace is constituted as a strategy, a challenge and an educational process based on the recognition, respect, and experience of human rights, as well as respect for the dignity of people, aimed at building culture of peace in the Latin American region. We assume it as an education that affects from different social spaces and in these, in the structures, in the different ways of thinking and assuming social realities. (Cerdas-Agüero, 2015, p. 135).

A process of rethinking the epistemologies that underpin the teaching-learning processes that generate new knowledge within the framework of the construction of a culture of peace and defense of Human Rights is necessary. Educating for peace involves, articulates and empowers the need for an epistemological change. (Fernández-Herrería and López-López, 2014).

About Groups of Special Constitutional Protection

The construction of peace represents a challenge for the States, since a policy must be generated and implemented that transforms the context of the population that has been the victim of war. (Bechara-Llanos, 2016). For the context of Colombia, defined through a plural and multicultural social fabric, it is necessary to guarantee the rights of the population due to specific circumstances or situations, seeking that all citizens are treated in equal conditions. (Daza-Rojas, 2018; Forero-Salcedo, 2019; Vanegas, 2010; Lyons, 2011; Peláez-Grisales, 2015). Now, the Groups of Subjects of Special Protection have been related from the traditional approach in international law to minorities (Bernal and Padilla, 2017), which can be defined as follows:

Group numerically inferior to the rest of the population of a State, in a non-dominant situation, whose members, subjects of a State, possess from the ethnic, religious, or linguistic point of view a characteristic that differs from those of the rest of the population and manifests even implicitly a feeling of solidarity to preserve their culture, their traditions, their religion or their language. (UN, 1965, p. 568)

This equality is considered a Fundamental Right in the Political Constitution of Colombia. However, it is not only a formal equality, but a material one. Given this, the Constitutional Court has indicated that the State must carry out positive discrimination against those who, for historical reasons or due to conditions

that put them in unfavorable positions, deserve greater protection. (Bernal-Camargo, and Padilla-Muñoz, 2018 Peláez, 2015). In this context, it is relevant to analyze processes to guarantee rights in the framework of peace building, knowledge management and the relationship with multiculturalism:

In the implementation of the ethno -education policy, criteria of interculturality, multiculturalism and diversity must be addressed to achieve recognition, acceptance and respect for different cultures; what implies the acceptance of the diversity of the Colombian nation; In the same sense, the ethno -education policy must respond to the needs, characteristics, location and intentions of the ethnic groups in order to achieve the development of the cultural identity of each of them under intercultural and multicultural criteria. (Grace, 2015, p. 153).

In the specific case of the conception of minority, the following features must be taken into account: “1) Numerical inferiority; 2) non-dominant position; 3) The nationality requirement; 4) The limitation to ethnicity, religion or language; 5) The conscience or collective will; 6) The granting of the category of minority” (Carmona, 2011 cited by Bernal-Camargo, and Padilla-Muñoz, 2018. p. 49). In this vein, the Special Protection Groups referred to in this article are defined as follows:

Social groups that require special protection to make the exercise of their fundamental rights effective. It is about the consideration of age, biological, economic, or social situation that place them in a situation of manifest weakness, discrimination, or marginalization and that require the special attention of the authorities. (Cepeda and Montealegre cited in Padilla, 2015)

In accordance with constitutional jurisprudence, there are Special Protection Groups that deserve greater attention from the State to materialize the right to material equality, which has led to a differential approach being applied nationally and internationally in order to protect the population that is exposed to greater vulnerability (Daza Rojas, 2018).

Conclusion

In contexts of peace-building processes articulated with Knowledge Management dynamics in Groups of Special Constitutional Protection, the use of participatory methodologies in social ordering systems favors the advancement and improvement of educational dynamics by coordinating information and meetings of the different social and institutional interlocutors. Likewise, the importance of closing the digital divide and improving access to technology in contexts with low resources or those affected by armed conflicts, through computer literacy, is recognized. (Hernández et al., 2017; Panchi, 2022; Santaella, 2021; Montiel et al., 2018).

Regarding the promotion of a culture of peace in schools, the importance of fostering specific social skills, such as effective communication, negotiation and mediation, is highlighted to create an environment of peaceful coexistence (Funes, 2000) . Educators play a crucial role in this process, acting as knowledge managers, guides, and models in the school climate (Gutiérrez-Torres et al., 2019).

The culture of peace and solidarity is built from the school, which must be converted into a space with a diversity of flexible participation and communication channels to form responsible and democratic citizenship, helping to consolidate a culture of peace, which implies justice and solidarity. The participation of civil society is the foundation of the construction of a culture of peace, constituting a guarantee of transparency of the process (Hernández, Luna and , Cadena, 2017, p. 162).

This article highlights the importance of Knowledge Management in peacebuilding from a Human Rights perspective for groups with particular constitutional concerns and vulnerabilities. The reviewed literature shows that the territory is a meeting and planning place for the public and political citizenship, in such a way that the planning of social practices, as well as the use of methodologies and local knowledge can become effective tools in the construction of peace. In addition, the importance of developing own and local knowledge is highlighted, as well as innovation in peace management in contexts of vulnerability. Territoriality is also shown as a fundamental element in terms of spatial and social connections. (Navarro, 2017), and in politics, money and society.

Education for peace consists of analyzing the world in which we live, passing it through reflective criticism emanating from the values of a pacifist worldview and launching individuals into a transformative commitment, liberating people insofar as, moved by this analysis critical, they are trapped by the force of the truth and conscientiously forced to cooperate in the fight for the emancipation of all human beings and of themselves. (Rojas, 2018, p. 3)

In general, the need for a culture of peace that promotes the dissemination of information and verifiable memories in relation to regional, cultural, and social contexts is emphasized. It is suggested that Knowledge Management be designed from the endogenous point of view, always in connection with the digital (Bocanegra, 2016; Mariñaz, et., al, 2022), globalization, the possibility of social change and the reduction of conditions of vulnerability and inequality.

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Tragedy, Logic, and Action in Hegel's Outlines of the Philosophy of Right



Zeus, who sets mortals on the path to understanding, Zeus, who has established as a fixed law that "wisdom comes by suffering,"
Aeschylus, *Agamemnon*, 176.

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ABSTRACT

The text examines the interconnection between tragedy, logic, and action in Hegel's works, notably in "Outlines of the Philosophy of Right." Hegel correlates tragedy with negativity and reconciliation, influenced by ancient tragedy and Christian consciousness. Tragedy serves as a means for self-knowledge, where negativity and death are pivotal in unveiling the spirit's truth. Hegel's philosophy is enriched by the works of Aeschylus and Sophocles, depicting the ethical crisis in Athens and the ensuing reconciliation of opposing ethical forces. Hegel identifies tragic elements in Christianity, a religion that perceives death and contradiction not as endpoints but transitional phases in reality. Christian religious consciousness, marked by finitude and sin, seeks reconciliation between the mutable and immutable. Hegel's practical philosophy is grounded in a distinctive ontological logic, with dialectics as a core element, not a function of subjective thinking but the animating essence of matter. The focus of the article is Hegel's stance on the manifestation and reconciliation of freedom, assessing the relationship between individual will and universal practical law. He critiques the limited legal perspective of individual freedom, advocating for a deeper, ethical interpretation of freedom. This view is distanced from common sense and consensus and rooted in speculative understanding developed through scientific and philosophical methods.

Keywords: Hegel, Tragedy, Practical Philosophy, Universal Practical Law, Self-knowledge.

Tragedia, lógica y acción en los esbozos de la filosofía del derecho de Hegel

RESUMEN

El texto analiza la interconexión entre tragedia, lógica y acción en la obra de Hegel, especialmente en „Outlines of the Philosophy of Right“. Hegel asocia la tragedia con la negatividad y la reconciliación, una conexión influenciada por la tragedia antigua y la conciencia cristiana. La tragedia se presenta como un medio para el autoconocimiento, donde la negatividad y la muerte son esenciales para revelar la verdad

del espíritu. La filosofía hegeliana se enriquece con las obras de Aeschylus y Sophocles, ilustrando la crisis ética en Atenas y la subsiguiente reconciliación de fuerzas éticas contrapuestas. Hegel identifica elementos trágicos en el cristianismo, una religión que ve la muerte y la contradicción no como finales, sino como fases transitorias en la realidad. La conciencia religiosa cristiana, marcada por la finitud y el pecado, aspira a una reconciliación entre lo mutable e inmutable. La filosofía práctica de Hegel se fundamenta en una lógica ontológica distintiva, con la dialéctica como elemento central, no como una función del pensamiento subjetivo, sino como la esencia animadora de la materia. El centro del artículo es la postura de Hegel en la que se adentra en la manifestación y reconciliación de la libertad, evaluando la relación entre la voluntad individual y la ley práctica universal. Critica la perspectiva legal limitada de la libertad individual, proponiendo una interpretación más profunda y ética de la libertad, alejada del sentido común y el consenso, y arraigada en un entendimiento especulativo desarrollado a través de métodos científicos y filosóficos.

Palabras clave: Hegel, Tragedy, Filosofía Práctica, Ley práctica universal, Autoconocimiento.

Tragédia, lógica e ação nos esboços da filosofia do direito de Hegel

RESUMO

O texto analisa a interconexão entre tragédia, lógica e ação na obra de Hegel, especialmente em “Linhas Fundamentais da Filosofia do Direito”. Hegel associa a tragédia à negatividade e reconciliação, uma conexão influenciada pela tragédia antiga e a consciência cristã. A tragédia é apresentada como um meio para o autoconhecimento, onde a negatividade e a morte são essenciais para revelar a verdade do espírito. A filosofia hegeliana se enriquece com as obras de Ésquilo e Sófocles, ilustrando a crise ética em Atenas e a subsequente reconciliação de forças éticas opostas. Hegel identifica elementos trágicos no cristianismo, uma religião que vê a morte e a contradição não como finais, mas como fases transitórias na realidade. A consciência religiosa cristã, marcada pela finitude e pelo pecado, aspira a uma reconciliação entre o mutável e o imutável. A filosofia prática de Hegel fundamenta-se em uma lógica ontológica distintiva, com a dialéctica como elemento central, não como uma função do pensamento subjetivo, mas como a essência animadora da matéria. O foco do artigo é a postura de Hegel na qual ele explora a manifestação e reconciliação da liberdade, avaliando a relação entre a vontade individual e a lei prática universal. Ele critica a visão legal limitada da liberdade individual, propondo uma interpretação mais profunda e ética da liberdade, distante do senso comum e do consenso, e enraizada em um entendimento especulativo desenvolvido através de métodos científicos e filosóficos.

Palavras-chave: Hegel, Tragédia, Filosofia Prática, Lei prática universal, Autoconhecimento.

Problem Overview

This text is part of a broader research project on the question of negativity and its role in the philosophical understanding of action in Hegel (1770-1831)'s thought. The main question on the subject is: What is the importance of tragedy for the understanding of human action? Or to say it otherwise: In what sense is it possible a tragic comprehension of action? This topic also implies a relation between dialectics and the becoming self-aware proper to objective spirit. These questions, although related, ought to be considered independently. In our presentation we will investigate the question through tragedy with the aim of exami-

ning its features as a self-conscious process of a dialectic character. For this, we will first set out some elements that will allow us to clarify the meaning of tragedy for Hegel, for which we will refer to the influence of ancient tragedy and Christian religious consciousness in the author; second, we will aim to show how this conception of the tragic parallels the logical moments in the occurrence of freedom. Finally, in a third moment, we will examine how in Abstract Right, Morality, and Civil Society there is a tragic development in play. The basic text for our purpose will be the *Outlines of the Philosophy of Right* (1821) and we will also rely upon the *Phenomenology of Spirit* (1807) and the *Encyclopedia of the Philosophical Sciences*

Negativity, Tragedy and Reconciliation: between the Greeks and Christianity

In all the works where Hegel approaches the problems of practical philosophy, he refers to tragedy. It is, nevertheless, in the *Phenomenology of Spirit* where the philosopher depicts it as a moment in the complete path towards Absolute Knowledge, that is, as a figure in the experience of Spirit.¹ To the philosopher contradiction and death are necessary steps in the elevation and the becoming aware of absolute spirit. In this way, death is a radical negative moment, an extreme limit from where consciousness lifts itself to its truth. Tragedy embodies an action through which one consciously traverses death and, keeping, retaining and assuming such negativity, one generates an elevated form of self-aware knowledge. In this way, the anxious situation in which the hero finds himself is a condition of a deep understanding of him as an individual in the universal realm of ethical life. This implies that a comprehension of tragedy allows us to come near the core of dialectics as it is suffered by the spirit. Or as the author says:

“Death, if that is what we want to call this non-actuality, is of all things the most dreadful, and to hold fast what is dead requires the greatest strength. [...] But the life of Spirit is not the life that shrinks from death and keeps itself untouched by devastation, but rather the life that endures it and maintains itself in it. It wins its truth only when, in utter dismemberment, it finds itself. It is this power, not as something positive, which closes its eyes to the negative, as when we say of something that it is nothing or is false, and then, having done with it, turn away and pass on to something else; on the contrary, Spirit is this power only by looking the negative in the face, and tarrying with it. This tarrying with the negative is the magical power that converts it into being.” (Hegel, 1807/1977, 19)

Insofar as negativity appears as a moment in the life of spirit which aims towards a complete process of reconciliation, it is worth examining the main aspects of the author's tragic conception, so as to clarify the meaning of his understanding of action.

Although it is not possible in this contribution to make a complete presentation of the number of influences that define the Hegelian interpretation of tragedy, it is nevertheless necessary to point out that Hegel is deeply influenced by the work of Aeschylus and Sophocles. For Hegel ancient tragedy puts in evidence the crisis of ethical life in Athens, since the hero is forced to take on the defense of a justified ethical force in opposition to others. This opposition unleashes a tragic conflict in which the citizen discovers that he has violated the universal law, causing the appearance of guilt. In spite of this negative situation, tragic reversal does not imply the hero's “fall”, but, on the contrary, his elevation, that is, the reconciliation and cleansing of himself in accordance with universal ethicality. In this sense, for the author, ancient tragedy conveys beauty and truth as it reconciles warring ethical forces. Tragic conflict appears as a negative experience that reconciles different forces of ethical life, that is, it renews the universality of ethical substance (Hegel, 1821/2008, §140, fn.). Remembering Aristoteles in this regard, we could say that tragedy makes the spectators go through catharsis and terror to shake them in a spectacle that enables them to recognize

¹ In the *Phenomenology of Spirit* (1807) the Sophoclean tragedy is one of the moments in the development of the natural consciousness, particularly in the moment of Spirit (Hegel, 1807/1977, 431).

themselves and unite the ethical forces of their political community (Aristoteles, 1974). In the *Phenomenology*, Antigone's suffering caused by her defense of the shadows' law, of tradition, and of the Penates makes possible Spirit's uplift and reconciliation, all this within the play's complete movement (Hegel 1807/1977).

On the other hand, Hegel saw in Christianity and Romanticism devotees of the endless character of freedom, which constitutes the trait that differentiates the modern world against the ancient (Hegel, 1821/2008, §124, Obs.). In the modern world, in which moral subjectivity has developed itself in fullness, the individual is a free subject that acts therefore to assert its particularity (Hegel, 1807/1977, §124). In this way, in the Christian Lutheran world we find the "moralist's drama" of someone that tries to attain his subjective ends in the objective world, and in so trying discovers the contradiction between duty and the results of his action, not the tragedy of the Athenian hero relentlessly determined by a law imposed upon him by a superior divine force to which he cannot resist.

One can also find a tragic element within Christianity, since this religion assumes death, contradiction, as a necessary but not definitive moment of reality. In the Hegelian understanding of religious self-consciousness in the *Phenomenology*, we find that it is presented as an unhappy consciousness (*unglückliche*), suffering and hapless, since it sees itself as splintered (*in sich entzweite*), inasmuch as it considers its truth the divine, eternal and immutable life, but at the same time appears to itself as contingent, sinful, and marked by the blemish of finitude. That is why Christian religious consciousness assumes infinitude, that is, an eternal and free being as another, as an absolute master. It is self-conscious in its knowledge of the eternal other, before which it conceives itself as mortal, subservient, limited and sinful (Hegel, 1807/1977, [122]). In this way, this religious self-consciousness implies an immediate reconciliation between a mutable and an immutable consciousness, which appears through a movement in which the singular consciousness offers its master its deeds, its belongings, the principle of its will, and the enjoyment of pleasure (characteristics of the medieval religious experience). This surrender retains in turn the retribution from the immutable consciousness which allows the singular enjoyment, what makes possible a bond or reconciliation with what is immutable.

By doing so, Christian religious consciousness achieves a reconciliation, that is, an encounter that links the two moments of religious self-consciousness, mutable and immutable, but such a reconciliation is immediate, abstract, as it is not projected as an action and as its own and self-conscious knowledge in the world. This is why we are dealing here with a partial reconciliation that is projected as a path, a pilgrimage towards a "beyond" in a promised reconciliation (Hegel, 1807/1977, [161]). In the dialectics of the unhappy consciousness in the *Phenomenology* this moment of universal reconciliation gives way to Reason. In this regard, Greek culture and Christianity share a vision of death, not as a material and biological passing away, but as a necessary path in and through which humans carry their universal being to fulfillment, whereby individuality and universality are reconciled. (Hegel, 1807/1977, [91]). The life of spirit has a universal character that comes to be and has therefore meaning in a communal context, open to the horizon of history, which points as its goal to the complete reconciliation of individual, community, nature and godhead in a rational order. As it was said before, the challenge of the Hegelian mode of philosophical enquiry is to think through contradiction, so as to assume it in a qualitative manner, without trying to evade or dissolve it; to take the opposites and develop them until contradictions arise; to think the "identity between identity and non-identity" as it was formulated in his writings of the Jena period (Hyppolite, 1974, 93).

From this dialectical perspective the contemporary ethical, political and juridical philosophies are illuminated in a particular manner, since it allows us to understand the overcoming of violence in a historical,

political, and communal environment as entailing practices of reconciliation. Thereby the Hegelian interpretation of tragedy, although heir of the Athenian classics, has a stronger Christian character, insofar as it accepts as rational the experience of forgiveness and reconciliation arising from the subjective and moral experience as Félix Duque and Ramón Valls Plana (Duque, 1998, 471; Valls Plana) pointed out. Thus, Christian tragedy assumes negativity as an inherent stage in the life of the community of worshipers, that is oriented towards a reconciliation yet to be done, projected as the ultimate aim to be achieved in history. Therefore, tragedy appears as a “moment” of action, that is, as a necessary negative phase, subject to the dialectical needs of reconciliation. In this way, Hegelian philosophy has a negative character, but only insofar as that contradiction is paired to reconciliation; we are in the presence of a way of thinking of the universal mediated by negation.

Dialectical logic and its scientific justification

The exploration of the relation between action and tragedy implies a need to substantiate the thoroughness or philosophical need which involves the contents of thought and the dialectical discourse that understands it, that is, the clear display of its scientific foundation and its need. All the more reason, when the link between contradiction and reconciliation in action is not evident, or, to say it in more logical terms, it is not immediately clear that the connection between identity and contradiction is rational.

As a modern philosopher Hegel conceives human praxis as the world mover, this activity is expression of the universal will, which will be achieved historically; in it humanity understands and knows itself in its universality; exactly the content encompassed by the concept of Spirit (Hegel, 2008, §377). As stated before, human communities become aware of themselves through social and political institutions, traditions, customs, juridical systems and traditional ancestral practices. This communal context, called by Hegel Ethical life (*Sittlichkeit*), is the spiritual fertile ground of each people, since here take place practices governed by reason as an effective principle, that direct the factual life of its members. Therefore, Ethical life is at the root of the individual consciousness, and, at the same time, humans are the individual expression through which a human group acknowledges itself; it is a spiritual knowledge, self-aware. As Ludwig Siep says: “For Hegel the individual is not a clean slate that is present to and confronts a community, it is rather the particularization of a communal being, a variation of the British scholar, the German artisan or the Polish worker” (Siep, 1989, 188).

Hegel stresses this in one of the most famous and beautiful paragraphs of the *Phenomenology of Spirit* (1807) as he characterizes it as an activity or practical self-conscious knowledge of a negative character, whereby the different subjects know themselves in others: “They recognize themselves as mutually recognizing one another”. (Hegel, 1807/1977, 112).

Material and historical manifestations are concrete expressions of the concept of freedom, as it is actualized and made tangible, becoming real. Every one of its manifestations is therefore ideal, that is, realizes, although in a partial and fragile way, freedom’s concept in itself. We are dealing here with the free Will as an active principle that grounds the individual’s moral life, as well as the social struggle and political life of the peoples in the overarching horizon of history; this means that Hegelian practical philosophy rests on assumptions of a peculiar ontological logic, of a first philosophy (Hegel, 2008, §§1-5; Valls-Plana, 2008, fn. 384, 272).

As was pointed out by the author of the Prologue in the *Outlines of the Philosophy of Right* (1821), every work, insofar as it is a scientific understanding of freedom’s concept and its realization, rests on a “logical

spirit” (Hegel, 1821/2008, 4). Hegelian Logic is a “first philosophy or ontology” that presents the necessary path of coming to be intrinsic to reality, insofar as the concept gives way to its negation, its death, where a new movement begins opposite to the first one, which in turn is itself negated. It is a negative and permanent movement through different moments of a strict development. The philosophical method that exhibits this real movement is called by Hegel *Dialectics*. Or in the author own words:

“The concept’s moving principle, which alike engenders and dissolves the particularizations of the universal, I call ‘dialectic’, [...] The higher dialectic of the concept consists not simply in producing the determination as a contrary and a restriction, but in producing and seizing upon the positive content and outcome of the determination, because it is this which makes it solely a development and an immanent progress. Moreover, this dialectic is not an activity of subjective thinking applied to some matter externally, but is rather the matter’s very soul putting forth its branches and fruit organically” (Hegel 1821/2008, §31).

This means that Hegel’s practical philosophy does not proceed from common sense, or an immediate insight, nor a sentiment; neither is it based upon a consensus or the tyranny of the majority. It understands itself speculatively through a strict method, scientific and philosophical, which is coherent with the dialectical content that it apprehends (Hegel, 1821/2010, 12-13). Therefore, the Hegelian philosopher does not foresee the future, or discovers or preaches truths, but comprehends them speculatively. Accordingly, the philosopher fulfills an important social and political function: understanding the ethical life of a people, enlightening and revealing its dialectical rationality, whose connections are veiled to the common sense (Hegel, 1821/2010, 12-13).

With this in mind and to finish our presentation, we will go through the moments of Abstract Right, Morality and Civil Society, in order to point out how tragedy appears in them as moments of ethical action in Hegel.

Abstract Right, Morality and Civil Society: tragedy, logic and action

As we have already said, the purpose of the book *Outlines of the Philosophy of Right* (1821) is the scientific or dialectical comprehension of freedom’s realization, that is, as the reconciliation between individual will and universal practical law. This relation is built or achieved in three stages: Abstract Right, Morality and Ethical life. In each of them, in its own way, the three moments of the concept become apparent: the singular (S), the particular (P), and the universal (U).

Hegel achieves in the Abstract Right his speculative comprehension of modern natural law philosophy, which starts from freedom and individual equality as fundamental normative principles of human sociability and political life, developed further in the theory of the state of nature, of the law and natural right, of the social contract and the State.²

For the German author, the simple assertion of freedom is purely negative, that is, it is the practical position according to which, human beings are only as long as they negate the other (Hegel, 1821/2010b, §81). It is the assertion of freedom as indetermination (*Unbestimmtheit*), as the rejection of every given

² The classical and more influential authors in the modern political tradition of natural law are Hobbes, Locke, and Rousseau, who share some categories and assumptions, although they come out with different theories; Hegel criticizes different aspects of their thought, among them the vision of the human individual as the basis for political association, what Hegel calls “atomism”, he also criticizes the assumption of a state of nature prior and independent of ethnicity and historical context, a criticism made from an Aristotelian point of view. He also criticizes the logical weakness present in the assumption of a universal social contract out of an assemblage of external individualities to each other, among many other weaknesses. Nevertheless, Hegel as a dialectical philosopher takes the thought of natural law authors in different parts of his works, to closely examine how in their philosophy there is a partial philosophical understanding of freedom.

material or intellectual content. It has to do with the simple and immediate affirmation of the “I am I” that grants itself certainty through negation (Hegel, 1821/2008, §80). This action leads necessarily to the imposition of the singular will over material objects, things. The legal person expresses herself in material things that become her property, so that it is necessary to establish the legal conditions that regulate legitimate property and its exchange, making thus indispensable the constitution of a theory of contracts, of the law and even of the State. This immediate conception of freedom conduces to a restricted legal vision of individual freedom, that gives citizens security in their legitimate and stable ownership of their lives and property. (Hobbes, 1999, 113-129). In this vision, the law appears as a universal principle external to the singular individual, that regulates the relations among legal persons, so as to prevent violence against alien life or property.

Let's draw our attention to the fact that in *Absolute Right* individual freedom is opposed to the law based and legitimated by the contract (universal will). Moreover, insofar as the individual and universality are opposed, the former seeks to affirm its freedom by using the law in its favor, that is to perpetrate a wrong (Unrecht). With this strategy the individual pursues the affirmation of her particular interest above the law, aspiring to make her vision a universal principle. This fallacy becomes a punishable action, one that universality sanctions with a penalty. Here we see how from the immediate and purely desiring affirmation of individuality the crime is unleashed. By doing so and in the face of law's negation, the penalty becomes the negation of the crime, reaching the reconciliation of the individual and the universal law. It is a dialectical process over which reconciliation is reached through negation. The end result of this process is that the individual does not act before an alien law, but incorporates this universal principle within. The wrong or “the unlawful action” and the related penalty, is a negative path whereby reconciliation appears. In this fashion, negativity is a way, as Aeschylus points out in his *Oresteia*, for discovering the fault and for the practical education in freedom. Out of the fault and the conscious suffering endured in the penalty, comes the self-conscious and spiritual learning.

As a result of this negative process, the second moment in the book is *Morality*, in which universal law does not appear anymore as opposite or alien to the individual, but arises as coming from herself, that is, universal law becomes a heritage, a moral wealth from within. Therefore, in *Morality* we do not find a legal person that defends an external material possession, subject to a contractual exchange, but a moral subject that declares her wishes, values and ideals in her effective actions in the world. The moral sage, whose paradigm is Kant, understands the universal law as an inner principle, formal and intellectual, that it takes upon herself to introduce in the world.

Morality develops another perspective of *Right* that shifts the problem of freedom from the material possessions towards subjective and particular interests and wishes, that are now considered “the soul of deeds” (Hegel, 2008, §121). It is the introjection of *Universality* that appears linked to the subject's inner principles, what motivates her free action upon the world. *Morality* is, therefore, defined by the author as the *Right* of the subjective will (Hegel, 1821, 2008, §107).

Nonetheless, for the moral subject her inner and universal knowledge of the law is a certainty that cannot be realized in her deeds, cannot become truth (*Wahrheit*), as long as her individual act is always contingent and therefore limited vis-à-vis a moral law that she strives to make reality. Moral Law is a universal and intimate knowledge as a requirement, an imperative never to be satisfied in the world, as the subject's particularity confronts her instinct's finitude and contingency. Thus, the moral subject is contradictory, tragic, as the paradox of a contingent desire and a universal duty inhabits her.

Hegel states clearly the finitude and limitation, the drama, of this freedom's figure; although consciousness strives to actualize the moral law, that cannot be done in the world. Indeed, no matter how essential and pure consciousness is, it remains in an "ought-to-be" without content, it cannot do justice to its subjective passions and interests that actually move the acting subject; in this way action's strict foundation becomes mere rhetoric. In Hegel's own words:

However essential it is to give prominence to the pure unconditioned self-determination of the will as the root of duty, and to the way in which knowledge of the will, thanks to Kant's philosophy, has won its firm foundation and starting-point for the first time through the thought of its infinite autonomy, still to adhere to the merely moral position, without making the transition to the concept of ethical life, is to reduce this gain to an empty formalism, and the science of morals to the preaching of duty for duty's sake (Hegel, 1821/2008, p.135).

On the other hand, the moral subject's tragedy appears in the confrontation with the changing and contingent conditions, in which the deed must be done. Hegelian philosophy points out that action carries within itself fragility as its fundamental element. Praxis always entails uncertainty, whose origins are the material conditions, concrete and limited of the agent, so as to know what he can and must do, the required means and those at his disposition to reach his ends, the effectiveness of the acts he performs amidst a context that he cannot fully control or foresee and the immediate or future consequences coming out of his acts, and of which, he will always be responsible.

When the author explains the contradictions of moral consciousness he brings up Oedipus. Acting is necessary, but when one acts, one needs to assume that the true law of action is variation, which is open to paradox, contradiction or reconciliation. As Hegel points out: "The development in external existence of the contradiction involved in the necessity of the finite is just the conversion of necessity into contingency and vice versa. From this point of view, therefore, acting means submitting oneself to this law" (Hegel, 1821, 2008, p.118).

This drama leads moral consciousness to radicalize its contradiction by means of passivity, hypocrisy, whose dialectics Hegel presents in his *Phenomenology* (Hegel, 1977, pp.135-140). Therefore, action as an expression of subjective freedom and as a principle thereof, implies elements of inadequacy that will be overcome in the Ethical life (Hegel, 1977, pp.141-142).

The occurrence of Ethical life at the end of the process comes to reconcile the moments of Abstract Right and Morality. In it, the idea of Freedom is attained as "living good", that is, as substance, in which the moments of defense of property, moral freedom and universality are linked. It is a logical, universal, and endless moment that binds the legal person and the moral subject with institutions of the ethical world, in which subjects appear as members of a family, as humans with egoistic interests, that work and consume, that are part of a class or social corporation, or as citizens of a State. Thus, in Ethical life, freedom has been realized through a world of historical and concrete institutions. To put it in Ludwig Siep's words:

"[...] in objective spirit human being experiences freedom by means of his participation in a human world created by itself, formed by right, family, economy, and politics. Only here, in this world of social relations, customs, and institutions, can the will, which wants its own freedom, find a proper content for its will". (Siep, 1989, p. 113).

Even though in the world of ethic institutions prior moments are annulled (*aufgehoben*) and freedom becomes broader and concrete in the abovementioned institutions, contradiction does not disappear. It is

instead pushed into the familiar, social and political realms where the moral dimension of actions does not disappear, but is articulated and framed in the context of an ethical world in which humans struggle for social recognition through their work, but where they can also lose their dignity.

Civil Society, although it represents the space where the infinite value of particular freedom is fully developed, it also implies the loss of dignity and autonomy for the majority of its members. Civil Society is, on one hand the ethical domain of material relations, where human beings work in the class chosen by them according to their values and subjective wealth and where they strive to be recognized and, reciprocally, recognize their others; it is a social space of theoretical and practical education (Hegel, 2008, §197). On the other hand, in Civil Society one finds the exacerbation of selfishness, conducive to opulence, luxury and waste that excludes and marginalizes a majority. For this reason, Hegel speaks about Civil Society as a spectacle of „physical and ethical degeneration“ (Hegel, 2008, §185).

Even though the different institutions of Civil Society aim at overcoming their contradictions, their actions are marked by paradox, since these institutions emerge, ultimately, from the development of moral freedom, whose historical expressions are linked to the system of production and exchange characteristic of the bourgeois system, in other words, are rooted in selfishness. For this reason, even though in those social institutions humans are able to strive towards their recognition and to develop their own projects in solidarity with others, conversely, civil society is also „is the field in which the understanding with its subjective aims and moral opinions vents its discontent and moral frustration“ (Hegel, 2008, §189). Civil Society is the ethical place of the tragedy of a morality that pursues its freedom, but that in its actions ended denying the universal ends and even the individual freedom in misery, exclusion, and thus, the loss of recognition for the majority of its members. It is a sphere of development of a splintered and fragile social self-consciousness.

Final Reflections

We can conclude that for Hegel, action reproduces in itself the dialectical logic of the concept. It is not a formal logic, but a logic that apprehends the totality of reality from a dialectical point of view, insofar as it goes through the negation of the concept, so as to reveal itself as the immanent unfolding of itself as idea. The scientific exposition of the philosophical discourse about human Praxis hangs upon the dynamic and dialectical comprehension of reality.

It is a process of negation and overcoming or reconciliation, which is given as a movement in and through negation. Thus, Hegelian speculative logic is the ontological soul of action.

In this context, tragedy and reconciliation are open moments of action, that is, neither one nor the other impose themselves in order to give a final or definitive meaning and, therefore, abstract or static to reality. The horizon of realization of human freedom always becomes historically dynamic as a negative, since „identity and contradiction“ are „moments“ in constant and mutual mediation.

The tragedy of spirit as it becomes free or as it acts is inevitable: the legal, moral, social, educational or political actions are marked by the duty of action, and, at the same time, by its inevitable fragility. The agent, being conscious of his acting, is a tragic hero, since he accepts to perform the action knowing of its imperfection, its frailty, the possibility of error, but also of the just deed that can happen through it. Hegelian logic results from the wisdom that learns through the path of pain, but it never rejects mutual and solidary reconciliation and the quest for a world of freedom, since the dialectical character of moral truth implies a need to act, where tragedy and reconciliation become interwoven. That is why, and as we

learn from Aeschylus' sentence, pain offers an education that cleanses the philosophical gaze, making it realistic, heroic and skeptic, without relinquishing the hope of moral happiness, of social solidarity and universal reconciliation.

Thus, the agent's tragic heroism does not conduce him to fatalism, passivity, agnosticism or moral pessimism, but to a clear hope, a sound skeptical consciousness and a serene heroic attitude.

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A dilemma of gas flaring and venting regulation in Colombia: challenges of reconciling environmental protection and legal stability of investors



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ABSTRACT

The paper studies the problems brought about by Resolution 40066 of 2022 of the Ministry of Mines and Energy of Colombia, regarding the new requirements it sets up for the flaring and venting of natural gas in Colombia. These requirements, which must be followed by the investing companies, imply an investment in infrastructure and technology that may imply a contractual imbalance and a negative impact on foreign investors. From a documentary analysis method with a systematic and deductive approach, the authors analyze the problematic scenario posed by the resolution and concludes that it is necessary to find a balance between the two legal interests at stake: the environment and free enterprise. As a result, the paper supplies a comprehensive and integrative view of the State's obligation to protect the environment, but also to ensure a stable and predictable legal framework for investments.

Keywords: Natural Gas Regulation, Legal Stability, Climate Change, Legal stability contracts, environmental protection.

Un dilema en la regulación de la quema y venteo de gas en Colombia: desafíos de conciliar protección ambiental y estabilidad jurídica para los inversionistas

RESUMEN

El artículo estudia los problemas que trae la Resolución 40066 de 2022 del Ministerio de Minas y Energía de Colombia, respecto de los nuevos requisitos para la quema y ventilación de gas natural en Colombia.

Estos requisitos, que deben ser cumplidos por las empresas inversoras, implican una importante inversión en infraestructura y tecnología que puede resultar en un desequilibrio contractual y un impacto negativo para los inversores extranjeros. Utilizando un método de análisis documental con enfoque sistemático y deductivo, los autores analizan el escenario que plantea la resolución y concluyen que es necesario encontrar un equilibrio entre los dos intereses jurídicos en juego: el medio ambiente y la libre empresa. Como resultado, se proporciona una visión amplia e integradora de la obligación del Estado de proteger el medio ambiente, pero también de garantizar un marco jurídico estable y predecible para las inversiones.

Palabras clave: Regulación del Gas Natural, Estabilidad Jurídica, Cambio Climático, Contratos de estabilidad jurídica, protección ambiental.

Um dilema na regulação da queima e ventilação de gás na Colômbia: desafios de conciliar proteção ambiental e estabilidade jurídica para os investidores

RESUMO

O artigo investiga os problemas introduzidos pela Resolução 40066 de 2022 do Ministério de Minas e Energia da Colômbia, em relação aos novos requisitos para a queima e ventilação de gás natural no país. Esses requisitos, que as empresas investidoras devem atender, envolvem um investimento significativo em infraestrutura e tecnologia, o que pode levar a um desequilíbrio contratual e impacto negativo para investidores estrangeiros. Através de uma análise documental com uma abordagem sistemática e dedutiva, os autores examinam o cenário proposto pela resolução e concluem que é essencial encontrar um equilíbrio entre dois interesses jurídicos conflitantes: a proteção ambiental e a liberdade empresarial. Como resultado, oferece-se uma visão abrangente e integradora da obrigação do Estado em proteger o meio ambiente, ao mesmo tempo que garante um quadro jurídico estável e previsível para os investimentos.

Palavras-chave: Regulação do gás natural, Estabilidade jurídica, Mudança climática, Contratos de estabilidade jurídica, Proteção ambiental.

1. Introduction

Resolution 40066 of 2022 of the Ministry of Mines and Energy of Colombia is a necessary measure to mitigate methane emissions in Colombia. The resolution sets up clear and objective limits for flaring and venting of natural gas and requires operators to implement measures to detect and repair leaks. This standard is also a key step towards meeting Colombia's climate goals, which include reducing greenhouse gas emissions by 51% by 2030 and achieving carbon neutrality by 2050.

In terms of operations, Resolution 40066 of 2022 sets up clear and objective limits for the flaring and venting of natural gas and requires operators to implement measures to detect and repair leaks. In addition, Resolution sets up measures to predict potential damage, which helps to prevent environmental and human health damage.

The problem brought about by the implementation of the guidelines and requirements in resolution to significantly reduce methane emissions in Colombia is the change of conditions for foreign investors in Colombia since they were measures that were not agreed upon at the time of signing the agreements and instruments, in some cases, to the point of implying an economic and technical imbalance against investors, in addition to violating agreements signed under legal stability contracts, affecting the conditions of compliance.

Although the resolution is a crucial step towards meeting Colombia's climate goals and has the potential to significantly reduce methane emissions in the country, it also is a major challenge for the legal stability of agreements, licenses, or contracts that stipulate initial conditions, which are changing in this new scenario.

The purpose of this text is to study the problems derived from the requirements of Resolution 40066 of 2022 for the investing companies, who agreed on the first conditions in the framework of operations that contemplate flaring activities and venting of natural gas. These first conditions that they will have to follow, contemplate an investment in infrastructure, and technology, in addition to an important economic effort that implies a contractual imbalance. However, the text also emphasizes the need to contemplate these requirements to safeguard the environment as a protected legal interest.

The study was conducted from a documentary analysis with a systematic and deductive approach to integrate several approaches to examine the Resolution concerning the problems described. From this method, current norms and legal doctrine were analyzed. In this sense, the author was able to find legal instability and environmental protection from different points of view (systematic approach). He was also able to organize the information coherently and sequentially (deductive study).

The paper, which is the result of the author's academic exercise as a professor at the Universidad Militar Nueva Granada, presents a discussion of a critical scenario about the problem that implies the mandatory compliance of the Resolution by the companies, and the impact that it can suppose for foreign investors. Even if this, it may pose a problem for the State, who would have the duty to compensate them for the damages they may suffer because of an economic and technical imbalance in the execution of the contracts.

The author concludes that, although the fight against climate change is a challenge for the State, it is also a challenge to find a balance between the two legal interests at stake, the environment on the one hand and free enterprise on the other. In the end, it is a fact that the State must protect the environment and reduce greenhouse gas emissions, but it is also true that it must ensure a stable and predictable legal framework for investments, as this is essential for economic growth.

2. Methodology

The proposed analysis followed a documentary analysis method, which is based on an analytical exercise deductive and systematic, based on various specialized sources, such as current regulations and legal doctrine. As a result, it allows us to study a complex issue: the legal instability that could potentially be caused by Resolution 40066 of 2022 from different perspectives.

The collected sources come from academic databases such as Scopus or Web of Science, allowing us to understand the theoretical foundations of the problem described. In this case, the proposed method made it possible to comprehensively address current issues such as the fight against climate change, the regu-

lation of flaring and venting of natural gas, the implementation of measures to detect and repair leaks, as well as the figure of legal stability.

The systematic orientation of the methodology made it possible to organize knowledge and establish relationships between the different elements of the study topic; and the deductive orientation allowed us to reach the question of the possible non-compliance with the commitments agreed upon before the regulation, which, although necessary, represented an important challenge for the law to protect the environment and guarantee free enterprise.

Finally, it is important to note that the deductive orientation allowed the results and discussion to be organized logically and coherently, starting from the generalities in the field of environmental protection and the regulation of natural gas extraction, until landing on the “contracts of legal stability”.

3. Results

The fight against climate change

Climate change is one of the main challenges facing humanity in the 21st century. Its effects are already being felt worldwide and are expected to worsen in the coming years (Palmer et al., 2008; Schmidt, Ivanova & Schäfer, 2013; Giosan et al., 2014). In the case of Colombia, a country highly vulnerable to climate change, the State has demonstrated its commitment to the fight against this phenomenon, adopting different international treaties, as well as laws, regulations, and domestic policies that seek to reduce greenhouse gas emissions and achieve carbon neutrality by 2050 (Ramírez-Villegas et al., 2012).

Among the most important international instruments signed by Colombia are the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement. These instruments set up global goals for the reduction of greenhouse gas emissions and supply a framework for international cooperation to address climate change.

At the national level, Colombia has issued Law 1715 of 2014, which sets up the National Climate Change Policy. This law defines the goals, strategies, and actions that the country must implement to mitigate and adapt to climate change (Peña & Gallego, 2018). Likewise, a series of public policies and programs have promoted the transition to a low-carbon economy (Aristizábal Alzate & González Manosalva, 2019).

These include the National Development Plan 2018-2022, which includes a chapter dedicated to climate change; the National Energy Plan 2018-2030, which promotes the use of renewable energies; and the National Forestry Development Plan 2021-2030, which seeks to protect and restore Colombian forests. Colombia's commitment to the fight against climate change is a crucial step in the right direction (Rodríguez Becerra & Mance, 2009). In this context, one of the most important challenges is to reduce greenhouse gas emissions from the energy sector. Colombia is a country that is highly dependent on fossil fuels and, therefore, it is necessary to accelerate the transition to renewable energies (Arango, 2009).

Another challenge for the Colombian state in its fight against climate change is to protect Colombian forests, which are an important carbon sink. Colombia is home to 7% of the Amazon rainforest, and, therefore, it is essential to implement forest conservation and restoration policies (Gómez-Lee, 2019; Pabón Caicedo, 2012; Güiza et al., 2019). And although the fight against climate change is a global effort that requires the commitment of all countries, Colombia, as a country vulnerable to climate change, has a significant role to play in the search for solutions to this challenge.

Resolution 40066 of 2022 and its regulatory framework

In the absence of a regulatory framework to meet this need, Resolution 40066 of 2022, issued by the Ministry of Mines and Energy, is a key step in the fight against climate change in Colombia. This resolution sets up the technical enabling requirements for the detection and repair of leaks and the exploitation, flaring, and venting of natural gas during hydrocarbon exploration and exploitation activities.

Flaring and venting of natural gas are two of the main sources of greenhouse gas emissions in the hydrocarbon sector (Saavedra Trujillo & Jiménez Inocencio, 2014). The resolution sets up the largest limits for flaring and venting of natural gas, which can only be authorized for safety reasons or duly justified operational conditions.

In practice, this implies that operators of hydrocarbon exploration and exploitation activities must implement a series of technological measures and tools for the detection, measurement, and quantification of greenhouse gases, as well as studies on the use of natural gas.

The resolution is the first internal norm promoted to implement strategies focused on the reduction of greenhouse gases. It is a key step towards meeting Colombia's climate goals, which include reducing greenhouse gas emissions by 2030. Therefore, the standard has potential benefits for the environment and the economy.

In environmental terms, the resolution will contribute to reducing greenhouse gas emissions, one of the main factors of climate change. It will also help protect air quality and the environment in areas where hydrocarbon exploration and exploitation activities are conducted.

In economic terms, the resolution can help generate savings for operators of hydrocarbon exploration and exploitation activities. The reduction of flaring and venting of natural gas can generate savings in hydrocarbon production and transportation costs. In addition, the resolution can help create new jobs in the renewable energy sector and the use of natural gas.

The problem posed by the measures of Resolution 40066 of 2022 for legal stability

From the perspective of the challenges faced by the resolution, firstly, the operators of hydrocarbon exploration and exploitation activities must implement the technological measures and tools required by the resolution. This may require significant investments, which operators may not be willing to make at once. Secondly, the competent authorities must exercise effective control over compliance with the resolution. This is important to ensure that operators follow the established requirements, and that the resolution has the expected impact on the reduction of greenhouse gas emissions.

Overall, Resolution 40066 of 2022 is a positive measure that may contribute to reducing greenhouse gas emissions in Colombia. However, it is important to overcome the challenges to ensure that the resolution has the expected impact, and, in any case, the most important challenge will be the foreseeable legal instability that could affect foreign investment.

In this context, legal stability is achieved through agreements between a State and a foreign investor that seek to ensure that the investment is not affected by changes in legislation or regulation (Azüero Zúñiga, Guzmán Vásquez & Trujillo Dávila, 2017). These agreements usually grant the investor the right to

continue to be subject to the laws and regulations existing at the time of signing the contract, even if they change in the future (Galán Barrera, 2006).

The figure of legal stability can be reinforced through legal stability contracts, which are important for attracting and keeping foreign direct investment, which is a key factor for economic growth since it generates employment, creates infrastructure, and promotes innovation (Morales, Guerrero, & López, 2009). Thus, legal stability contracts provide investors with greater certainty about the regulatory environment in which they must operate, allowing them to make investment decisions with greater confidence since they know that they will not be affected by changes in laws or regulations that may harm their interests (Quiroga-Natale & Villegas-Ibáñez, 2008).

Another key aspect of this figure is that they can also help protect investors from expropriation, which is the forced taking of private property by the State (Quintero Garay, 2008). Legal stability contracts, for example, in the case of Peru, can include clauses that protect investors from expropriation, or that guarantee that they will be adequately compensated in case of expropriation (Vega Sánchez, 2002).

If the above is analyzed from the point of view of the advocates of a state paternalism that looks to superimpose the decision-making ability of the States on the commitments previously agreed with investors. This may be the case for companies in the hydrocarbon sector in activities that require compliance with guidelines for detecting and repairing natural gas leaks, as well as their use, flaring, and venting in the framework of exploration and exploitation of hydrocarbons in Colombia.

Indeed, those who assume a defense of this position argue that legal stability agreements and mechanisms have also been criticized by some. It is argued that these agreements may give investors too much power and that they may limit the State's ability to regulate the economy (Castaño & Galeano, 2011; Guauque Torres, 2012; Azuero Zúñiga, Guzmán Vásquez & Trujillo Dávila, 2017).

4. Discussion

In any case, legal stability agreements can be a valuable tool for attracting and keeping foreign direct investment. However, it is important that these agreements are carefully negotiated to ensure that they do not give too much power to investors and that they do not limit the State's ability to regulate the economy (Marín Vélez, 2006).

As a proposal, a fair scenario should be advocated, with fair conditions and a fair distribution of both the risks assumed in this type of agreement, as well as the benefits. In the case of legal stability contracts signed between the Colombian State and foreign companies, a key advantage is the greater certainty about the regulatory environment in which investors must work. This allows them to make investment decisions with greater confidence since they know that they will not be affected by changes in laws or regulations that may harm their interests.

In addition, depending on the context and conditions agreed upon, legal stability contracts may help protect investors from expropriation. Indeed, legal stability agreements may include clauses protecting investors from expropriation or ensuring that they are adequately compensated in case of expropriation. And, finally, legal stability agreements are certainly an attraction for foreign direct investment, as they can help attract and keep foreign direct investment, which is a key factor for economic growth, as it generates employment, creates infrastructure, and promotes innovation.

Regarding the challenges to be faced concerning Resolution 40066 of 2022 and the figure of legal stability agreements -signed in the past and to be signed after the enactment of the law-, we must not lose sight of the fact that in both cases they can be costly for the State, since it should pay investors compensation if it changes the laws or regulations that affect their investment.

In this specific case, the change in the rules of the game is clear in the investment that must be made to implement mechanisms and procedures for leak detection and repair, as well as for the use, flaring, and venting of natural gas during hydrocarbon exploration and exploitation activities. This implies an added expense for foreign companies, which will have to invest in the development of new products and processes, as well as in infrastructure and recent technologies. These are expenses that were not initially foreseen in the initially agreed conditions.

Although the resolution sets up the largest limits for the flaring and venting of natural gas, which can only be authorized for safety reasons or duly justified operational conditions, in practice it also implies restrictions and a change in the rules of the game.

This also implies that the operators of hydrocarbon exploration and exploitation activities must implement a series of measures and technological tools for the detection, measurement, and quantification of greenhouse gases, as well as studies on the use of natural gas. If not implemented during the execution of the agreements, the State could suspend the authorization.

In addition to the above, of course, there are measures to predict potential damage, including the mandatory report that the company that conducts the natural gas flaring process in well control operations must make within 24 hours of the event to the supervisory agency in the periodic report.

In conclusion, a change in the rules of the game with a mandatory rule, such as Resolution 40066 of 2022, which despite being justified by the need to adopt measures against climate change, implies an economic and technical contractual imbalance, especially if the rules of the game were already contemplated in agreements, licenses, or if they had been agreed through legal stability contracts. It is therefore necessary to continue to address this problem to seek solutions that balance the two legal interests protected, on the one hand, the right to enjoy a healthy environment, and on the other hand, free enterprise. In any case, the State and investors must work together to find a solution that is fair and fair for all. Undoubtedly, this will be a task to be led by the Ministry of Mines and Energy, together with the Ministry of Commerce, Industry, and Tourism, to find the main challenges and propose practical solutions based on a diagnosis of the current situation.

This diagnosis would be necessary to find the real impacts of Resolution 40066 of 2022 on companies so that a transition plan can be implemented that is fair and fair for all parties involved. This plan should consider the needs of the companies and the impact on the environment of the activities regulated in the referred standard. This would contribute to finding a sustainable solution that protects the environment and promotes foreign investment.

5. Conclusions

- i. Resolution 40066 of 2022, issued by the Colombian Ministry of Mines and Energy, sets up a technical framework for the detection and repair of leaks, tapping flaring, and venting of natural gas during hydrocarbon exploration and exploitation activities. This resolution is a major step towards meeting

Colombia's climate goals, which include reducing greenhouse gas emissions by 51% by 2030 and achieving carbon neutrality by 2050.

- i. However, the resolution faces challenges, such as the need for operators to undertake significant efforts in infrastructure and deployment of technical measures, as well as new procedures to follow the requirements of the resolution. While this may require significant investments, it is also necessary to meet environmental aims.
- iii. In the case of legal stability agreements, signed by the Colombian State with foreign companies, this change in the rules of the game could generate an economic and technical contractual imbalance. This is because, in many cases, legal stability agreements guarantee companies that laws and regulations will not change in a way that affects their investments.
- iv. Resolution 40066 of 2022 is a mandatory rule, so the State could be obliged to pay companies compensation if they consider that their investments have been negatively affected. In other cases, the guidelines and requirements provided by the Resolution may even result in a breach of contracts.
- v. This poses a challenge for the State to find a balance between the two protected legal interests, on the one hand, the healthy environment and, on the other, free enterprise. Thus, while the State must protect the environment and reduce greenhouse gas emissions, it also must guarantee foreign companies and investors a stable and predictable legal framework for their investments, since growth in the current economic development model depends on it.

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The impact of funding for public state universities in Mexico on the quality of education



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ABSTRACT

This research aims to centrally analyze the impact of state and federal public funding allocated to public state higher education institutions in Mexico on the performance of scientific research. Through the review of previous studies, international indicators, and government official data, a database of indicators was created for comparison and correlation. The findings presented highlight the importance of allocating adequate resources and contribute to the understanding of how funding can influence performance in scientific research, innovation, social impact, and, consequently, the continuous improvement of the quality of education in the universities under analysis. Finally, it provides recommendations to strengthen this link for the benefit of students and society.

Keywords: Quality Education; Education; Higher Education Institutions; Sustainable Development Goal 4 (SDG 4).

El impacto del financiamiento de las universidades públicas estatales de México en la calidad de la educación

RESUMEN

Esta investigación tiene como objetivo central analizar el impacto financiamiento público estatal y federal asignado a las instituciones de educación superior públicas estatales de México en el desempeño de la investigación científica. A través de la revisión de estudios previos, indicadores internacionales y datos oficiales del gobierno, se creó una base de datos de indicadores para su comparación y correlación. Los hallazgos presentados destacan la importancia de asignar recursos adecuados y contribuye a la comprensión

de cómo el financiamiento puede influir en el desempeño en la investigación científica, la innovación, el impacto social y por consiguiente en la mejora continua de la calidad de la educación en las universidades en análisis. Por último, proporciona recomendaciones para fortalecer este vínculo en beneficio de los estudiantes y la sociedad en general.

Palabras clave: Calidad Educativa, Educación, Instituciones de Educación Superior, Objetivo de Desarrollo Sostenible ODS 4.

O impacto do financiamento das universidades públicas estaduais do México na qualidade da educação

RESUMO

Esta pesquisa tem como objetivo principal analisar o impacto do financiamento público estadual e federal alocado às instituições de ensino superior públicas estaduais do México no desempenho da pesquisa científica. Através da revisão de estudos anteriores, indicadores internacionais e dados oficiais do governo, uma base de dados de indicadores foi criada para sua comparação e correlação. Os achados apresentados destacam a importância de alocar recursos adequados e contribui para o entendimento de como o financiamento pode influenciar no desempenho em pesquisa científica, inovação, impacto social e, conseqüentemente, na melhoria contínua da qualidade da educação nas universidades em análise. Por último, fornece recomendações para fortalecer esse vínculo em benefício dos estudantes e da sociedade em geral.

Palavras-chave: Qualidade Educacional, Educação, Instituições de Ensino Superior, Objetivo de Desenvolvimento Sustentável ODS 4.

1. Introduction

Universities play a fundamental role in society, being responsible for the academic and professional training of individuals in a wide variety of disciplines. At the same time, they are the main generators of knowledge that is created to transform current realities and promote the development of a country. According to the United Nations (2023), higher education enhances people's quality of life because having access to it enables greater financial stability and economic security, access to medical services, improved working conditions, a healthier life, and reduces the likelihood of engaging in criminal activities. On the other hand, one can enjoy other benefits such as access to the internet, artistic activities, and other forms of entertainment.

According to the above, it is evident that investing in improving access to higher education entails a clear and achievable benefit for social well-being. This investment opens the doors to a wide range of opportunities that encompass economic, security, health, civic participation and citizen security aspects, therefore, it is undeniable that the positive impact of such an investment extends not only at the individual level, but it also has a significant impact on society (Mendoza Rojas, 2022).

Taking into account the previously developed context, this research is conducted with the central objective of analyzing the impact of public funding allocated to public state higher education institutions in Mexi-

co on their performance in terms of scientific research, innovation, and social impact. To achieve this, previous studies, international indicators, and government official data are reviewed, and a database of indicators is created for comparison and correlation.

The findings presented highlight the importance of allocating adequate resources and contribute to the understanding of how financing can influence the quality of education in the universities under analysis. Finally, it provides recommendations to strengthen this link for the benefit of students and society in general.

2. Method

This study is framed within a quantitative correlational research, since it focuses on the exploration of relationships between institutional financing and performance in scientific research, innovation and social impact in the 35 state public universities of Mexico. Furthermore, the variables are investigated with the aim of identifying causal relationships and highlighting significant differences between these institutions. The research approach is transversal, as it is carried out during the period between 2022 and 2023, involving the review of university reports, official sources of the Mexican government and data from the international classification of universities SCIMAGO (Hernández et al., 2010).

Also, the method for accessing and utilizing information in this study is based on the data retrieval and utilization system provided by Higher Education, Format 911, for the academic period 2021-2022. This system covers educational levels, including Technical University Degrees (TSU), Bachelor's degrees, and Postgraduate studies. Likewise, a similar system is integrated for Upper Secondary Education, corresponding to the 2021-2022 school year. The data used are sourced from information collected until February 2022 by the Directorate of Institutional Strengthening of the DGESUI-SEP. Additionally, data related to the 2022 subsidy is considered, which encompasses both federal and state subsidies. It's worth noting that the subsidy calculation per student in Upper Secondary Education is 0.7. It's important to bear in mind that this value only includes the regular subsidy and may undergo changes at the end of the fiscal year (Secretaría de Educación, 2022).

3. Analysis And Results

Institutional financing

Financing is a term used to refer to economic resources or financial funds, which make up the base of the capital used for the execution of an activity, project or organization (Villalobos Carballo, 2017). It is the provision of money or financial resources necessary to cover expenses, investments or specific needs. This can come from various sources, such as government subsidies, financial institutions, investors, among others.

The fundamental purpose of financing is to obtain the necessary resources to finance the acquisition of goods, services and human resources that allow optimal performance of the activities that said organization develops or provides as a service to the community.

In the state public universities of Mexico, financing refers to the economic and financial resources that are allocated for the operation, development and maintenance of these educational institutions. These are financed mainly by the state government to which they belong, although they may also receive additional resources from other sources, in the case of Mexico, from the federal government. This financing is used

to cover a wide range of needs, such as the payment of salaries of academic and administrative staff, the construction and maintenance of facilities, the acquisition of educational equipment and materials, research and development, extension programs and projects, and other expenses related to higher education.

Regionally, funding for state public universities can vary by country, state, and government policy. Some universities may rely heavily on the budget allocated by the state government, while others may seek additional funding sources, such as donations, agreements with companies, research contracts, scholarship programs and international collaborations (Guerrero-Vega y Flores-Montes, 2023). Importantly, funding at public universities has a direct impact on their ability to offer quality programs, maintain adequate infrastructure, attract and retain qualified faculty, and provide educational services and opportunities to students. Therefore, the availability and allocation of financial resources are fundamental aspects for the functioning and development of these institutions.

Bok (2003), Slaughter and Rhoades (2004) comment that the financing granted to public universities allows them to offer affordable and accessible educational programs to a greater number of students. This helps ensure that higher education is not exclusive to those who can afford higher tuition and study fees. Equitable access to education is essential to promoting social mobility and providing opportunities to people from diverse backgrounds and economic circumstances.

Therefore, state funding contributes to maintaining and improving the quality of education in universities. It helps recruit and retain highly qualified faculty, improve teaching infrastructure and resources, upgrade equipment and laboratories, and promote research and academic development (Leyva et al., 2021). These investments are essential to ensure that students receive a quality education that prepares them to meet the challenges of the world of work.

At the same time, universities play a crucial role in generating knowledge through research and development. State funding is vital to support research in various disciplines, from basic to applied sciences, and foster innovation. Many scientific discoveries and technological advances have emerged from research conducted at universities. State funding helps finance research projects, scholarships and grants that promote scientific progress and the development of society.

It should also be considered that universities are economic and social engines in their communities and countries. In this regard, funding allows universities to hire personnel with diverse profiles and skills, support the local industry, foster entrepreneurship, and collaborate with public and private companies and institutions in problem-solving and knowledge transfer. Likewise, universities play a significant role in shaping highly skilled human capital, all of which drives the country's economy and competitiveness.

Public spending on education

Investment in education through public spending is a critical component of any society that seeks development and progress. In education, public spending represents a country's commitment to empowering its citizens and strengthening its human capital. In this sense, a society with access to quality, equitable and egalitarian education presents the three fundamental pillars to build cities with justice and development. In Mexico, public spending includes government spending on educational institutions, both public and private, as well as educational administration and subsidies for private entities. One of the indicators that allows measuring investment in education is the percentage of GDP that the country contributes to the educational sector. When carrying out a comparative analysis of these percentages, in the Latin American region the countries that contribute the most in percentage of GDP are Bolivia, Costa Rica and Honduras with 9.8%, 6.7% and 6.4% respectively (World Bank, 2020a). As for Mexico, its contribution is 4.3%.

The disparity of budgets allocated and executed on education issues is very marked in the region, therefore, to address the specific issue of financing education, it is necessary to recognize the existence of a series of institutional features, not exclusive to the educational sector but essential to understand the scope of the problem and its challenges. The financing structure of the educational system is related to the institutional organization of each country, its own educational system, the resources of its public sector and the participation of education. There is a belief that the efficiency of educational systems is maximized by increasing financing to improve the conditions of educational entities. According to the following table, Mexico is positioned as the tenth country of the eighteen presented in this region with the highest percentage of gross domestic product allocated to spending on education.

Table 1: Regional indicators on education spending.

Country	Population	% of public expenditure	% of GDP
Bolivia	12 224	14.2	9,8
Costa Rica	5 181	21.54	6,7
Honduras	10 433	24.25	6,4
Brazil	215 313	15.96	6,0
Chili	19 604	21.23	5,6
Argentina	45 510	11.92	5,0
Colombia	51 874	14.75	4,9
Nicaragua	6 948	22.82	4,6
Uruguay	3 423	16.36	4,6
Mexico	127 504	16.58	4,3
Peru	34 050	15.93	4,2
Ecuador	18 001	11.51	4,1
The Savior	6 336	13.09	4,1
Panama	4 409	10.24	3,9
Guatemala	17 844	21.14	3,3
Paraguay	6 781	9.84	3,3
Venezuela	28 302	23.87	1,3
Cuba	11 212	16.66	0,0

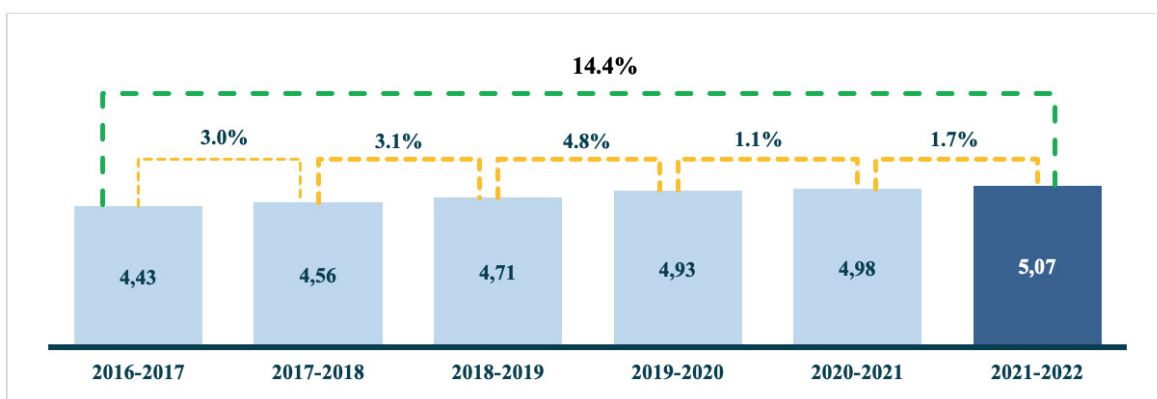
Source: Own elaboration based on population data from ECLAC (2022) and regional education spending by the World Bank (2020b).

The issue of financing in education is broader than just analyzing the percentages allocated to the different GDPs in the region. Although many countries steadily increase investment in education, it is not enough if one considers that the remaining percentage includes subsidies, transfers to private entities, spending on the acquisition of educational resources, among others. Even though the volume of resources allocated in each country does not necessarily cover the needs, several countries in the region allocate a proportion of GDP in line with what is proposed in the Education 2030 Action Framework: allocate at least between 4 and 6% to education. of GDP or, at least, between 15 and 20% of public spending. However, educational financing, educational gaps in coverage, quality, equity and inclusion are still very significant, which requires greater mobilization of resources (UNESCO, 2021).

The enrollment challenge

According to the National Association of Universities and Higher Education Institutions of Mexico – ANUIES (2022), one of the most notable challenges of the educational system is to cover the growth of annual enrollment, since the service must be guaranteed to the new students who join and ensure the quality of education provided to everyone, both in infrastructure and the knowledge that is transmitted. As seen in Figure 1, in the last six years, higher education enrollment has increased by 14.4%, meaning that around 638.2 thousand students enrolled to pursue higher education. Although this figure includes public and private institutions, the largest participation falls in the public sector, obtaining around 65% of the total enrollment (see figure 1).

Figure 1: enrollment per year of higher education



Source: Own elaboration with information from the Higher Education Statistical Yearbooks provided by ANUIES (2022).

This significant challenge is not unique to Mexico but is also faced by other countries in the Latin American region, which encounter difficulties in acquiring adequate funding to ensure their optimal performance. It is well known that spaces for innovation are clouded by basic needs that enable the daily functioning of the university ecosystem. However, the lack of access to public funding not only limits the institution's capabilities but also restricts students' access to other benefits, such as scholarships or credits that guarantee them to complete their studies satisfactorily. Along these lines, it has been proven that when there are sufficient resources, its effect is totally positive and impacts enrollment in universities. On the other hand, it is observed that in Mexico there is inequality in terms of the allocation of resources to universities with characteristics like others (Valenzuela & Yáñez, 2022).

Institutional performance and internationalization

Institutional performance is nothing more than the outcome of actions aimed at work, and this result is a direct consequence of the workers' skills and their motivation to carry out their functions (Castillo et al., 2016). Performance implies the consideration of a dynamic organizational process over time and reflects changes in the organizational environment, power structures and objectives; it also includes both the efficiency and effectiveness of a recurring activity or a specific project ECLAC (2022). In higher education institutions, this process is immersed in Teaching, Students, Scientific Research, Linkage, Extension and Infrastructure (COPAES, 2021).

Regarding the international panorama of Mexican public universities that depend on State financing, the National Autonomous University of Mexico stands out in Scimago's international classification, as one of the most prestigious and recognized worldwide. It is observed that during the 2023 edition, it is in position number 2 among Latin American universities and position 223 worldwide. Another relevant university, is Instituto Tecnológico y de Estudios Superiores de Monterrey, which is a private institution with high prestige, especially for its investments in technology and its organization.

Table 2: Classification of SCIMAGO universities at the Latin American level.

Rank	Global Rank	Institution	Country
1	50	Universidade de Sao Paulo *	Brasil
2	223	Universidad Nacional Autonoma de Mexico	México
3	486	Universidade Estadual Paulista Julio de Mesquita Filho	Brasil
4	600	Universidade Estadual de Campinas *	Brasil
5	710	Universidade Federal do Rio de Janeiro *	Brasil
6	733	Universidade Federal do Rio Grande do Sul	Brasil
7	789	Pontificia Universidad Catolica de Chile *	Chile
8	793	Universidade Federal de Minas Gerais	Brasil
9	807	Universidad de Chile *	Chile
10	1027	Universidad Nacional de Colombia *	Colombia
11	1368	Universidad de Buenos Aires *	Argentina
12	1434	Universidade Federal de Santa Catarina *	Brasil
13	1446	Universidade Federal do Parana	Brasil
14	1681	Universidade Federal de Sao Paulo *	Brasil
15	2129	Universidad de Antioquia *	Colombia
16	2210	Universidade de Brasilia	Brasil
17	2496	Universidad de Concepcion *	Chile
18	2735	Instituto Tecnológico y de Estudios Superiores de Monterrey	México
19	2835	Universidad Nacional de La Plata *	Argentina
20	2971	Universidade Federal de Vicosa	Brasil
21	2980	Universidade Federal de Sao Carlos	Brasil

Source: SCIMAGO university classification (2023).

Despite this favorable context, there arises the question about the situation of the other public universities in Mexico. As can be seen in the previous table, Brazil has the greatest representation in this classification. If the total number of Latin American universities in this classification is analyzed, Brazil has a participation of 40.7% of the total number of universities in Latin America and Mexico with 12.2%. Along these lines, a total of nearly 85% of UPE appear in these international university classifications, since the majority dedicate efforts to the development of science and technology, which are relevant aspects considered for their evaluation.

In themselves, global university rankings are instruments that evaluate performance according to a series of indicators that are weighted to give a score, that is, quality is defined by the position it occupies in relation to others (Baltodano-García, 2021). Currently there are a number of national and international classifications that it's difficult to select the most suitable one to measure the universities of the Latin American region, in this sense, Albornoz and Osorio (2018) emphasize that the SCImago university clas-

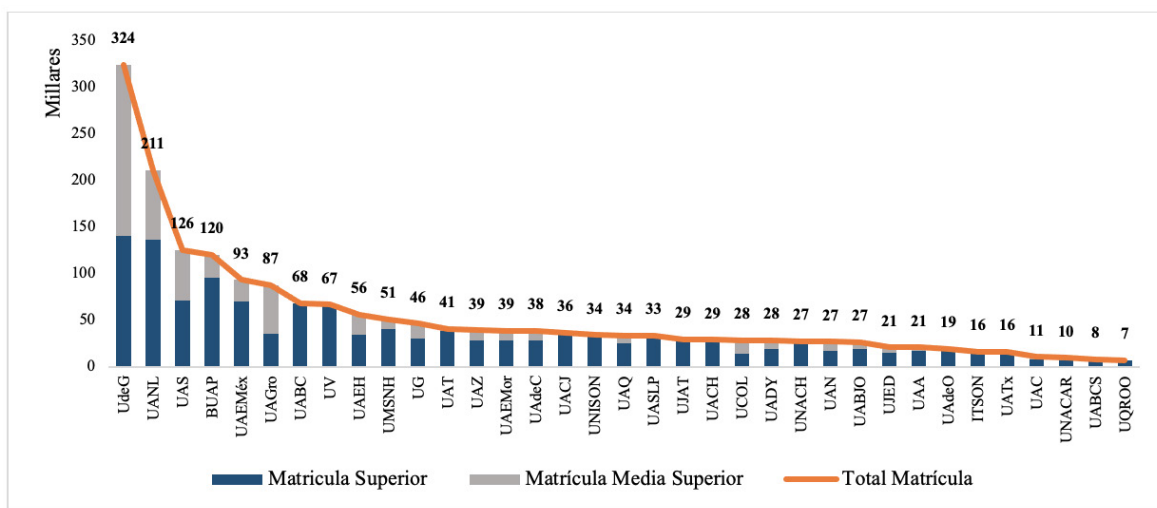
sification specializes in measure academic institutions and its algorithm favors Mexican universities by evaluating nearly 85% of UPE according to the indicators they select.

SCImago (2022) is a competitive instrument that brings together thousands of academic institutions in the world considering three different sets of performance indicators prioritized under a value system in the areas of scientific research, innovation and social impact. Firstly, research performance is measured through a series of indicators, including leadership, quality published documents, own journals, international collaboration, open access to published documents and the scientific talent of the authors. Secondly, innovation performance refers to the analysis of innovative scientific publications, patent citations and the number of patent applications, and thirdly, Social Impact is calculated through the documents with the highest impact value. normalized in the PlumX Metrics platforms, social networks and Mendeley, as well as the number of Backlinks, which are the number of incoming networks or subnetworks from other institutions, finally, the size of resources (URL) associated with the institution, that is, the social impact is measured through the visibility of the scientific products associated with each institution.

Before comparing these performance indicators between the UPE, it is necessary to previously review the designation of the public worlds to have a perspective on how financing may have some implication on performance and perceived quality both nationally and internationally.

The 35 state public universities (UPE) were established by the Mexican State with the purpose of satisfying the growing demand of more than 1 million 682 thousand students who study at the intermediate and higher levels. Curiously, 51% of this demand is served only through five educational institutions: the University of Guadalajara UdG (17%), the Autonomous University of Nuevo León UANL (11%), the Autonomous University of Sinaloa UAS (7%) , the Benemérita Universidad Autónoma de Puebla BUAP (6%), the Autonomous University of the State of Mexico UAEMéx (5%) and the Autonomous University of Guerrero UAGro (4%). These institutions play a vitally important role in this study due to the breadth of services they provide to the educational community.

Figure 2: Total enrollment of Mexican state public universities

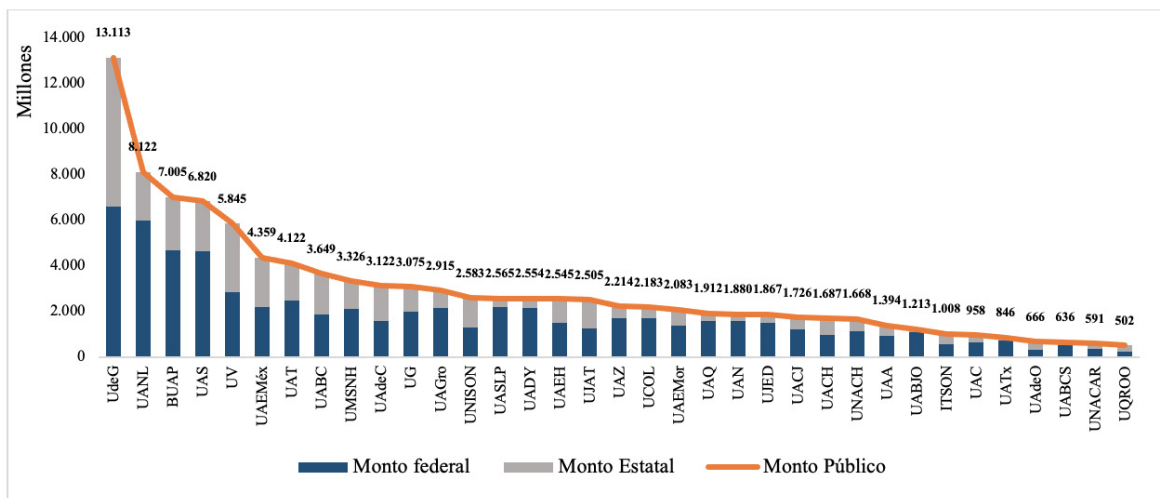


Source: Secretariat of Higher Education (2022). (Benemérita U. Autónoma de Puebla- BUAP; Instituto Tecnológico de Sonora - ITSON; U. Autónoma Benito Juárez de Oaxaca-UABJO; U. Autónoma de Aguascalientes-UAA; U. Autónoma de Baja California-UABC; U. Autónoma de Baja California Sur-UABCS; U. Autónoma de Campeche-UAC; U. Autónoma de Chiapas-UNACH; U. Autónoma de Chihuahua-UACH; U. Autónoma de Ciudad Juárez-UACJ; U. Autónoma de Coahuila-UAdeC; U. Autónoma de Guerrero-UAGro; U. Autónoma de Nayarit-UAN; U.

Autónoma de Nuevo León-UANL; U. Autónoma de Occidente-UAdO; U. Autónoma de Querétaro-UAQ; U. Autónoma de San Luis Potosí-UASLP; U. Autónoma de Sinaloa-UAS; U. Autónoma de Tamaulipas-UAT; U. Autónoma de Tlaxcala-UATx; U. Autónoma de Yucatán-UADY; U. Autónoma De Zacatecas Francisco García Salinas-UAZ; U. Autónoma del Carmen-UNACAR; U. Autónoma del Estado de Hidalgo-UAEH; U. Autónoma del Estado de México-UAEMéx; U. Autónoma del Estado de Morelos-UAEMor; U. Autónoma del Estado de Quintana Roo-UQROO; U. de Colima-UCOL; U. de Guadalajara-UdeG; U. de Guanajuato-UG; U. de Sonora-UNISON; U. Juárez Autónoma de Tabasco-UJAT; U. Juárez del Estado de Durango-UJED; U. Michoacana de San Nicolás de Hidalgo-UMSNH; U. Veracruzana-UV)

Regarding the allocated budget, a trend is indeed observed in which universities with a greater number of students receive more substantial financing. This financing is divided into state and federal resources; however, the allocation of resources by both entities is not always proportional. In other words, if we calculate an average of the percentages, we will see that the states contribute approximately 63%, while the federation contributes around 34%. However, there are notable exceptions, such as the case of the Autonomous University of San Luis Potosí and the Autonomous University of Yucatán, where states subsidize up to 85%. If we consider universities with a greater number of students, such as the University of Guadalajara (UdG), a balance of around 50% is observed. In contrast, in the case of the Autonomous University of Nuevo León (UANL), the state provides a considerable 74% of the financing. The following illustration shows the budget assigned by the university in millions of pesos.

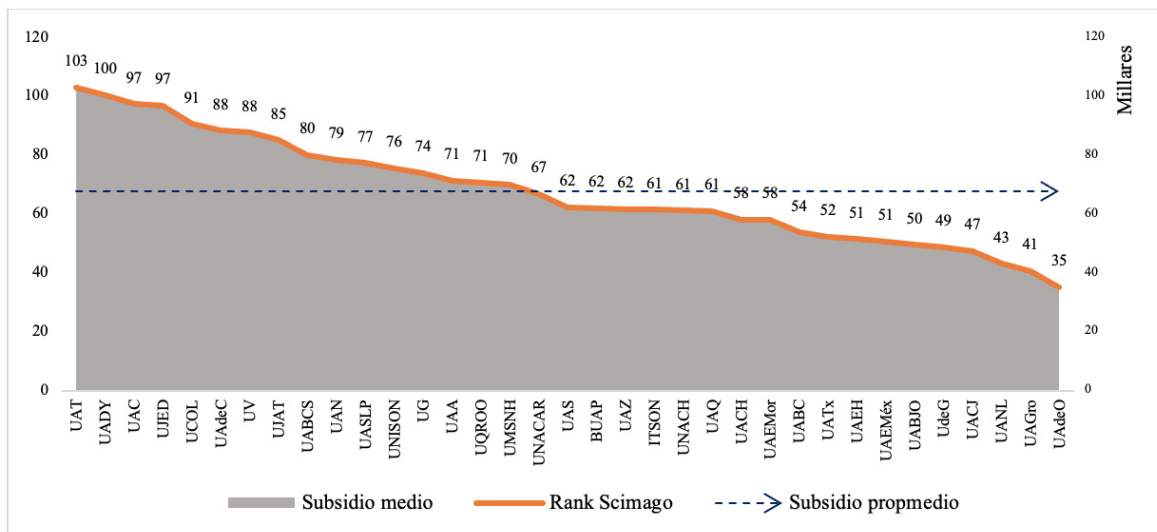
Figure 3: Total public, federal and state amount received by each UPE.



Source: Secretariat of Higher Education (2022).

If we only consider the total amount of public financing, there is no significant difference that can be considered important. However, to more accurately identify any disparities in the allocation of these resources, it is essential to compare the average subsidy awarded per student. In this context, it is evident that five of the six universities that serve most of the demand have a lower subsidy per student, with the exception of BUAP, which is ranked 19th in terms of subsidy, considering from highest to lower allocation of resources. In this scenario, the institution that receives the highest subsidy per student is the Autonomous University of Tamaulipas UAT despite serving only 2% of the demand. (see Figure 4)

Figure 4: Average subsidy per student per UPE.



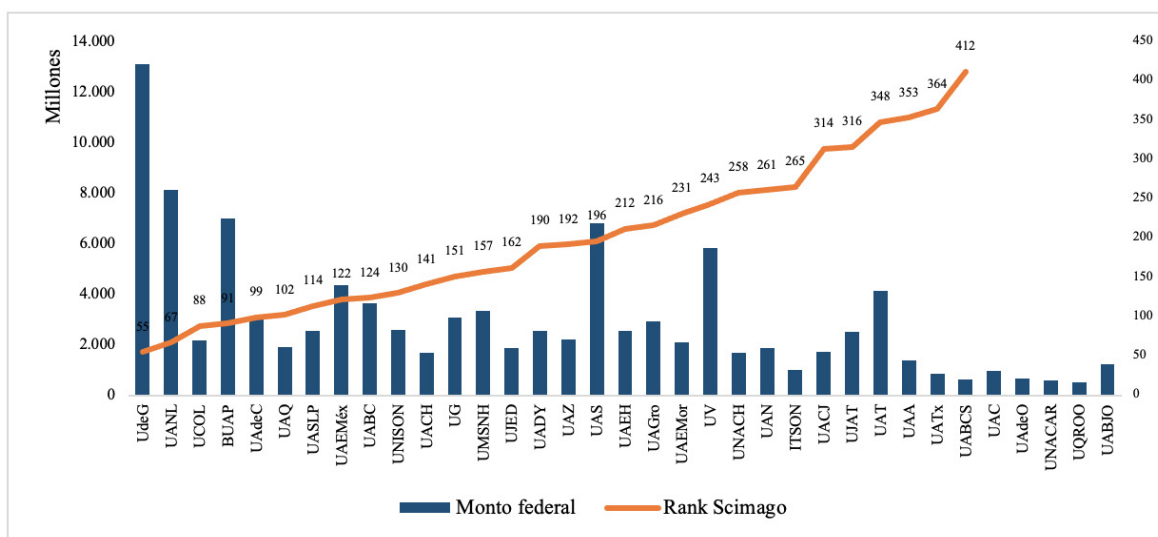
Source: Secretariat of Higher Education (2022).

In accordance with the above, it is imperative that both state and federal entities carefully review the allocation of resources in order to adequately align it with the needs they must address. It is evident that the current distribution of resources is not directly related to student demand, which could have negative repercussions on the quality of education provided by these institutions.

Furthermore, it is crucial to address in detail the notable exceptions that have been identified, which raise questions about the underlying rationale for resource allocation. This also raises the question of whether there are valid justifications for such differences. Transparency and equity in the allocation of funds are essential to ensure that all educational institutions have the capacity to offer quality and accessible education.

Addressing again the issue of the international status of Mexican universities, particularly the UPE, internally, the universities that have a greater capacity to serve many students are those that achieve a better position in the international arena. Notable examples are the UdeG and the UANL, which together cover almost 30% of the demand and achieve first and second place in the SCImago classification among their own categories. (see Figure 5)

Figure 5: Public Amount and Position in the SCImago qualification by university.



Source: Secretariat of Higher Education (2022) and SCImago (2023).

On the other hand, in the previous illustration it is noted that most universities with lower allocation of resources do not appear at all in the SCImago classifications, which is why a review is required about the financing they receive from the federal and state governments or look for other alternatives that can boost your international visibility.

In this study, 35 UPE were analyzed, obtaining a total average subsidy of \$67,792 per university, a minimum of \$35,024 and a maximum of \$102,993 with a SD standard deviation of 18,064. In terms of total federal amounts, an average of \$2,250 million pesos was obtained. 84 million pesos million pesos and maximum 46,603.79 million pesos. Regarding the SCImago international classification, the positions of the universities vary between 55 and 412, with an average of 199 positions and a ds of 97.

Table 3: Descriptive statistics

	N	Minimum	Maximum	Average	Typical deviation.
Average subsidy	35	35024	102993	67792	18064
Federal amount	35	250848521	6603790527	1876398615	1485021264
State Amount	35	108080833	6509513068	1073892741	1210743355
Public Amount	35	501697042	13113303595	2950291356	2569198199
Rank Latam	30	55	412	199.13	97.301
INNOV_Rank	30	11	384	175	109
INVEST_Rank	30	86	409	225	85
IMP_SOCIAL_Rank	30	35	380	185	107
Valid num. (according to list)	30				

Source: Own elaboration (2023)

According to the performance indicators considered by the SCImago university classification, it is seen that there is a significant relationship with the public amounts assigned to each university and the global performance that includes social impact, scientific research and innovation. On the other hand, and separately, a level of significance is appreciated between the amounts, the social impact and the scientific research.

Table 4: Pearson correlations between the variables in analysis.

Variables	Description	Rank	IMP_SOCIAL_Rank	INVEST_Rank
Public Amount	Pearson correlation	-.504**	-.645**	-.569**
	Sig. (bilateral)	.005	.000	.001
Federal amount	Pearson correlation	-.529**	-.639**	-.592**
	Sig. (bilateral)	.003	.000	.001
State Amount	Pearson correlation	-.419*	-.581**	-.478**
	Sig. (bilateral)	.021	.001	.008

** The correlation is significant at the 0.01 level (two-sided). Source: Own elaboration (2023).

The relationship that exists between the variables is inverse, this is because when the public amounts allocated to universities are greater, the position in the international classification decreases, which means that the larger the budget, the better they will be positioned in terms of the international visibility. An example of this is the Public Funding, where negative values of *r* are observed, indicating a negative correlation. This means that when Public Funding increases, the positions of the public universities under analysis decrease in the international ranking. This reflects a clear linear relationship between both variables.

4. Conclusions

This research carried out a detailed analysis of 35 State Public Universities (UPE) in Mexico, evaluating the financing they receive and their performance in terms of scientific research, social impact and innovation. The results show that, on average, these universities receive a total subsidy of \$67,792 per university, with a variation ranging between \$35,024 and \$67,792, demonstrating a significant disparity in resource allocation. In addition, an average of \$2250.84 million pesos in federal financing is observed, with a maximum of \$46,603.79 million, which underlines the importance of financial support from government entities, as well as a commitment from the State to guarantee higher education to Mexican citizens.

Regarding the international classification of SCImago, the universities studied show variability in their positions, ranging from position 55 to 412, with an average of 199 positions compared to the other universities in the Latin American region and a standard deviation of 97. This reflects the diversity in the academic performance of these institutions. However, it leaves the question that we need to continue working to improve aspects such as innovations and scientific research that are fundamental pillars for social progress.

The most significant thing about this study is that a significantly important relationship has been identified between the allocation of public resources and the overall performance of universities, which covers aspects such as social impact, scientific research and innovation. These findings underscore the importance of allocating adequate resources to higher education institutions to boost their quality and ability

to positively influence society. Taken together, this study provides a solid basis for decision-making and policy formulation that promotes academic excellence and the positive impact of universities in Mexico. In accordance with the above, it is suggested to incorporate the principle of equity into federal and state-level budget planning, along with its specific criteria, with the aim of reducing disparities in funding, accessibility, and educational quality among different regions, states, and territories of the country. This will be done while considering the specific educational needs of each region and locality to provide high-quality higher education services.

Furthermore, it is recommended to include in the annual budget allocation, both at the federal and state levels, the estimates of resources required to achieve, by the year 2030, an equitable budget that allows students to access high-quality higher education, scientific and humanistic research, as well as technological development and innovation.

Finally, effectively align the federal and state budgets allocated to public universities with the mechanisms that facilitate the implementation of funding policies, such as the National Development Plan, programs of the Ministry of Public Education (SEP), and the Sectoral Education Program. This approach aims to comprehensively address the specific needs of each educational institution and provide the necessary resources to ensure a high-quality and equitable education for both new students entering due to the annual increase in enrollment and those who already benefit from this social advantage.

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