SUMARIO / SUMMARY / RESUMO

Editorial

Dear Readers. We are pleased to present the June 2024 issue of the MLS-Inclusion And Society Journal, which addresses different topics that encourage and promote inclusion in our classrooms. This issue is composed of five contributions, in which, through research, reflections and didactic experiences, relevant issues in the educational field are addressed.

First, Leonardo Gallego Joya, from the Universidad Antonio Nariño (Colombia), presents a very interesting didactic experience in the article "Science and technology research group Moralba". In an increasingly innovation-driven world, education in science and technology has become a cornerstone in preparing new generations for the challenges of tomorrow. In this article, we explore various educational projects that are making a difference in the field of STEM (Science, Technology, Engineering and Mathematics), highlighting initiatives that inspire and empower students from an early age. One of the projects that stands out is the "**Science and technology research group Moralba"**, an initiative that aims to deepen the concepts of science and technology for elementary, high school and middle school students. This program offers a comprehensive approach that encompasses both the technological and scientific domains, providing students with an enriching and practical education, as well as an embodied one.

In the article "Pedagogical practices in the context of social, preventive and mandatory isolation from an intersectional perspective," its author Moira Marianne Fuentes, from the University of Flores (Loncopué, Argentina), offers a detailed and critical analysis of how pedagogical practices have been transformed during the COVID-19 period. Through a qualitative approach and a case study, the adaptations that the institute has had to implement are explored, considering not only the modifications in the institutional modality and organization, but also highlighting the lack of a specific regulation that could have guided the teaching work under these circumstances. One of the most significant findings is the way in which these changes have led to the development of new capabilities in educational personnel, such as flexibility, empathy and articulation with other agencies. It also highlights how socioeconomic and demographic factors have influenced the effectiveness of pedagogical practices and the construction of meaningful learning for students. This study not only provides valuable insight into the impact of the pandemic on higher education, but also opens a space for reflection on the need for policies and regulations that can adapt to future challenges. The research presented here invites us to reconsider our educational practices and to seek ways to improve equity and effectiveness in times of crisis. Third, authors Anatoli José Abel Ginga and Elisângela Hermes, both from the International Ibero-American University (Angola), invite us to reflect on the "Teaching and social inclusion skills to be added in the 21st century to trained and training teachers in teaching schools in Saurimo-angola." We live in an era characterized by transience, discontinuity and complexity, where information and communication technologies are driving profound transformations in all aspects of our lives. The article presents an analysis of the need to reform educational systems so that they respond adequately to the demands of our contemporary society. In particular, it focuses on how to prepare future teachers to face and overcome today's challenges, promoting a professional profile that

is not only based on technical knowledge, but also on critical and creative skills. The proposal includes a training plan designed for the Saurimo Teacher School, which aims to address the complexities of social inequality, sustainable human development and the injustices present in our world. This training plan stands out for its formative and pedagogical approach, seeking to improve teacher performance and stimulate student learning. At a time when education must evolve to remain relevant and effective, this article offers a valuable reflection on how teacher education can contribute to the development of a more equitable society prepared for the

challenges of the 21st century. It invites us to rethink our educational practices and adopt approaches that respond to the demands and complexities of the contemporary world.

A very interesting and innovative topic is presented by Marco Antonio Catalán Urbina (Pontificia Universidad Católica, Chile) and Pedro Jurado de los Santos (Universidad Autónoma de Barcelona, Spain). Through his article "Characterizing the gifted teacher: a literature review," he shows us how in the educational field, teacher training and inclusion are two fundamental pillars that have captured the attention of educational policies worldwide. In this manuscript, the confluence of these two aspects is addressed through an innovative concept: the gifted teacher. This emerging term seeks to combine excellence in teacher training with inclusive practices to improve educational quality. The article offers an exhaustive review of the specialized literature, both in the Chilean and international context, with the aim of identifying common elements, successful experiences and areas for development. Using the systematic review methodology in accordance with the guidelines of the PRISMA statement and validated databases, the authors have selected key works that address the presence and conceptualization of the gifted teacher. This article not only reveals the lack of initiatives that address this critical intersection, but also opens the door to new research and policies that can transform education. By promoting the concept of the gifted teacher, a holistic view of the teacher, who not only stands out for his or her technical skill and knowledge, but also for his or her ability to create inclusive and equitable learning environments, is encouraged.

With the article "Students of Special Education Classrooms as Target for Educational Activities of Museums: A Comparison between Users," its authors María Marta Carrera Rossi, Juan Antonio Rodríguez Hernández and Pablo Joel Santana Bonilla, from the University of La Laguna (Tenerife, Spain), raise awareness of how museums have the opportunity to expand their educational impact through their online platforms. Among the main conclusions of the study, it is highlighted that the educational activities are mainly aimed at students in compulsory education and high school, while the offer for students in enclave classrooms is considerably low and is present only in publicly owned museums. This finding highlights a significant gap in the inclusiveness of educational activities offered by museums. This article highlights the importance of improving the visibility and accessibility of educational activities on museum websites, especially for groups of students with specific needs. In doing so, museums can become more inclusive and democratic spaces, providing equitable educational opportunities for all students. We invite our readers to consider the implications of these findings and reflect on how museums can use their digital platforms to offer more inclusive and visible education that reaches a wider diversity of users.

Editor in chief

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Science and technology research group Moralba
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ABSTRACT

The Moralba Science and Technology Seedbed is an educational project that aims to deepen the concepts of science and technology in STEM areas (Science, Technology, Engineering and Mathematics) for elementary, high school and middle school students. In the technological field, the RobótiKa Moralba project and the Robotics interest center stand out. In this space, students work on projects related to STEM Olympics and programming with Arduino, which gives them the opportunity to apply theoretical knowledge in concrete projects. On the scientific side, the Semillero includes the Antares club and the Astronomy interest center. These programs focus on theoretical-practical activities related to astronomy, which reinforces curricular knowledge of natural sciences and mathematics. These activities foster the scientific abstraction necessary to thoroughly understand the topics in this field, promoting curiosity and passion for science, providing an enriching educational environment that combines technological and scientific aspects. Students have the opportunity to participate in hands-on projects, olympiads and astronomy-related activities, which helps them develop skills in science and technology, as well as fostering their interest in STEM disciplines. This comprehensive approach seeks to prepare students for future challenges and opportunities in the field of science and technology.

RESUMEN

El Semillero de Ciencia y Tecnología Moralba es un proyecto educativo que tiene como objetivo profundizar en los conceptos de ciencia y tecnología en áreas STEM (Ciencia, Tecnología, Ingeniería y Matemáticas) para estudiantes de primaria, bachillerato y educación media. En el ámbito tecnológico, se destaca el proyecto RobótiKa Moralba y el centro de interés de Robótica. En este espacio, los estudiantes trabajan en proyectos relacionados con olimpiadas STEM y programación con Arduino, lo que les brinda la oportunidad de aplicar conocimientos teóricos en proyectos concretos. En el ámbito científico, el Semillero incluye el club Antares y el centro de interés de Astronomía. Estos programas se centran en actividades teórico-prácticas relacionadas con la astronomía, lo que refuerza los conocimientos curriculares de ciencias naturales y matemáticas. Estas actividades fomentan la abstracción científica necesaria para comprender a fondo los temas en este campo, promoviendo la curiosidad y la pasión por la ciencia, proporcionando un entorno educativo enriquecedor que combina aspectos tecnológicos y científicos. Los estudiantes tienen la oportunidad de participar en proyectos prácticos, olimpiadas y actividades relacionadas con la astronomía, lo que les ayuda a desarrollar habilidades en ciencia y

Tecnología, así como a fomentar su interés en las disciplinas STEM.

Este enfoque integral busca preparar a los estudiantes para futuros desafíos y oportunidades en el campo de la ciencia y la tecnología.

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Introduction

Colegio Moralba Suroriental IED is located in the southeast of the city of Bogotá, in a vulnerable socioeconomic area very close to the eastern hills. The educational community is characterized by its limited interests in science and technology, only focused on supplying basic needs in their homes and personal needs, very few have a defined life project. It is in this scenario where the project plays a fundamental role, in which students who have a taste for science and technology topics have the possibility to focus their life projects, thus the Moralba Science and Technology Semillero.

It is presented as a classroom project and aims to deepen science and technology concepts in STEM areas using the ABP (Project Based Learning) methodology for elementary, high school and middle school students. In turn, it arises as an initiative to promote learning and interest in these fundamental fields. This is divided into 5 strategies, three of technology and two of astronomy, which are addressed together, in the strengthening and deepening of the themes that are cross-cutting in natural sciences, mathematics and technology.

On the technology side, there is the robotics project "RobótiKa Moralba", the Robotics Center of Interest and the participation of two teams in the STEM Olympics, one in the Junior category and the other in the Juvenile category. In the scientific field, there is the astronomy group "Antares" and the astronomy interest center. These strategies as a whole make up the seedbed, which, in a complementary manner, are part of the curricular alternatives for students in extra-class hours.

In each strategy, theoretical-practical activities are carried out, where audiovisual media such as video clips, documentaries and films are used, as well as practical workshops with consumable material or digital tools such as computers, tablets or cell phones in the use of software, topics and problem situations are addressed through project-based learning, i.e., a proposal is proposed that will be developed during the year.

During its development, in each stage, it is evaluated, not with a class grade, but as an activity of each strategy, with the evolution of the students in the work groups, carrying out an audiovisual show each semester and, at the end, an exhibition of each final product obtained. As a pedagogical proposal that integrates technology and science to provide students with an enriching experience in the learning of STEM areas, it seeks to stimulate students' interest and understanding of science and technology, providing them with tools and opportunities to explore and apply this knowledge in a practical way.

Conceptual Framework

STEM FOCUS

The STEM approach is the acronym for Science, Technology, Engineering and Mathematics (Ramos-Lizcano et al., 2022). It is a combination of the sciences in a teaching approach based on interdisciplinarity and applicability of science and mathematics knowledge (Perales Palacios & Aguilera, 2020), it is an

educational methodology that integrates these disciplines in an interdisciplinary approach. According to Bybee (2019(Bybee, 2019)), the STEM approach seeks to develop key skills and competencies, such as critical thinking, problem solving, and collaboration, through hands-on projects and activities. It encourages inquiry-based learning and promotes the connection between theoretical knowledge and its application in real-world situations.

In the context of classroom projects, the STEM approach allows students to tackle complex challenges using an integrated approach. According to (Allodi et al., 2019) classroom projects based on the STEM approach engage students in authentic problem solving, where they apply the principles of science, technology, engineering, and mathematics to design innovative solutions. These projects encourage creativity, experimentation and teamwork, providing students with hands-on experience that helps them understand the relevance and impact of STEM disciplines in their daily lives.

In interest centers, the STEM approach also finds application by allowing students to explore topics related to science, technology, engineering and mathematics that spark their curiosity. According to (Knowles et al., 2018) this fosters intrinsic motivation and student engagement in learning. By tackling projects related to their insights, students become active researchers, applying the scientific method, using advanced technology and developing mathematical skills to understand and solve complex problems.

Applying the STEM approach in these settings also has long-term benefits for students. According to (Bybee, 2019), this approach promotes the development of skills and competencies that are highly valued in today's labor market, such as critical thinking, collaboration and adaptability. In addition, the STEM approach fosters interest in these areas, thus contributing to closing the gender and diversity gap in these fields.

PROJECT-BASED LEARNING (PBL)

Project-Based Learning (PBL) is a pedagogical approach that focuses on project-based learning as the primary means of learning. This approach encourages student participation, promoting the acquisition of knowledge, skills and competencies through practical problem solving and the creation of tangible products. According to (Mutakinati et al., 2018), PBL involves designing challenging and authentic projects, where students take active and collaborative roles, investigating, planning, solving problems, and presenting results.

In the context of classroom projects, PBL provides students with the opportunity to apply the knowledge acquired in a real-world environment. According to (Edelson et al., 2021) PBL-based classroom projects engage students in exploring and understanding concepts through hands-on problem solving. These projects can address topics relevant to students, awakening their interest and intrinsic motivation for learning. In addition, PBA fosters teamwork, effective communication and the development of socioemotional skills, thus strengthening the competencies necessary for the 21st century.

As for the centers of interest, PBL also finds application in this educational approach. According to (Mergendoller, 2018), it involves creating learning environments that reflect students' interests and needs. These provide a meaningful context for learning, where students can explore topics that are relevant and motivating to them. Students can develop research, problem-solving and decision-making skills while actively engaging in the learning process.

The use of simulators in theoretical and practical laboratories has proven to be a valuable tool in the teaching of physics and mathematics (Molina Molina, 2021). These simulators allow students to explore and experiment with key robotics concepts in a controlled virtual environment. According to previous studies, the use of simulators can improve the understanding of scientific principles and promote practical skills in the field of robotics (Sánchez-Caballé & Esteve- Mon, 2023; Sánchez-Otero et al., 2019).

Seedbed

From the particular interests of the students and their due characterization, the socioeconomic context of the educational institution (Colegio Moralba Suroriental, located in the district of San Cristobal, southeast of the city of Bogota) and the low academic results of students in areas such as natural sciences, mathematics and technology, the need arises, initially, to strengthen the fundamental concepts for the understanding of the scientific context, the difficulties in their understanding, and then to deepen their understanding.

The idea of the project arose a few years ago, after several attempts to gather some high school and middle school students, since they participated in an institutional way in events with the business emphasis of the school in some entrepreneurship exhibition in the afternoon. The club was born in the year 2021 as a classroom project, and in turn participating in "planetarium for teachers" of the district planetarium linked for some years in the activities and workshops for teachers, initially a weekly extra-classroom session, virtual modality of two hours, aimed at high school students from sixth to eleventh grade during August to November of the same year.

Subsequently, a proposal was made for the following year, in a 100% face-to-face manner, for the creation of the Astronomy center of interest, a center of interest specific to the educational institution, which would work against the school day, for now, only directed to students from sixth to ninth grade in the afternoon in a two-hour session. Theoretical and practical activities are carried out on different astronomy topics that attract the students' attention. In each session they not only satisfy their curiosity, but also reinforce their knowledge in natural sciences and mathematics through the scientific abstraction required by the topics in this field.

During the same year, other classroom projects were initiated, which are part of strategies other than astronomy, such as RobótiKa Moralba and STEM Olympics, initially with tenth and eleventh grade students in the subjects of Physics and Technology, where the curriculum is complemented with the use of simulators and STEM resources. On the one hand, there are the simulators in theoretical-practical physics laboratories and on the other hand, the use of programming software such as Scratch and Mblock to bring the students closer to the

students to programming through the use of blocks and later the use of the Arduino board (and the electronics kit) for the control of external objects, with the purpose of bringing them closer to Robotics. Programming has been recognized as an important skill in the 21st century, and its application in robotics can spark students' interest and promote cognitive and problem-solving skills (Bers, 2018; Katterfeldt & Shilling, 2019).

In 2023, the Robotics center of interest was opened, which, together with the other two technology strategies (RobótiKa Moralba and STEM Olympics), will work transversally as projects with a STEM focus, which seek to work together to solve a problem, either institutional or local (specific to the sector, for example, mobility, pollution in the area, inadequate use of waste, etc.). In this way, it is possible to carry out workshops or school activities in projects such as ICT and risk management.

This is based on educational approaches supported by research, where the use of simulators, programming and the study of astronomy through theoretical and practical activities are effective strategies to deepen the concepts of science and technology in STEM areas. These promote student interest and understanding, providing them with tools and opportunities to explore and apply knowledge in meaningful contexts.

It is an educational project that has been developed with the purpose of deepening the concepts of science and technology in STEM areas (Science, Technology, Engineering and Mathematics) for students of different educational levels. This pedagogical approach seeks to stimulate young people's interest and learning through two key educational methodologies: the STEM approach and project-based learning (PBL). This article explores in detail this educational project, its relevance in the context of STEM education, and the contribution of the use of technologies and simulators, with a special focus on the teacher's experience as a learning facilitator.

It emerges as an innovative educational initiative that seeks to provide students with the opportunity to explore and understand concepts in STEM areas, such as natural sciences, mathematics and technology. This approach has become a fundamental pillar of contemporary education, as it is recognized that STEM training is essential to prepare young people to meet the challenges of the 21st century, both in their future careers and in their understanding of the world around them.

It is based on the interconnection of the aforementioned disciplines to address real-world problems and foster problem-solving skills, critical thinking and creativity. This approach seeks not only to impart theoretical knowledge, but also to apply this knowledge in practical and real situations. In addition, project-based learning (PBL) is a methodology that promotes active learning and student participation in projects with clear objectives and practical applications.

Technology Integration in STEM Education:

The use of technology plays a crucial role in the effective implementation of the STEM and PBL approach in education. The teacher, in this context, plays a fundamental role in incorporating technological resources to improve the quality of teaching and learning. In the case of the teacher behind the Semillero de Ciencia y Tecnología

Moralba, his experience and commitment to teaching physics and mathematics have led to an evolution in his pedagogical approach.

Initially, the teacher introduced Web 2.0 and 3.0 technologies in his classes. These technologies provided assessment tools, such as online questionnaires and interactive assessments, as well as online resources for consultation. Over time, this experience expanded to the integration of simulators and STEM resources with programming in the classroom. This allowed for a more hands-on and engaging approach for students, who were able to interact with cutting-edge educational technology.

Experience with PhET Simulators

A particular highlight of the teacher's experience has been his work with the PhET simulators in the classroom. PhET Interactive Simulations is a collection of interactive simulators developed by the University of Colorado Boulder, designed specifically for teaching science and mathematics. These simulators offer students the opportunity to explore and experiment with scientific and mathematical concepts in a virtual environment, which facilitates the understanding of abstract and complex topics.

The teacher has used PhET simulators in a variety of educational contexts. First, it has incorporated them into the design of laboratory activities in physics and mathematics. Simulators allow students to conduct virtual experiments in a safe and controlled environment, eliminating the logistical and equipment limitations associated with traditional experiments. This expands access to laboratory experiences in resource-limited settings.

In addition, the teacher has integrated the PhET simulators in different moments of a class session. These simulators have been used at the beginning of a lesson as a way to explore concepts and preconceptions. This strategy helps to arouse students' curiosity and build a solid foundation of knowledge before delving into more complex topics.

PhET simulators have also been used at the end of the exploratory or preconcept phase, allowing students to apply what they have learned and observe how scientific principles manifest themselves in practice. Finally, PhET simulators have been used after the explanations in the practical phase, allowing students to consolidate their knowledge and reinforce their understanding through hands-on activities.

The Benefits of Technology and Simulators in STEM Education:

•   The integration of technology, and in particular educational simulators such as PhET, into the classroom offers a number of significant benefits in the context of STEM education. Some of these benefits include:

•   Interactivity and Virtual Experimentation: Simulators allow students to interact with scientific concepts and principles in a safe and practical way. They can perform virtual experiments, modify parameters and observe results, which facilitates experimentation and understanding of complex phenomena.

•   Access to Laboratory Experiences: Simulators eliminate the physical and logistical resource constraints in traditional laboratories. This broadens the access of

students to laboratory experiences, regardless of the availability of equipment and materials.

• Focus on Active Learning: Simulators encourage active learning as students actively participate in exploration and experimentation. This promotes critical thinking and problem solving.

• Personalization of Learning: The simulators allow students to advance at their own pace and explore concepts in depth. This facilitates the personalization of learning and adaptation to the individual needs of students.

• Visualization of Abstract Concepts: Many concepts in science and mathematics are abstract and difficult to visualize. Simulators provide visual representations that make these concepts more accessible and understandable.

• Motivation and Commitment: Technology, in the form of simulators and interactive resources, is often highly attractive to students. This increases motivation and commitment to the learning process.

• Formative Evaluation: Simulators can also be used for formative assessment, allowing teachers to track student progress and adapt their teaching accordingly.

The Teacher's Experience as a Learning Facilitator:

The teacher behind the Semillero de Ciencia y Tecnología Moralba plays a fundamental role as a learning facilitator. His experience in teaching physics and mathematics, as well as his commitment to educational innovation, have enabled him to take full advantage of technologies and simulators in the classroom.

It has shown the importance of adapting its pedagogical approach as educational technology evolves. It began with the incorporation of Web 2.0 and 3.0 tools, which led to a significant improvement in online interaction and evaluation. As he progressed, he delved into the world of simulators and STEM resources with programming, allowing students to experiment with concepts in a more hands-on and visual way.

The use of PhET simulators in their teaching has demonstrated their ability to provide high quality virtual laboratory experiences. This is especially relevant in a context where physical laboratories often present logistical and budgetary challenges. The ability to use simulators to provide hands-on experiences is one way to overcome these barriers and ensure that students have access to a better quality education.

They have applied these simulators at different times in their classes, which shows a deep understanding of how to integrate technology into the teaching and learning process. By using simulators at the beginning of a lesson, it creates a solid foundation for concept exploration. Used at the end of the exploratory phase, they allow students to apply what they have learned. In addition, PhET simulators were used after the explanations in the practical phase, consolidating learning by verifying the concepts.

In addition to his experience with educational technology, he has demonstrated a commitment to STEM education and project-based learning. The Moralba Science and Technology Seminar is a manifestation of this commitment, as it provides students with the opportunity to participate in projects that challenge them to apply their knowledge to real-world situations. The combination of technology and innovative educational methodologies has led to an enriching learning experience for students.

Relevance in the Context of STEM Education:

The STEM approach and project-based learning have gained prominence in the field of education in recent years. This is due in part to the growing demand for professionals in STEM areas and the need to prepare students for future careers and challenges that will require strong foundations in science, technology, engineering and mathematics. STEM education has become an essential approach to promote scientific and technological literacy in society. This includes not only the acquisition of knowledge, but also the development of critical skills, such as logical thinking, problem solving and creativity. The integration of technology, as seen in the case of the seedbed, complements this approach by providing tools and resources for learning.

Project-based learning, on the other hand, emphasizes the practical application of knowledge and skills. Challenging, problem-oriented projects allow students to work in teams, investigate, collaborate and solve real problems. This fosters critical thinking and prepares students to face complex situations in their future careers and lives. The combination of STEM and PBL creates a comprehensive educational approach that prepares students for success in the 21st century. In an ever-evolving world where technology plays a central role, the ability to understand and apply STEM concepts is essential. STEM education also fosters scientific and technological thinking, which is fundamental to problem solving in various disciplines and contexts.

It is an outstanding example of how STEM education and project-based learning can stimulate student interest and learning. The combination of educational technology, in particular the use of PhET simulators, with innovative pedagogical methods, has enabled the teacher behind this project to provide enriching learning experiences. The integration of technology, such as PhET simulators, into the classroom has proven to be an effective strategy for addressing physical and logistical resource constraints in science and mathematics education. In addition, teachers have adapted their approach over time, incorporating increasingly advanced technological tools to enhance the teaching and learning process.

It highlights the importance of preparing students to face real-world challenges through STEM education and project-based learning. This approach not only provides them with theoretical knowledge, but also with practical and applicable skills in a wide variety of fields. Ultimately, it exemplifies how the combination of a committed teacher, advanced educational technology and innovative pedagogical approaches can have a significant impact on students' education and prepare them for a knowledge and technology-based future.

Method

The seedbed consists of 5 strategies that comprise two lines of work, on the one hand, the technological part based on the "RobótiKa Moralba" project, the Robotics Interest Center and participation in STEM Olympics and, on the other hand, the scientific part, where the Antares Astronomy Club and the Astronomy Interest Center are located. Both currents focus on the same goal, which is the strengthening and deepening of concepts through the design and execution of PBL projects, in terms of the STEM approach, as will be seen below:

Moralba RobotiKa Project:
On the technological side, there is the RobótiKa Moralba project, which uses simulators in theoretical and practical physics and mathematics laboratories. These simulators allow students to explore and experiment with key robotics concepts in a virtual environment. In addition, students are introduced to basic notions of programming using the Arduino board, giving them the opportunity to enter the world of programming and electronics.

Figure 1

Middle school student developing a practical activity with the Arduino board

Note. Retrieved from: https://sites.google.com/view/cienciaytecnologamoralba/
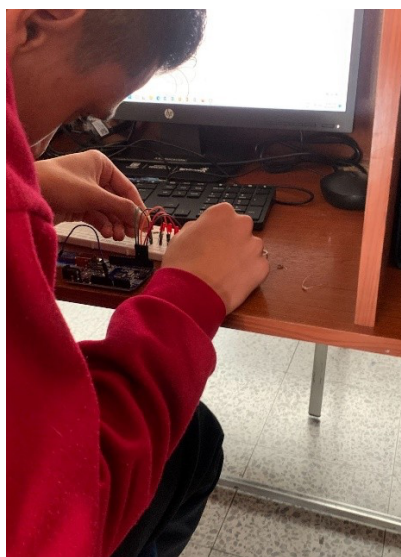
Robotics Interest Center:
Since 2023, it has been open to students from 5 to 9 as part of the extended day, as well as Astronomy. It addresses some basic topics related to the introduction to programming and the use of devices such as Arduino are effective strategies to bring students closer to the world of technology and electronics, in addition to the formation of two teams, one junior (students from 5 to 8) and one youth (9 to 11) for participation in the STEM Olympics. Its objective is to strengthen concepts in STEM areas, but also to teach them other uses of some electromechanical devices, which, together with programming software, are important for the execution of tasks, using knowledge of mathematics, natural sciences and technology.

Figure 2

Students attending the robotics center of interest

Note. Retrieved from: https://sites.google.com/view/cienciaytecnologamoralba/

STEM Olympics:

Since 2022 we have participated in the STEM olympics, forming the youth team QUARK TEAM MORALBA, with students in grades 10 and 11, with whom we reached the challenge 4 out of a possible 5. In the year 2023, two teams will be formed, one junior and one youth, whose base are the students of the robotics center of interest and are intended to continue advancing sustainability projects, on the one hand, sustainable production, and on the other, climate change.

Figure 3

Junior Quark Team Moralba STEM Olympiads students

Note. Retrieved from: https://sites.google.com/view/cienciaytecnologamoralba/
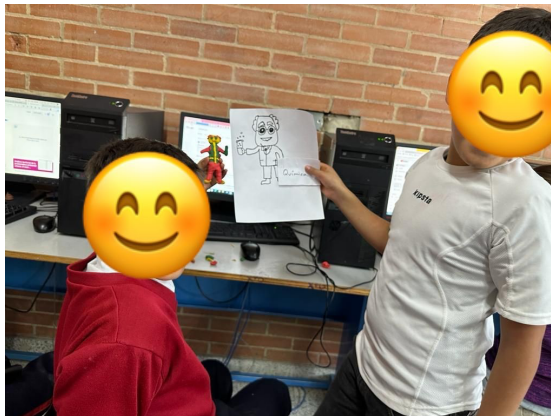
Antares Astronomy Club:

As for the scientific part, the seedbed has the ANTARES Astronomy Club, which has the support of the District Planetarium. This club focuses on theoretical and practical activities related to astronomy, allowing students to deepen their curricular knowledge of natural sciences and mathematics. These activities, which range from astronomical observations to conducting scientific experiments, foster the scientific abstraction necessary to

understand astronomical phenomena and apply mathematical concepts in this field.

Figure 4

Students starting the astronomy club, year 2021

Note. Retrieved from: https://sites.google.com/view/cienciaytecnologamoralba/

Astronomy Interest Center

It begins in 2022 as part of the astronomy club of the educational institution and the astronomy seedbed that had previously worked from the District Planetarium. With the approval of the Board of Directors, the call for applications was made in February for students from sixth to ninth grade in the morning session, as shown in the advertisement. The schedule is against the clock (in the afternoon) in a two-hour session on Thursdays from 2:20 pm to 4:10 pm, are theoretical and practical sessions, which address topics of interest in astronomy, such as: Planet Earth, Moon, Sun, Solar System, Planetary Systems, Exoplanets, Galaxies, Milky Way, Constellations, Astronomical Coordinate Systems, Telescopes, etc. In the year 2023, the program continues on Friday afternoons, in the same modality as the previous year, and two guests have been invited to talk with the students.

Figure 5

Students attending the Astronomy interest center

Note. Retrieved from: https://sites.google.com/view/cienciaytecnologamoralba/

Publication of scientific articles on the pedagogical practice carried out in physics classes with PhET simulators, as a product of the seedbed. The idea is to continue writing about the experiences and results obtained in each strategy. The site https://sites.google.com/view/cienciaytecnologamoralba/inicio contains the different projects of the seedbed, which are permanently updated, according to the activities that are being developed on a permanent basis.

Figure 6

Screenshot of the seedbed website

Note. Retrieved from: https://sites.google.com/view/cienciaytecnologamoralba/

Results

Throughout several years of teaching practice, the Moralba Science and Technology Semillero has demonstrated a significant impact on the teaching-learning process. This educational project has employed a combination of educational technology, in particular, simulators and innovative pedagogical strategies to provide students with enriching learning experiences in STEM areas. In this article, we will explore in depth the positive results obtained and their relevance in the development of STEM skills.

Simulators: Effective Tools for Understanding Concepts

Simulators have played a prominent role in the success of the Moralba Science and Technology Seedbed. These interactive tools have proven to be effective in explaining abstract and complex concepts in the natural sciences and mathematics. Through the simulation of scientific and mathematical phenomena, simulators provide students with a hands-on experience that allows them to understand and visualize concepts that might otherwise be difficult to assimilate.

The usefulness of simulators lies in their ability to simplify and clarify concepts, making them more accessible and understandable to students. These

virtual environments allow students to explore variables, perform experiments and observe results interactively. Rather than relying solely on theoretical explanations, the simulators offer a hands-on experience that encourages active, participatory learning.

The application of simulators in physics and mathematics teaching has had a particularly positive impact. Students can perform virtual laboratory practices, which eliminates the logistical and budgetary constraints associated with traditional laboratories. This flexibility has enriched the learning experience by giving students the opportunity to experiment without limitations, which has stimulated their curiosity and participation in the classes. Simulation technology not only simplifies concepts, but also facilitates the process of experimentation and analysis. Students can test hypotheses, modify parameters and observe how results change, which promotes critical thinking and problem solving. This practice is fundamental in the formation of essential scientific and mathematical skills.

The Impact on Robotics and Programming

In addition to its effectiveness in teaching natural sciences and mathematics, the Moralba Science and Technology Semillero has had a significant impact on student interest and participation in the field of robotics and programming. The introduction of basic notions using the Arduino board has proved to be an enriching experience.

Robotics and programming are growing areas that are fundamental to STEM education. The Semillero has acted as a bridge to these fields by fostering students' curiosity and motivation to explore technology and electronics. The use of the Arduino board as a pedagogical tool has allowed students to understand the concepts of programming and electronics in a practical way. The Arduino board is known for its versatility and ease of use, making it an ideal platform for teaching programming and electronics. Students can create interactive projects and explore a variety of applications, which stimulates their creativity and desire to learn. This experience also has the potential to awaken vocations in fields related to technology and engineering.

The Robotics Interest Center at the Semillero has been particularly effective in bringing students closer to the world of technology and electronics. Forming teams to participate in STEM Olympiads has promoted collaboration and healthy competition among students. Competition in these Olympiads allows students to apply their knowledge in real-world situations, which reinforces their understanding of STEM concepts and problem-solving skills. The connection between technology and robotics is also critical for the future, as robotics and automation play an increasingly important role in industry and society in general. The Semillero has prepared students for future opportunities in these fields while enhancing their understanding of STEM concepts.

Deepening of Curricular Knowledge

The Antares Astronomy Club has been a valuable addition to the Moralba Science and Technology Semillero. This club focuses on theoretical and practical activities related to astronomy, which has led to a deepening of curricular knowledge in natural sciences and mathematics. Astronomy is a discipline that combines aspects of natural science and mathematics, and requires scientific abstraction skills to understand astronomical phenomena. Hands-on activities, such as star and planet observations, allow students to apply mathematical concepts to the understanding of these phenomena.

It has not only enriched curricular education, but also stimulated students' curiosity about the universe and the mysteries of the cosmos. Astronomy is a discipline that has fascinated mankind for centuries, and this club has allowed students to explore and appreciate the beauty of space.

Discussion and conclusions

The experience with the different strategies of the seedbed has proven to be highly positive and enriching. Its integration with the science, mathematics and technology curricula has facilitated the explanation of complex concepts and increased students' level of understanding. The possibility of virtual laboratory practices has provided flexibility and variety in the learning activities, which has boosted student interest and participation. The RobótiKa Moralba project has been a great success in introducing students to the world of robotics and programming. The use of simulators in theoretical and practical laboratories has allowed an interactive and safe exploration of key concepts in robotics. Participation in the STEM Olympiads has motivated students to excel and engage in learning in STEM areas.

The Antares Astronomy Club has been a valuable experience to deepen the curricular knowledge of natural sciences and mathematics. Theoretical and practical activities related to astronomy have stimulated the students' scientific abstraction and logical reasoning. In conclusion, the use of PhET simulators and ICT resources in the teaching of physics, as well as the implementation of the RobótiKa Moralba project and the Antares Astronomy Club, have had a positive impact on the educational process. These experiences demonstrate that the appropriate use of technologies and the promotion of hands-on, playful activities can enhance student learning in STEM areas. We will continue to explore and expand the use of ICT resources in teaching to improve teacher training and learning of physics in the future, continuing with the social projection, that the educational community continues to recognize our work and effort through its dissemination, and increasingly students show greater interest in these areas and forge a future studying careers related to the STEM approach, but above all, see a whole life project that allows them to grow integrally from the scientific and technological training.

References

Allodi, I., Nijssen, J., Benitez, J. A., Schweingruber, C., Fuchs, A., Bonvicini, G., Cao, M., Kiehn, O., & Hedlund, E. (2019). Modeling Motor Neuron Resilience in ALS Using Stem Cells. Stem Cell Reports, 12(6), 1329–1341. https://doi.org/10.1016/j.stemcr.2019.04.009

Bybee, R. W. (n.d.). Using the BSCS 5E Instructional Model to Introduce STEM Disciplines.

Edelson, D. C., Reiser, B. J., McNeill, K. L., Mohan, A., Novak, M., Mohan, L., Affolter, R., McGill, T. A. W., Buck Bracey, Z. E., Deutch Noll, J., Kowalski, S. M., Novak, D., Lo, A. S., Landel, C., Krumm, A., Penuel, W. R., Van Horne, K., González-Howard, M., & Suárez, E. (2021). Developing Research-Based Instructional Materials to Support Large-Scale Transformation of Science Teaching and Learning: The Approach of the OpenSciEd Middle School Program. Journal of Science Teacher Education, 32(7), 780-804. https://doi.org/10.1080/1046560X.2021.1877457

Knowles, J. G., Kelley, T. R., & Holland, J. D. (n.d.). Increasing Teacher Awareness of STEM Careers. https://polytechnic.purdue.

Mergendoller, J. R. (n.d.). Defining High Quality PBL: A Look at the Research.

Molina Molina, G. A. (2021). Tensiones entre el enfoque educativo STEM y la filosofía escolar. Praxis Pedagógica, 21(30), 54–81. https://doi.org/10.26620/uniminuto.praxis.21.30.2021.54-81

Mutakinati, L., Anwari, I., & Yoshisuke, K. (2018). Analysis of students' critical thinking skill of middle school through stem education project-based learning. Jurnal Pendidikan IPA Indonesia, 7(1), 54–65. https://doi.org/10.15294/jpii.v7i1.10495

Perales Palacios, F. J., & Aguilera, D. (2020). Ciencia-Tecnología-Sociedad vs. STEM: ¿evolución, revolución o disyunción? Ápice. Revista de Educación Científica, 4(1), 1–15. https://doi.org/10.17979/arec.2020.4.1.5826

Ramos-Lizcano, C., Ángel-Uribe, I.-C., López-Molina, G., & Cano-Ruiz, Y.-M. (2022). Elementos centrales de experiencias educativas con enfoque STEM. Revista Científica, 45(3), 345–357. https://doi.org/10.14483/23448350.19298

Sánchez-Caballé, A., & Esteve-Mon, F. M. (2023). Analysis of Teaching Methodologies Using Digital Technologies in Higher Education: a Systematic Review. RIED-Revista Iberoamericana de Educacion a Distancia, 26(1), 181–199. https://doi.org/10.5944/ried.26.1.33964

Sánchez-Otero, M., García-Guiliany, J., Steffens-Sanabria, E., & Hernández- Palma, H. (2019). Pedagogical Strategies in Teaching and Learning Processes in Higher Education including Information and Communication Technologies. Informacion Tecnologica, 30(3), 277–286. https://doi.org/10.4067/S0718-07642019000300277

Pedagogical practices in the context of social, preventive and mandatory isolation from an intersectional perspective

Prácticas pedagógicas en contexto de aislamiento social, preventivo y obligatorio desde una mirada interseccional

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	ABSTRACT
Keywords: Pedagogical practices, Intersectionality, COVID-19, Learning, Psychopedagogy	The current global situation regarding the Covid-19 pandemic and the Argentine national provisions of ASPO (Preventive and Mandatory Social Isolation) have directly impacted education. In higher education, each institution made the relevant decisions for the development of its pedagogical practices, therefore, the objective of the research was to analyze the way in which pedagogical practices were developed in a Teacher Training Institute in Argentine Patagonia, and determine if the age, gender and/or social class of the students influenced these practices, analyzing these aspects through an intersectional perspective. This research focused on a qualitative approach, the design was a case study, and the sample was made up of the management team, teachers and some students. To collect data, it was decided to use semi-structured interviews and a discussion group focused on the participating students. On this methodological basis, the analysis and elaboration procedure gave rise to the construction of four theoretical categories. Among the most relevant results, the modified aspects in pedagogical practices were identified, such as the modality, institutional organization, lack of regulations that frame teaching work. The development of capabilities such as flexibility, empathy and articulation with other organizations was identified. It was concluded that aspects such as gender, socioeconomic issues and age directly influenced pedagogical practices and the construction of effective learning by the students.
	RESUMEN
Palabras clave: Prácticas pedagógicas, Interseccionalidad, COVID-19, Aprendizaje, Psicopedagogía	La situación actual mundial acerca de la pandemia por Covid-19 y las disposiciones nacionales argentinas de ASPO (Aislamiento Social Preventivo y Obligatorio) han impactado directamente sobre la educación. En educación superior, cada institución tomó las decisiones pertinentes para el desarrollo de sus prácticas pedagógicas; por lo tanto, el objetivo de la presente investigación fue analizar la manera en que se desarrollaron las prácticas pedagógicas en un Instituto de Formación Docente de la Patagonia argentina, y determinar si la edad, el género y/o

la clase social de los estudiantes, influyeron en dichas prácticas, analizando dichos aspectos a través de una mirada interseccional.

Dicha investigación se centró en un enfoque cualitativo, siendo el diseño un estudio de casos, y estando la muestra constituida por el equipo directivo, profesores y algunos estudiantes. Para la recolección de datos se optó por utilizar entrevistas semiestructuradas y un grupo de discusión centrado en los estudiantes participantes. Sobre esta base metodológica, el procedimiento de análisis y elaboración dio lugar a la construcción de cuatro categorías teóricas. Dentro de los resultados más relevantes, se identificaron los aspectos modificados en las prácticas pedagógicas, tales como la modalidad, organización institucional y falta de normativa que encuadre el trabajo docente. Se identificó el desarrollo de capacidades tales como flexibilización, empatía y articulación con otros organismos. Se concluyó que, aspectos como el género, las cuestiones socioeconómicas y la edad influyeron directamente sobre las prácticas pedagógicas y sobre la construcción de aprendizajes eficaces por parte del estudiantado.

Introduction

In Argentina, in March 2020, the Social, Preventive and Obligatory Isolation (ASPO) was decreed due to the health crisis caused by the COVID-19 virus. Faced with this, educational institutions suspended their pedagogical practices for a while, and then developed new modalities related to virtuality.

The pedagogical practice, taking into account authors such as Forgion and Santos (2017) can be defined as the existing relationship between subjects of knowledge, in which a subject with a more structured knowledge owner of a disciplinary knowledge, assumes as a clear and basic resource to favor teaching and learning from a position that demands a dialogical and critical disposition of knowledge, in order to pretend to materialize the formative purposes manifested in a pedagogical horizon in a given context. Pedagogical practice is a social practice, which is found within a context, within the educational system and crossed by axes such as power, knowledge, theory, practice, historical situationality and daily life.

Within this pedagogical practice are the subjects of education, theoretical and practical knowledge, a context within a socio-historical era that is progressively changing, and the teaching and learning processes that these subjects deploy.

According to Zabalza (1990), teaching practices can be defined as communication to the extent that they respond to a structured process in which information, messages or communications are exchanged between teachers and students. It is a socio-communicative and cognitive activity that promotes meaningful learning in rich and complex environments, in the classroom, virtual classroom or outside the classroom, in synchrony or asynchronously. On the other hand, learning is defined according to Pozo (2016) as "a relatively permanent and transferable change in a person's knowledge, skills, attitudes, emotions, beliefs, etc., as a consequence of his or her social practices mediated by certain cultural devices" (p. 64). Also, taking into account some constructivist and sociocultural positions, it can be argued that learning is above all a process of construction of meanings whose defining attribute is its dialogic and social character, and is determined by the context in which the subjects live.

Regarding the approach to perform the analysis of pedagogical practices, starting from the contributions of Hill Collins and Bilge (2019) it is argued that:

> Intersectionality is a way of understanding and analyzing the complexity of the world, people and human experiences. The events and circumstances of social and political life and the individual can rarely be understood as determined by a single factor. In general, they are shaped by many factors and in a variety of ways that influence each other. (p. 13)

The different social, cultural, educational, political and economic inequalities that a subject may suffer are axes that intersect moments and situations in the student's life. The notion of intersectionality places the subject in interdependence and interaction, in those points of crossroads woven by the different dimensions, structures and dynamics that determine the difficulty of access or educational abandonment, and also places it in the devices that define and cause inequality, discrimination and exclusion, or, provoke experiences and situations of privilege (Vázquez, 2020).

From this intersection emanate different forms of domination under which students construct their gender, cultural, ethnic, social class, etc. identities, which may come into confrontation as a result of these forms of domination and the ASPO context that determines them.

In the educational context, research has been conducted under this approach, among which we can name the one conducted by Lopez in 2018 in Guatemala, called "*An intersectional reading of technological innovation as an educational resource in the university*." The results of this exploratory study showed that despite the possibilities of access offered by ICTs, their application was limited by gaps. The one carried out by Hueso in 2020 in Colombia, about digital education and the right to education in times of the coronavirus, from which it is concluded that digital education is a lifesaver in a situation like the pandemic to ensure a minimum of the objectives guaranteed by the right to education. And also a research by Suárez et al., from the year 2021, in Colombia, called "*ICT-mediated education in higher education in the midst of the isolation period of the Covid-19 pandemic*," from which it was found that after a year in the midst of the pandemic, ICT-mediated education has acquired greater understanding and relevance by the university academic community.

In this sense, the purpose of this article is to analyze the development of the pedagogical practice in ASPO in a Teacher Training Institute of the Argentinean Patagonia, under an intersectional view; that is, according to the existing social inequalities in this educational level and in the current society, taking the approach as an analytical tool, in order to make a complex reading of the educational reality.

Method

For this research, the development of a qualitative approach was considered, using a case study, specifically in a teacher training institute in the Argentinean Patagonia.

The population chosen for this research is the pedagogical practices developed at the tertiary educational level, its students, teachers, directors and their organization in the context of pandemic-quarantine.

The sample consisted of 12 teachers, including the management team and 6 students belonging to the 2nd, 3rd, 4th year and a graduate of the institute, who were invited to take part in the research on a voluntary basis, having to read and sign an informed consent form. This sample was defined as a matter of geographic convenience and accessibility. They are considered key informants for the research topic and the interest of giving an account of the pedagogical practices of which they were part.

First, a semi-structured interview with teachers and the management team was chosen as an instrument of inquiry, gathering information in first person. As a second instance, a discussion group of students was proposed, called "Forum of exchange on current practices", which was developed in a meeting of approximately one hour and a half, encouraging the exchange of educational experiences in pandemics.

Once the data were collected, categories of analysis were developed to allow interpretation in order to find the research results.

Results

From this study, the following categories were derived and analyzed: "Pedagogical practices in a new context", "Institutional conditions for development", "Conditions of permanence from intersectionality, when flexibility is not enough" and "Teaching and learning processes in times of COVID".

Pedagogical Practices in a New Context

In Argentina, Decree 297/2020 established the ASPO, which led the higher education institution to suspend its face-to-face activities. Later, seeing that the health situation did not change, the educational modality was modified.

Based on the above, modifications were found in the institutional organization, which, at this early stage, was characterized by decision-making along two lines imposed from other places:

> (...) first of all, from the higher level management, there was a guideline that told us that classes had to continue in this virtual format, since no other means were possible (...) on the other hand, we also had the union or the guild that told us that we had to take into account all the possibilities so that no one would be left out of this Public Education (...) (E12).

In turn, one of the difficulties encountered was the lack of regulations, since, beyond these two general guidelines, the Decrees published by the Nation and the replies from the Provinces, there were no regulations regarding the duties and obligations of teachers:

> We only received the resolution of the suspension for the two weeks (...) It did not specify anything in terms of actions or decision making (...) Resolutions that told us how the classes would continue, how they should be given or organized, there was nothing (...) (E1).

With these problems in mind, the virtualization process was deployed, which required contact with all the students, not only in the urban area, but also in nearby towns and rural areas. The most used resources for this were WhatsApp, Google Drive, Zoom and Google Meet:

> (...) we organized the schedules, we started to contact the students and ask them for their e-mails, also with the teachers and we set up an institutional drive (...) We thought about this way of organization. The preceptor was the one who was able to contact the students, set up WhatsApp groups (...) (E1).

One of the main challenges was to create the necessary conditions, not only to achieve the development of teaching and learning processes in their students, but also to make these pedagogical practices accessible to all, within a territory with student diversity.

Institutional Conditions for Development

The conditions in the teaching and learning processes changed due to the social transformations that occurred as a result of the health situation. One of the main challenges for teachers in such conditions was to develop in them the ability to be flexible with students. This capacity had to be put to the test due to the multiple realities and the pressure for all students to have access to the classes taught:

> (...) we took into account the pressure exerted on us by the union that no one should be left out and what we did was to transmit it to the teachers all the time (...). What that meant was that the requirements may not be the same because obviously the access modality and the possibilities for everyone were not the same. So this led to messages to teachers, receipt of documents, work and queries at any time and also by different means (...) (E12).

The processes triggered by the virtualization of classes have led teachers to develop logistical flexibility, which refers to the use of technological resources as the only possibility for communication and transmission of information, crossing space-time barriers so that students can access their classes. However, with respect to pedagogical

flexibility, it seems that very few teachers were able to develop it in this new modality. One of the interviewees explained:

> (...) we noticed this resistance with technology, that is, to use only the basics, that I give you the work, the material and deliver it to me, and there was no other more innovative use of all the tools we had available (E12).

This shows that, despite this change of modality and use of technological resources, in many cases this new approach to the construction of learning was not achieved; the strategies remained intact, only the medium changed.

A third type of flexibility was also found, that of reducing transactional distance, referring to the demands and the challenge of deconstructing pedagogical practices in order to include. Such flexibility became necessary for pedagogical continuity. This was expressed by one of the interviewees: "So yes, there was a lot of flexibility, we had, let's say, that each student was able to make their journey as far as they could and how they could" (E7). The different realities and possibilities were considered, and the requirements alternated, taking into account different channels, times and resources.

Not only was flexibility developed, but also the management team, as well as the teachers, developed a certain empathy for the situation of the other, in the face of the multiple challenges that socially presented themselves. This was stated by one of the students participating in the discussion group:

> (...) I think we had to be more empathetic, both teachers and ourselves, with what was happening to the other person because not all of us had the same difficulties or the same problems with the issue of resources (Focus group).

Therefore, we sought to generate institutional conditions that favored the construction of knowledge and also sought solutions that went beyond the institution itself, which included personal effort, and the construction of networks and alliances to reach minority sectors so that they could access and remain in education.

> We had several students from Huecú (neighboring town) and they had worse connectivity than us, so I called the mayor of the town, after we had once sent copies, and asked him if he would provide a place with good internet so that they could connect during class hours (...) (E1).

Seen from this perspective, the learning possibilities of the subjects were defined not only by individual competencies and capabilities, but by the complex combinatorics expressed by the relationships between subject and situation.

Conditions of permanence from the perspective of intersectionality, when flexibility is not enough

The intersectional approach allowed for a complex reading of the educational reality by analyzing the categories that intersected in the student body and generated privileges or exclusion. The categories identified were gender, socioeconomic status and age.

With respect to gender, it was identified that more women than men attend higher education institutions; however, this does not guarantee that women have full access and opportunities as men do. Accordingly, one of the teachers interviewed explained: "(...) in general we have very few men in the IFD, most of them always, there are even some courses that are all women (...)" (E12).

It was shown that during the pandemic, female students were disadvantaged due to multiple circumstances, most of them linked to gender stereotypes that are reproduced in society. It was the women who generally had to take charge of cleaning the home, taking

care of their children, domestic activities, and accompanying them to school. And in the face of all this, to have the necessary time to carry out their academic activities. This was explained by a teacher interviewed:

> I believe that gender had an influence on the development of the practices, unfortunately (...) male students did not have all the difficulties that women had, even more so when talking about children, taking care of the home and taking care of them (...) I could tell you that women mothers were the students who had the most difficulties (...) (E1).

Gender was generally found to intersect with another category, resulting in greater inequality. Categories such as low economic resources, being a mother, problematic social conditions, age, among others.

Socioeconomic level was one of the main aspects that influenced educational practices, in terms of the possibility or not of access to them. In the words of one interviewee:

> (...) in terms of social conditions, it had a lot of influence on access and maintenance because there were many students who did not even have internet at home, so they bought data (...) Zoom was very expensive and complicated for them, they spent a lot of money to be able to attend a complete class and many times that money was not available (...) (E2).

In order to access education, students had to have different resources that determined their access and permanence. In other words, they had to have a certain economic level that allowed them to access the resources, thus exposing the idea that only a privileged sector was able to enjoy this online education.

The age category was related to the use of technological resources as mediators of pedagogical practices. Those who found it most difficult to use and access technological resources were older students and teachers, considered digital immigrants. This was expressed by some of the teachers interviewed:

> (...) in terms of age I think it influenced the facilities, I feel that a younger student had other possibilities and perhaps a better understanding of technology and those who found it more difficult for me were the older students and those with families (...) (E2).

Therefore, age was a factor that directly influenced access to and permanence in pedagogical practices, since the use of technology was a condition that excluded them.

Taking into account the categories of gender, socioeconomic conditions and age, in relation to the existing minorities, it was concluded that when these categories intersected in a subject, he/she was excluded from higher education, thus violating the right of access to it. This was expressed by a teacher: (...) the state never took charge of what it could have done in relation to this access and the needs that the students also had (...). Of geographical issues, nor of connectivity, they did not take care of this gap and thus left aside the rights of students (E11).

Teaching and Learning processes in times of COVID

The subjects of education were affected by the social and health crisis, i.e. the one who teaches changed, as did the one who learns. As for the type of knowledge or content, it did not change drastically, but the way and means by which teaching is carried out did, having ICT as mediators, and, therefore, having to develop other types of teaching strategies.

It could be seen that while there were teachers who changed their strategies and oriented them to the new modality and needs of the students, innovating with technology, learning from multiple resources; there were those who could not change them, and only went from using a face-to-face medium to using a technological one. One of the interviewees, based on this, expressed "(...) there is a percentage of teachers who adapted easily, who worked with the platform, who looked for other alternatives, who played and even enjoyed these new options (...)" (E1). From another side, a student expounded: "(...) the teachers handled themselves with PDF. That for us was not a way of teaching us (...)" (Focus group).

Most of the teachers used ICTs as mediation, but it has not been easy to use them as a means to access, explore and elaborate contents in different ways and degrees, having to transform their own teaching practices and even less to use them for monitoring, evaluation and control of the process. This was stated by a teacher interviewed:

(...) we try to continue with some of the classroom-based activities, such as taking a midterm, asking for practical work, giving reading material and doing activities. (...) but we could not see, or at least I could not see when they understood or not, or when they managed to learn or not (E3).

In most cases, the aim was to "imitate" face-to-face teaching with virtual resources, which also explains the incorporation of synchronous instances as mandatory in the teaching process. This was explained by a teacher: "The development of synchronous classes was also requested, when possible (...) it was also requested as an obligation that when possible at least 80 minutes or 60 should be classes like that" (E1).

From this point of view, teachers expressed not having been able to visualize the learning results in their students, a matter that was made difficult by the very modality of the educational practices. And in turn, other teachers expressed that, compared to face-to-face teaching, the results were "poorer", as expressed by one interviewee: "...I noticed differences from face-to-face to virtuality, not only in the modality (...) but also in the learning results, in Creole I would say that it was half a hair's breadth" (E8).

Difficulties were encountered in building lasting or effective learning, since it was more relevant and focused more on contextual issues, leaving the learning processes as a last resort.

With respect to the pedagogical link, we went from "face-to-face" to having to relate through a screen, either synchronously or asynchronously. This generated in many actors the feeling that the other people were not present. A teacher interviewed, explained:

(...) I never saw the point of putting together a class where everyone has their cameras turned off and microphones turned off. I felt it was like being in a classroom and no one is watching you, no one is listening to me because there was no feedback (E3).

In many other actors, being through a screen affected the idea of "being able to reach" the students, and generate the link. In other words, in some cases this link was not even built, thus affecting the teaching and learning processes: "(...) I believe that if in general there is no link with the student, there is nothing"; "There is no application that can work if there is no link (...)" (E4).

Therefore, it can be argued that the pedagogical link was characterized at this stage by distance and a sense of uncertainty. In the words of the students, they maintain that "(...) we lost the contact we had before with the teachers, we did not know what was going to happen (...)" (Discussion group).

On the other hand, another characteristic of the pedagogical link was visualized. Several interviewees expressed that they thought that the measures taken to improve the conditions of many students, in order for them to access and continue with their classes, were so many and such that, to a certain extent, they generated a type of mothering towards them. This was stated by a teacher:

> (...) the institute overprotects the students. The student does not have a computer, we give him/her a computer. She does not have a photocopy, she is given a photocopy and then this maternity that exists (...) this maternal thing that exists, it seems to me, made it even more difficult (E8).

It was possible to identify that many of the practices carried out in this context of pandemic affected the possibility for students to achieve autonomy in their learning and trajectories, not only that, with the flexibility, the educational level dropped, which had an impact on the trajectory of future professionals. This was expressed by some teachers: "There are very few independent children, I think that the higher level should be strengthened from another place..." (E8).

Discussion

The results obtained have shown that Covid-19's higher level teaching practices have been modified in multiple dimensions, starting with the virtual modality, the transformations in the organization of the institution, the lack of regulations to guide the actions of the educational actors and the deployment of resources that would allow access to education by the student body so as not to violate the right to public education.

The main modification was the incorporation of ICTs as mediators of the teaching and learning processes and of the pedagogical link, which was an emergency solution and constituted what Hueso (2020) calls "suspension without suspension".

Faced with this new scenario, the educational actors had to develop new skills, search for resources and solutions to face the challenges of teaching classes virtually. Hueso (2020) presented an analysis of measures taken in different countries to soften the impact of this new education, and tools they were able to provide. However, in this territory these measures and tools were not visualized, and the educational actors themselves expressed that the solutions were built autonomously, relying on accessible resources and skills such as flexibility, empathy and partnership with other local institutions.

Regarding the skills of the different educational actors, Suárez et al. (2021) argue that by this time many teachers were forced to make pedagogical adaptations, however, many of these educators lacked the necessary skills to assume the integration of ICT, this was evidenced in the creation of more complex virtual scenarios, for this reason the most used applications were WhatsApp and email, as visualized in the results of this research.

From the intersectional analysis of the pedagogical practices occurred in this period, the results obtained differ with what was exposed by López (2018), because, for the author, regarding the gender category, virtual training was perceived as an alternative that broadens access to higher education. It argues that, in the case of women, having access to virtual education has contributed to overcoming gender conditioning factors that have limited their mobilization and attendance at study centers. However, in this emergency educational modality, rather than increasing the possibilities of access, access was disadvantaged in the female gender, since the fulfillment of domestic and care-giving

roles increased during the ASPO period and did not allow women to have the time and space to devote to their academic activities.

Regarding the other categories, socioeconomic level and age, the results obtained confirm the findings of Hueso (2020) and Suárez et al. (2021), that in times of coronavirus access to the Internet became a right coupled with the right to education, especially when educational objectives are to be achieved through connectivity. Hueso (2020) argues that the dangers to equality in education are in relation to ensuring access and digital literacy.

Suarez et al. (2021), for their part, expressed that the greatest challenge of the ICT-mediated educational process was related to technical difficulties such as unstable Internet connection. Generally the students' videos and audios were turned off for greater connectivity, but contact and dialogue were lost. In addition, the authors add, many students did not have the technological resources necessary to log on to the online connections. In this sense, as in the present study, it was found that the socioeconomic level of the student body was one of the categories that most influenced access to and permanence in education. Limited time and access to necessary devices resulted in a fragmented and less affective educational experience for students.

Suarez et al. (2021), based on the above, argue that there were pedagogical-communicative difficulties, since teachers could not see the students' faces and moods, making the teaching process difficult. At the same time, another difficulty was that practical subjects such as laboratories or professional and pedagogical practices could not be carried out.

In agreement with Suarez et al. (2021), in addition to the pedagogical-communicative difficulties, psychosocial problems were identified, since many students had to share their electronic devices with the rest of the family, or had to connect in shared spaces with the other members, which made it difficult to connect to classes, on the other hand, those who were not from the village, returned to their native places, in many cases, rural environments without internet connectivity or broadband services and uninterrupted power supplies. All of this led many students to state that they did not have an environment conducive to learning, which affected their academic performance.

With respect to age, those who encountered the greatest difficulties in the use of ICTs, due to the digital divide, were older students and teachers. And according to what was surveyed in terms of teaching and learning processes during Covid-19, the results showed dissatisfaction on the part of the educational actors in terms of the level of learning and the lack of pedagogical link, which would be in line with what Hueso (2020) states, that digital teaching ended up being "inferior" to face-to-face teaching and showing how the perceptions of the protagonists of such educational modality were tinged with negativity. This limitation on personalized access to technology exacerbated inequalities among students.

Finally, in relation to the categories raised from the intersectional perspective, and how these can determine the right to education of the subjects, Hueso (2020) expresses that this right raises a series of concrete rights and consequent obligations mainly of the powers, and must be realized even in digital education and in particular in the pandemic. These are the rights to access to education at all levels and to receive affordable education, i.e., education with the three A's: accessible (right to choose), acceptable (quality education) and adaptable. However, in the present research it was visualized that when these categories intersected in a subject belonging to minorities, there was a great possibility that he/she would be excluded from higher education, thus violating the right of access to it.

Conclusions

According to the results obtained through the testimonies collected from teachers and students who went through the pedagogical practices in the context of ASPO, it is concluded that the objectives proposed for this research were achieved as the modifications in the development of the pedagogical practice were analyzed and the intersectional approach was used to determine the inequalities produced in the student body in the categories of gender, socioeconomic level and age.

Regarding pedagogical practice, the transformations in the institutional organization were visualized, characterized by impositions from higher organisms, the development of the virtual modality and the lack of regulations that frame the actions of teachers.

On the other hand, as regards institutional conditions for development, skills such as pedagogical flexibility, empathy and linkage with other organizations to face contextual challenges were visualized. In turn, based on the intersectional analysis, it was concluded that the student categories of gender, socioeconomic level and age had a broad influence on access to and permanence in higher education, and that when these categories intersected in a particular subject, they produced school exclusion.

The teaching and learning processes were mediated by ICTs. Difficulties were encountered in transforming practices by adapting methodology and strategies to the new environment. The consequence was dissatisfaction with the level of learning compared to face-to-face. And, in reference to the pedagogical link, problems were found in the construction of this link, and one of the characteristics identified was the "mothering" of students, which undermines the autonomy of the learner.

As for the limitations of the research process, one could mention the focus of the problem to be investigated, since it required work to frame it, due to the breadth of the topics and the chosen approach. It is considered that the search for focus group participants could have been more exhaustive, in order to achieve a greater number of students, which could have generated more diversified and enriching contributions. Therefore, it is suggested that for future research, the number of participants be increased and that it be carried out in other locations. Another line of research could be oriented to analyze pedagogical practices in the post-pandemic context, inquiring about what this period of crisis left in the institutions.

This work is considered relevant because it contributes to reflect on pedagogical practices in the context of crisis, on the influence of socioeconomic aspects, gender and age issues in subjects belonging to higher education institutions, on the role of the teacher as facilitator of the knowledge construction process and on the role of ICT in current educational processes. This generates a starting point to rethink today's pedagogical practices and consider whether modifications are necessary in accordance with current social changes, to accommodate these new subjects.

It also contributes to the training process and the professional practice of the psychopedagogist, as the one who must intervene in these educational spaces, nowadays crossed by multiple challenges, which requires a positioning as professionals that allows a complex reading of the learning subject.

References

Forgiony Santos, J. (2017). *Prácticas Pedagógicas: concepciones, roles y métodos en la formación del psicólogo bolivariano. Practicas Pedagógicas*. Edit. University of Zulia.

Galindo, M. Z., Peter, S. G., & de Avila, J. C. (2012). La interseccionalidad en debate. In Actas del Congreso Internacional "Indicadores Interseccionales y Medidas de Inclusión Social en Instituciones de Educación Superior. Berlin (Vol. 23).

Hill Collins, P. and Bilge, S. (2019). *Interseccionalidad*. Morata

Hueso, L. C. (2020). La enseñanza digital en serio y el derecho a la educación en tiempos del coronavirus. *Revista de educación y derecho. Education and law review*, 21, 8.

López, G., & Galicia, P. (2018). Una lectura interseccional de la innovación tecnológica como recurso educativo en la universidad. *Ciencias Sociales y Humanidades*, 5(2), 53-60. DOI: https://doi.org/10.36829/63CHS.v5i2.690

Pozo, J. I. (2016). *Aprender en tiempos revueltos*. Alianza Editorial.

Suárez, C. A. H., Núñez, R. P., & Mariño, L. F. (2021). Educación mediada por las TIC en la educación superior en medio del periodo de aislamiento de la pandemia Covid-19. *Revista Boletín Redipe, 10(*10), 347-357. DOI: https://doi.org/10.36260/rbr.v10i10.1491

Vázquez, R. (2020). La interseccionalidad como herramienta de análisis del fracaso escolar y del abandono educativo: Claves para la equidad. *Revista Internacional de Educación para la Justicia Social*, 9(2), 267-283. DOI: https://doi.org/10.15366/riejs2020.9.2.013

Zabalza, M (1990). *Teoría de las prácticas, la formación práctica de los profesores.* Tórculo.

Teaching and social inclusion skills to be added in the 21st century to trained and training teachers in teaching schools in Saurimo-angola

Competências docentes e de inclusão social a serem agregadas no século XXI aos professores formados e em formação nas escolas de magistério em Saurimo-Angola

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	ABSTRACT
Keywords: training plan; Teachers; students; Skills; social inclusion;	These days, marked by profound transformations, transience, discontinuity, complexity, heterogeneity among others who live people in the current world, driven by information and communication technologies. Scholars from various areas of knowledge has used concepts such as contemporary, globalization, modernity, skills and others have been used in the social sciences to designate a particular area of knowledge or context. In education this concept is focused on the teacher's attitude, because it is expected to develop citizens with flexible, critical and creative ideals and behavior, with high scientific knowledge and human values that are fully formed to contribute to the country's development. The need to reform the educational system, adapting it to the current reality and the demands of society, today led to gizar a training plan that contributes to the need to train new and competent teachers in the school of teaching of Saurimo and its Occasionally, you can prepare citizen to confront the complex and profound social inequality, sustainable human development, poverty, injustice and contemporary was information and uncertainty. In this aspect, a set of activities with a formative and pedagogical penalty, which with their implementation and elasticity will improve the performance of teachers, will stimulate students' learning and both developed teaching and social inclusion.
	RESUMO
Palavras-chave: Plano de formação; Professores; alunos; competências; inclusão social.	Nos dias de hoje, marcado por profundas transformações, transitoriedade, descontinuidade, complexidade, heterogeneidade dentre outras que vivem as pessoas no mundo actual, movido pelas tecnologias de informação e comunicação. Estudiosos de diversas áreas do saber tem usado conceitos como contemporaneidade, globalização, modernidade, competências dentre outros tem sido usado nas ciências sociais para designar determinada área do saber ou contexto. Na educação esse conceito está voltado a atitude do professor, pois dele

espera-se desenvolver cidadãos com ideais e comportamento flexíveis, críticos e criativos, com elevados conhecimentos científicos e valores humanos e que estejam formados integralmente para contribuir para o desenvolvimento do país. A necessidade de reformar o sistema educacional, adequando-o a realidade actual e as demandas da sociedade, de hoje, levou a gizar um plano de formação que contribui para a necessidade de formar novos e competentes professores na Escola de Magistério de Saurimo e por sua vez, estás possam preparar cidadão para confrontar a complexa e profunda desigualdade social, o desenvolvimento humano sustentável, a pobreza, a injustiça e a contemporânea era da informação e incerteza. Nesta vertente, propôs-se um conjunto de atividades com pendor formativo e pedagógico, que com a sua implementação e elasticidade melhorara a atuação dos professores, estimulará a aprendizagem dos alunos e ambos desenvolveram competência docentes e de inclusão social.

Introduction

We have observed with some concern the lack of serious investment by the governments of less developed countries, including Angola, in education, where the low population density is a positive factor in the development process in which society seems to want to participate.

The situation of instability that Angola experienced led to a lack of commitment and decision-making at a political level, justified by the priority given to the war effort to the detriment of social areas such as education (Ferreira, 2019).

The small share of the general state budget allocated to the education sector, the lowest in the SADEC region at 6%, the devaluation of teachers, the politicization and militarization of the education system, the robotization of knowledge, decontextualization and disharmonization of content, the standardization of teaching methods and methodologies, the culture of fear, of non-violence, poor accommodation, the lack of technical and human conditions, and the improvisation of measures lead to numerous consequences, making education practically inoperative as a structure, empty of policies, technicians and dynamics (Correia, 2017).

This cascade effect, which starts from the privileged positions of the central power (Ministry of Education) where minimalist policies are being designed for the sector, has had repercussions at the grassroots (provincial, municipal, district, communal and school directorates) of a movement of disorientation, destabilization, asymmetry and improvisation at the level of all education and particularly in the areas of teacher training, clearly demonstrating that education is still not among the highest national priorities, despite all the official rhetoric.

The Saurimo Teaching School is completely murdering the future generation, the society of tomorrow, and is leading us to an educational culture that brutalizes, depersonalizes and reduces teaching and students to mere numbers, to blue statistics.

We are witnessing a failed and incoherent education system that is obsolete and far from responding to the demands of today's society. An education that trains teachers for the 18th century, where the governing party has usurped the competences of schools and teachers by implementing preparatory courses for university entrance at the end of each school year.

The gaps found lead us to realize that Angola needs an education that responds to the current events of the contemporary world. This should be reflected in the training of teachers, understood as those who are able to train individuals who know how to create, criticize, innovate, reflect, generate initiatives; those who are able to train individuals with a good command of languages, from oral to written; those who are able to accumulate and culturally improve scientific, ethical, diversified and culturally accepted knowledge.

Therefore, the bulwark of any country's sustainable and multifaceted development will be education. Therefore, it is only through rigorous scientific research and the work of teachers that alternatives can be identified towards the full enjoyment of the right to education, as an exercise of citizenship in different social conditions and scenarios, a concern that is becoming urgent in the context in which we are now immersed.

The 21st century therefore highlights the growing importance of teachers' personal and professional training, so that their competence and personal factors, combined with high levels of performance, can contribute to an education that leads students to think, reflect, form concepts, discern and have the ability to apply what they have learned.

There is an urgent need to train teachers, to prepare them for technological innovation and to respond to the main problems of their daily lives, as well as to respond punctually to the desire to build the country that is being designed and its pedagogical consequences.

That's why it's so important to train and modernize the teachers in training at the teaching schools in question. It is believed that if we add teaching and relational skills to teachers, education will be a food capable of liberating man and solving his problems.

Weaknesses in the teacher training process at Saurimo teacher training colleges

The social, political and economic transformations that have taken place in recent years in Angolan society have drastically altered the education system and devastated the performance of teachers in Angola, substantially mitigating their preparation in the scientific and pedagogical components, making their performance fruitless.

This is mainly because the teacher training model shows weaknesses on the part of the trainees in the acquisition/appropriation of the content taught in the initial training curriculum, i.e. a lack of depth in the content taught, as well as an increase in practical activities in the teaching-learning process to ensure understanding and application of the knowledge acquired in the trainee's day-to-day life.

Inocêncio (2017) says that there are serious limitations in the teacher training process, which lead to inadequacy in their performance, due to aspects related to the content of their learning and the precariousness in incorporating knowledge production processes. To emphasize, teacher training has been done in a mechanical and repetitive way, that is, the relationship with knowledge, its construction/transmission, training has been done with an expository tendency in the transmission of information, as well as a simple chain of repetitions of words and texts, without delaying in the investigation and construction of knowledge.

This calls for urgent, significant and transformative changes, both financially, economically, politically, socially and culturally, which trigger questions on different scales, including education. Education has been extolled as the engine that will provide future generations with wealth, development, democracy, equality and other goods, and for this it must be monitored, it must be seen as a strategic partner, as humanity's greatest contribution and not relegated to third place.

The General State Budget must make considerable resources available for these sectors, so that the teachers being trained in the country's schools, and in particular in Saurimo, do not escape the demands imposed by today's societies, so that the programs and curricula respond to and competently train the citizen, man of science, reflective, critical and researchers who think according to (Inocêncio, 2017).

To this end, teacher training colleges cannot escape the demands imposed by Angolan society today, in terms of academic plans and programs that allow for the training and development of the skills and intellectual capacities required in the face of the development of science and technology, as well as the training of increasingly competent, reflective and critical teachers.

There is an urgent need for the teaching schools in Angola and Saurimo to find models for organizing teaching or relevant curricula in order to train future teaching professionals, with a broad profile, whose professional performance fits in with the new challenges posed by science and technology, as there are deficiencies in the performance of teachers who serve the teaching subsystems.

This attitude requires new pedagogical practices and strategies that are closely related to current scientific methodologies that foster in the future teacher all the aspects inherent to the teaching profession, ranging from knowing, doing and knowing how to be (Inocêncio, 2017).

It is therefore necessary to take into account teacher training models that focus on integrity, as well as the organization and planning of curricula that take into account not only

the characteristics of the students and the context, but also the content and methods to be used and their justification and framework.

Hence the importance of this study, which proposes to add imputes to the deficient training of teachers at all levels. We want to add competence to those who have not acquired it during their training, since it is not enough to have a large number of graduates leaving higher education institutions, but we must get them to develop skills for their position in reconciling practice with theory.

The teaching and inclusion skills needed in Saurimo's teaching schools

In the meantime, the new competencies that teachers in training and those trained for 21st century education in Angola and at the Saurimo Teaching Schools should have are: Pedagogical-Didactic, Scientific, Affective/Emotional, Communicational and Ethical/Deontological, as they are the most common and the most essential in the teaching profession in the context of the study.

1. Scientific competence leads teachers, among the various options, to create interdisciplinarity in order to enrich the student's overall knowledge. This competence is related to and predicted by Zabalza (2003), quoted by Wagner (2017), which leads teachers to "identify with the institution and work as a team", whereby they work as a group in the context of their institution. This competence leads teachers to break away from their academic individualism and learn to work with their peers, as a team, in cooperation, in an integrated manner, in order to uphold the institution's mission and implement the desired curriculum.

2. Pedagogical-didactic competence means that teachers are no longer mere reproducers of science. It means that today's teachers are no longer bound by "modern pedagogy, based on the psychological and sociological sciences of the 20th century" (Nóvoa, 2009) and use pedagogies that correspond to students' needs, especially their teaching-learning rhythms. It requires the teacher to build, revise, reformulate and adapt the pedagogical project of the course; it also requires planning in pairs, regulated by didactics and using available resources; we can also add that it requires creativity, autonomy, planning, methodology, evaluation and knowledge of the instruments. The didactic-pedagogical competence leads the teacher to select learning methods/strategies/techniques;

3. Communication competence is one of the most important competences, which the teacher must strive to master wonderfully in relation to the other competences (scientific, pedagogical-didactic, affective/emotional and ethical) and not know how to communicate with the students, which has the consequence of not being able to get the desired information across to them. Nowadays, using class/discipline blogs, chat platforms, tools such as *Google Classroom*, *Go Formative*, *Sutori*, *Lessonup*, *Class Flow* or *Class dojo* , or platforms.

4. Affective/Emotional Competence is the most important skill to work on in the classroom in Angola, due to a culture shaped by patriarchy and the effects of the war on society, making people insensitive, not accepting others as people, but only as members of the tribe, party or religion. Estrela, teaching arouses emotions and feelings in teachers (Estrela, 2010, updated by Costa, 2019). Being a teacher means being able to deal with emotions in a way that promotes personal power and the quality of life around us. Being a teacher means being a mediator between the family and the school, especially "in those cases where the family has more serious

difficulties in carrying out in-depth educational action" (Guerra, 2006, p.63). Emotional/affective skills automatically lead us to moral skills derived from an ethic of respect and attention to others (Estrela, 2010 cited by Costa, 2019).

Strategy to add new skills and maximize the performance of teachers trained and in training at the Saurimo Teaching Schools

1. A plan for the development of professional skills and social inclusion in the school context, as a point of escape and a proposal for the teaching that was aimed for:
- Detoxifying the classroom of theorizing;
- Motivate various reading and learning encounters between teachers that enable the development of teaching skills and social inclusion.
- Discuss everyday themes and issues in an interdisciplinary way;
- Propose the influence of ICT as an element in learning and improving ideas;
- Exchange experiences with students from other education systems;
- Building a face-to-face and/or online pedagogical workshop

2.The academic excursion you wanted:
- Developing activities that promote/equate and/or encourage solidarity, equity, respect, peace, justice in interaction/relationship, coexistence with the environment through awareness/awareness, involvement/commitment to the humanizing defence of nature, responsible citizenship, sustainable development and building a promising future.
- With the materialization of this activity, the study put students and teachers in direct contact with their surroundings, in other words, to study is to translate learning into the context in which one lives, so more than an extra-curricular and curricular activity, the activity had as its themes:
  a) Burning and the exploitation of nature by industries as agents leading to the destruction of the ecosystem are consequent means of environmental imbalance;
  b) Tourist/academic excursion during ecological week to train/inform about the beauty and charms of nature, provoking contemplation, solidarity, respect, communion for sustainable and promising development
  c) Ecological activism: Meeting-school-community-nature whose function will be to generate information about major environmental issues and conflicts and human-nature interactions/relationships, and then to train and involve the community in resolving and transforming environmental conflicts

3. Round tables on the themes:
  a) Teenage pregnancy:
This materialized activity was justified by the fact that we noticed within the school and the interviewees the high number of pregnant teenagers, which has prevented them from continuing to study, by the bullying that has been going on and by making teachers aware of the disrespect that has been meted out when addressing these teenagers.

On the other hand, early marriage is a global challenge that has profound consequences for the lives of girls and their families and the province of Lunda Sul has the highest prevalence rate of teenage pregnancy in the country, at 59.6% (Instituto Nacional de Estatística (INE)).

  b) Practical activity with community mobilization and awareness-raising; This activity was materialized when students, teachers and Mwana Pwo associates got involved in awareness-raising campaigns in the community, handing out pamphlets, booklets,

information and educational leaflets on prevention, transmission and treatment, or giving talks in plausible areas such as churches, public squares, markets, schools, or through a road show, or dramatizing in the form of theater.

Method

Using the epistemological paradigms that counterbalance the traditional and modern educational systems, which are teacher-centered and student-oriented, as well as those centered on knowledge and the development of competencies, based on modern/contemporary and post-modern pedagogical theories, the study designed an experimental methodology, based on the need to add teaching and social inclusion competencies to teachers trained and in training at the Saurimo teaching school.

Faced with the disparity between what is lived and what is thought, he proposes a teaching strategy that provides both human, social, cultural and technological training, and the updating, positioning and insertion of man into a more human world, which restructures man and makes him more egalitarian and self-effacing.

Along these lines, the study opted for an applied, integrative and dynamic methodological perspective, since the aim is to improve certain aspects that, based on the data collected and according to the results, can be improved. We therefore opted for an applied approach, because the study started from a pedagogical model of competencies, which with its elasticity, convergence and timeliness can be used to train teachers at any level of schooling, moment and context, being appropriate for the context of Saurimo /Angola and Lunda Sul where education varies from the center outwards and differs from outside to the center by coupling local experiences and cultural values to spice it up;

Integrative because it not only allows the main players (trained teachers and teachers in training) to change, but also reaches parents and guardians, the surrounding communities, society in question, both by example and by raising awareness, using inter- and transdisciplinarity as the focus of all learning, as emanates from modern pedagogical theory based on aggregating and developing skills.

Dynamic because it is understood at a time of great technological upheaval and can adapt to changing realities; because it wants to go beyond all traditional forms of education and seeks to make major changes in thinking with minimalist gestures, technologies, methodologies and examples; and transformational because it adopts the old and the new at the same time.

The survey used a stratified random sample, which consists of dividing the target population into subpopulations or strata, using the following formulas: n/100 x population, i.e. 10x806/ 100 = 80.6 students from the Lunda-Sul Polytechnic Institute and 10x980/100 = 98 from the Saurimo Teaching School.

The study was structured in three phases: (i) Literature review phase, which focused on the basic strategic concern of the study express the theoretical foundations that guide, explain and underpin this research. (ii) The pre-intervention phase focuses on explaining the strategy, its object and its contributions. It sought to x-ray the understanding of the competences possessed by Salucombo's students and teachers; to establish the links between the perspectives used to validate the construct and the results obtained from learning, with a view to educational practice that provides the necessary knowledge for students and teachers to understand, emerge from and cope with complex everyday life. (iii) Intervention phase, which aimed to determine the value of the pedagogical strategy of training in competencies, which provides the opportunity for a new educational approach that we call the competencies incubator.

The data was collected by means of a questionnaire and validated by the Delphy method, in which three experts from different countries and two rounds were certified as being ready for implementation. The reliability of the instrument was obtained using the sPSS (Statiscal Packedge Social Science) program in which the Cronbach's alpha coefficient was determined cronbach's alpha coefficient was determined, reaching a reliability of 0.245 in 27 items evaluated, which gave light to its materialization. They were filled in online, first for the teachers and second for the students, and assisted by the researcher.

Results

The rupture that exists between the ways of doing education with a global focus and necessary for the development of skills for the generations of the 21st century and the education done in the local context of our teaching, led the study to question a total of 40 teachers, 20 from each school, both in the city of Saurimo, who teach in the teacher training course in Primary Education at both secondary and higher level. These 24 are male and 16 female, 25% of whom have a doctorate, 35% a master's degree and 40% a bachelor's degree.

They said in the pre-intervention phase that the reasons why they don't develop professional and social inclusion skills are: 35 teachers making up 87.5% said it was the excessive number of students in each class; 30 teachers (75%) said it was the excessive number of theory classes; 21 teachers (52.5%) said it was the age of the students in each class; 18 teachers (45%) said it was the poor infrastructural conditions; finally, 34 teachers (85%) said it was the poor preparation of the students.

Table 1

Teachers' response to the working conditions they face

	Pre-intervention				Post-intervention			
	Yes	%	No	%	Yes	%	No	%
1. Too many students per class	35	87,5	5	12,5	22	55,0	18	45,0
2. Excessive number of lectures	30	75,0	10	25,0	30	75,0	10	25,0
3. Students' age group	21	52,5	19	47,5	30	75,0	10	25,0
4. Poor classroom infrastructure	18	45,0	22	55,0	20	50,0	20	50,0
5. Poor preparation of students	34	85,0	6	15,0	20	50,0	20	50,0

In the post-interventional/post-experiment phase, they stated that what has made it difficult for them to develop professional skills and inclusion in their students is: 22 teachers accounting for 55% said it was the excessive number of students per class; 30 teachers accounting for 75% said it was the excessive number of lectures; 30 teachers accounting for 75% said it was the age of the students per class; 20 teachers accounting for 50% said it was the poor infrastructure; finally, 20 teachers accounting for 50% said it was the poor preparation of the students.

The two phases of the study, based on the results, attest to the prominent need for training and/or updating of both teachers and students: some in experience, others in innovative methodological procedures to overcome the difficulty raised. This process must involve the adoption of measures that can mitigate old pedagogical habits, which were taken on during bad times in the country's history and banished or refuted, so that they don't clash with new educational trends. (Inocêncio, 2017).

The study also supports the entry of ICT into the Angolan education system, as it will lead teachers to have fundamental scientific knowledge, in the disciplinary field to be taught and in the field of educational sciences (updating and improvement) (Cedro & Moura 2012); it

will allow the incorporation of new resources made available (Ferreira & Frade, 2010) and will require teachers to have the humility to recognize that learning is a process that does not end with graduation, or with a diploma, but rather, it is in the wake of continuous training that new knowledge is incorporated.

They stated in the pre-intervention phase that the attitudes that lead them not to develop professional and social inclusion skills are: 25 teachers (62.5%) said yes, there is a lack of colleagues on the part of colleagues and this leads to a lack of teaching; 22 other teachers (55%) said it was the lack of goals in staff development; 24 of the respondents (60%) said it was the political and social context that chilled the teaching attitude and the development of skills; the lack of material conditions was also listed by 34 teachers in this group, making up 85%; 27 teachers (67.5%) went further when they said that they didn't develop skills due to the lack of up-to-date tools; and 29 (72.5%) said it was the lack of appreciation from those who govern, as shown in the table below.

Table 2

Teachers' responses on why they don't develop teaching and social inclusion skills

	Pre-intervention				Post-intervention			
	Yes	%	No	%	Yes	%	No	%
1.Lack of pedagogical attitude	25	62,5	15	37,5	15	37,5	25	62,5
2.Lack of pre-defined goals for the development of staff in training	22	55,0	18	45,0	22	55,0	18	45,0
3.Teachers' political and socio-economic context	24	60,0	16	40,0	31	77,5	9	22,5
4.Lack of material conditions	34	85,0	6	15,0	40	100	0	0
Updating tools and content for the 21st century	27	67,5	13	32,5	27	67,5	13	32,5
5.Lack of appreciation on the part of those who govern	29	72,5	11	27,5	40	100	00	00

In the table above, we find the results of phase II of the survey, in which post-experiments stated that what has made it impossible for them to develop professional and social inclusion competencies in students is: the lack of predefined goals for teacher training 55%; the socio-political and economic context that does not satisfy the making of education, 77.5%; the lack of material conditions 100%; the lack of technological and/or up-to-date tools 67.5%, as well as the lack of appreciation from government officials 100%.

Scientific literature points out that society is proposing a new set of basic skills and demanding "other tools" in addition to being able to read, write and count, in order to keep up with scientific/technological acceleration. UNESCO has enshrined four forms of knowledge: learning to be; learning to know; learning to do; and learning to live together. (Delors J., 2003). The Partnership for 21st Century Learning, known as P.21, has created a framework of four essential skills for the success of a 21st century student: communication, collaboration, creativity and critical thinking. (Magalhães, 2022). In 2015, the Organization for Economic Cooperation and Development (OECD) proposed the competency framework for the Future of Education by 2030. Challenging educational institutions to abandon the centrality of the school curriculum organized into subject areas, focused on objectives and content, aimed at transmitting academic or specialized knowledge that is decontextualized from the social reality and previous experiences of the student (Magalhães, 2022).

Educational institutions are called upon to (re)define their competencies, pedagogical and didactic models, organize the school system, the different processes of personal and social development of children and young people, as well as their basic knowledge.

The study did not leave out the students of the Saurimo Teacher Training School, who numbered 160, 80 for each school. There were 82 women and 78 men aged between 15 and 45.

The table below shows that in the pre-interventional phase, the study sought to find out if they had made a self-assessment of the physical conditions and accommodation at the Saurimo teaching school: 100% said that there is not enough accommodation for the students and that this interferes with the process of developing skills; 100% also said that the school does not have the number of 45 students recommended by law, and always tends to double; 50% pointed out that they study in a borrowed school; 78.1% argued that they do not have laboratories or libraries and do not use these tools during lessons; 80% answered that they do not carry out practical lessons and extracurricular activities.

Table 3

Students' responses on the conditions of their school

	Pre-intervention				Post-intervention			
	Yes	%	No	%	Yes	%	No	%
1. Your classroom has the number of students recommended by Law 13/01	00	0	160	100	00	0	160	100
2. Your school has its own facilities	80	50,0	80	50,0	80	50,0	80	50,0
3. Access to laboratories and libraries during classes	35	21,9	125	78,1	105	65,6	55	34,4
4. Teachers carry out practical lessons and extracurricular activities	32	20	128	80	150	93,8	10	6,3
5. They have an educational workshop	00	0	160	100	141	88,1	19	11,9

In phase II of the research, in the post-experiment phase, the students showed a different attitude, they changed their stance on the issue of access to the laboratories, where 65.6% said they were now using them for lessons; 93.8% also said that in the experiment phase they had materialized the extracurricular activities and a pedagogical workshop had been integrated, as shown in table 3 above.

Authors such as Nicolau (2019) testify that the study conditions offered to students in Angola, reflected by the lack of laboratories, sports facilities, canteens, bookstores, lack of textbooks, standardized and structured programs, lack of regular inspection for these schools is a breeding ground for non-learning and, consequently, non-development of skills. Teixeira (2022) states that the failure to develop teaching skills and social inclusion is caused by poor student accommodation, sanitation, hygiene, cleanliness and ventilation. Soares (2007) states that school is the place where students learn the knowledge they need to enter society. It is the place where emphasis should be placed on acquiring cognitive skills that cannot be obtained in other environments.

Thus, learning is not just a central component of education, but a right that enables other rights, as it contributes to better participation and social integration. Chizzotti (2016).

Angola will have scientific potential if it takes these two paths and it must start at school with teachers and students, thus justifying the focus that this study gives to these two key elements for the current situation, for the training of student teachers and for the development of contemporary skills

Table 4 shows the attitude of the students when they were asked about their training process, i.e. the answer to the question how has your teacher training process been?

They responded by agreeing, disagreeing or being neutral. In the first phase of the pre-intervention project, they agreed that it was the lack of physical conditions (51.3%), the lack of

methodological diversity on the part of teachers (81.8%), the lack of scientific incentives and the use of ICT (80.5%) that led them to fail to develop skills; they also stressed that they did not feel prepared to exercise their profession as teachers in the 21st century (85. 7%); that the methods they use force them to skip classes (95.7%) and they all agree that they are looking for new ways of knowing in order to enhance the teaching they set out to do (95.7%).

Table 4

Students' response to some constraints that do not lead to the development of teaching skills and social inclusion

| | Pre-intervention | | | | | | Post-intervention | | | | | |
	C	%	N	%	D	%	C	%	N	%	D	%
The school's lack of physical facilities has led to skills not being developed	82	51,3	5	3	73	45,6	98	56,3	57	3,1	5	35,6
Teachers use different teaching methods	129	81,8	0	2,5	21	15,7	152	93,2	0	0	8	6,9
Teachers encourage students to do scientific research, to study in groups and to use ICT.	131	80,5	4	6,3	25	13.1	141	95,1	0	0	11	5
Do you feel that you are being prepared to prepare a generation for the 21st century?	137	85,7	2	1,3	21	13,1	58	36,2	0	0	102	63,8
As students you actively participate in class	153	95,7	2	1,3	5	3	42	26,3	1	0,6	117	73,2
You are motivated to seek other knowledge and improve new ways of knowing	157	95,7	0	0	3	1,8	158	98,7	0	0	2	1,2

Note: (C=agree; N=neutral; D=disagree)

After using the proposal and the activity developed, we asked the same students again, how has your teacher training process and consequently the development of competencies been? In turn, 56.3% agreed that poor accommodation conditions; that reproductive and traditional classes (93.2%) and the lack of incentives for research and the use of technology (95.1%) have motivated them not to achieve excellence and not to develop other skills; when asked about their training and preparation for the 21st century, they replied that they disagreed, i.e. 63.8% of those questioned know that they are not being prepared for the 21st century; 73.2% said that they do not actively participate in class and 98.7 agreed that they have sought other knowledge beyond what they receive at school.

The 21st century is considered to be the century of education, as it is a catalyst that determines the development of any nation, highlighting the need to train human capital for the sustainability of nations in two areas that have had a significant impact on people's modus vivendi from the last century to the present day: Computing and Telecommunications. The use of ICTs to take education to transportation, energy and health services, electricity, among others, in an intelligent, interconnected and efficient way has become a reality (Filho, 2012).

It is the responsibility of educators to build new pedagogical processes for the current society so that these new ways of being, behaving, teaching and learning bring new pedagogical practices, the use of ICT and the reconstruction of a new personal and professional identity imposed on them, forcing them to reinvent themselves in order to cope with this disturbing society.

Angola is a new country, rich in available natural and human resources and in need of manpower for its transformation. It requires the new generations to be prepared through an educational process to respond to its contemporary demands and present challenges.

Through education, it is hoped to develop citizens with flexible, critical and creative ideals and behaviour that allow them to take on the global reality, a much-needed element in the inevitable globalization processes that society as a whole, and especially the education system, is undergoing.

The inclusion of citizens excluded by the various adverse factors, whether political, social, economic, regional, tribal or racial, or by other factors inherent in the lack of employment, poor training, professional disqualification, social acceptance, among others that today's reality shows us.

Discussion and conclusions

The need to reform the education system, adapting it to the current reality and the demands of society, the historical moment and the modus vivendi, were called competencies.

That's why we believe that if we add teaching skills and social inclusion to the teachers we have trained and are training, education will be the remedy to combat the cultural and social manipulation, corruption, facilitation, cronyism and cronyism in which Angola is immersed.

Thus, using the epistemological paradigms that counterbalance traditional and modern educational systems, those centered on teachers and students, as well as those centered on knowledge and the development of competences, based on modern/contemporary and post-modern pedagogical theories, the study designed an experimental methodology, based on the need to add teaching and social inclusion competences to teachers trained and in training at the Saurimo teaching school, taking into account that reality presents us with two trends.

On the one hand:
- There are precarious conditions in teacher training in Angola and in Saurimo schools, reported by Imbamba as "corruption"; Paulo (2013) speaks of "mediocrity in teacher training; Nguluve (2006) "poor student performance and poor teacher training;
- There is a legal inconsistency between Decree Law 17/16 article 4 and the reality we are experiencing, in which there are weaknesses in teacher training;
- Weaknesses in infrastructure and/or working conditions;
- The overcrowding of students in the classroom;
- Weaknesses in the means and models of teaching; the transmission of content that is inappropriate to the context;
- The lack of mastery of Portuguese as the working language of instruction, as well as the lack of appropriate teaching materials.
- There are weaknesses in initial teacher training;

On the other hand, there are expectations in the authorized pronouncements that these limitations will be overcome:
- João Lourenço, in the guise of the nation's president, says that developing the country means investing very seriously in the education of young people and in their technical and professional training, adjusted to the needs of the labor market and the country's development; that is, with a view to supporting equal opportunities for

people to live a healthy, prosperous and longer life; ensuring productive and inclusive jobs;

- UNESCO, the World Bank and other organizations say that leaders must develop education as the most powerful antidote to poverty in Africa;

Faced with the disparity between what is lived and what is thought, the vanishing points open up that provide the foundation for teaching based on competencies, as the study proposes and as a teaching strategy that provides both human, social, cultural and technological training and the updating, positioning and insertion of man into a more human world, which restructures man and makes him more egalitarian and more self-effacing.

The study therefore opted for an applied, integrative and dynamic methodological approach, since the aim was to improve some aspects that, based on the data collected and according to the results, could be improved.

Applied from a pedagogical model of competencies, which with its elasticity, convergence and timeliness can be used to train teachers at any level of schooling, time and context, being appropriate for the context of Saurimo /Angola and Lunda Sul where education varies from the center outwards and differs from outside to the center by coupling local experiences and cultural values to spice it up;

Integrative because it not only allows the main players (trained teachers and teachers in training) to change, but also reaches parents and guardians, the surrounding communities, society in question, both by example and by raising awareness, using inter- and transdisciplinarity as the focus of all learning, as emanates from modern pedagogical theory based on aggregating and developing skills.

Dynamic because it is understood at a time of great technological upheaval and can adapt to changing realities; because it wants to go beyond all traditional forms of education and seeks to make major changes in thinking with minimalist gestures, technologies, methodologies and examples; and transformational because it adopts the old and the new at the same time.

It is up to the educator, every day, in any way, to train young people to be subjects, protagonists of their own history. Educating young citizens to be better people, to develop their humanity, their spirituality and to actively participate in the process of social transformation.

It can also be added that personal or professional human skills or qualities, as a complex system of understanding, are not acquired in a naive or fallacious way, in an abstract way or by memorizing theories, but require attitudes, coherent action strategies, practical actions, experience, authentic experiences in real and reflective contexts, debate and open contracting of personal and professional knowledge. Without these effective and appropriate skills, students will not be able to unite and link the disciplinary fragments they have learned in abstract ways.

In agreement with Teixeira (2022), the teacher of the 21st century must be continuously reflective and discover and innovate new procedures and new ways of teaching. The teacher of the 21st century has to be one who is looking for an opportunity for personal and professional growth, seeking regular continuing education, taking part in short training courses that offer practical insights into their profession, mastering technology in order to have it as an ally in their teaching practice.

References

Cedro, W., & Moura, M. d. (2012). *As relações entre Organização do Ensino e a actividade de apdendizagem.* Sp: Ponte.

Chizzotti, A. (2016.). Políticas Públicas: direito de aprender e avaliação formativa. *Práxis Educativa, Ponta Grossa, p. 561-576, 11*(3).

Costa, T. A. (2019). *Competências Profissionais dos Professores para o século XXI: entre as representa ções teóricas e as considerações de alunos e docentes (Tese de Mestrado Faculdade de Letras da Universidade do Porto).* Porto: University of Porto.

Delors, J. (2008). *Os quatro pilares da educação. Educação: um tesouro a descobrir.* São Paulo: Cortez.

Estrella, Á. M. (2018). *Teorias da aprendizagem e bases metodológicas na formação.* Spain: FUNIBER.

Ferreira, D. d. (2019). *Saberes e Praticas Pedagogicas dos Enfermeiros que Atuam como Docentes nos Cursos Tecnicos em Enfermagem na Escola de Formação em Saude Efos São Jose.* RJ: EPSJV.

Filho, A. M. (2012). Século XXI - O Século da Educação. *Revista Espaço Academico nº131-Abril de 2012*, 1-4.

Gómez, A. I. (1992). O pensamento prático do professor - a formação do professor como profissional reflexivo. Em A. Nóvoa, *Os professores e a sua formação* (pp. 93-114). Lisbon: Publicações Dom Quixote.

Gómez, A. I., & Gomez, E. S. (2, 2009). Competencias Y Contextos Escolares: Implicações mutuas. *Organización Y Gestión Educativa*, pp. 17-22.

INE (2014). *Resultados preliminares recenseamento geralda população e habitação.* Luanda: National Statistics Institute.

Inocêncio, E. (2017). *Profissionalismo da Docencia Universitaria e sua influencia no Desenolimento de competencias pedagogicas dos estudantes em formação de professores no I.S. C. ED of Benguela -Angola.* Grenada: University of Granada.

Lopes, F. C., & Steidel, R. (October 16, 2017). A complexidade da pratica docente e um caso prático na condução de diciplina com problematização. *Engenharia: múltiplos saberes e atuações*, p. 7.

Magalhães, Â. E. (2022). *Educar no seculo XXI: potencialidades de uma abordagem por competências na preparação das gerações futuras, no ensino de inglês no 1.º CEB (Dissertação) .* Porto: ESEP.

Nicolau, M. C. (2019). *As práticas educativas e modelos de ensino dos professores de educação moral e cívica das escolas secundárias em Lubango (Angola). Uma abordagem etnobiográfica. Doctoral Thesis.* Seville: University of Seville.

Silveira, R. L. (2004). Competências e Habilidades Pedagógica. *Revista Iberoamericana de Educación,* 1-6.

Teixeira, M. (2022). *Cimeira Sobre a Transformação da Educação.* Luanda: Governo de Angola, Comissão Nacional de Angola para a UNESCO e Nações Unidas em Angola.

UNESCO. (2015). *Educação 2030: Declaração de Incheon e Marco de acção; rumo a uma educação de qualidade inclusiva e equitativa e à educação ao longo da vida para todos.* New York: United Nations.

Wagner, F. (2017). *Competencias Pedagogicas e o sentido da Formação continuada para Professores da Educação Superior.* University of Lisbon.

Zabalza, A. (1998). *A prática educativa: como ensinar.* Art Med.

Characterizing the gifted teacher: a literature review
El profesor talentoso y su caracterización: una revisión de la literatura

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	ABSTRACT
Keywords: gifted teacher, pedagogical talent, teacher training, inclusion, PRISMA.	Teacher training and inclusion have been part of the political agenda at different levels. This article explores an incipient concept that, as a combination of those fields, aims to promote educational quality and equity: the *gifted teacher*. A literature review has been developed, searching a diversity of specialized sources both national and international, seeking to notice the presence of the notion of *gifted teacher*. This process has focused on determining common elements, successful experiences, and spaces for development and improvement. Thus, a specific selection of works has been done, considering key concepts and exclusion criteria, following the PRISMA declaration guidelines and using highly validated databases. The results show that a small group of documents approached the concept to be studied, confirming the absence of initiatives that involve teacher training and inclusion. In addition to this, the prevalence of central elements to be considered (standardized teacher evaluations, vocation, intelligence, teaching competencies, among others) has been highlighted. It is expected that this literature review allows progress in the characterization of the *gifted teacher*, in light of notions such as *pedagogical talent* and depending on contextual particularities.
	RESUMEN
Palabras clave: profesor talentoso, talento pedagógico, formación inicial docente, inclusión, PRISMA.	La formación del profesorado y la inclusión han formado parte de la agenda política en distintos niveles. Desde ambas perspectivas, este trabajo ofrece la exploración de un incipiente y poco tratado concepto que pretende combinarlas, en pos de promover la calidad educativa: el *profesor talentoso*. La búsqueda de fuentes que den cuenta de la presencia y conceptualización de tal noción, tanto en el ámbito de la educación en Chile como a nivel internacional, han motivado una revisión de la literatura especializada, a fin de determinar elementos comunes, experiencias exitosas, y espacios de desarrollo y mejora. De este modo, se llevó a cabo una selección específica de trabajos de acuerdo a conceptos clave y criterios de exclusión, siguiendo los lineamientos de la declaración PRISMA y utilizando bases de datos ampliamente validadas. Los resultados muestran que un grupo reducido de documentos se aproximaban al concepto a estudiar, confirmando la ausencia de iniciativas en que la formación del profesorado y la inclusión educativa

se combinen, así como también la prevalencia de elementos centrales a considerar (evaluaciones docentes estandarizadas, vocación, inteligencia, competencias docentes, entre otros). Se espera que la revisión permita avanzar en la caracterización del *profesor talentoso*, a la luz de nociones como el *talento pedagógico* y en función de las particularidades contextuales.

Introduction

Under the influence of the social movements that have instigated various demands, education in Chile has emerged as one of the decisive elements shaping some of the most transcendental policies in recent times. As a result, several issues associated with this area have gained relevance in the public agenda, although with varying degrees of priority in their implementation. Two notable examples are teacher training and educational inclusion.

The quality of the teaching staff is seen as a determining factor in achieving excellence in education. To this end, significant efforts have been deployed to improve both the training and working conditions of teachers (Centro de Estudios MINEDUC, 2017). This approach includes improvements in training programs and working conditions, the latter aspect being, until recently, undervalued, which has led to an undervaluation of the teacher as a social agent (Cabezas & Claro, 2011; Hernández et al., 2017). In this context, it is projected that, in the medium to long term, the figure of the teacher will be consolidated as one of the fundamental pillars for establishing the foundations of a lasting educational system. In addition to various campaigns aimed at promoting the social valuation of the teaching profession, efforts have been made to equate this profession with others of great importance for collective development, such as medicine, engineering and law (Elige Educar, 2021). In turn, the enactment of Law No. 20903 (MINEDUC, 2016) has marked a significant milestone in the achievement of these objectives, establishing the teaching career as a mechanism that recognizes the performance of teachers, both professionally and economically, over factors such as seniority in the system, which previously determined the status of the teacher in his or her educational community. It is important to point out that these measures directly affect public schools (both municipal and subsidized), since they are the ones that are governed by this evaluation system. In this regard, the possible effects that this measure may have on the number of teachers, considering, for example, the increase in the requirements established by law to access a teaching program, as well as the transformation of the perception of the teacher as a professional, continue to be the subject of analysis.

Inclusion, as an issue of sociocultural scope, is positioned as a relevant aspect to improve the national education system (MINEDUC, 2017), especially in the context of the current debates on migration (Poblete & Galaz, 2017) and gender identity (Rojas Fabris et al., 2019). However, there is one aspect of inclusive education that has historically received little attention in the conversations of groups charged with defining issues of interest in the field: the education of students with specific educational support needs (SEN) (López et al., 2014; Tenorio, 2011). A close examination of this group of students reveals, both locally and internationally (UNESCO, 2004), a lack of attention to gifted students within the spectrum of those with SEN, especially when considering their presence in the regular classroom. This leads to a limitation in the supply of learning opportunities appropriate to their needs and abilities, as they tend to find their space mainly in extracurricular programs outside of school (Reid & Boettger, 2015; UNESCO, 2004). As a result, the achievements of gifted students are often confined to a local dimension, rooted as personal experiences or within the context of extracurricular programs, without a direct transfer to the school, either to the group of students with whom they share classes on a daily basis or to the school community at large. This evidences a possible loss of the capabilities that talented students possess and that could contribute to the well-being of the

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learning community, an aspect as crucial as their own personal development, since their talents are expected to become a social benefit (Renzulli, 2012).

In view of these issues, the need arises to analyze the intersection between educational inclusion, from the perspective of meeting the needs of gifted students, and teacher training, with the aim of contributing to the improvement of the national education system. In this context, the incorporation of a significant number of talented students to the field of pedagogy is considered as an alternative to address the SEN present in this student group. In effect, we seek to explore the concepts of *potential talented teacher*, understood as that student (both at school and university level, but with emphasis on the first type) who shows superior skills both at the disciplinary and pedagogical level, exhibiting a potential to become a quality teacher, and *talented teacher*, referring to a teacher who shows certain characteristics in his professional practice (related to his mastery of the discipline, his critical and analytical vision of teaching, his investigative nature in his role as an educator, his ability to attend to diversity, especially talented students, among others) that distinguish him from other teachers, in a similar way to how a talented student could be identified within the entire group of students.

Method

To address the topic in question, a review of the literature was carried out, defining search criteria based on key concepts, exploring certain repositories and selecting those works that addressed the issues to be considered. This made it possible to analyze the national (Chile) and international references, with the aim of verifying differences and/or similarities that would provide useful information for the conclusions.

From the point of view of key concepts, we considered those that could potentially refer to the notion to be explored. In this sense, searches were conducted under the concepts *gifted teacher*, *talented teacher*, *pedagogical talent*, *profesor talentoso* and *talento pedagógico*. It is important to mention that the concept of *gifted* used in Spanish can be divided into the concepts *gifted* and *talented*, which means that the Anglo-Saxon literature potentially offers a greater number of results related to the topic under investigation, and with a greater degree of precision in terms of what their respective definitions seek to reflect. On the other hand, the terms *excellent teacher*, *expert teacher*, *effective teacher*, *outstanding teacher* or *expert teacher* were not considered at this stage, since they allude to another dimension of teacher analysis (discussed in later sections). Mainly, we worked with Web of Science, Scopus, ERIC and Dialnet; additionally, complementary searches were carried out in university libraries, specific journals and tools such as Google Scholar or Researchgate, in order to find any work that had not been registered in the main databases. The selection of publications was essentially based on the criterion that the works should refer to teachers who possess certain distinctive characteristics, and not to teachers who are related in a certain way to the field of gifted education. Thus, and once the review was restricted to those papers that contained the specific terms, cross-checks were made to verify repetitions between databases, the age of the research was evaluated, abstracts of the papers were reviewed and the central theme treated in them was analyzed.

To organize and present the results of the search performed, the PRISMA protocol has been used as a reference, which provides clear guidelines regarding the collection, selection and use of specialized literature on a certain topic to be investigated, in the context of systematic reviews. Although the PRISMA protocol has been used mainly in the health field, in recent years its application has been extended to other fields, particularly education, due to the quality and rigor it offers to those who apply it. Its structure is applicable to long and short

systematic reviews, especially in those cases in which it is necessary to refine the results obtained to give greater precision to the final sample.

Results

Figure 1 shows the results obtained from the search associated with the key concepts already suggested. No other type of filter was used (year, type of writing, area of study, peer reviewed, etc), since it was estimated that the sample of papers was sufficiently reduced without its application.

Figure 1

Stages and figures of the search
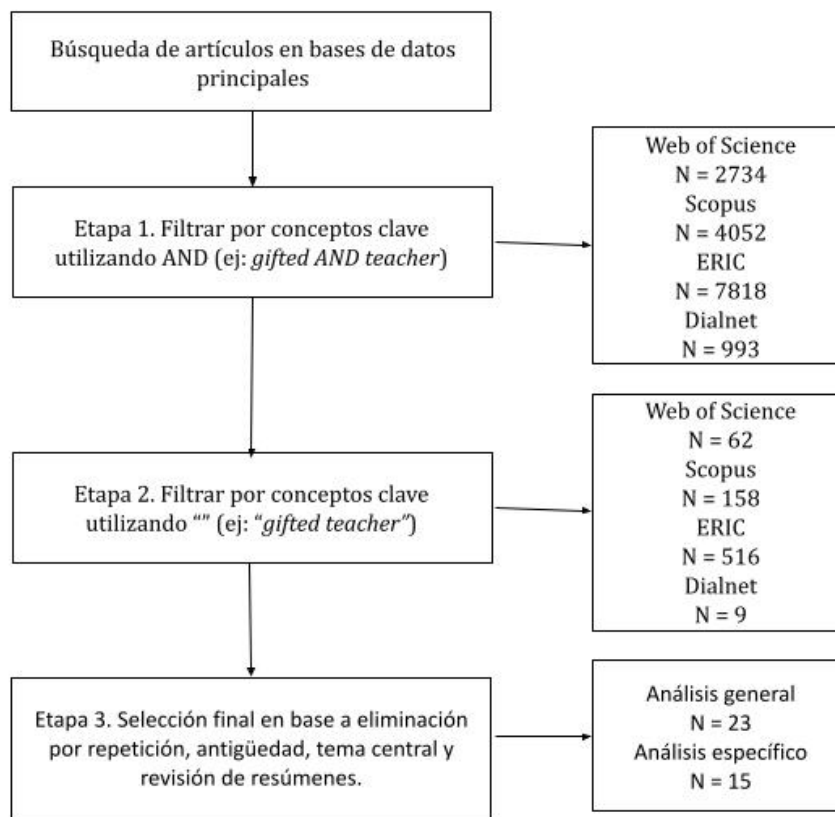
General analysis

As summarized in Catalán (2023), in the field of gifted education there is a significant absence of works that are linked to the concept of *gifted teacher* that is expected to be developed. Some of the most common themes are: how gifted students and their respective teachers relate (Clark & Shore, 2004), along with the preparation of such a teaching group (Cabrera, 2011; Clark & Shore, 2004; National Association for Gifted Children, 2013); how the implementation of teaching is conditioned by the presence of gifted students and their teachers (Camci-Erdogan, 2015; Tourón, 2020; Vidergor & Eilam, 2012); the approach to gifted education from the viewpoint of educational policies (Reid & Boettger, 2015; Tourón &

Freeman, 2018); the vision held by educators, members of the governing body, students and adults responsible for gifted education (Bégin & Gagné, 1994; Hosseinkhanzadeh et al., 2013).

In addition, a considerable body of research has been identified that focuses on the figure of the *excellent/expert/effective teacher*, terms close to the concept of the *outstanding/expert teacher*, which are usually linked to standardized teacher evaluations. However, these investigations, despite their relevance, do not establish a direct connection with the anticipated identification of skills, an essential element for the construction of the concept that is sought to be developed (Catalán, 2023).

Specific analysis (national)

In formulating the concept, Fuentes et al. (2013) pose a pending task, highlighting its importance for improving teaching careers in relation to the students who study them. In this sense, they propose that it is crucial to identify certain qualities in outstanding teachers among their colleagues, in order to use this information to identify high school students with teaching potential early on. However, although the introduction of the key concept generates expectations in the authors' proposal, they focus on stressing the importance of the educational system having highly competent teachers, suggesting that entry should be directed towards those students who demonstrate, from the outset, the best skills for this field. In addition, they present some general definitions of talent (which tend to focus on academic talent), and then outline a possible definition of what a *talented teacher* might be. According to Fuentes et al. (2013), some characteristics that could be associated with the figure of the *gifted teacher* include: a need to communicate and collaborate with various members of the educational community; abilities to establish bonds and empathize with them, as well as to perceive and express emotions, especially sensitive to the emotional processes of their students; an interest in transmitting knowledge effectively, reflective thinking, observational skills and awareness of the context and social aspects; a high degree of self-control, self-knowledge and introspection; and a performance that evidences pedagogical leadership skills and promotes the realization of educational projects.

Following a similar line, Hermosilla & Lara (2017) give an account of the search for a definition of categories associated with the conformation of the notion of pedagogical talent (teaching orientation, emotional stability, social skills and higher cognitive skills). However, it is possible to detect at least two points for improvement. First, what was done was to corroborate what the literature proposes with respect to such categories and their different descriptors through the application of questionnaires, which included sentences that the respondents were to value in terms of what should be observed in a *talented teacher*; however, such sentences are written in a format in which most of the respondents would naturally attribute a high positive valuation to them, which makes them lose value as discriminatory elements to generate judgments and conclusions. Second, the conceptions of *talented teacher* and outstanding/experienced teacher tend to be mixed, since some characteristics that a teacher presents more clearly when he/she has practiced for a considerable time are valued, so that the focus of the research is not particularly on the potential exhibited by a prospective teacher.

Pizarro et al. (2018) essentially show the development of measurement instruments by the institution, with the purpose of capturing what they call *educational talent* in their teachers in training, which would allow characterizing the population of students in their programs and making decisions based on their needs. Together with the analysis of the correlations between different variables, the predictive capacity of the instrument or the attribution of weighted

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weights to each factor, it is possible to rescue from this work precisely those variables or factors that support the structure of the battery of instruments applied by the institution, since they account for some characteristics/skills/attitudes that a *talented teacher* might have (although the study does not state with certainty how much and/or how each of the variables contribute to the conception of the concept): creativity, educational talent, metacognition, teamwork/communication, empathy, multiple intelligences, innovation, leadership, pedagogical interests/motivation/vocation (Pizarro et al., 2018).

In turn, Castro & Jaramillo (2018) approach what Hermosilla & Lara (2017) stated, giving an account of the country's situation in terms of initial teacher training and positioning in a preponderant place the need to attract the most qualified students to pedagogy careers. In this case, the size of the sample in which the corresponding instruments were applied, the validation process of such instruments and that there is a greater dispersion in the assessments made to the different characteristics of a teacher are particularly positively valued, in contrast to what has already been consigned about Hermosilla & Lara (2017), understanding that this allows identifying different levels of relevance of the presence of one or other qualities in a teacher. In terms of the specific proposal of characteristics that would allow for the definition of a *talented teacher*, the authors suggest two broad areas, which are divided into five dimensions (pedagogical vocation: social commitment, motivations for teaching and professional role; pedagogical talent: cognitive skills and social skills). In turn, each of the dimensions was associated with certain adjectives, which act as descriptors or characterizers of these dimensions as a result of the application of the instruments that were part of the study. It is important to note that the study sought to distinguish and differentiate vocation from talent as observable phenomena, which corresponds to one of the hypotheses that the literature review sought to demonstrate.

In the field of more recent research, the work of Walker-Janzen et al. (2020), who examine Chile's situation regarding access to teaching careers and associated reforms, highlighting the importance of more effectively managing the entry of students with teaching talent. Although this study is limited to a specific context, it yields significant results: teachers in charge of selecting future teachers tend to favor those with excellent academic performance, a remarkable capacity for social interaction and participation, as well as leadership skills with respect to their peers. In addition, they seek to foster the integration of these qualities in students, suggesting that the conception of talent in education requires the harmonious presence of various factors.

Cruz et al. (2020) seek to establish certain relationships or common minimums between the different descriptions of talent, through adapted models based on the classic proposals of Csikszentmihalyi (1988), Gagné (1991), Renzulli (1986) and Sternberg (1985), which inevitably puts the focus on the relationships that have existed between the ideas of academic talent, intelligence, high exceptionality and giftedness; as a result of the crossing between the aforementioned adapted models, it is concluded that the following aspects surround the notion of *talented teacher*: professional training/disciplinary knowledge, motivation, training process and personal development, creative thinking, practical intelligence and motivating professional environments (Cruz et al., 2020).

Finally, Hormazabal et al. (2020) explore the proliferation of programs sponsored by Chilean universities designed to attract students in their final years of secondary education who show an interest in teaching. These programs employ a variety of criteria to select, develop and incorporate participants into the university environment (Araya & Wong, 2013; Hernández et al., 2020). This phenomenon is relatively new in Chile and has gained momentum with the enactment of Law No. 20903, which offers an alternative access route to teaching careers. Given their novelty, a thorough documentation and in-depth analysis of the implementation of these

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programs is still lacking, especially with regard to their impact on the identification and proliferation of potential talented teachers. However, the article points out that, in general terms, these programs are aimed at identifying outstanding skills in areas such as writing and mathematics, as well as valuing the pedagogical vocation and the teacher's commitment to his or her role in society (Hormazabal et al., 2020).

Specific analysis (international)

Among the works of Marion Porath, an expert in the field of high abilities, it is possible to find at least two that give certain indications of what could be understood as a *gifted teacher*, since she tries to give a description focused on the teacher as a subject that may present certain exceptional characteristics. Along these lines, Towers & Porath (2001) present some reflections based on what they call *gifted teaching*, a concept that, according to the authors, refers to that type of teaching that inspires and connects with the minds and hearts of students, reaffirming the idea that, as opposed to what is sought by those studies focused on the student as exceptional, it seems relevant to analyze characteristics, actions, skills and/or strategies of the teacher that would lead him/her to be classified as gifted.

Regarding the ideas that surround the notion of *gifted teacher*, the authors bring up interpersonal competence or ability as one of the components of the definition of intelligence, and position it as an integral part of what configures the teacher with high capacities, complementing it with the notion of *wise teacher* (*profesor sabio*) that the authors rescue from Arlin (1999), which would indicate that a *gifted teacher* could show the following characteristics:

- broad objective knowledge about teaching and the importance of the discipline he/she teaches; broad theoretical knowledge about teaching strategies and practical knowledge about how and when to use such strategies;
- sense of the context in which teaching is carried out;
- awareness of the various variables associated with other teachers and students;
- uncertainty about the effects that teaching decisions may have, along with a willingness to take risks and try different ways of actively involving students in the learning process.

Finally, the authors conclude that the triad between intelligence, personality and what results from the interaction between both (for example, creativity and social intelligence are mentioned) is fundamental to conceive the so-called *wise teacher*, age not being a determining variable and only experience being a determining variable when it appears interacting with intelligence and personality. In addition, the importance of permanently incorporating students in the learning process is reaffirmed, as well as the importance of betting on innovative strategies, a solid disciplinary knowledge and a deep and perspective reading of what the curriculum states.

In turn, Porath (2009) highlights the figure of the *expert teacher* as a starting point to think about the possible qualities that a teacher with high capacities possesses, complementing what has already been exposed in relation to the figure of the *wise teacher*, and incorporating aspects such as intrapersonal intelligence (teachers' knowledge of themselves, projection of personal reflections in their professional practice), the consideration and management of different contextual variables (school climate, educational policies, expectations of the educational community, etc.), the search for excellence in their own practice and in the development of students, or the appropriation of their environment as a space in which they deploy their maximum potential.

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One of the main references and sources of inspiration has been found in Mikulic et al. (2017), both for the ideas he puts forward regarding the conception of the *talented teacher*, as well as for the strategy he follows to obtain information, analyze it and generate important conclusions. In effect, the authors seek to characterize what they call *gifted teachers*, assuming their existence (as it occurs in the different fields of human development) and suggesting the need to find a way to detect such teachers. The notion is circumscribed to some of the models already cited (Gagné, 1991; Renzulli, 1986; Sternberg, 1985), takes as evidence the effect that teachers can have on the learning process of students and particularly on the results of such process, is placed at the center of the discussion between the importance of excellence and equity (a debate that usually revolves around the positioning of talent as social capital), and is linked to a conception that appears as a sort of corollary of the subject in question: the manifestation of the characteristics of a *talented teacher* in adulthood, through different levels (competence, expertise and eminence).

This last point is particularly interesting, since it could have an impact on the search for a differentiation between the concepts of *potential talented teacher* and *talented teacher*, understanding that the characteristics of the latter are observable once he/she has already become a teacher as such. Specifically, the research used as a target group student teachers from different years, practicing elementary school teachers and academics linked to teaching careers, whose assessments from a battery of indicators generated as a result that a series of adjectives and actions are valued as descriptors of the figure of the *talented teacher*, grouped into two major domains: cognitive (responsible, encouraging, willing to learn, disciplined, encourages thinking, competent, creative, detail-oriented, etc) and socio-affective (attentive, communicative, cooperative, reliable, fair, benevolent, accessible, concerned, honest, etc). In turn, within a range of seven areas in which, according to the authors, it is possible to distribute the different actions and teaching tasks (family and community, evaluation, environment, professional development, teaching strategies, inclusion and interactions), and which would eventually account for the behavior of a *talented teacher*, the areas of inclusion and interactions are the ones that were most highly valued by the evaluation groups, together with that of teaching strategies by practicing teachers/academics. In particular, these results showed no significant differences between the groups consulted, which indicates a considerable level of agreement.

In general, the notion of the *talented teacher* that the authors attempt to illustrate is similar to that proposed in Arlin (1999), Porath (2009) and Towers & Porath (2001), evoking the figure of an expert who possesses a degree of full knowledge of all the aspects that converge in the teaching practice, along with some particularities that are not common in teachers (the valuation of the reflection of their own practice with an investigative tinge, or the need to achieve excellence, among others).

In recent research, it is worth highlighting Fedorov et al. (2019), who emphasize the importance of mechanisms to identify, select and support those students who show certain special abilities linked to the pedagogical field, which would allow strengthening the educational system in terms of its quality; in turn, the authors consider relevant the debate between the two possible conceptions of talent: the idea of *gifted*, focused on the potential and capabilities prior to exposure to a certain context, and that of *talented*, focused on the observable, virtuous and professional deployment of certain basic tools. By virtue of these scopes, the authors consider that the presence of a *talented teacher* is related both to previous antecedents (at school and initial training level) and to performances that are manifested in a professional environment (from initial training to classroom teaching practice). It is important to mention that this study promotes the link between early detection and the consolidation of

talent through a systematic method, involving different levels and actors of the educational system.

On the other hand, Orgoványi-Gajdos & Kovács (2020) are close to the idea that we are trying to define, since although it is based on the notions of *excellent teacher* or *effective teacher* (associated to the outstanding/expert teacher under the criteria of a standardized teacher evaluation) the authors allude to outstanding intrinsic characteristics and/or developed with experience, such as: supports student self-development, evaluates the learning process and reflects on it, has professional autonomy, is efficient in communication, possesses knowledge of his/her discipline, among the most outstanding. These can be qualified as *talents* and are distributed according to their focus (student-centered, pedagogical, professional or educational). One aspect that makes this research particularly interesting is the potential difference in the manifestation of those special characteristics in gifted teachers according to the type of students they work with. In this case, the sample was divided into three groups, made up of teachers who teach high-risk students and gifted students, plus the addition of a group of supervising teachers, and the results showed similarities between the group of supervising teachers and teachers of high-risk students in various aspects, with teachers working with gifted students being seen as different (which according to the authors is explained, in part, by the homogeneous character that a group of gifted students tends to have in comparison to others). This result is relevant, since it opens the door to the incorporation of the context as a determining variable when constructing a definition of a *talented teacher*, whether due to the conditions provided by school socioeconomic contexts, disciplines of study, educational levels, cultural capital, type of student, among others; on the other hand, it invites us to think about the difference between the characteristics of a talented teacher that make him/her a talented teacher and the characteristics of a talented teacher that make him/her particular and different from others, but that do not necessarily contribute to being considered talented. For example, and to mention a few adjectives within the data obtained, the research showed that teachers working with gifted students rated themselves as more distant, conservative, serious, critical, rational and rigid than their peers in the other two groups, which does not necessarily imply that such characteristics lead them to maximize the deployment of their talent.

Discussion and conclusions

A thorough review of the literature has been instrumental in identifying common guidelines that contribute to the definition of a *gifted teacher*. This understanding becomes crucial when addressing specific problems, such as the difficulties in incorporating teachers into the national education system and the need to effectively meet the educational demands of talented students. Next, we will delve into various aspects related to the definition of a *talented teacher*, highlighting relevant ideas that emerged from the bibliographic analysis.

Outstanding teacher and national and international competitions

In the national context, the *outstanding teacher* emerges as an outstanding figure in the field of pedagogy, a classification derived from the current categorization in terms of teaching performance, according to the Framework for Good Teaching (MINEDUC, 2021). The exploration of national and international reference frameworks reveals similarities, especially with regard to the maximum expected of a teacher, aligning with the conception of a *talented*

teacher. The analysis of proposals that work in terms of competencies is presented as an interesting avenue, consistent with contemporary trends in education.

Differentiation between gifted and talented

The search for a precise definition of a *gifted teacher* demands a clear distinction between the notions of *gifted* and *talented* (Fedorov et al., 2019). The idea of *gifted*, associated with innate potentials, may not be completely applicable to the *gifted teacher*. The latter term seems to develop with time and specific experiences, although certain abilities or characteristics could be considered intrinsic, innate or exceptional from the beginning (Orgoványi-Gajdos & Kovács, 2020). The notion of *talented*, understood as the concrete manifestation of worked and enhanced skills, fits better with the construction of the definition of a *talented teacher*. The crucial question thus arises about the manifestation and detection of talent in adulthood (Mikulic et al., 2017).

Value-added and exceeding evaluation standards

A distinguishing characteristic of the *talented teacher* lies in his or her ability to add value, surpassing conventional teaching evaluation standards. Although the initial definition could be aligned with that of an *outstanding/expert teacher* according to standardized assessments, the distinction between the two is expected to fall on an added value associated with the manifestation or exceptional display of certain distinctive aspects (Orgoványi-Gajdos & Kovács, 2020). This added value transcends the requirements of a traditional teacher evaluation and is evident in unusual contexts, such as working with gifted students, participation in teacher training and leadership within educational communities.

Role of intelligence

Intelligence, understood both in its interpersonal (Porath, 2009; Towers & Porath, 2001) and intellectual dimensions, plays a fundamental role in defining the *talented teacher*. The discussion centers on whether the *talented teacher* is inherently more intelligent, according to the relevant conceptions of intelligence. The question arises as to whether intelligence is a determining factor in the identification and final definition of the *talented teacher*.

Vocation as a determining factor

In the Chilean national context, vocation emerges as a distinctive trait of the *talented teacher*, contrasting with international research. The influence of vocation in the classification of teachers as talented should be carefully evaluated, since this trait could be particular to Chilean teachers, affecting the general conception of teaching talent. This emphasis on vocation could divert attention from what, according to most research, appears to be fundamental in the conception of the *gifted teacher*.

Key capabilities identified

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The review of the literature has allowed us to identify key capabilities that make up the figure of the *talented teacher*. These capabilities are divided into different areas: social (related to social interactions), emotional (linked to emotional deployment), cognitive (related to intellectual development), didactic/pedagogical (specific to interactions in teaching and learning processes), disciplinary (specific to the knowledge in which teaching is imparted) and professional (transversal and observable in various work contexts). These capabilities, in turn, can be grouped into dimensions that define a diverse vision of the identity of the *talented teacher* (Catalán & Jurado, 2023), which is aligned with a modern and comprehensive perspective of the presence of talent, without circumscribing or limiting it to a particular field.

In sum, the literature review provides a solid basis for the conceptualization of the gifted teacher. The distinction between gifted and talented, the added value that goes beyond assessment standards, the role of intelligence, the influence of vocation and the identification of key capabilities are fundamental aspects that contribute to a comprehensive understanding of this figure.

References

Araya, J., & Wong, T. (2013). Programa de Educadores Líderes con Vocación Pedagógica Temprana de la Universidad de Santiago de Chile. In *Tercera conferencia latinoamericana sobre el abandono en la educación superior*. México DF, México.

Arlin, P. K. (1999). The wise teacher: A developmental model of teaching. *Theory into Practice, 38*, 12-17. https://doi.org/10.1080/00405849909543825

Bégin, J. & Gagné, F. (1994). Predictors of attitudes toward gifted education: A review of the literature and blueprints for future research. *Journal for the Education of the Gifted, 17*(2), 161-179. https://doi.org/10.1177/016235329401700206

Cabezas, V. & Claro, F. (2011). Valoración social del profesor en Chile: ¿cómo atraer a alumnos talentosos a estudiar pedagogía? *Temas de la agenda pública, 6*(42), 1-18. https://politicaspublicas.uc.cl/wp-content/uploads/2015/02/valoracion-social-del-profesor-en-chile.pdf

Cabrera, P. (2011). ¿Qué debe saber y saber hacer un profesor de estudiantes con talento académico? Una propuesta de estándares de formación inicial en educación de talentos. *Estudios Pedagógicos, 37*(2), 43-59. https://doi.org/10.4067/S0718-07052011000200002

Camci-Erdogan, S. (2015). Investigating Pre-Service Gifted Education Teachers' Self-Efficacy toward Science Teaching and Scientific Attitudes. *Eurasian Journal of Educational Research, 59*, 133-148. https://doi.org/10.14689/ejer.2015.59.8

Castro, R. & Jaramillo, C. (2018). Autopercepción de estudiantes novatos de pedagogías relativa a la vocación y talento pedagógico. *Revista Reflexión e Investigación Educacional, 1*(1), 33-56. https://doi.org/10.22320/reined.v1i1.3404

Catalán, M. (2023). El profesor talentoso de acuerdo a los docentes chilenos: construcción de un instrumento que apoye su caracterización. In A. M. Porto-Castro, J. M. Muñoz-Cantero, & C. I. Ocampo-Gómez. (Eds.), *XX Congreso Internacional de Investigación Educativa, AIDIPE 2022* (pp. 2273-2278). Edicións USC. https://dx.doi.org/10.15304/9788419679543

Catalán, M, & Jurado, P. (2023). Dimensiones del talento a la base de la figura del profesor talentoso: propuesta teórica desde un paradigma diverso. In D. Ortega-Sánchez & A. López-Padrón (Eds.), *Educación y sociedad: claves interdisciplinares* (pp. 307–316). Ediciones Octaedro.

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Centro de Estudios MINEDUC (2017). *Revisión de las Políticas Educativas en Chile desde 2004 a 2016*. https://centroestudios.mineduc.cl/wp-content/uploads/sites/100/2017/06/CBR_Mineduc-WEB.pdf

Clark, C., & Shore, B. (2004). *Educating Students with High Ability*. UNESCO Publishing.

Cruz, S., Castillo, J., & Annunziata, P. (2020). El talento pedagógico: aportes desde la didáctica para el aprendizaje significativo. *Revista Akadèmeia, 18*, 54-87. https://doi.org/10.61144/0718-9397.2019.289

Csikszentmihalyi, M. (1988). Society, culture, and person: A systems view of creativity. En R. J. Sternberg (Ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 325-339). Cambridge University Press.

Elige Educar (2021). *Índice Elige Educar 2020: Reporte de resultados*. https://eligeeducar.cl/content/uploads/2021/03/reporte-indiceee2020-210326.pdf

Fedorov, A. A., Ilaltdinova, E. Yu., & Frolova, S. V. (2019). Pedagogical talent: psychological and pedagogical solutions for identification, selection, and support. *Perspectives of Science and Education, 37*(1), 262-274. https://doi.org/10.32744/pse.2019.1.19

Fuentes, R., Araneda, A., & Verdugo, C. (2013). Aproximación al concepto de talento pedagógico: un paso en la selección de personas con potencial docente para la FIP en Chile. *REXE: Revista de estudios y experiencias en educación, 12*(23), 61-74.

Gagné, F. (1991). Toward a Differentiated Model of Giftedness and Talent. En N. Collangelo y G. A. Davis (Eds.), *Handbook of Gifted Education* (pp. 65-81). Allyn and Bacon.

Hermosilla, M., & Lara, J. (2017). *Caracterización del concepto de talento pedagógico desde la visión de estudiantes de pedagogía de la UCSC* [Tesis de pregrado, Universidad Católica de la Santísima Concepción]. http://repositoriodigital.ucsc.cl/handle/25022009/1205

Hernández, C., Pavez, A., González, A. & Tecpan, S. (2017). ¿Se sienten valorados los profesores en Chile? *Educación y Educadores, 20*(3), 434-447. https://doi.org/10.5294/edu.2017.20.3.6

Hernández, C., Peña, S., Sepúlveda, A., Minte, A., Carrasco, H., Barraza, E., & Sánchez, F. (2020). Evaluación del Programa Vocación y Talento Pedagógico de la Universidad de Los Lagos (Chile): experiencia piloto. *Espacios, 41*(16), 11-18.

Hormazabal, N., Abricot, N., Oyarzo, K., Alvarado, M., & Bravo, C. (2020). Programas de acceso especial a las carreras de pedagogía: Sus características en las Universidades del Estado de Chile. *Sophia Austral, 25*, 93-119. https://doi.org/10.4067/S0719-56052020000100093

Hosseinkhanzadeh, A. A., Yeganeh, T., & Taher, M. (2013). Investigate Attitudes of Parents and Teachers About Educational Placement of Gifted Students. *Procedia - Social and Behavioral Sciences, 84*, 631-636. https://doi.org/10.1016/j.sbspro.2013.06.616

López, V., Julio, C., Morales, M., Rojas, C. & Pérez, M. V. (2014). Barreras culturales para la inclusión: políticas y prácticas de integración en Chile. *Revista de Educación, 363*, 256-281.

Mikulic, M., Racki, Z. & Brajkovic, S. (2017). In Support of Agreement on Gifted Teachers and Education as a Giftedness Performance Domain. *Croatian Journal of Education, 19*(3), 891-917. https://doi.org/10.15516/cje.v19i3.2381

MINEDUC (2016). *Ley N° 20.903. Crea el Sistema de Desarrollo Profesional Docente y modifica otras normas.* https://www.colegiodeprofesores.cl/wp-content/uploads/2021/04/Ley-20903_01-ABR-2016.pdf

MINEDUC (2017). *El primer gran debate de la Reforma Educacional: Ley de inclusión escolar.* https://www.mineduc.cl/wp-content/uploads/sites/19/2018/03/libro_Inclusio%CC%81n_final.pdf

MINEDUC (2021). *Marco para la Buena Enseñanza*. https://www.cpeip.cl/marco-buena-ensenanza/

National Association for Gifted Children (2013). Advanced Standards in Gifted Education Teacher Preparation. https://eric.ed.gov/?id=ED562615

Orgoványi-Gajdos, J., & Kovács, E. (2020). Teachers' Views about the Characteristics of Pedagogical Talents. *Acta Educationis Generalis, 10*(2), 78-94. https://doi.org/10.2478/atd-2020-0011

Pizarro, R., Clark, S., Pinto, A., González, C., & Bonnefoy, N. (2018). Análisis psicométrico de batería de talentos educativos y habilidades blandas, en alumnos de pedagogías de la Universidad de Playa Ancha, 2017. *Foro educacional, 31*, 47-67. https://doi.org/10.29344/07180772.31.1829

Poblete, R. & Galaz, C. (2017). Aperturas y cierres para la inclusión educativa de niños/as migrantes en Chile. *Estudios Pedagógicos, 43*(3), 239-257. https://doi.org/10.4067/S0718-07052017000300014

Porath, M. (2009). What Makes a Gifted Educator? A Design for Development. In L. V. Shavinina (Ed.), *International Handbook on Giftedness* (pp. 825-837). Springer. https://doi.org/10.1007/978-1-4020-6162-2_40

Reid, E. & Boettger, H. (2015). Gifted Education in various countries of Europe. *Slavonic Pedagogical Studies Journal, 4*(2), 158-171. https://doi.org/10.18355/PG.2015.4.2.158-171

Renzulli, J. (1986). The three-ring conception of giftedness: a developmental model for creative productivity. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 53-92). Cambridge University Press.

Renzulli, J. (2012). Reexamining the Role of Gifted Education and Talent Development for the 21st Century: A Four-Part Theoretical Approach. *Gifted Child Quarterly, 56*(3), 150-159. https://doi.org/10.1177/0016986212444901

Rojas Fabris, M., Fernández, M., Astudillo, P., Stefoni, C., Salinas, P. & Valdebenito, M. (2019). La inclusión de estudiantes LGTBI en las escuelas chilenas: entre invisibilización y reconocimiento social. *Pensamiento Educativo. Revista de Investigación Educacional Latinoamericana, 56*(1), 1-14. https://doi.org/10.7764/PEL.56.1.2019.3

Sternberg, R. (1985). *Beyond IQ: A triarchic theory of human intelligence.* Cambridge University Press. https://doi.org/10.1007/978-94-009-4406-0_9

Tenorio, S. (2011). Formación inicial docente y necesidades educativas especiales. *Estudios Pedagógicos, 37*(2), 249-265. https://doi.org/10.4067/S0718-07052011000200015

Tourón, J., & Freeman, J. (2018). Gifted education in Europe: Implications for policymakers and educators. In S. I. Pfeiffer, E. Shaunessy-Dedrick, & M. Foley-Nicpon (Eds.), *APA handbook of giftedness and talent* (pp. 55-70). APA Books.https://doi.org/10.1037/0000038-004

Tourón, J. (2020). Las Altas Capacidades en el sistema educativo español: reflexiones sobre el concepto y la identificación. *Revista de Investigación Educativa, 38*(1), 15-32. https://doi.org/10.6018/rie.396781

Towers, E., & Porath, M. (2001). Gifted teaching: Thought and action. *Roeper Review, 23*(4), 202-206. https://doi.org/10.1080/02783190109554099

UNESCO (2004). *La Educación de Niños con Talento en Iberoamérica.* https://unesdoc.unesco.org/ark:/48223/pf0000139179

Vidergor, H. E., & Eilam, B. (2012). Israeli Teachers' Perceptions of Gifted Teachers' Desired Characteristics: A Case of Cultural Orientation. *Roeper Review, 34*(1), 26-37. https://doi.org/10.1080/02783193.2012.627550

Walker-Janzen, W., González-García, G., & García-Olguín, R. (2020). Características socioacadémicas de estudiantes en Chile postulados con talento escolar para la pedagogía. *Educação e Pesquisa, 46*. https://doi.org/10.1590/s1678-4634202046219434

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Students of Special Education Classrooms as Target for Educational Activities of Museums: A Comparison between Users
El alumnado de aulas enclave como destinatario de actividades educativas de museos: una comparación entre tipos de usuarios

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	ABSTRACT
Keywords: museums, secondary education, special education classroom, transition to adulthood, websites	This study aims to describe what kind of users are offered the educational activities visible on museums' websites, and analyse the relationship between the type of users to whom activities are offered and the educational dimension of museums' visibility on their websites. This is a quantitative and exploratory research. The sample, composed of 33 museum websites, was selected from 134 institutions' museums. A specific research tool was developed to analyse the museums' educational aspects on their websites. Concerning the first aim, the main conclusions are: (a) the educational activities offered are aimed mainly at compulsory education and Baccalaureate students, while the offer of activities for special education classroom students is low; and (b) museums' websites that offer activities for special education classroom students are exclusively of public ownership. Regarding the second aim: (a) the provision of educational activities aimed at pupils in compulsory education and baccalaureate is significantly associated with the visibility of education on websites' homepages, and with the presence of an educational section and an education department on the institutional website; and (b) there is no educational facet on the institutional website visible, that is associated with the offer of activities for special educational classroom students.
	RESUMEN
Palabras clave: aula enclave, educación secundaria, museos, transición a la vida adulta, webs	This study aims to describe what kind of users are offered the educational activities visible on museums' websites, and analyze the relationship between the type of users to whom activities are offered and the educational dimension of museums' visibility on their websites. This is a quantitative and exploratory research. The sample, composed of 33 museum websites, was selected from 134 institutions' museums. A specific research tool was developed to analyze the museums' educational aspects on their websites. Concerning the first aim, the main

conclusions are: (a) the educational activities offered are aimed mainly at compulsory education and Baccalaureate students, while the offer of activities for special education classroom students is low; and (b) museums' websites that offer activities for special education classroom students are exclusively of public ownership. Regarding the second aim: (a) the provision of educational activities aimed at pupils in compulsory education and baccalaureate is significantly associated with the visibility of education on websites' homepages, and with the presence of an educational section and an education department on the institutional website; and (b) there is no educational facet on the institutional website visible, that is associated with the offer of activities for special educational classroom students.

Introduction

In recent decades, education has evolved towards more open and plural educational models in a society that is increasingly aware of its diversity. Proof of this evolution are the changes introduced recently, both in our Magna Carta and in the educational laws. On February 15, 2024, the Spanish Constitution sanctioned a reform that involves not only a terminological change, but also the protection of their rights, and the commitment of the public authorities to the development of policies that guarantee their full personal autonomy and social inclusion (Reform of Article 49 of the Spanish Constitution, February 15, 2024). At the school level, the Organic Law on Education (Organic Law of 2006) and the Organic Law modifying the Organic Law on Education (Organic Law of 2020) have been committed to comprehensive educational approaches that include all students, regardless of their needs, characteristics or conditions (García-Barrera, 2021). In this regard, the Organic Law of 2020, in its fourth additional provision, establishes that, within a period of ten years, the Government, in collaboration with the educational administrations, will develop a plan so that regular schools have the necessary resources to be able to attend disabled students in the best conditions. Special education centers will continue to provide schooling for students requiring highly specialized attention, and will serve as reference and support centers for regular schools. These changes require the construction of open and more participatory curricula, and the promotion of active teaching methodologies that make it possible to attend to the diversity of students (Martínez Blázquez, 2024; Muntaner-Guasp et al. 2022). In addition, they must be accompanied by teacher training that favors an educational approach that is as inclusive as possible (Quesada López, 2021).

In the Canary Islands, the enclave classrooms (AE) are schooling units for students with special educational needs located in regular schools. This is an exceptional type of schooling designed to provide an individualized educational response with specific methodologies. The EAs have extraordinary personnel and material resources. This schooling is temporary and is reviewed periodically after three school years from the date of issuance of the last psycho-pedagogical report for each student. The ECs serve students from 3 to 21 years of age, grouped by age: Adapted Curricular Specification for Early Childhood Education from 3 to 8 years old, Adapted Curricular Specification for Primary Education from 8 to 14 years old, and Curricular Specification for Transition to Adult Life from 14 to 21 years old (Dirección General de Ordenación, Innovación y Calidad, 2021). The amount of time each student spends in the regular classroom varies greatly depending on his or her needs, abilities and curriculum areas, among other factors.

The conceptualization of inclusion is still under debate (Norwick, 2022). However, Nilholm (2021) has synthesized the various conceptions into four: (a) inclusion as the placement of students with disabilities in regular classrooms, (b) inclusion as meeting the social and academic needs of students with disabilities, (c) inclusion as meeting the social and

academic needs of the entire student body, and (d) inclusion as community building. Nilholm alludes to a broader vision, inclusion as a response to the social and academic needs of the whole student body and the creation of communities. Moreover, the concept of inclusion is elusive as its rationale and implementation varies according to different contexts (Plancarte, 2017). The transition from the deficit perspective to the inclusive perspective seems clear, however, there is no agreement about which action plans are more adequate to achieve full social integration (García, 2009; Fierro and Contreras, 2024).

For several decades, museums and cultural institutions have been moving in the same direction. At present, these spaces are conceived as non-formal educational environments in which knowledge transmission and acquisition processes take place, constituting an environment committed to opening up to new audiences. This has been breaking down barriers for the global inclusion of the population, and making it possible for broad segments of society to participate in this process in a plural and democratic manner (de la Jara, 2022). One of the ways in which museums have opened up to citizens has been by incorporating new ways of understanding pedagogical work oriented towards social inclusion; this is especially noteworthy in art museums (Benéitez, 2021, Bernaschina, 2022). Thus, other ways of generating knowledge about inclusion have been proposed (Springingzeisz, 2024). Numerous infrastructural, political and economic factors have been modified to achieve this. This has required adapting the operational aspects of the museum for better mobility, the incorporation of audio and linguistic accessibility, as well as various inclusive workshops, in addition to other adaptations such as technological ones, so present today.

In this sense, the educational dimension of the museums, represented by their education departments, is a key aspect in these processes towards educational and social participation and inclusion. These departments are involved, in their pedagogical work, in making contact with institutions outside the museum, as well as in the interaction with educational centers. This work has not only been focused on providing care to people from disadvantaged or marginalized backgrounds. Museums have created activities and programs aimed at groups that respond to the diversity of citizens. These activities are undoubtedly important for the people who participate, but also for society as a whole by reinforcing and making inclusion visible in different contexts (if there is a reference, that's great). For this reason, this research investigates the educational activities offered by museums to students in the enclave classroom in comparison with other students.

The objectives of this article are: (a) to describe the types of users to whom face-to-face educational activities that are visible on museum websites are offered, and (b) to analyze the relationship between the type of users to whom face-to-face educational activities are offered and the visibility of the educational dimension of museum websites.

Method

Type of study and research design

This research is quantitative and exploratory. Quantitative, since the collection of information is done through a closed instrument that allows the analysis of the web pages. Exploratory because it analyzes the websites of museums, an area that has been little studied.

Population and sample

To select the sample we first identified the museum institutions that existed in the Canary Islands and that had a web page at the time of the study: a total of 134. Of these, 33 websites were selected according to three criteria:

(a) The museum should have its own website.

(b) The website should have a section that includes sufficient information on educational activities and resources.

(c) That the website had a defined structure and that it allowed to move freely among the contents.

Of the institutions to which these websites belong (24), 72.7% are publicly owned, 18.2% are privately owned (6) and 9.1% are of a mixed nature (3).

Data collection instrument

An *ad hoc* instrument was used to collect the information from the web sites in order to analyze

- the educational aspect of cultural institutions and museums that appears in the content of their websites, and, in particular, the visibility of artistic mediation.
- the range of educational activities offered by cultural institutions as reflected in the content of their websites.
- the characteristics of the educational activities visible on their websites, with special attention to artistic mediation activities, and
- the ease of access and navigation of the websites.

The construction of the instrument was carried out in six phases:

Phase 1. Literature review on web analysis tools, and on museum education and artistic mediation

Phase 2. Design of the first version of the museum web analysis instrument.

Phase 3. Piloting of the instrument on six museum websites.

Phase 4. Preparation of a second version of the same.

Phase 5. Validation of the instrument by experts following the proposal of Escobar and Cuervo (2008).

Phase 6. Revision of the instrument after expert assessments and comments.

As a result of this process, a two-dimensional instrument was elaborated: one referring to *Web Content* and the other referring to the *Technological Characteristics of the Web*. The first dimension is composed of three sub-dimensions: *The educational facet of the institution*, *The offer of current educational activities*, and *Characteristics of educational activities*. The second dimension is composed of three sub-dimensions: *Organization and Navigation*, *Appearance* and *Accessibility* (Author 1; available in the ULL institutional repository).

Data collection and analysis procedures

Data collection using the instrument developed covered August to November 2022. The time it takes to apply the instrument to a web page varies, depending on the amount of information available on the page and the degree of difficulty in navigating it. The minimum time of application of the instrument in this sample was around 3 hours.

The data from the from the web analysis were entered into an Excel spreadsheet. The data were analyzed using SPSS-29, which allowed the construction of contingency tables and the calculation of $\chi 2$. For the analysis of one of the contrasts, the binomial test was applied, calculated using JASP-0.18.3.

Results

The results are presented below according to the objectives of this study. To address the first objective, the offer of educational activities was explored according to the type of users who benefit from them. In addition, the relationship between the offer of activities by type of students and the ownership of the museum institutions was analyzed.

According to the type of students, 27 of the websites studied (81.8%) show that the educational activities are aimed at students in Primary Education, E.S.O. and Baccalaureate. In 24 websites (72.7%), the target audience for educational activities is children's education students, while in 17 websites (51.5%) it is vocational training students and in 12 websites (36.4%) it is university students. The number of websites that indicate that the educational activities of museums are aimed at students in an enclave classroom (AE) is significantly lower: 8 webs (24.2%) in the case of Primary Education EC, 7 webs (21.2%) for Early Childhood Education EC, and 5 webs (15.2%) for Transition to Adulthood EC for EC for transition to adult life. Figure 1 clearly shows the difference between the offer aimed at students in enclave classrooms and that aimed at other types of students and those aimed at other types of students.

Figure 1

Types of users who benefit from face-to-face educational activities.
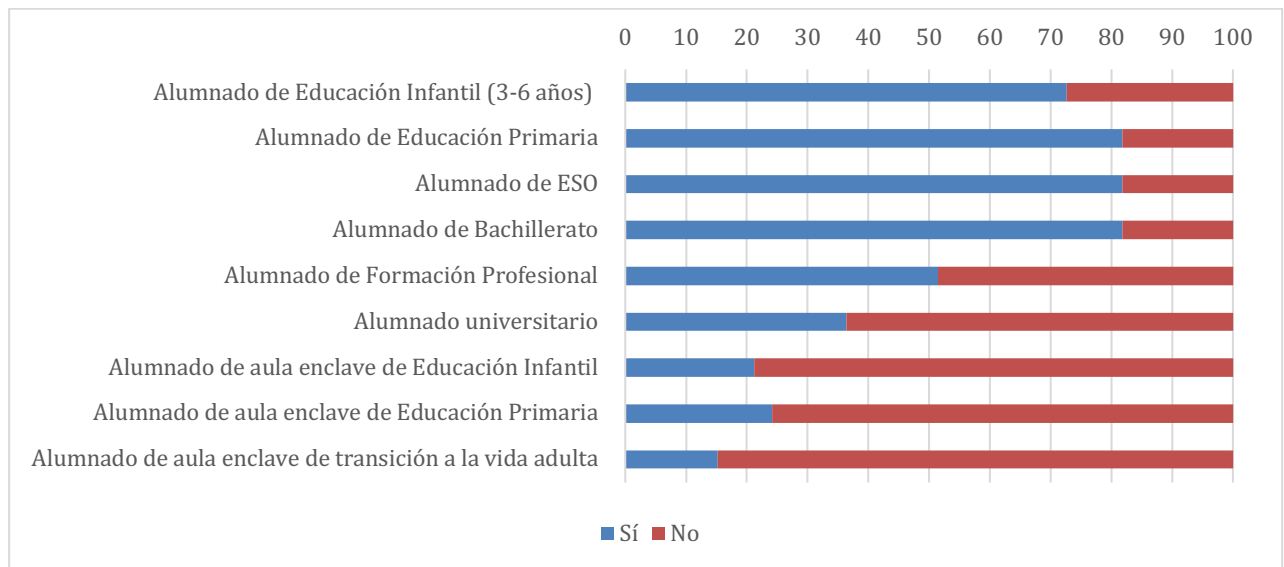
Note: The percentages have been calculated with respect to the 33 websites analyzed.

Table 1 shows that, depending on the ownership of the institution (public, private or mixed), 20 of the 24 websites of public institutions target students in primary education, secondary education and high school, 17 public websites (70.8%) target students in pre-school education, 14 websites (58.3%) target students in vocational training and 10 websites (41.7%) target university students (Table 1). Also in the case of private and mixed ownership websites, the largest number of websites offer activities aimed at Primary School, E.S.O. and Baccalaureate students, followed by Vocational Training and university students. The fundamental difference, depending on the ownership of the institution, appears in the offer of activities for EC students: in public institutions, this offer exists, but not in private and mixed institutions. Although this is not a statistically significant difference, it is from the point of view of our object of study.

The binomial test revealed that the proportion of websites that offer activities to students in Early Childhood Education (72.7%, p <.014), Primary Education (81.8%, p <.001), Secondary Education (81.8%, p <.001) is significantly higher than expected, while the proportion of those that do not offer activities to these students (27.3%, p <.014; 18.2%, p <.001; 18.2%, p <.001); 18.2%, p <.001) is lower than expected. With respect to EC students, the binomial test revealed that the proportion of sites offering activities to students in Early Childhood Education (21.2%, p <.001), Primary Education (24.2%, p <.005) and transition to

adult life (15.2%%, p <.001) is significantly lower than expected, while the proportion of sites that do not offer activities to these students (78.8%, p <.001; 75.8%, p <.005; 84.8%%, p <.001) is higher than expected; 75.8%, p <.005; 84.8%%, p <.001) is higher than expected.

Table 1

Types of users to whom the educational activities are addressed according to the ownership of the institution

| | Ownership of the institution | | | | | |
| | Public | | Private | | Mixed | |
	N	%	N	%	N	
Early Childhood Education students (3-6 years old)	17	70,8	4	66,7	3	100
Primary Education Students	20	83,3	4	66,7	3	100
ESO students	20	83,3	4	66,7	3	100
High School Students	20	83,3	4	66,7	3	100
Vocational Training Students	14	58,3	1	16,7	2	66,7
University students	10	41,7	1	16,7	1	33,3
Students in the enclave classroom of Early Childhood Education	7	29,2	0	0	0	0
Students in enclave classrooms of Primary Education	8	33,3	0	0	0	0
Students in the enclave classroom for transition to adulthood	5	20,8	0	0	0	0

Note: The percentages have been calculatedfor the total number of websites within each type of ownership.

In relation to the second objective, to analyze the relationship between the type of users to whom face-to-face educational activities are offered and the educational facet of the institution, it was decided to study four aspects of the educational dimension of museums: the visibility of education on the home page of the website, the presence of education in the mission of the institution reflected on the website, the presence on the website of an educational section and the presence on the website of an educational area or department. The first aspect is that education is clearly displayed on the home page of the museum's website, generally in the form of a tab with that name. The second aspect is that education appears explicitly in the definition of the museum's mission or objectives. The third aspect is that the website has a specific section dedicated to education, which is usually associated with a tab on the home page usually called EDUCATION, but may have other names such as LEARNING, Education and Cultural Action, DEAC (Department of Education and Cultural Action). The fourth aspect consists of the presence on the website of the museum's education department, which may be called by various names but all of which have to do with education.

As can be seen in Table 2, the educational facet of the museum is clearly reflected on the home page of 24 of the 33 websites analyzed. Cross-referencing these results with the type of users for whom the activities are intended, we find that 22 of these websites offer educational activities for students in Primary Education, E.S.O. and Bachillerato. In the case of Early Childhood Education students we found 19 webs (57.6%), 16 webs (48.5%) in the case of Vocational Training students, and 12 webs (36.4%) in the case of university students.

Table 2

Types of users targeted by the educational activities according to the presence of the educational facet of the institution on the home page of the web site

	Presence of the educational facet of the institution on the home page of the web site								χ2	
	Yes				No					
	Yes		No		Yes		No			
	N	%	N	%	N	%	N	%	Value	Sig.
Early Childhood Education students (3-6 years old)	19	57,6	5	15,2	5	15,2	4	12,1	1,840	,175
Primary Education Students	22	66,7	2	6,1	5	15,2	4	12,1	5,738	,017
ESO students	22	66,7	2	6,1	5	15,2	4	12,1	5,738	,017
High School Students	22	66,7	2	6,1	5	15,2	4	12,1	5,738	,017
Vocational Training Students	16	48,5	8	24,2	1	3,0	8	24,2	8,088	,004
University students	12	36,4	12	36,4	0	0	9	27,3	7,071	,008
Students in the enclave classroom of Early Childhood Education	6	18,2	18	54,5	1	3,0	8	24,2	,755	,385
Students in enclave classrooms of Primary Education	7	21,2	17	51,5	1	3,0	8	24,2	1,162	,281
Students in the enclave classroom for transition to adulthood	4	12,1	20	60,6	1	3,0	8	24,2	,157	,692

Note: The percentages have been calculated with respect to the 33 websites analyzed.

The number of websites that reflect the educational aspect on their home page and offer activities for EC students is decreasing significantly. In the case of AE students in Primary Education, they are offered in 7 museums (21.2%), for AE students in Early Childhood Education they are offered in 6 websites (18.2%/) and for AE students in transition to adult life 4 websites (12.1%).

The χ2 indicates that there is a statistically significant relationship between the presence of the educational facet of the institution on the home page of a museum's website and the offer of face-to-face educational activities to students in primary education, secondary education, high school, vocational training and higher education. In other words, the presence of the educational facet in this web space is associated with a greater offer of activities aimed at students at these levels. However, there is no relationship between the presence of the educational facet on the home page of a museum's website and offering activities for EC students. Therefore, offering activities for EC students is independent of whether or not the educational aspect appears at the beginning of the website.

As Table 3 shows, in 16 of the 33 sites analyzed, education is clearly included among the objectives or in the mission of the institution. Cross-checking these results with the activities offered to different groups of students shows that the number of websites offering activities for students in Primary Education, E.S.O., Bachillerato, Vocational Training and higher education is greater among the websites in which the educational facet appears in the mission of the institution. However, paradoxically, the number of websites that do not include the educational facet in the mission of the institution and that offer activities for Early Childhood and EC students is greater than the number of websites where the educational facet appears in their mission.

Table 3

Types of users to whom the educational activities are directed according to the presence of the educational facet in the institution's mission

	Presence of the educational facet in the mission of the institution								χ2	
	Yes				No					
	Yes		No		Yes		No			
	N	%	N	%	N	%	N	%	Value	Sig.
Early Childhood Education students (3-6 years old)	11	33,3	5	15,2	13	39,4	4	12,1	,248	,619

	N	%	N	%	N	%	N	%	Value	Sig.
Primary Education Students	14	42,4	2	6,1	13	39,4	4	12,1	,674	,412
ESO students	14	42,4	2	6,1	13	39,4	4	12,1	,674	,412
High School Students	14	42,4	2	6,1	13	39,4	4	12,1	,674	,412
Vocational Training Students	12	36,4	4	12,1	5	15,2	12	36,4	6,858	,009
University students	10	30,3	6	18,2	2	6,1	21	63,5	9,169	,002
Students in the enclave classroom of Early Childhood Education	2	6,1	14	42,4	5	15,2	12	36,4	1,411	,235
Students in enclave classrooms of Primary Education	3	9,1	13	39,4	5	15,2	12	36,4	,510	,475
Students in the enclave classroom for transition to adulthood	2	6,1	14	42,4	3	9,1	14	42,4	,170	,680

Note: The percentages have been calculated with respect to the 33 websites analyzed.

The χ2 values indicate that there is a statistically significant relationship between the presence of the educational facet in the institution's mission and the offer of activities for university and vocational training students. Taking into consideration the data, it can be understood that it is more likely that websites that do not include education in their mission do not offer face-to-face activities for university and vocational training students, while those that do include education in their mission do offer them. The rest of the offers of educational activities are not related to the presence of the educational facet in the mission of the website.

As can be seen in Table 4, in 28 of the 33 websites studied there is a section of specifically educational content, i.e., in the structure of the website there is a tab alluding to or related to education that leads to a section of educational content. If we analyze these results according to the students to whom activities are offered, as shown in Table 4, most of the websites that have an educational content section, 26 of them (78.8%), offer their activities to students in Primary Education, E.S.O. and Bachillerato; 23 of them (69.7%) offer them to students in Early Childhood Education, 16 websites (48.5%) offer them to students in Vocational Training, and 12 websites (36.4%) offer them to university students. On the other hand, the websites that have an educational content section offering activities for students in the EC classroom represent 21.2%, 18.2% and 12.1% for the levels of Primary Education, Early Childhood Education and transition to adult life, respectively. Most of the websites that do not have an educational section do not offer any activities for students.

Table 4

Types of users targeted by educational activities based on the presence of an educational content section on the institution's web site

	Presence of an educational content section on the institution's website								χ2	
	Yes				No					
	Yes		No		Yes		No			
	N	%	N	%	N	%	N	%	Value	Sig.
Early Childhood Education students (3-6 years old)	23	69,7	5	15,2	1	3,0	4	12,1	8,260	,004
Primary Education Students	26	78,8	2	6,1	1	3,0	4	12,1	15,138	,001
ESO students	26	78,8	2	6,1	1	3,0	4	12,1	15,138	,001
High School Students	26	78,8	2	6,1	1	3,0	4	12,1	15,138	,001
Vocational Training Students	16	48,5	12	36,4	1	3,0	4	12,1	2,343	,126
University students	12	36,4	16	48,5	0	0	5	15,2	3,367	,067
Students in the enclave classroom of Early Childhood Education	6	18,2	22	66,7	1	3,0	4	12,1	,005	,943
Students in enclave classrooms of Primary Education	7	21,2	21	63,6	1	3,0	4	12,1	,058	,810
Students in the enclave classroom for transition to adulthood	4	12,1	24	72,7	1	3,0	4	12,1	,108	,743

Note: The percentages have been calculated with respect to the 33 websites analyzed.

The χ2 results indicate that there is a statistically significant relationship between the presence of the educational section on the web and the offer of educational activities to students

in Pre-school, Primary Education, Secondary Education and High School, so that the presence of the contents section is associated with a greater offer of activities to students at these levels. There is no such relationship with the offer of activities to other types of students, so that the presence or absence of a content section on the website is independent of the offer to Vocational Training, university and AE students.

As shown in Table 5, in 20 of the 33 websites analyzed, the area or department of education appears. Most of them, 19 of them (57.6%), offer activities for students in Primary Education, E.S.O. and High School. Among those that do not have an Education Department, there are also more that offer activities for these groups. With respect to students in early childhood education, something similar occurs, although the number of those that have an education department and offer educational activities for this level is somewhat lower, 16 sites (48.5%). Vocational training and university students are offered activities, especially those websites that have an education department. Most of the websites analyzed do not offer face-to-face activities for EC students, although it is noteworthy that most of those that offer activities for EC students are those that have an education department.

Table 5

Types of users targeted by educational activities based on the presence of an education department on the institution's web site

	Presence of an education department on the institution's web site								χ2	
	Yes				No					
	Yes		No		Yes		No			
	N	%	N	%	N	%	N	%	Value	Sig.
Early Childhood Education students (3-6 years old)	16	48,5	4	12,1	8	24,2	5	15,2	1,354	,245
Primary Education Students	19	57,6	1	3,0	8	24,2	5	15,2	5,930	,015
ESO students	19	57,6	1	3,0	8	24,2	5	15,2	5,930	,015
High School Students	19	57,6	1	3,0	8	24,2	5	15,2	5,930	,015
Vocational Training Students	14	42,4	6	18,2	3	9,1	10	30,3	6,945	,008
University students	10	30,3	10	30,3	2	6,1	11	33,3	4,080	,043
Students in the enclave classroom of Early Childhood Education	6	18,2	14	42,4	1	3,0	12	36,4	2,346	,126
Students in enclave classrooms of Primary Education	7	21,2	13	39,4	1	3,0	12	36,4	3,199	,074
Students in the enclave classroom for transition to adulthood	4	12,1	16	48,5	1	3,0	12	36,4	,928	,335

Note: The percentages have been calculated with respect to the 33 websites analyzed.

The χ2 results indicate that there is a statistically significant relationship between the presence of the education department on the institution's website and the offer of educational activities aimed at students in Primary Education, E.S.O., Bachillerato and Vocational Training. There is no relationship between the presence on the web of an education department and the offer of activities to early childhood education students, university students and AE students.

Discussion and conclusions

We will present the conclusions with respect to each of the objectives of the study and the discussion of the respective conclusions.

In relation to the first objective of the study, the types of users to whom the educational activities visible on the websites of the museums are offered, we have been able to verify that most of the educational activities offered are aimed at students in Primary Education, E.S.O., Baccalaureate and, to a lesser extent, at students in Early Childhood Education. It can be seen

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that the majority of the offer is aimed at students in Compulsory Education and High School. The offer for vocational training and university students is much smaller. The data showed that the offer of activities for students of EC in Early Childhood Education, Primary Education and Transition to Adult Life is low, being offered by less than a quarter of the websites analyzed. Therefore, it is clear that in order to be more inclusive, museum websites should increase their offerings for these students.

This study has shown that the websites of museums that offer activities for AE students are publicly owned, while the websites of private or mixed ownership do not, as well as some of those of public ownership. This result would merit a more detailed study to better understand the reasons why some websites do not offer activities to these students.

Regarding the second objective, the relationship between the type of users to whom face-to-face educational activities are offered and the visibility of the educational dimension of museum websites, this varies depending on the aspect considered. The visibility of education on the home page of the website is significantly associated with the activities offered to students in primary education, secondary education, high school, vocational training and university. The presence of education in the educational mission of the institution is only significantly related to the offer of activities for university and vocational training students, but in a negative sense; that is, when the educational facet appears in the institution's mission, fewer activities are offered for this type of student body. The presence of an educational section is the presence of an educational section is significantly associated with the offer of activities for kindergarten, primary education, secondary education and high school. The existence of an education department is significantly related to activities aimed at students of Primary Education, E.S.O., Baccalaureate and Vocational Training.

In conclusion, we can see that none of the aspects that make up the educational facet of the web are significantly associated with the offer of activities for students of EC in Early Childhood Education, Primary Education or transition to adult life. These results lead us to consider that the offer of activities for EC students is independent of the aspects that make up the educational facet. It would seem to be expected that at least the presence of an education department on the museums' websites would be associated with a greater offer of activities for AE students, but this is not the case. In our opinion, this result points to the fact that the offer that museums make to EC students is based on the current organization of students in school education - the dominant model of formal education. This organization tends to consider the capabilities of EC students from a deficit perspective and not from an inclusive perspective (García, 2009; Fierro y Contreras, 2024).

It is necessary to point out some limitations of this work. First, the sample studied is relatively small, since it constitutes 24.6% of the population of museums and cultural institutions in the Canary Islands. However, it should be noted that, given the object of study, the museum websites, the sample could not be larger. As mentioned in the description of the sample selection criteria, the other museums did not have websites that could be analyzed in detail. Secondly, the study analyzes the websites and the activities reflected on them, not all the activities actually carried out by the museums. It should be added that the information available on the websites was studied, and not the motivations and reasons that justify the offer of activities.

In light of the results obtained and the limitations detected, several lines of research on the subject are open. In the first place, studies should be carried out in other autonomous communities or by comparing a sample of museums in several autonomous communities. Secondly, it would be very valuable to explore the motivations and reasons that justify the current offer of face-to-face activities from museum institutions. Thirdly, it is necessary to deepen the relationship between the educational offer of museums and educational inclusion.

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Conflict of interest

There is no conflict of interest for the publication of this manuscript.

Ethical Statement

This work has been carried out in accordance with the ethical principles established by the scientific community. The reference code for research approval by our university's ethics committee is: CEIBA2023-3351.

References

Benéitez, A. E. (2021). Fomento de la inclusión a través de las enseñanzas artísticas en centros docentes y aulas hospitalarias. *Revista de Educación Inclusiva, Monográfico Aulas Hospotalarias*, 106-123.

Bernaschina, D. (2022). La mediación cultural-artística desde la virtualidad inclusiva: cuestión o beneficios de los usuarios con diversidad cultural. *Educación artística: revista de investigación (EARI),* (13), 38-50. https://dx.doi.org/10.7203/eari.13.21790

Constitución Española [Const.] Art. 49. February 15, 2024 (España). https://www.boe.es/boe/dias/2024/02/17/pdfs/BOE-A-2024-3099.pdf

de la Jara, I., (2022). Educación inclusiva en el contexto de museos. *Polyphōnía: Revista de Educación Inclusiva*, *6*(1).

Dirección General de Ordenación, Innovación y Calidad. (2021). *Guía de Aulas Enclave. Unidades de escolarización para alumnado con necesidades educativas especiales.* Consejería de Educación, Universidades, Cultura y Deportes del Gobierno de Canarias. https://www.gobiernodecanarias.org/cmsweb/export/sites/educacion/web/_galerias/descargas/neae/guia_tutorias-aulas-enclave-neae_2021.pdf

Escobar, J. y Cuervo, A. (2008). Validez de contenido y juicio de expertos: Una aproximación a su utilización. *Avances en Medición*, 6(1), 27-36.

Fierro, B.., & Contreras, A. (2024). Perspectivas históricas relacionadas a la inclusión de personas en situación de discapacidad en Educación Física escolar. *Retos: nuevas tendencias en educación física, deporte y recreación*, 55, 317-326. https://doi.org/10.47197/retos.v55.103640

García, E. G. (2009). Evolución de la Educación Especial: del modelo del déficit al modelo de la Escuela Inclusiva. En Mª Reyes y S. Conejero (coords.). *El largo camino hacia una educación inclusiva: la educación especial y social del siglo XIX a nuestros días: XV Coloquio*

de Historia de la Educación, Pamplona-Iruñea, 29, 30 de junio y 1 de julio de 2009 (pp. 429-440). Universidad Pública de Navarra.

García-Barrera, A. (2021). Controversias inclusivas de la LOMLOE: Avanzando hacia un modelo de normalización educativa plena. *Revista de Educación Inclusiva*, *14*(2), 254-266.

Ley Orgánica de 2006. De Educación. 4 de mayo. Boletín Oficial del Estado No. 106. https://www.boe.es/buscar/pdf/2006/BOE-A-2006-7899-consolidado.pdf

Ley Orgánica de 2020. Por la que se modifica la Ley Orgánica de 2006. 4 de mayo. Boletín Oficial del Estado No. 340. https://www.boe.es/boe/dias/2020/12/30/pdfs/BOE-A-2020-17264.pdf-

López López, P., & Samek, T. (2009). Inclusión digital: un nuevo derecho humano, *Educación y Biblioteca*, 172 (julio-agosto), 114-118.

Martínez, A. (2023). *Prácticas artísticas y su contribución a la inclusión social.* [Tesis Doctoral, Universidad de Murcia]. https://digitum.um.es/digitum/handle/10201/139324

Muntaner-Guasp, J. J., Mut-Amengual, B., & Pinya-Medina, C. (2022). Las metodologías activas para la implementación de la educación inclusiva. *Revista Electrónica Educare*, *26*(2), 85-105. https://doi.org/10.15359/ree.26-2.5

Nilholm, C. (2021) Research about inclusive education in 2020 – How can we improve our theories in order to change practice?, *European Journal of Special Needs Education*, *36*(3), 358-370, https://doi.10.1080/08856257.2020.1754547

Norwich, B. (2022). Research about inclusive education: Are the scope, reach and limits empirical and methodological and/or conceptual and evaluative?, *Frontiers in Education*, 7:937929, https://doi.org/10.3389/feduc.2022.937929

Pérez, A., Lázaro-Visa, S., Badia, M., & Fernández-Fuentes, A. A. (2022). Necesidades formativas de los profesionales de instituciones artísticas y socioeducativas en contextos inclusivos, *Arteterapia. Papeles de arteterapia y educación para la inclusión social*, 18, 1-11.

Plancarte, P. A. (2017). Inclusión educativa y cultura inclusiva. *Revista de Educación Inclusiva*, *10*(2), 213-226.

Quesada, M. I. (2021). Metodologías inclusivas y emergentes para la formación docente en inclusión educativa. *Revista internacional de apoyo a la inclusión, logopedia, sociedad y multiculturalidad*, *7*(2), 110-117.

Reforma del artículo 49 de la Constitución Española, de 15 de febrero de 2024. Boletín Oficial del Estado No. 43. https://www.boe.es/boe/dias/2024/02/17/pdfs/BOE-A-2024-3099.pdf

Springingzeisz, D. y Bustamante, D. C. (2024). Conceptos de inclusión social en museos de arte en Chile: Percepciones de educadores/as, curadores/as y directores/as. *Revista de Investigación Educativa*, *42*(1), 95-113. https://doi.org/10.6018/rie.566461