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La ética de la inteligencia artificial generativa en educación a debate. Perspectiva desde el desarrollo de un caso de estudio teórico-práctico

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Abstract:
This article examines the ethics of generative artificial intelligence (GenAI) in higher education from a theoretical and practical perspective. It reflects the growing importance of teaching ethics in information technology and its impact on society. Its aim is to develop a training model that integrates ethical reflection on GenAI into the education of computer engineering students. To achieve this, a case study is used based on the Social and Environmental Aspects of Computer Science module at the Universidad Politécnica de Cataluña, in which the theoretical principles of artificial intelligence (AI) ethics are applied through a case study of the use of GenAI within the course. Several examples of GenAI systems within AI applied to education are introduced. One of the examples, developed by the authors, involves an AI assistant built using the LAMB framework that enables students to analyse the proposed case using the PESTLE (political, economic, social, technological, legal, and environmental) method with the assistant acting as an expert. Students are then required to analyse a similar case study in another domain. The results suggest that this theoretical-practical approach, where abstract concepts of AI ethics and safety are grounded in specific decisions about application and concrete technological artefacts, effectively integrates ethical reflection into engineering education, highlighting the need for multidisciplinary approaches to address emerging ethical challenges in AI and education.

Keywords: ethics of artificial intelligence, higher education, generative artificial intelligence, engineering education, PESTLE method, artificial intelligence in education, artificial intelligence regulation, ethical competencies.

Resumen:

El artículo analiza la ética de la inteligencia artificial generativa (IAGen) en la educación superior desde un enfoque teórico-práctico. Se enmarca en la creciente relevancia de la enseñanza de la ética en tecnologías de la información y en su impacto en la sociedad. El objetivo principal es desarrollar un modelo formativo que integre la reflexión ética sobre la IAGen en la formación de ingenieros informáticos. Para ello, se emplea un estudio de caso basado en la asignatura Aspectos sociales y medioambientales de la informática de la Universidad Politécnica de Cataluña, en la que se aplican los principios teóricos de la ética de la inteligencia artificial (IA) a partir de un caso de aplicación de IAGen en la propia asignatura. Se introducen varios ejemplos de sistemas de IAGen en el dominio de la IA aplicada a la educación. Uno de los ejemplos, desarrollado por los autores, utiliza un asistente de IA creado con el *framework* LAMB, que permite a los estudiantes analizar el caso propuesto mediante el método PESTLE (*political, economic, social, technological, legal, and environmental*) y el uso del asistente como experto. Con posterioridad, los estudiantes deben analizar un caso de estudio análogo en otro dominio. Los resultados sugieren que este enfoque teórico-práctico, en el que los conceptos abstractos de ética y seguridad de la IA se aterrizan en decisiones de aplicación específicas y en artefactos tecnológicos concretos, es efectivo para integrar la reflexión ética en la enseñanza de la ingeniería y subraya la necesidad de implementar enfoques multidisciplinares para abordar los desafíos éticos emergentes de la IA en la educación.

Palabras clave: ética de la inteligencia artificial, educación superior, inteligencia artificial generativa, educación en ingeniería, método PESTLE, inteligencia artificial en educación, regulación de la IA, competencias éticas.

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1. Introduction

1.1. The ethics of information technology as a subject of study

Teaching ethics in information and communication technology (ICT) to engineering students is increasingly important owing to the profound impact of these technologies in contemporary society. As Casañ et al. (2020) observe, technology clearly influences our way of life, culture, economy, how we function in society, and how we relate to our surroundings, and ICT is no exception.

ICT's potential to create ethical and social problems that differ from those posed by other technologies has been debated since the earliest days of digital computers (Wiener, 1950). This potential is amplified by the accelerated pace of innovation in the field, which, according to Moore's law, doubles approximately every 18 months (Moore, 1965). This rate of change led Ray Kurzweil (2005) to predict that the technological development we will experience during the 21st century will be equivalent to 20 000 years of progress at the current pace.

The importance of incorporating ethics into the Computer Engineering curriculum was formally recognised in 1991, when the study of ethics was first introduced into Computer Science study plans (Bynum et al., 1992). The concept *computer ethics* had been coined before then by Walter Maner (1980), who noted that ethical decisions become much more complex when computers are added to the equation, as Johnson (2009) explains. This idea is expressed

in a well-known quote from 1969, attributed to Paul Ehrlich or Bill Vaughan (Quote Investigator, 2010): "To err is human but to really foul things up requires a computer".

According to the guidelines of the IEEE/ACM Computer Science Curriculum 2023 (Kumar et al., 2024), the education that Computer Engineering students receive must incorporate all of the dimensions and functions of computing as a profession (technical, philosophical, and ethical) as well as understanding that these standards vary internationally (Casañ et al., 2020).

The emergence of generative artificial intelligence (GenAI) (García-Peñalvo & Vázquez-Ingelmo, 2023; Jovanović & Campbell, 2022) and the launch of ChatGPT on 30 November 2022 were a turning point marking a decisive moment that exemplified the transition of artificial intelligence (AI) from a "deceptive" phase to a "disruptive" phase, according to Diamandis's model of the 6Ds (Diamandis & Kotler, 2012). According to this model, a technology passes through six phases when it is digitised: digitisation, deceptive growth, disruptive growth, demonetisation, democratisation, and dematerialisation. After decades of deceptively slow development, GenAI has reached a turning point typical of exponential curves where its impact on society cannot be ignored.

This impact is present in the three principal dimensions of sustainability. In the social dimension, AI is revolutionising communication (Elmoudden & Wrench, 2024), work (Anurag et al., 2023), and decision making (Parra et al., 2024), most noticeably affecting the fields of art (Epstein et al., 2023), culture (Henriksen et al., 2025), language (Martínez-Arboleda, 2024), and education (García-Peñalvo et al., 2024), which poses a challenge for the rules of the game and existing laws and raises questions about the process of authorship when the creation of any type of content or knowledge is involved (González-Geraldo & Ortega-López, 2024). In the environmental dimension, training large language models (LLM) (Zhao et al., 2024) require significant energy consumption (Samsi et al., 2023) but AI can help optimise processes and reduce the environmental impact of various sectors (Kar et al., 2022). In the economic dimension, GenAI is creating new business models and jobs and transforming entire industries (Kanbach et al., 2024), promoting higher levels of productivity at the same time as threatening existing business models and jobs (García-Peñalvo & Vázquez-Ingelmo, 2023).

This emerging scenario means it is vital to incorporate the ethics of AI as a specific component in the education of future professionals in any branch of knowledge, but in particular those that relate to ICT. However, this presents unique challenges. The dizzying pace at which the state of the art in AI is evolving (with new models, capacities, and applications emerging almost daily) means that even specialists in the field find it hard to keep up to date. This poses an additional challenge for teaching the ethics of AI, as ethical aspects must be analysed on a constantly changing technological foundation (Alier et al., 2024).

As Flores-Vivar and García-Peñalvo (2023) note, it is important to develop ethical frameworks that not only address the technical aspects of AI, but that also consider its impact on society and the environment. Ethics education for AI must prepare students to confront dilemmas that do not yet exist and develop critical thinking that will allow them to evaluate the ethical implications of the applications of AI as these emerge.

1.2. Approaches to teaching the ethics of AI

The teaching of ethics in Software Engineering has its origins in Europe with pioneering initiatives like that of the Computing Faculty of the Universidad Politécnica de Cataluña, which in 1991 incorporated courses on professional ethics and the history of computing (Casañ & Alier, 2024). Another important initiative was the creation of the Centre for Computing and Social Responsibility at De Montfort University in 1995 (Gotterbarn et al., 1997).

There are various approaches to introducing ethics into ICT curricula. Some centre on the process of ethical decision making, while others emphasise practical applications through

deontological codes. Johnson (2017) suggests providing knowledge of codes and standards of behaviour, developing skills for practical application. However, an alternative perspective integrates both ethics and the social implications, exposing students to diverse cultural, social, and legal questions to expand their understanding. This focus was adopted by academics such as Barceló and Gordon (Spiekermann, 2015).

Education in engineering should include both technical and professional skills (Bowden, 2010). The criteria of the ABET Engineering Accreditation Commission (2021) emphasise competences such as communication, team work, and ethical comprehension, along with awareness of the overall context. In Spain, the white papers for adapting to the EHEA specifically recommended courses on ethics, following the guidelines of the ACM/IEEE and ABET (Miñano et al., 2019).

Teaching methodologies include using deontological codes, case studies, moral theory, and service learning. In order to teach this content effectively, teachers must combine competences in philosophy of science and in computing and technology.

1.3. Structure of the article

Section 2 of this article introduces the challenge of incorporating the ethics of AI into higher education in engineering. Section 3 addresses a possible introduction of this topic from both the theoretical and practical viewpoints. Finally, part 4 sets out the conclusions of the work.

2. The challenge of incorporating the ethics of AI directly as content

The relationship between research into AI and its commercial application has undergone a significant change in recent years. The phrase "as soon as it works, nobody calls it AI any more" is attributed to John McCarthy (Meyer, 2011) (among others [Quote Investigator, 2024]), one of the parents of the concept *artificial intelligence* in the 1950s. This remark notes AI's nature as a field of research centred on giving computer systems capacities traditionally associated with human intelligence, and its achievements result in technological applications that we stop seeing as *intelligent*: logical inference, facial recognition, optimisation, etc.

However, we are currently seeing a blurring of the boundaries between academic research and commercial applications. This phenomenon is especially apparent in the field of GenAI, where the concept *artificial intelligence* has moved beyond its academic origin to become a commercial label widely used in products and services aimed at the general public.

One widely held position, including among experts in technology, views AI – especially the surprising GenAI technologies that have appeared in the last two years – as a technology that is beyond our control, resembling the metaphor of the *palantír* of J.R.R. Tolkien (1954): a powerful but dangerous magical tool, controlled by forces we do not fully understand (Alier, 2024). This analogy is particularly relevant when we observe how the very leaders of the technology industry contribute to this narrative.

Prominent figures such as Elon Musk, Ilya Sutskever, and Sam Altman have fed this perception when publicly discussing the existential risks of AI and the imminent arrival of artificial general intelligence (AGI) (Morrison, 2024), even going so far as to advocate artificial superintelligence (Altman et al., 2023). This vision has been amplified by influential philosophers such as Nick Bostrom (2014) and Yuval Noah Harari (2015), who have published extensively on the potential dangers of this technology.

Paradoxically, this idea of AI as an almost-magical tool is promoted both by its most ardent critics and by its principal defenders. This apparent contradiction could be explained if we consider that this type of narrative fosters a perception of inevitability of the adoption of these technologies, at the same time as justifying the need for their regulation.

The current situation recalls the *bootleggers and baptists* phenomenon described by Bruce Yandle (1983). As in the case of prohibition in the USA, when moralist preachers and alcohol smugglers alike supported prohibition for different motives, we currently see a similar alliance between people with an *apocalyptic* outlook who warn of the dangers of AI and the *integrationists* who benefit from these regulations (Smith & Yandle, 2014).

In view of this pressure, the European Union has passed specific legislation on AI without even having a clear and agreed definition of what it is (Morrison, 2024). Therefore, this legislative focus reflects an attempt to establish trust in AI systems through governance, albeit at the cost of the clarity of definitions (Bellogín et al., 2024). This haste contrasts with the slower development of other regulations such as the GDPR (General Data Protection Regulation) (European Parliament & Council of the European Union, 2016) and it could benefit large technology companies through *regulatory capture*, a phenomenon where regulation comes to favour established businesses instead of serving the public interest (Dal Bó, 2006; Saltelli et al., 2022; Wei et al., 2024), creating barriers to entry for new competitors.

The first step in approaching the study of the ethics of AI requires a dual focus. On the one hand, it is necessary to recognise and understand how the concept *artificial intelligence* has been positioned in popular culture (where the metaphor of the *palantír* illustrates the current perception of this technology). On the other hand, as the target population is mainly (but not exclusively) engineering students from fields relating to ICT (in areas such as data science, artificial intelligence, and computer engineering), AI should be presented from a rigorous technical perspective.

This technical perspective involves understanding AI as a group of technologies and tools with specific characteristics and functionalities shaped by conscious design decisions by researchers and developers. It is crucial to understand that these new technologies do not exist in isolation, but instead are integrated into pre-existing systems and technologies. This process of integration is not new in the field of technology; we see a parallel in how smartphones became integrated into existing web technology after their introduction in 2007, transforming, but not replacing, the previous technological ecosystem.

3. Introducing the ethics of AI in the curriculum

The Social and Environmental Aspects of Computing module will be used as a case study. This is a 6 ECTS (European Credit Transfer and accumulation System) credit optional module that is delivered in the final years of the degree in Computer Engineering of the Universidad Politécnica de Cataluña. Students usually take this module in their third or fourth year, when they already have a solid technical foundation in the theoretical-practical concepts of computer engineering.

This module has existed for more than 30 years, introduced into the study plans of the Faculty of Computing of Barcelona by Professor Miquel Barceló, a pioneer in the teaching of technoethics in software engineering courses (Casañ et al., 2020). The module has been part of numerous study plans over the decades and has constantly evolved, both in the content delivered and in the methodologies applied, adapting to the constant and rapid changes in ICT and its impact on society.

In its current version, the module's programme covers four principal areas:

- History of ICT
- Social impact of technology
- Environmental impact
- Ethics of ICT

The ethics block has an important weight in the module. The principal ethical theories are studied (Kantianism [Sevilla, 2014], utilitarianism [Zavala, 1999], virtue ethics [Hoyos, 2011], and the social contract [Leal, 1982]) and they are applied to case histories where students must analyse dilemmas and debate different moral positions relating to ICT and its social and environmental impact, integrating knowledge acquired in the course's other blocks. This practical focus is intended to develop critical thinking and the capacity for ethical analysis.

Since 2023, a new transversal block on AI has been added, including:

- The history and evolution of AI

- Its social impact (automation, the future of work, etc.)

- Its environmental impact (including the costs of AI and the possible benefits of its use to solve environmental problems)

- The ethics of AI

This update is in response to the need to address the unique challenges that AI poses, and it maintains the module's dual focus by involving theoretical study followed by a practical application using analysis of cases.

3.1. Theoretical aspects of the ethics of AI

Content that has previously been covered in the module is adapted to address the theoretical aspects of the ethics of AI, giving this content a specific focus in this area. For example, the social aspects of information technologies are analysed after discussing the questions of how automation has impacted the future of work, with similar phenomena being seen in previous industrial revolutions, where some occupations disappeared while others emerged. On this line, it is relevant to address specifically the influence of AI on this problem.

Consequently, in the theoretical aspect of the ethics of AI, the teaching team has designed a two-hour theory session addressing the following topics:

- Apocalyptic visions of AI: from Frankenstein (Shelley, 1831) and the Luddites (Prieto, 2016) to contemporary authors such as Bostrom (2014) and Harari (2015, 2024) who theorise on the real or hypothetical dangers of the imminent development of AI.

- A realistic and pragmatic analysis of the current ethical challenges and dilemmas of AI:

  ○ Algorithmic bias and discrimination

  ○ Privacy and data protection

  ○ Transformation of the job market

  ○ Control and autonomy of AI systems

  ○ Transparency and explainability of the algorithms

  ○ Alignment with human values

  ○ Implications for cybersecurity

It is deemed necessary that after the theoretical foundations of the ethics of AI have been presented, students will be able to apply the concepts acquired to specific contexts that are close to the reality of their lives. To this end, designing of a new practical activity is proposed. This is described in the following section.

3.2. Designing practical activities to work on the ethics of AI

The students are presented with a practical case for discussion so that they can design a practical activity where they apply the theoretical concepts relating to the ethics of AI that have previously been addressed.

The case study centres on the application of AI in the educational sphere. In this context, the authors developed an AI assistant using the LAMB (learning assistant manager and builder) framework (Alier et al., 2025).

An AI assistant with a specific knowledge base (Casañ et al., 2024) relating to anthropomorphic robots and their possible commercialisation in the years to come was created using LAMB. This knowledge base encompasses environmental, legal, economic, technological, ethical, and political aspects relating to anthropomorphic robots. Consequently, the assistant act as an expert consultant on the topic of anthropomorphic robots. In the thematic block of the module relating to social aspects of computing, the students do a case study using the AI assistant that was developed using LAMB, in which they can consult it to carry out an analysis of the PESTLE (political, economic, social, technological, legal, and environmental) factors (Casañ et al., 2025) of these robots.

In late 2024, the "Safe AI in education manifesto" (Alier et al., 2024a, 2024b) was launched. This document sets out a series of practical principles for the design and implementation of AI technologies in education, including a checklist to evaluate these technologies and strategies (García-Peñalvo et al., 2024).

The principles for safe AI in education proposed in the manifesto are (Alier et al., 2024a, 2024b):

- **Human oversight and accountability:** AI must be a support tool for teachers and not replace their role. Key decisions must be under human control.

- **Guaranteeing confidentiality:** the privacy of students' data must be protected with strict security measures.

- **Alignment with educational strategies:** AI tools must adapt to the policy objectives of each educational institution.

- **Alignment with didactic practices:** AI must follow the pedagogical parameters established to guarantee its effectiveness in the classroom.

- **Accuracy and explainability:** systems must offer clear and precise information to avoid errors and confusion.

- **Comprehensive interface and behaviour:** AI should be easy to understand for users and openly communicate its limitations.

- **Ethical training and transparency:** AI models should be trained ethically, ensuring transparency in the use of data and methodologies.

These principles present an interesting framework of analysis for cases where AI is used in education, but they can be also extrapolated to other domains. Therefore, the decision was taken to use the manifesto to analyse the AI assistant that teachers and students had used on the same course in the anthropomorphic robots case study.

How the AI-based assistant, which acted as an expert consultant on questions relating to anthropomorphic robots, aligned with the principles of the manifesto was analysed in class. The teachers presented the tool's technological design, its integration into the university's digital strategy, and the design of its didactic application, providing a practical example of application of the theoretical concepts relating to the ethics of AI in the educational context (Casañ et al., 2024).

Contrasting with the case of the previous AI assistant, the case of an English school that decided to carry out a pilot scheme with secondary students to replace teachers with ChatGPT in 2024 was discussed with the students (Escobar, 2024). The discussion centred on whether this complied with the principles of the manifesto. Applying the manifesto and the checklist showed that this strategy did not comply with most of the principles established.

To progress beyond the discussion, the students worked in small teams of three people on a practical case relating to another field of application of GenAI. The case used is shown in Figure 1.

FIGURE 1. Wording of the case study.

AI-Powered hiring system in the ACME company

Background:

The ACME company, a large multinational, has recently introduced an advanced system powered by Artificial intelligence (AI) in its recruitment processes. This AI system is designed to analyse CVs, carry out initial filtering with chatbots, and even score candidates according to their responses and qualifications. The company believes that this system will streamline the hiring process, reduce human bias, and help select the most qualified candidates.

Questions:

1. Identify the most relevant ethical questions from the case.

2. What measures can the company take to address the ethical questions?

3. Analyse the economic viability of the proposals mentioned in question 2.

4. Should the company continue with this system of selecting people to hire? Base the answer on the answers to the previous questions.

The case of the recruiting company described in Figure 1 is considered through team work so that in small groups students can discuss the different ethical aspects relating to the case. To analyse this situation, students have all of the previously mentioned theoretical material: the theory set out in class, the "Safe AI in education manifesto", as well as various articles about the British school that decided to replace the teachers with ChatGPT.

The results of this case study suggest that this focus enables the abstract concepts of ethics and security of AI to become a reality for specific decisions about the application and design of technology. Therefore, the authors consider that this theoretical-practical approach can be effective for integrating ethical reflection into the teaching of engineering, underlining the need for multidisciplinary focuses to tackle the ethical challenges in education posed by AI.

4. Conclusions

This article offers a methodological proposal for approaching the study of the ethics of AI from a theoretical-practical focus, principally intended for students in fields of engineering related to ICT. As this field is relatively new and is constantly evolving, studying it poses significant challenges regarding defining relevant content and its application in real contexts.

To provide a solid basis, the theoretical framework of the ethics of ICT has been adopted. This means that the ethical challenges and dilemmas of AI can be analysed from an interdisciplinary perspective.

Finally, structured theoretical content is proposed, as is a strategy of using case histories in which GenAI tools developed specifically to be part of the learning process are both the foundation of the educational programme and an object for analysis of their level of compliance with the SAFE-AI principles based on the "Safe AI in education manifesto". In this way, we can conclude that the experience acquired through studying a specific use case in the field of education underpins the viability of this methodology for reconciling theoretical concepts with students' professional environment.

To approach with some guarantee of success the challenge of teaching a subject area like the ethics of AI that is rapidly changing, the teaching team must have a multidisciplinary body of knowledge. On the one hand, a grounding in knowledge of ethics and philosophy of science is important. On the other hand, knowledge of the short but intense history of information technologies and their impact on society is needed. Furthermore, there is a need for knowledge of the different legal frameworks that affect ICT in general and AI in particular (some of these laws will be passed as the course is in progress) as well as knowledge of the foundational literature about AI's potential and dangers, including how it is presented in works of fiction, such as *Frankenstein* (Shelley, 1831), *Terminator* (Cameron, 1984), or *Her* (Jonze, 2013). This last part is very relevant given how it appeals to students and for the media coverage through which the collective imagination has influenced social perceptions of the concept of AI.

Authors' contributions

Francisco-José García-Peñalvo: Conceptualisation; Methodology; Supervision; Writing (review and editing).

María-José Casañ-Guerrero: Research; Validation; Writing (original draft).

Marc Alier-Forment: Conceptualisation; Software; Writing (original draft).

Juan-Antonio Pereira-Varela: Supervision; Software; Writing (review and editing).

Artificial Intelligence (AI) Policy

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REP

Articles

Burnout and mental health among Spanish workers engaged in educational and inclusion practices in the third sector of social action

Burnout *y salud mental en trabajadores españoles que desempeñan labores educativas y de inclusión en el tercer sector de acción social*

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Abstract:

The purpose of this research was to analyse the prevalence and frequency of the syndrome of burnout in professionals engaged in educational and social inclusion activities targeting vulnerable populations in the third sector of social action. The study also examined associations between burnout and various socio-demographic factors, work factors, and mental health factors. The sample consisted of 141 workers (e. g., social educators) of 21 centres of a third-sector social action organization located in different Spanish provinces. To measure *burnout* and mental health, two standardised instruments were used: the CESQT and the Spanish version of the GHQ-12. Though high levels of enthusiasm for work were reported, high rates of mental exhaustion were also reported, the latter being more prevalent and frequent in women than in men. On the other hand, 30.16 % of the participants presented symptoms of psychological morbidity. Applied generalized linear models revealed that enthusiasm for work and mental exhaustion were significant predictors of psychological morbidity in these workers. We propose as a future direction of research the need to evaluate psychosocial conditions in such organizations and implement psycho-educational interventions to promote the socio-emotional skills of workers, to improve management strategies, and to help workers face adverse and stressful situations.

Keywords: burnout, mental health, third sector of social action, mental exhaustion, enthusiasm for work.

Resumen:

El objetivo de la presente investigación es analizar la prevalencia y la frecuencia del *burnout* en profesionales que llevan a cabo labores educativas y de inclusión dirigidas a poblaciones vulnerables en el tercer sector de acción social. Asimismo, se analizan las asociaciones entre este Yesndrome psicosocial y diferentes factores sociodemográficos, laborales y de salud mental. La muestra está formada por 141 trabajadores (p. ej., educadores sociales) de 21 centros de trabajo de este sector ubicados en diferentes provincias españolas. Para la medición del *burnout* y de la salud mental, se utilizaron dos instrumentos estandarizados: el CESQT y la versión española del GHQ-12. Los resultados evidencian altos niveles de ilusión por el trabajo, pero también elevadas tasas de desgaste pYesquico (más frecuente en mujeres). El 30.16 % de los participantes muestran una potencial sintomatología de morbilidad psicológica. Los modelos lineales generalizados revelan que la ilusión por el trabajo y el desgaste pYesquico son predictores significativos de la salud mental de estos trabajadores. En este contexto, se establece la necesidad de evaluar las condiciones psicosociales de estas organizaciones, aYes como de implementar intervenciones socioeducativas orientadas a promover las competencias socioemocionales de los trabajadores y a mejorar las estrategias de gestión y afrontamiento de situaciones adversas y de estrés.

Palabras clave: *burnout*, salud mental, tercer sector de acción social, agotamiento psicológico, ilusión por el trabajo.

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1. Introduction

Over the last two decades, burnout has become a major public health problem. Most of the conceptualizations proposed of this construct define it as a psychosocial syndrome caused by an imbalance between labour demands and the skills of workers, characterized by a set of symptoms that can be grouped into three dimensions: emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach, 1993). More recently, Gil-Monte (2019) conceptualized burnout as a psychological response to chronic work stress of an interpersonal and emotional nature appearing in professionals who work in contact with people and characterized by cognitive deterioration, loss of enthusiasm for work and professional disenchantment, low personal fulfilment, affective deterioration, physical and emotional (or mental) exhaustion, the appearance of negative attitudes and behaviours towards customers, clients and one's employer, with indifference, coldness, distance, negative attitudes (indolence), and, in certain cases, feelings of guilt.

According to various systematic reviews and meta-analyses (Frieiro et al., 2021; García-Carmona et al., 2019; Romero-Martín et al., 2020; Simionato & Simpson, 2018), the prevalence of the syndrome, depending on the professional sector, is between 5 % and 55 % of the working population, though can be higher in health (Budayová et al., 2023; Rotenstein et al., 2022) and educational fields in particular (Alsalhe et al., 2021; Berjot et al., 2017). Regarding the frequency of burnout, very few studies measure it, and, when they do, they tend to treat prevalence and frequency indices indistinctly, without properly considering that frequency only refers to the periodicity with which workers experience the symptoms of the syndrome. A notable study on the frequency of burnout is that carried out by Gajra et al. (2020), which reports that 85.30 % and 86.50 % of oncology medical personnel have felt respectively emotionally exhausted and physically exhausted at some point, while 15 % have felt overwhelmed frequently.

In the field of non-formal education, burnout seems to be especially prevalent in third-sector, social education, voluntary, non-governmental and non-profit organizations (Drüge et al., 2021; Maddock, 2024; McFadden, 2015). These organizations may respond to educational, cultural and social integration needs not covered by the state, with the ultimate goal of protecting and promoting the quality of life and well-being of people in the community (Morse et al., 2011). The agents that generally work in such entities are educators, social workers and psychologists who promote and support the personal and social development of people based on interpersonal contact as the main work tool (Martín & Quiroz, 2006). Direct and continuous contact with people that may be at risk of social exclusion (such as young immigrants, people with disabilities, and people with drug and mental health problems), often coupled with the scarcity of human and material resources typical of the sector, makes these workers especially vulnerable to burnout (Drüge et al., 2021; Maddock, 2024).

However, one of the questions which research has yet to provide a clear and unequivocal answer is the role played by certain socio-demographic and work-related variables in the appearance and development of burnout, since somewhat disparate and contradictory results have come the various studies carried out. For example, several studies suggest that the variables of age, gender, seniority and work experience are significantly associated with burnout (Hoff & Lee, 2021; McCormack et al., 2018), indicating that women, younger workers and those with less work experience have higher levels of this syndrome. Other studies, on the other hand, such as the one by Yeboah et al. (2022), show that men have a higher overall burnout score than women. In any case, the results seem to vary with the different dimensions of burnout, according to gender, with women presenting higher levels of emotional exhaustion, and men presenting higher levels of depersonalization. Yet other investigations found no gender-based differences (El Ghaziri et al., 2019), but observed inconsistent results between burnout and age (Meredith et al., 2021), or between burnout and work experience (Simionato & Simpson, 2018).

In the third sector of social action, research focused on studying the relationship between burnout and psycho-physiological health is particularly scarce. The few studies carried out have shown that educators, social workers and psychologists, as front-line workers (that is, as agents that deal directly with young people and families), are particularly susceptible to suffering from burnout and stress (Drüge et al., 2021; Lemieux-Cumberlege et al., 2023; Maddock, 2024; Pihl-Thingvad et al., 2019).

In Spain, previous research in this field has revealed high levels of burnout in social workers, especially regarding the exhaustion dimension (Caravaca-Sánchez et al., 2019; González-Rodriguez et al., 2020; Verde-Diego et al., 2021). A review of studies dealing with samples of such professionals (Romero-Martín et al., 2020) has reported burnout prevalence rates ranging between 25.30 % and 29.90 %, in line with studies carried out in various different countries (Frieiro et al., 2021; Huang et al., 2021; Tartakovsky & Walsh, 2016; Tu et al., 2022). Likewise, studies focused on the field of social work have indicated that rates of psychiatric disorders related to emotional exhaustion are significantly higher than in other professions (Sánchez-Moreno et al., 2014).

Taking the above-described framework as a reference, the following research questions guided the current study:

- What is the prevalence and frequency of burnout among professionals working in third-sector social action organizations in Spain?

- What is the relationship between burnout and demographic and occupational factors such as gender, age, work role, and seniority among these professionals?

- What proportion of workers present symptoms of mental health problems, and how do these symptoms relate to gender, age, work role, and seniority?

● Are burnout and other occupational factors associated with mental health in these workers?

In this context, this study aims to examine in detail the prevalence and frequency of burnout among professionals working in organizations of the third sector of social action in Spain, as well as to explore the relationships between this syndrome and different socio-demographic factors (such as gender and age), work-related factors (such as role and seniority), and mental health, all with a view to alleviating the scarcity of research in this field.

2. Method

2.1. Sample

The sample of this study consisted of 141 of 169 potential workers (response rate of 83.43 %) of 21 centres of a third-sector social action organization located in different Spanish provinces. This organization is dedicated to developing social integration and work placement inclusion projects for young people, in collaboration with public administrations and businesses. Its initiatives are primarily of a psychoeducational nature, including programs focused on family guidance, social support, and employment training. The convenience sample was made up of 75.89 % women and 24.11 % men, with a median age of 39 years (interquartile range of 34 to 43 years) and four years of seniority in their work role (interquartile range of 2 to 10 years). Regarding the work roles, the majority (63.12 %) were social intervention technicians (e. g., social educator, social integration technician), while 20.57 % were psychologists, 14.18 % were project coordinators, and 2.13 % were administrative staff (see Table 1).

TABLE 1. Demographic and work-related characteristics of the workers.

	Total sample		GHQ-12 pathologies (cut-off > 4)		
	(n)	%	(n)	%	
Gender					
Woman	107	75.89	30	32.26	$p = .39$
Man	34	24.11	8	24.24	DP = 8.02 (-10.86, 23.21)
Age (years)					
Min-Max	23 - 62		27 - 62		
Interquartile range (median)	34-43 (39)		34.50-46 (41.50)		

≤ 39	73	51.77	16	25.81	*p* = .30
> 39	68	48.23	22	34.38	DP = -8.57 (-23.90, 7.40)
Current work role					
Administrative	3	2.13			
Technician	89	63.12	26	31.71	*p* = .85**
Psychologist	29	20.57	6	26.09	
Coordinator	20	14.18	5	27.78	
Seniority in the role (years)					
Min-Max	< 1-27		< 1-27		
Interquartile range (median)	2-10 (4)		2.75-12.25 (8)		
≤ 4	71	50.35	15	25	*p* = .23
> 4	70	49.65	23	34.85	DP = -9.85 (-25.01, 6.19)
Burnout					*p* <.001
Profile 1*	14	10.85	11	78.57	DP = -54.46 (-69.98, -26.90)
Non-profile 1	112	89.15	27	24.11	OR = 11.54 (2.99, 44.43)
Profile 2*	2	1.55	2	100	
GHQ-12 (bimodal scoring)					
Cut-off of 4 or above	38	30.16			

*Reported for descriptive purposes, based on the CESQT scale criteria, are the percentage of workers with critical levels of burnout (profile 1) and critical levels of both burnout and guilt (profile 2). **Due to a low number, administrative roles were removed from the analysis. The difference of percentages is only applied to 2×2 chi-square tables.

Note: *p* = *p*-value; DP = difference of percentages; OR = odds ratio.

2.2. Instruments

To measure burnout, the questionnaire for the assessment of burnout syndrome (CESQT in Spanish, for short) (Gil-Monte, 2019) was used. The instrument consists of 20 items grouped into four dimensions: (1) enthusiasm for work, (2) mental exhaustion, (3) indolence, and (4) guilt. The reliability indices of these dimensions, calculated using the sample of this study, were the following: enthusiasm for work (5 items, $\Omega = .92$), mental exhaustion (4 items, $\Omega = .89$), indolence (6 items, $\Omega = .78$), and guilt (5 items, $\Omega = .83$). The set of 20 items is assessed using a Likert-type frequency scale, with five linguistic quantifiers (from 0 = "Never" to 4 = "Every day or very frequently"), defining the last twelve months as the reference time frame. This instrument has been previously validated with samples from different professional sectors and in different countries. The reliability coefficients reported across the various studies indicated Cronbach's alpha values above .70 for each dimension, as well as in the CESQT total score (Gil-Monte, 2019). This also makes it possible to distinguish between two profiles in the development of this syndrome. Profile 1 (or total score) may be used to consider those who present critical levels of burnout, characterized by lower levels of enthusiasm for work, higher levels of mental exhaustion, and indolence, without considering the guilt dimension. Critical scores (or cases) of profile 1 are then those that exceed the 89th percentile calculated as $\frac{\sum_{i=1}^{5} x_i' + \sum_{i=1}^{4} x_i + \sum_{i=1}^{6} x_i}{15}$. Profile 2 may be used to consider those with critical levels in the total score and critical levels of guilt ($\frac{\sum_{i=1}^{5} x_i}{5}$). As outlined in Gil-Monte's manual (2019), the cut-off points used to define critical levels are derived from normative data, based on percentiles, with scores (or cases) above the 89th percentile considered critical.

On the other hand, for the assessment of the mental health of the participants, the Goldberg General Health Questionnaire (GHQ-12) was used, taking as a reference the validation study conducted in Spain by Sánchez-López and Dresch (2008), which reported a Cronbach's alpha coefficient of .76. The GHQ-12 is a self-administered screening questionnaire, which aims to detect psychological morbidity and psychiatric disorders (Goldberg et al., 1997) based on respondents' own assessments of their general well-being and certain emotional states. It also aims to measure certain intellectual and physiological functions, the planning and achievement of goals, and the management of adversities. This instrument is made up of 12 items, using a Likert scale response format with four linguistic quantifiers (from 0 = "Better than usual," or "Not at all," to 3 = "Much less than usual," or "Much more than usual.") The responses can then be transformed into a dichotomous score (0-0-1-1), called the GHQ score. In this investigation, a cut-off value of 4 was established, above which respondents were considered to have potential psychopathologies or psychiatric disorders according to criteria used in other studies in Spain (López-Castedo & Fernández, 2005; Rocha et al., 2011). The GHQ-12 reliability index for the scores obtained from the sample was $\Omega = .91$.

Finally, a series of items were added to collect information on socio-demographic variables, including gender (male/female) and age, and work-related variables, including role (e. g., psychologist, technician) and years of seniority in the role.

2.3. Procedure

A cross-sectional design was used, with a descriptive-relational level of inquiry. Before the data collection, a meeting was scheduled with the workers' committee and workers' representatives to explain the objectives of the study, disclose the questionnaire, and obtain approval. Once participation had been authorized, an informed consent document was drawn up and attached to the questionnaire, together with instructions for its completion.

Each worker received a link to the questionnaire through an email sent by the organization's management to their individual work email address. The workers received various notices spaced throughout the data collection period, encouraging them to complete the questionnaire and therefore increase the percentage of participation.

In conducting this research, the guidelines of the Code of Ethics of the International University of La Rioja were followed. In the instructions, the importance of responding

truthfully, emphasizing that there were no right or wrong answers, was highlighted. Additionally, participants were assured that neither their participation nor their responses would influence their work dynamics, thereby aiming to pre-emptively alleviate any concerns regarding potential workplace repercussions. Throughout the process, anonymity and the confidentiality of respondents' personal data were guaranteed. Furthermore, the research was conducted in a manner that complied rigorously with the moral principles for research studies of autonomy, beneficence, justice and non-maleficence (Beauchamp & Childress, 2019).

2.4. Statistical analysis

The first results section of this research describes the prevalence (that is, the percentage of workers reporting to have experienced a burnout indicator a few times a month or more frequently) and frequency (that is, the number of times the burnout indicator was reported to have been experienced during the indicated time frame) of burnout, disaggregated by the dimensions of enthusiasm for work, exhaustion, indolence and guilt.

All response percentages were expressed as point/mean prevalences, along with their 95 % confidence intervals (95 % CI). The median frequency (MDF) was also calculated as a measure of central tendency. The normality of the data distribution was assessed through multiple methods, such as graphical visualizations (e. g., Q-Q Plots) and various normality tests (e. g., Kolmogorov-Smirnov test), and normality was not assumed in the data. Both the prevalence and frequency of burnout were analysed in terms of gender, age, work role (excluding administrative workers due to the low number of cases), and seniority. Regarding gender prevalence differences, a chi-squared test in 2×2 tables was used to assess the dichotomous data, and the difference of percentages (DP) was reported as an effect size, along with their 95 % confidence intervals.

Frequency differences were analysed using the non-parametric Mann-Whitney U test, with a rank-biserial correlation (rbc; with > .10 as very small; .10 to .29 as small; .30 to .49 as moderate; > .50 as large) as the effect size for two independent groups (i.e. for the gender variable), and the Kruskal-Wallis test for multiple independent groups (i.e. for the work role variable), with the eta-squared value as the effect size (ε^2; with > .01 as very small; .01 to .05 as small; .06 to .13 as moderate; > .14 as large). Associations of burnout with age and seniority were assessed using Kendall's tau coefficient (τ; with > .10 as very small; .10 to .29 as small; .30 to .49 as moderate; > .50 as large). Effect sizes were interpreted following López-Martín and Ardura-Martínez (2023) classification. Psychological morbidity data (GHQ-12 scores) were examined in a similar manner. Frequencies of each indicator were reported as percentages along with their 95 % confidence intervals. The percentage of workers reporting each indicator in terms of the bimodal scaling system (i. e., 0-0-1-1) was also calculated.

Bivariate tests were performed to analyse associations between the frequency of each indicator and gender, age, work role and seniority. Bivariate associations were used in the same terms as for burnout indicators. According to statistical criteria, and for practical reasons, the generalized linear modelling approach was taken to examine the effects of demographic factors (gender and age), work factors (work role and seniority) and burnout factors (frequency in reporting the dimensions of professional disenchantment, mental exhaustion, indolence, and guilt) on the number of GHQ-12 symptoms reported using the bimodal scoring. According to the outcome variable probability distribution, different count-based regression models were tested, including the Poisson regression, the zero-inflated Poisson/negative binomial regression, and the zero-truncated Poisson/negative binomial model. Model fit comparisons were made according to different goodness-of-fit criteria, such as smaller deviance, the Akaike information criterion (AIC) and the Bayesian

information criterion (BIC), on the maximum log-likelihood value, considering the over-dispersion parameter.

The generalized negative binomial model fit the data the best was more parsimonious than the others and violated no assumptions in its application. For ease of interpretation, the coefficients are presented in terms of the adjusted odds ratio (OR) and as a percentage change, along with their confidence intervals (95% CI). It should be noted that the results were consistent between the different count-based regression models tested. Finally, a complementary binary logistic regression was also performed to identify worker characteristics predicting psychological morbidity (GHQ-12 scores < 4 vs. ≥ 4).

All the statistical analyses were performed using the software R (version R-4.2.2), and a value of $p < .05$ was considered significant.

3. Results

3.1. Burnout prevalence and frequency

The percentage of workers with critical levels of burnout was 10.85% (95% CI [6.06, 17.54]), and the percentage of workers with critical levels of both burnout and guilt was 1.55% (95% CI [.19, 5.49]).

Table 2 shows the prevalence and frequencies of burnout indicators in detail. In the sample, 97.67% (95% CI [93.35, 99.52]) of respondents reported at least one enthusiasm for work indicator a few times a month or more frequently (the same time frame is assumed for all results on prevalence presented from here on). Enthusiasm for work was mainly reported as experienced "frequently (a few times a week)" (47.29%, 95% CI [38.44, 56.26]) or "very frequently (every day)" (38.76%, 95% CI [30.31, 47.73]). The prevalence of all individual indicators for the enthusiasm for work dimension was above 85%: from "feeling hopeful about work" (89.15%, 95% CI [82.61, 93.42]) to "thinking that work brings positive things" (95.35%, 95% CI [90.22, 97.85]), with a high frequency in responses (the median value for all items corresponds to "frequently or a few times a week" category).

In the sample, 91.47% (95% CI [85.26, 95.67]) reported some form of mental exhaustion, with frequencies mostly between "sometimes (a few times a month)" (47.29%, CI 95% [38.44, 56.26]) and "frequently" (a few times a week) (29.46%, CI 95% [21.76, 38.12]). The most prevalent and also more frequent individual mental exhaustion indicator was "feeling overwhelmed by work" (82.95%, CI 95% [75.53, 88.46]); indeed, 26.36% (CI 95% [19.52, 34.56]) of the workers reported feeling that way "frequently (a few times a week)". In particular, all indicators of exhaustion were above 70%, with the median frequency value corresponding to "sometimes or a few times a month".

The data indicated that 63.57% (95% CI [54.64, 71.86]) of workers reported some form of indolence (or negative attitudes of indifference and cynicism towards service users), with a median frequency in the "sometimes or a few times a month" category. The least prevalent and least frequent individual indolence indicators were the feeling of being treated with indifference (5.43%, 95% CI [2.65, 10.78]) and thinking that many service users were unbearable (13.18%, 95% CI [8.39, 20.09]). The most prevalent and also most frequent were not wanting to serve some service users (35.66%, 95% CI [27.92, 44.23]), believing that users' relatives were annoying (31.78%, 95% CI [24.37, 40.25]), and wanting to respond sarcastically to users (30.23%, 95% CI [22.97, 38.63]).

Guilt was the least prevalent and least frequent burnout dimension reported by workers, as reflected in individual indicators. The results showed that 27.91% (95% CI [20.37, 36.48]) of participants reported feelings of guilt for behaviours and attitudes developed at work. The highest rate for individual items regarding guilt was feeling guilty about some of the attitudes at work (14.73%, 95% CI [9.64, 21.86]), while the lowest corresponded to having regrets about some behaviours at work and thinking about apologizing to someone for their behaviour (9.30%, 95% CI [5.40, 15.56]).

TABLE 2. Prevalence and frequency of burnout.

CESQT dimensions	Never or rarely (a few times a year) p (95% CI)	Sometimes, frequently, or very frequently p (95% CI)	Never p (95% CI)	Rarely (a few times a year) p (95% CI)	Sometimes (several times a month) p (95% CI)	Frequently (several times a week) p (95% CI)	Very often (every day) p (95% CI)	MDF
Enthusiasm for work*	2.33 (.48, 6.65)	97.67 (93.35, 99.52)	0 (0, 2.82)	2.33 (.48, 6.65)	11.63 (6.66, 18.45)	47.29 (38.44, 56.26)	38.76 (30.31, 47.73)	3
Stimulating challenge	5.43 (2.65, 10.78)	94.57 (89.22, 97.35)	0 (0, 2.82)	5.43 (2.65, 10.78)	24.81 (18.15, 32.92)	49.61 (41.12, 58.13)	20.16 (14.14, 27.89)	3
Personal fulfilment	9.30 (5.40, 15.56)	90.70 (84.44, 94.60)	1.55 (.43, 5.48)	7.75 (4.26, 13.68)	23.26 (16.80, 31.25)	48.06 (39.62, 56.61)	19.38 (13.49, 27.05)	3
Positive contribution	4.65 (2.15, 9.78)	95.35 (90.22, 97.85)	0 (0, 2.82)	4.65 (2.15, 9.78)	18.60 (12.83, 26.19)	50.39 (41.87, 58.88)	26.36 (19.52, 34.56)	3
Gratifying	8.53 (4.83, 14.62)	91.47 (85.38, 95.17)	.78 (.14, 4.26)	7.75 (4.26, 13.68)	20.16 (14.14, 27.89)	49.61 (41.12, 58.13)	21.71 (15.47, 29.58)	3
Hopeful	10.85 (6.58, 17.39)	89.15 (82.61, 93.42)	0 (0, 2.82)	10.85 (6.58, 17.39)	24.03 (17.48, 32.09)	50.39 (41.87, 58.88)	14.73 (9.64, 21.86)	3
Mental exhaustion*	8.53 (4.33, 14.74)	91.47 (85.26, 95.67)	.78 (.02, 4.24)	7.75 (3.78, 13.79)	47.29 (38.44, 56.26)	29.46 (21.76, 38.12)	14.73 (9.11, 22.04)	2
Feeling swamped at work	24.03 (17.48, 32.09)	75.97 (67.91, 82.52)	3.10 (1.21, 7.70)	20.93 (14.80, 28.74)	42.64 (34.44, 51.26)	24.81 (18.15, 32.92)	8.53 (4.83, 14.62)	2
Feeling overwhelmed at work	17.05 (11.54, 24.47)	82.95 (75.53, 88.46)	2.33 (.79, 6.61)	14.73 (9.64, 21.86)	48.06 (39.62, 56.61)	26.36 (19.52, 34.56)	8.53 (4.83, 14.62)	2
Physical exhaustion	22.48 (16.13, 30.42)	77.52 (69.58, 83.87)	3.88 (1.67, 8.75)	18.60 (12.83, 26.19)	51.94 (43.39, 60.38)	17.83 (12.18, 25.33)	7.75 (4.26, 13.68)	2
Emotional exhaustion	27.91 (20.89, 36.20)	72.09 (63.80, 79.11)	3.10 (1.21, 7.70)	24.81 (18.15, 32.92)	45.74 (37.39, 54.33)	17.05 (11.54, 24.47)	9.30 (5.40, 15.56)	2

Indolence*	36.43 (28.14, 45.36)	63.57 (54.64, 71.86)	4.65 (1.73, 9.85)	31.78 (23.87, 40.56)	48.84 (39.94, 57.79)	10.85 (6.06, 17.54)	3.88 (1.27, 8.81)	2
No attention	64.34 (55.77, 72.08)	35.66 (27.92, 44.23)	14.73 (9.64, 21.86)	49.61 (41.12, 58.13)	31.78 (24.37, 40.25)	3.10 (1.21, 7.70)	.78 (.14, 4.26)	1
Unbearable users	86.82 (79.91, 91.61)	13.18 (8.39, 20.09)	31.01 (23.67, 39.44)	55.81 (47.20, 64.09)	10.85 (6.58, 17.39)	2.33 (.79, 6.61)		1
Annoying relatives	68.22 (59.75, 75.63)	31.78 (24.37, 40.25)	19.38 (13.49, 27.05)	48.84 (40.37, 57.37)	25.58 (18.83, 33.74)	6.20 (3.18, 11.76)		1
Indifference	94.57 (89.22, 97.35)	5.43 (2.65, 10.78)	65.89 (57.36, 73.51)	28.68 (21.58, 37.01)	4.65 (2.15, 9.78)	.78 (.14, 4.26)		0
Sarcasm	69.77 (61.37, 77.03)	30.23 (22.97, 38.63)	37.21 (29.35, 45.81)	32.56 (25.08, 41.05)	24.81 (18.15, 32.92)	2.33 (.79, 6.61)	3.10 (1.21, 7.70)	1
Label or categorize	75.19 (67.08, 81.85)	24.81 (18.15, 32.92)	23.26 (16.80, 31.25)	51.94 (43.39, 60.38)	20.16 (14.14, 27.89)	4.65 (2.15, 9.78)		1
Guilt*	72.09 (63.52, 79.63)	27.91 (20.37, 36.48)	6.20 (2.72, 11.85)	65.89 (57.03, 74.01)	22.48 (15.60, 30.66)	4.65 (1.73, 9.85)	.78 (.14, 4.26)	1
Treatment of users	88.37 (81.70, 92.83)	11.63 (7.17, 18.30)	30.23 (22.97, 38.63)	58.14 (49.51, 66.30)	8.53 (4.83, 14.62)	3.10 (1.21, 7.70)		1
Guilt about attitude	85.27 (78.14, 90.36)	14.73 (9.64, 21.86)	21.71 (15.47, 29.58)	63.57 (54.98, 71.37)	12.40 (7.78, 19.20)	1.55 (.43, 5.48)	.78 (.14, 4.26)	1
Remorse	90.70 (84.44, 94.60)	9.30 (5.40, 15.56)	34.88 (27.20, 43.44)	55.81 (47.20, 64.09)	9.30 (5.40, 15.56)			1
Apologize for conduct	90.70 (84.44, 94.60)	9.30 (5.40, 15.56)	25.58 (18.83, 33.74)	65.12 (56.56, 72.80)	9.30 (5.40, 15.56)			1
Guilt for something said	88.37 (81.70, 92.83)	11.63 (7.17, 18.30)	20.93 (14.80, 28.74)	67.44 (58.95, 74.92)	10.08 (5.98, 16.48)	1.55 (.43, 5.48)		1

*The overall prevalence of each burnout dimension was computed using the maximum value of the respondent in each of the indicators constituting the dimension.

Note: p (95% CI) = observed percentage and 95% confidence interval. In order to assess the prevalence of burnout, responses were dichotomized as "0 = Never" or "1 = Rarely (a few times a year)" and "2 = Sometimes (a few times a month)" up to "4 = Very frequently (every day)".

3.2. Burnout associations with gender, age, work role, and seniority

As shown in Table 3, there were similar rates of burnout in male and female workers. However, there were significant gender differences regarding mental exhaustion as a dimension, and regarding some of their individual items. Overall, women reported higher rates of mental exhaustion (94.97% for women vs. 81.82% for men) (the difference of percentages, DP, as the percentage of women minus the percentage of men, = 12.97, 95% CI [1.45, 29.45], p <.05), of feeling overwhelmed (88.54 % for women vs. 66.67% for men) (DP = 21.88, 95% CI [6.16, 39.63], p <.01), and of emotional exhaustion (77.08% for women vs. 57.58% for men) (DP = 19.51, 95% CI [1.67, 37.78], p <.05). Regarding burnout frequency, it was women who also felt mental exhaustion more frequently (p = .03, rbc = .2358), in addition to a feeling of being swamped (p = .05, rbc = .2178) and overwhelmed (p = .01, rbc = .2746) at work.

No statistically significant differences were found regarding the dimensions of enthusiasm for work, indolence, or guilt, nor regarding any of their individual items. The data also indicates that age was inversely related to enthusiasm for work as a dimension (τ = -.23, p <.01), as well as to the item referring to seeing work as a source of personal fulfilment (τ = -.19, p <.05). The rest of the associations did not attain statistical significance. Lastly, role seniority showed inverse associations with the enthusiasm for work dimension (τ = -.25, p <.01), and with all of its indicators (from τ = -.17 to -.21, p <.05), except for considering work as a stimulating challenge (τ = -16, p >.05).

The results also showed that there was a significant direct relationship between seniority and both the emotional exhaustion dimension (τ = .24, p <.01) and all of its individual indicators (from τ = .18 to .23, p <.05). No other significant associations were found with regard to seniority.

3.3. GHQ-12 scores and associations with gender, age, work role and seniority

Table 4 shows GHQ-12 frequency responses and bimodal scoring, as well as bivariate associations with gender, age, work role, and seniority.

According to the GHQ-12 scores, 30.16% (95% CI [22.31, 38.97]) of the sample had a total score of 4 or higher, indicating a high risk of psychological morbidity.

According to the bimodal scoring, feeling constantly overwhelmed and tense was the most prevalent individual indicator (39.68%, 95% CI [31.08, 48.8]), followed by the feeling that worries had caused a lot of sleep loss (34.13%, 95% CI [25.92, 41.1]).

Bivariate analysis revealed that there were no significant associations between the overall GHQ-12 score, gender, age, work role, and seniority (p >.05 in all comparisons) (Table 1). However, the individual indicator referring to feeling able to make decisions was significantly more frequently reported by women (p = .04, rbc = .1906), and showed a positive statistically significant correlation with age (τ = .19, p <.05). Age was also directly related to the frequency of feeling happy considering everything (τ = .19, p <.05).

Differences according to work role only emerged in the indicator regarding the feeling of not being able to overcome one's difficulties (p = .40, ε^2 = .0527). In particular, differences were seen between technicians and psychologists, with the latter reporting the feeling more frequently (p = .02, rbc = .3022).

Lastly, the frequency of the feeling that one is playing a helpful role in life and the feeling of being constantly overwhelmed and tense were positively correlated with seniority (τ = .18 and .20, respectively).

TABLE 3. Bivariate associations between burnout and gender, age, work role, and seniority.

CESQT dimensions	Women %	Men %	Effect size Difference of percentages (95% CI)	Frequency of women vs. Men p-value	Effect size rbc	Age τ	Work role χ²	Work role p-value	Effect size ε²	Seniority in the role τ
Enthusiasm for work	97.92	96.97	.0095 (-4.82, 13.33)	.20	.1386	-.23***	2.72	.26	.0217	-.25***
Stimulating challenge	94.79	93.94	.85 (-6.91, 14.72)	.14	.1600	-.17	.78	.68	.0062	-.16
Personal fulfilment	89.58	93.94	-4.36 (-13.22, 9.97)	.19	.1427	-.19**	10.35	.60	.0083	-.19**
Positive contribution	94.79	96.97	-2.18 (-9.06, 10.46)	.80	.0271	-.13	54.65	.07	.0437	-.18**
Gratifying	90.63	93.94	-3.31 (-11.99, 10.92)	.22	.1323	-.14	20.32	.36	.0163	-.21**
Hopeful	87.50	93.94	-6.44 (-15.64, 8.07)	.21	.1364	-.11	15.99	.45	.0128	-.18**
Mental exhaustion	94.97	81.82	12.97 (1.45, 29.45)**	.03*	.2358	-.01	3.45	.18	.0276	.24***
Feeling swamped at work	79.17	66.67	12.50 (-3.89, 30.91)	.05*	.2178	.03	28.64	.24	.0229	.23***
Feeling overwhelmed at work	88.54	66.67	21.88 (6.16, 39.63)***	.01*	.2746	.00	10.47	.59	.0084	.19**
Physical exhaustion	81.25	66.67	14.58 (-1.68, 32.86)	.06	.2045	-.08	32.77	.19	.0262	.18**
Emotional exhaustion	77.08	57.58	19.51 (1.67, 37.78)**	.12	.1730	-.02	32.65	.20	.0261	.18**

Indolence	62.50	66.67	-4.17 (-21.03, 15.13)	.23	.1282	.11	2.38	.30	.0191	.06
No attention	37.50	30.30	7.20 (-12.08, 23.53)	.56	.0578	-.01	17.27	.42	.0138	.06
Unbearable users	11.46	18.18	-6.72 (-23.67, 5.69)	.33	.0669	.05	12.71	.53	.0102	-.04
Annoying relatives	31.25	33.33	-2.08 (-21.10, 14.69)	.85	.0189	.04	.78	.68	.0062	.03
Indifference	5.21	6.06	-.85 (-14.72, 6.91)	.83	.0101	-.03	14.62	.48	.0117	.04
Sarcasm	27.08	39.39	-12.31 (-30.98, 5.28)	.12	.1452	-.03	.52	.77	.0042	-.00
Label or categorize	21.88	33.33	-11.46 (-29.94, 4.98)	.13	.1342	-.04	.50	.78	.0040	-.06
Guilt	27.08	30.30	-3.22 (-21.99, 12.91)	.71	.0344	-.08	3.89	.14	.0311	-.04
Treatment of users	11.46	12.12	-.66 (-16.65, 10.10)	.87	.0110	-.09	27.11	.26	.0217	-.09
Guilt about attitude	13.54	18.18	-4.64 (-21.74, 8)	.51	.0473	-.06	14.43	.49	.0115	-.04
Remorse	7.29	15.15	-7.86 (-24.06, 3.15)	.18	.0786	-.13	24.67	.29	.0197	-.13
Apologize for conduct	7.29	15.15	-7.86 (-24.06, 3.15)	.18	.0786	-.13	.50	.78	.0040	-.06
Guilt for something said	10.42	15.15	-4.73 (-21.18, 6.74)	.50	.0442	-.05	18.67	.39	.0149	-.08

*Women report it more frequently; ** p <.05; *** p <.01.

Note: Shapiro–Wilk test for all items (p <.001); 95 % CI = 95 % confidence interval; ε^2 = Eta squared; rbc = rank-biserial correlation effect size for Mann–Whitney's U test; τ = Kendall's τ coefficient; χ^2 Kruskal–Wallis' test; technicians (>) vs. psychologists, and also technicians (>) vs. coordinators.

TABLE 4. GHQ-12 scores.

	Not at all p (95 % CI)	Same as usual p (95 % CI)	More than usual p (95 % CI)	Much more than usual p (95 % CI)	GHQ-12 (bimodal sc.) p (95 % CI)	Men vs. women p-val (rbc)	Age τ	Work role p-val (ε^2)	Seniority τ
Concerns about loss of sleep	28.57 (20.88, 37.30)	37.30 (28.85, 46.36)	28.57 (20.88, 37.30)	5.56 (2.26, 11.11)	34.13 (25.92, 41.1)	.50 (.0743)	.05	.79 (.0040)	.12
Constantly overwhelmed and tense	13.49 (8.06, 20.72)	46.83 (37.88, 55.92)	30.16 (22.31, 38.97)	9.52 (5.02, 16.05)	39.68 (31.08, 48.8)	.49 (.0753)	.04	.87 (.0024)	.20*
Can't overcome one's difficulties	39.68 (21.08, 48.78)	42.06 (33.33, 51.18)	14.29 (8.69, 21.64)	3.97 (1.30, 9.02)	18.26 (11.94, 26.1)	.220 (.1339)	.12	.04*** (.0527)	.10

	More (or better) than usual p (95 % CI)	Same as usual p (95 % CI)	Less than usual p (95 % CI)	Much less than usual p (95 % CI)	GHQ-12 (bimodal sc.) p (95 % CI)	Men vs. women p-val (rbc)	Age τ	Work role p-val (ε^2)	Seniority τ
Playing a useful role in life	13.49 (8.06, 20.72)	71.43 (62.70, 79.12)	12.70 (7.44, 19.80)	2.38 (.49, 6.80)	15.08 (9.33, 22.5)	.58 (.0521)	.14	.10 (.0371)	.18*
Enjoying day-to-day activities	3.97 (1.30, 9.02)	68.25 (59.37, 76.26)	23.81 (16.68, 32.21)	3.97 (1.30, 9.02)	27.78 (20.17, 36.5)	.27 (.1059)	.16	.86 (.0024)	.15
Can concentrate well on what one does	7.14 (3.33, 13.13)	54.76 (45.65, 63.64)	33.33 (25.19, 42.28)	4.76 (1.77, 10.08)	38.09 (29.59, 47.2)	.26 (.1183)	.07	.59 (.0088)	.16

	More than usual	Same as usual	Less than usual	Much less than usual					
Sentirse capaz de tomar decisiones	11.90 (6.82, 18.87)	71.43 (62.70, 79.12)	14.29 (8.69, 21.64)	2.38 (.49, 6.80)	16.67 (10.62, 24.3)	.04** (.1906)	.19*	.21 (.0260)	.14
Able to deal with one's problems	8.73 (4.44, 15.08)	76.19 (67.79, 83.32)	11.90 (6.82, 18.87)	3.17 (.87, 7.93)	15.07 (9.33, 22.5)	.91 (.0098)	.12	.31 (.0194)	.08
Feeling happy considering everything	7.94 (3.87, 14.11)	73.81 (65.23, 81.24)	17.46 (11.28, 25.23)	.79 (.02, 4.34)	18.25 (11.94, 26.1)	.59 (.0492)	.19*	.34 (.0178)	.10

	Not at all	No more than usual	More than usual	Much more than usual					
Felt unhappy and depressed	37.30 (28.85, 46.36)	39.68 (21.08, 48.78)	19.84 (13.27, 27.88)	3.17 (.87, 7.93)	23.01 (15.99, 31.4)	.37 (.1000)	.09	.60 (.0085)	.12
Lost confidence in oneself	51.59 (42.52, 60.58)	33.33 (25.19, 42.28)	12.70 (7.44, 19.80)	2.38 (.49, 6.80)	15.08 (9.33, 22.5)	.18 (.1430)	.00	.24 (.0235)	-.11
Feeling of worthlessness	81.75 (73.88, 88.06)	12.70 (7.44, 19.80)	4.76 (1.77, 10.08)	.79 (.02, 4.34)	5.55 (2.26, 11.1)	.93 (.0008)	.10	.78 (.0040)	.08

*p <.05; **Women report more frequently than men feeling more capable of making decisions. ***χ² Kruskal-Wallis test; technicians (>) vs. psychologists, and also technicians (>) vs. coordinators.

Note: p (95% CI) = observed percentage and 95% confidence interval; ε^2 = eta squared; rbc = rank-biserial correlation effect size for Mann–Whitney's U test; τ = Kendall's τ coefficient. There are no differences in the percentage of women vs. men reporting each symptom (based on the bimodal scoring).

3.4. Work and burnout predictors of psychological morbidity

Table 5 indicates the results of the negative binomial regression model predicting the GHQ-12 number of symptoms of psychological morbidity. The data reveals a significant global adjustment ($\chi^2(8) = 61.31$; p <.001), with an AIC of 480.12, and a BIC of 513.06.

The results show that enthusiasm for work and mental exhaustion were associated with psychological morbidity symptoms (p = .02 and <.001, respectively). In particular, enthusiasm for work was inversely associated: workers who reported more frequent enthusiasm for work reduced the probability of psychological morbidity symptoms (OR: .67, 95 % CI [.47, .94]).

Mental exhaustion was the strongest predictor with the largest effect in the model, revealing a direct relationship between feeling mental exhaustion and an increased likelihood of developing symptoms of psychological morbidity (OR: 2.41, 95 % CI [1.77, 3.29]). Work role, seniority, indolence and guilt did not predict psychological morbidity symptoms (p >.05). Table 5 also shows the results of a complementary binary regression model predicting psychological morbidity (GHQ-12 scores with ≥ 4 vs. < 4, following bimodal score criteria for individual indicators). Consistent with the latter model, enthusiasm for work (OR: .46, 95 % CI [.22, .99], p = .05) and mental exhaustion (OR: 4.71, 95 % CI [2.23, 9.95], p <.001) independently predicted psychological morbidity, while frequent mental exhaustion feelings were identified as most predictive factor of psychological morbidity, and frequent enthusiasm for work was shown to be protective against it.

TABLE 5. Binomial and binary logistic negative regression analysis on the GHQ-12 scores.

	B (SE)	p value	OR adj [95 % CI]			(OR adj -1) × 100 [95 % CI]			Goodness-of-fit statistics
Work role	.19 (.35)	.59	1.21	.61	2.38	20.50 %	-39 %	137.90 %	Negative binomial regression predicting number of GHQ-12 symptoms based on the bimodal scoring. % of included cases = 87.2 %
	-.323 (.45)	.47	.72	.30	1.74	-27.60 %	-70 %	74.40 %	χ^2***; R-squared = .3798
Seniority in the role	.02 (.02)	.46	1.02	.97	1.07	1.80 %	-2.90 %	6.60 %	Deviance = 105.09
Enthusiasm for work	-.40 (.18)	.02	.67	.47	.94	-33.30 %	-52.70 %	-5.70 %	AIC = 480.12
Mental exhaustion	.88 (.16)	< .001	2.41	1.77	3.29	141.10 %	76.60 %	229.10 %	BIC = 513.06
Indolence	.23 (.17)	.19	1.25	.89	1.76	25.20 %	-10.80 %	75.60 %	Residual DP = 113

Guilt	.15 (.18)	.41	1.16	.82	1.64	15.70%	-18.30%	63.80%	Chi-squared/DP = .96
Work role	-.23 (.71)	.75	.80	.20	3.18	-20.30%	-80%	217.70%	Binary logistic regression predicting psychological morbidity based on a GHQ-12 cut-off > 4 following bimodal scoring. % of included cases = 87.2% χ²***; R-squared = .3490
	.24 (.75)	.75	1.27	.29	5.52	26.60%	-70.90%	451.70%	
Seniority in the role	.04 (.05)	.36	1.04	.95	1.15	4.40%	-4.90%	14.70%	Deviance = 97.94
Enthusiasm for work	-.77 (.39)	.05	.46	.22	.99	-53.80%	-78.50%	-0.80%	AIC = 117.94
Mental exhaustion	1.55 (.38)	< .001	4.71	2.23	9.95	371%	123%	894.70%	BIC = 146.07
Indolence	.36 (.36)	.31	1.44	.71	2.90	43.80%	-28.60%	189.50%	Residual DP = 113
Guilt	.73 (.44)	.10	2.08	.88	4.91	107.50%	-12.20%	390.60%	Chi-squared/DP = 1.06

Note: adjusted odds ratio (OR adj); 95% confidence intervals (95% CI); *p* values (p); AIC = Akiake information criterion; BIC = Bayesian information criterion. (OR adj - 1) × 100 indicates the effect of covariables on the GHQ12 scores expressed as a percentage change. The formula (OR adj -1) × 100 [95% CI] provided the percentage change in the GHQ-12 scores for each unit increase in the predictor variable. χ^2 = chi-square value; SE = standard error; ***p <.001. Effect of predictors were corrected by gender and age.

4. Discussion and conclusions

The results of this study indicated a high prevalence of burnout (10.85% at critical levels) among the professionals engaged in educational and social inclusion activities targeting vulnerable populations within the third sector of social action, which is consistent with the results obtained in similar previous studies (Caravaca-Sánchez et al., 2019; Romero-Martín et al., 2020; Tartakovsky & Walsh, 2016; Tu et al., 2022). In addition, frequency data were provided, making it possible to analyse the periodicity with which respondents experienced the symptoms and dimensions of burnout, an aspect that has to date seen very little research. In particular, knowing both the prevalence and frequency with which certain dimensions of burnout are experienced allows us to evaluate the real magnitude of a complex phenomenon over a specific time frame, and, in turn, to identify its symptoms. Finally, this study highlighted the existence of a series of socio-demographic and work-related variables that influence the different dimensions of the syndrome, suggesting that several of them can be considered predictors of psychological morbidity.

On the one hand, the descriptive results of this study suggest that mental exhaustion is characterized by a high prevalence and frequency, in line with previous research (Caravaca-Sánchez et al., 2019; Gómez et al., 2019; Sánchez-Moreno et al., 2014; Verde-Diego et al., 2021). Indeed, it is notable that 83% of respondents indicated that they had felt overwhelmed several times a month, or even more frequently, during the last year. These results could be due to the influence of various psychosocial risk factors common to this sector, similar to those existing in the health sector, such as high work demands, conflicts with users or patients, excessive

working hours, excessive bureaucracy, oversubscribed services, and job instability (González-Rodríguez et al., 2020; Lizano & Mor-Barak, 2012).

On the other hand, the findings of this study suggest that enthusiasm for work also has a high prevalence, manifesting itself frequently (several times a week) or very frequently (every day), which coincides with the findings of the study by De la Torre & Jenaro (2019). In turn, this study found that the prevalence and frequency of all items of this dimension are high, evidencing a perception on the part of educational workers of the positive aspects of their work (goals, challenges) and of the gratifying feelings and personal fulfilment that their work brings. A possible explanation is that the respondents in this study were relatively young (median age 39), and therefore at a stage in their professional careers in which they maintain high professional aspirations to achieve the objectives that motivate their work (Morilla-Luchena et al., 2019; Navarro et al., 2018).

Both results, high enthusiasm for work and high mental exhaustion, though apparently contradictory, suggest a vocational side to these workers, materializing in the form of greater job satisfaction, and likely to act as a protective factor against the possible negative effects of burnout and emotional exhaustion that these workers develop in their work of caring for and helping the most vulnerable people in society (Caravaca-Sánchez et al., 2019; Maddock, 2024; Martínez-López et al., 2021). At the same time, the indolence dimension is characterized by high prevalence and low frequency, while the guilt dimension is characterized by low prevalence and low frequency, also in line with previous studies in this field (Gil-Monte, 2015; Munsuri, 2018).

The inferential analyses carried out in a disaggregated way highlight the relationship between different socio-demographic and work-related variables and the different dimensions of burnout. For example, regarding seniority, despite the fact that there are previous studies that have indicated that as professional experience increases, psychological discomfort decreases (Gómez et al., 2019; Tartakovsky, 2016), our results suggest that as seniority increases, the frequency of feeling enthusiasm for work decreases, increasing the likelihood of psychological deterioration. In this regard, in line with our results, Lizano and Mor-Barak (2012), in one of the few longitudinal studies carried out in this professional field, indicate that mental exhaustion tends to increase with the passage of time. A possible explanation for this is that, with greater role seniority, commitment, energy and dedication decrease, as has already been suggested by other studies (Budayová et al., 2023; Morilla-Luchena et al., 2019). Conversely, and in line with previous research (De la Fuente & Sánchez-Moreno, 2011; Romero-Martín et al., 2020; Sánchez-Moreno et al., 2014), it can be hypothesized that despite the knowledge that comes from experience, continuous and prolonged contact with service users' problems can lead, over time, to an emotional overload, which increases feelings of anguish and exhaustion over the years of professional practice. The results once again suggest the vulnerability of people who work in this socioeducational sector, who are highly exposed to contact with other people's feelings of pain and crisis (De la Fuente & Sánchez-Moreno, 2011).

Regarding gender, significant differences were seen, though only in the dimension of mental exhaustion. Specifically, women report higher rates of prevalence and frequency, both globally and in two of the items related to the presence of feelings of being overwhelmed and swamped at work. In this regard, Frieiro et al. (2021) have suggested that women suffer greater emotional exhaustion in relation to the mental overload they tend to suffer in caring for others. A potential explanation for the above is the so-called *double presence phenomenon*, which constitutes an important psychosocial risk factor for women. Indeed, though the involvement of men in family and household chores tends to now be higher than in previous decades, women continue to be more responsible for caring for dependent family members, such as children and elderly and disabled relatives, and therefore bearing a greater, double work and family burden (García, et al., 2012; Higgins et al., 2010).

However, in line with the study by Meredith et al. (2021), the existence of significant age or work role differences in burnout dimensions was not found, with the exception of enthusiasm for work, which dropped off with the increasing age of respondents. These results agree with

what was mentioned above: that younger workers often have high expectations and levels of motivation at the beginning of their professional careers, and that these tend to decrease over time.

Regarding the mental health of this study's respondents, a third of the sample (30.16 %) presented potential symptoms of psychological morbidity, reporting high levels of general malaise in the form of anxiety, insomnia and the perception of being constantly in tension (Maddock, 2024). Concordantly, previous research, such as that of Kim and Kao (2011), has revealed a direct relationship between burnout and psychological distress among social intervention workers, with the incidence of mental disorders being higher in this group than in others. Regarding risk factors, authors have pointed to excessive bureaucracy, blurred boundaries between the family and professional sphere, and the over-subscription of services, in addition to high work demands and scarce resources (De la Fuente & Sánchez-Moreno, 2011; Lizano & Mor-Barak, 2012).

The regression analyses carried out in the study suggested two statistically significant predictors of psychological morbidity: enthusiasm for work, negatively correlated; and mental exhaustion, positively correlated. Regarding enthusiasm for work, we suggest that, in addition to boosting job satisfaction, it acts as a protective and cushioning factor, underlining the need to help these professionals to improve their psychological capital and resources, and proactive behaviours and skills in managing adverse situations and coping with stress (Avey et al., 2010; Gandía-Carbonell et al., 2022).

Regarding mental exhaustion, numerous studies have evidenced its predictive capacity for psychological morbidity (e.g. Chen et al., 2022; Huang et al., 2011; Maddock, 2024). This directs our attention to the influence of the organizational characteristics of the third sector of social action, and to various psychosocial risk factors, such as work overload, conflicts with users, excessive working hours and job instability (De la Fuente & Sánchez-Moreno, 2011), which may increase the mental exhaustion suffered by professionals in the sector, particularly those involved in educational and inclusion practices. For this reason, to mitigate the risk of psychological morbidity, psychosocial assessment programmes are needed to evaluate the unfavourable psychosocial dimensions in third-sector organizations.

One of the implications of this study for educational practices and policies is related to one of the issues highlighted in various educational reports (Organisation for Economic Co-operation and Development [OECD], 2019; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2023). In particular, these reports highlight that people working in education who experience a high level of stress at work are more likely to quit their profession in the next five years. In this sense, it is considered essential to reduce the level of burnout to which professionals in this educational field are exposed, while working on their motivation and professional development.

On the other hand, and in line with the different reports prepared by the OECD (2018), the European Strategic Framework on Health and Safety at Work 2021-2027 and the Spanish Strategy for Safety and Health at Work 2023-2027, in which highlight the need to strengthen the protection of workers in situations of greater risk or vulnerability, those studies warrant the need to undertake future research focused on the study, development and implementation of organizational well-being and healthy practices for structuring and managing work processes. Such work should not only focus on dysfunctional aspects, but also attempt to improve the motivation, health and well-being of workers, maximizing together the development of the organization and its employees (Salanova et al., 2016) and improving the attention and educational service they provide to their users. As Gandía-Carbonell et al. (2022) have pointed out, the teaching of socio-emotional skills contributes to improving both the well-being of professionals and the improvement of work quality within organizations.

This study's limitations include its cross-sectional and descriptive nature, which prevents longitudinal relations to be confirmed among the studied variables. Longitudinal studies would allow further examination of the temporal sequence of interrelationships, such as between burnout and psychological morbidity. This study used a convenience sample, allowing us

to obtain a first approximation of burnout in organizations of the third sector of social action. However, given its non-probabilistic nature, the estimates of prevalence and correlates must be interpreted with caution, without trying to generalize them at the population level, or to other professional sectors or contexts. Future research should use probabilistic sampling for the selection of heterogeneous samples, which would guarantee greater coverage across social services (e. g., immigration, families, minors, functional diversity) and professional profiles (e. g., educators, social workers). The sample size of this study, the socio-demographic and work-related variables and the burnout characteristics evaluated also limited the possibility of carrying out additional analyses. Obtaining responses through self-administered instruments should also be recognized as a limitation, and may be subject to social desirability biases, leading to the under-reporting or over-reporting of true prevalence rates.

Finally, as future directions for research in this field, we propose a differential approach to the prevention and management of burnout based on gender and studies to address the predictive capacity of different socio-demographic, work-related and psychological capital variables for burnout, which may potentially help to understand its emergence and evolution with greater precision and depth in professionals working in the third sector of social action engaged in educational and inclusion activities.

Authors' contributions

Cristian Mollà-Esparza: Conceptualization; Investigation; Methodology; Data curation; Formal analysis; Writing (original draft).

Eva González-Menéndez: Conceptualization; Investigation; Methodology; Writing (original draft); Writing (review and editing).

Marialuz-Arantzazu García-González: Conceptualization; Investigation; Resources; Writing (original draft).

Fermín Torrano: Conceptualization; Investigation; Methodology; Formal analysis; Supervision; Writing (original draft); Writing (review and editing).

Artificial Intelligence (AI) Policy

The authors do not claim to have made use of artificial intelligence (AI) in the preparation of their articles.

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Manifestations of gender (in)equality and stereotypes in physical-motor

Manifestaciones de (des)igualdad y estereotipos de género en #TikTokchallenges físico-motrices: un estudio cualitativo

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Abstract:
TikTok's growth as a platform with mass use among the general population and especially among young people has significantly increased the scientific-educational community's interest in it over the last five years. One of the main factors attracting attention has been the popular #trends or #TikTokTokchallenges, which can have an impact on the transmission and perpetuation of gender stereotypes. The main objective of this work was to explore the construction of gender manifested in #TikTokchallenges using a critical approach to guide and inform possible future educational interventions. A qualitative methodology with an emergent design was used, triangulating the use of an ad hoc coeducational scale, observation through a categorical system, and content analysis of a researcher diary. The sample comprised 86 videos with physical-motor content. The results obtained did not show a high gender inequality index in the sample analysed. However, the largest percentage of videos analysed did not show stereotype-free and gender-equal content. The elements that were identified as transmitting gender (in)equality in #trends included the shot type, interactions between participants, the music used, the hashtags used, the type of skill or physical ability shown in the challenge, and the body image presented. The information obtained highlights the importance of reviewing and addressing the physical-motor content of these TikTok challenges in educational contexts. The impact that consuming and/or producing this type of content can have on the young population and the design of educational and critical interventions to promote gender equality, including social networks, are discussed.

Keywords: stereotypes, social networks, virality, motor challenges, physical activity, digital competence.

Resumen:

El crecimiento de TikTok como una plataforma de uso masivo entre la población en general y en especial entre el sector más joven impulsó de manera significativa el interés de la comunidad científico-educativa durante el último lustro. Uno de los principales factores de atención fueron sus populares *#trends* o *#TikTokchallenges*, que pueden impactar en la transmisión y perpetuación de estereotipos de género. El objetivo principal de este trabajo fue profundizar en la construcción de género manifiesta en los *#TikTokchallenges* con un enfoque crítico que oriente y fundamente posibles futuras intervenciones educativas. Se aplicó una metodología cualitativa con un diseño emergente, en la cual se trianguló la aplicación de una escala coeducativa construida *ad hoc*, la observación mediante un sistema categorial y un análisis de contenido sobre un diario de los investigadores. La muestra fue de 86 vídeos con contenido físico-motriz. Los resultados obtenidos no revelaron un índice de desigualdad de género alto en la muestra analizada. Sin embargo, el mayor porcentaje de los vídeos analizados no mostraron un contenido libre de estereotipos y en igualdad de género. Entre los elementos identificados como transmisores de (des)igualdad de género en los *#trends* se incluyeron el plano de grabación, las interacciones entre las personas participantes, la música utilizada, los *hashtags* empleados, el tipo de habilidad o capacidad física manifestada en el reto y la imagen corporal presentada. La información obtenida manifiesta la importancia de revisar y tratar el contenido físico-motor de estos retos de TikTok en contextos educativos. Se debate el impacto que pueden tener el consumo o la producción de este tipo de contenidos en la población joven y la necesidad de diseñar intervenciones educativas y críticas hacia la igualdad de género que incluyan las redes sociales.

Palabras clave: estereotipos, redes sociales, viralidad, retos motores, actividad física, competencia digital.

1. Introduction

TikTok is a social network that has grown rapidly over the last five years, and is very popular among young people in Spain and internationally (IAB Spain, 2023; Dixon, 2025). It is known for being entertaining and diverting, and is especially appreciated by the adolescent population (Al- Maroof et al., 2021; Suárez-Álvarez & García-Jiménez, 2021). Its rise has been linked to the pandemic of 2020, when #TikTokChallenges became a popular form of entertainment during lockdowns (López-Carril et al., 2024). These challenges, especially ones of a physical-motor and expressive-corporal nature, such as dances, are done individually or in groups, and they became a form of therapy against isolation (Kennedy, 2020; González-Ramírez, 2022).

Interest in TikTok has not only emerged in the general public but also in the scientific and educational community, which perceived its educational potential and has explored its benefits in areas such as physical-sporting education (Escamilla-Fajardo et al., 2021; López-Carril et al., 2024). The recent review by Caldeiro-Pereira and Yot-Domínguez (2023) reflected its educational potential and the wide range of educational proposals that make use of it. TikTok is used in a wide variety of areas (language, science, physical education, etc.) and has proven to be an effective resource for teaching foreign languages, for producing creative videos, and for physical expression among other aspects. Its short-video format and its capacity to share ideas or resources and generate interactions contribute to the use of TikTok in classrooms as a pedagogical tool that has a positive impact on student motivation (Escamilla-Fajardo et al., 2021; López-Carril et al., 2024; Meirbekov et al., 2024).

Nevertheless, in accordance with the ideas of Caldeiro-Pereira and Yot-Domínguez (2023), the adoption of movement without the necessary critical reflection can cause difficulties and harm for society, especially among the population that makes the most use of TikTok: adolescents and young adults (Dixon, 2025; IAB Spain, 2023; Manago et al., 2023). For example, the work of D'Ambrosi et al. (2024) found that TikTok can be an unrealistic tool in medical education and that videos with a low scientific basis were predominant in the case of treating epicondylitis. These results, combined with the proliferation and consumption of science-based content on TikTok (Micaletto-Belda et al., 2024), are an example of the possible reach of this application and are a rationale for the educational approach to the problem. In addition to the possible misinformation generated among consumers of these or other videos, there is concern that misuse of the app might contribute to the appearance of physical and mental health problems among adolescents (Falgoust et al., 2022; Patel et al., 2023). Other studies even suggest that these challenges can affect family relations (Ibanez-Ayuso et al., 2022). Works such as that by Garcés-Fuemayor et al. (2023) emphasised the need to educate in critical thinking on TikTok and also demonstrated the app's efficacy as a pedagogical tool for doing so.

In accordance with this concern, which revolves around the development of critical thinking in the culture of immediacy, and in line with Agenda 2030 (SDG 5, "gender equality"), one of the recent focusses in research into TikTok centres on gender (e.g., Micaletto-Belda et al., 2024). In this area of study, social network use patterns have been seen to reflect and reinforce gender stereotypes and can shape people's opportunities (Manago et al., 2023). For example, some researches have noted that TikTok #dancechallenges often transmit sexualised images of women with athletic bodies and tight clothing, perpetuating gender stereotypes (González-Ramírez, 2022; Kennedy, 2020). This phenomenon is not unique to TikTok, but is also apparent on various social networks, where likes and comments can reflect and promote discriminatory attitudes (Yu et al., 2020; Gil et al., 2022).

The present work seeks to examine in depth the construction of gender apparent in #TikTokchallenges using a critical focus that orients and justifies possible future educational interventions. The specific objectives are as follows:

1. To analyse #TikTokchallenges that relate to physical-motor and/or corporal-expressive content from a gender perspective and how they influence virality.

2. To identify elements that can transmit gender stereotypes and discrimination in these challenges as the basis of future educational interventions.

2. Method

A qualitative method was used, with observation using two instruments that have an ad hoc design and content analysis of a researcher diary. The methodology considers the difficulty of inquiring into the little-explored world of audio-visual research on networks, as well as the need to generate procedures for accessing research on TikTok in response to the requirements apparent in previous works (e.g., González-Ramírez, 2022; Huamán & Ramírez, 2022). In order to meet the objectives rigorously and credibly, avoiding biases in qualitative research, this study is based on triangulation of researcher and methods.

2.1. Sample

To select a sample from an infinite population that is the result of how TikTok works (Huamán & Ramírez, 2022), this study used purposive sampling, which is characteristic of qualitative research, with one selection criterion: challenges that include physical-motor and/or corporal-expressive activity. Establishing a single inclusion criterion is an opportunity to analyse the situation in all of its complexity, including videos from diverse perspectives (social, educational, etc.) recorded by different users, with the aim of this analysis reflecting the wide variety of realities that girls, boys, adolescents, and young people might encounter in #TikTokchallenges.

The selection of videos was done by two experts in physical activity and sport. Hashtags were used as a search strategy, in line with previous research (González-Ramírez, 2022; Suárez-Álvarez, 2022). These were #trend, #challenge, #TikTokChallenge, and #reto. The collection process was also enriched manually through TikTok's "For you" algorithm, making use of this social network's applied artificial intelligence, which drives the network's functioning and offers users new videos relating to what they have previously viewed (Roth et al., 2021). Therefore, new challenges were added that did not feature the tags mentioned above, but did respond to the inclusion criterion.

The final sample comprised 86 videos and their respective captions. With regards to the search strategy, it is notable that using hashtags to search for content is an opportunity to discover with greater accuracy the reality that people see. When a search is done, the app itself orders videos by how viral they are, with the top results being the videos with the most interactions. These are then the ones that a TikTok user is most likely to find.

2.2. Tools

In this research, two instruments with an ad hoc design were applied: the observational-critical scale of the co-educational value of physical-motor #TikTokchallenges and the observational coding system for physical-motor #TikTokchallenges with a gender perspective.

The first instrument is intended to establish the degree of (in)equality present when assessing a challenge. It has six indicators with a dichotomous response option (Yes/No) to assess whether the challenge contributes to gender equality. These items evaluates gender discrimination (indicator 1), verbal or non-verbal language (indicator 2), the classification of physical skills and capacities (indicator 3), body image and gender stereotypes (indicator 4), use of spaces (indicator 5), and use of equipment (indicator 6). It should be noted that these indicators were developed following a prior review of literature on the gender perspective in physical activity and sport, as well as a discussion within the research team. The number of items fulfilled gives a gender inequality index (GII = number of indicators fulfilled from 0 to 6). The higher this number, the more inequality and gender stereotypes are transmitted in the challenge analysed. The instrument also collects observations where the analyst can express qualitative information relating to the coding of the videos. This scale was designed through various discussion groups comprising the research team (five experts in physical activity and gender perspective) and by applying the instrument in various pilot studies until its final format was reached.

The second instrument is a categorial system for coding the videos, which is based on the Critical Visual Methodology (Rose, 2016), and is a method for addressing the problem of #DanceChallenges in earlier studies (González-Ramírez, 2022). This instrument includes various categories based on a prior literature review that relate to gender stereotypes in physical-sporting and artistic-expressive activity. They were classified in the dimensions listed by Rose (2016):

- Circulation and audience: this reflects the impact of the challenge considering the characteristics of the social network, analysing categories such as the number of likes, comments and views; type of influencer, and gender of the influencer (Arróniz et al., 2021; González-Ramírez, 2022; Huamán & Ramírez, 2022).

- Production: the categories include content characteristic of the challenge and the context in which it is carried out from a physical-sporting and artistic-expressive point of view, analysing categories such as verbal or non-verbal language, content type (conditioning, motor skills, etc.), the physical capacities displayed, the style or type of music (e. g., Cremades, 2022; Garrote-Escribano & Avilés, 2021).

- Image: the categories describe what is intuitive or palpable in the challenge, serving to generate an overview or snapshot of what is viewed. Categories are analysed such as the groupings (individual, pairs, etc.), shot type (close-up, three-quarter, etc.), camera angle (back, front, etc.), the primary emotional expression (happiness, sadness, neutral,

etc.), or equipment used (conventional physical education or repurposed equipment), among other aspects (e. g., Blández, 1995; González-Ramírez, 2022; Huamán & Ramírez, 2022; Learreta et al., 2006, pp. 56–58).

Similarly, content analysis was applied to the insights of the research team included in the Observational-Critical Scale. These observations form a researcher diary, which is a tool to control the quality of the study and is also an element that collects reflections, decisions, constructs, concepts, etc. relating to the research topic (Gehrig & Palacios, 2014), which can favour exploration of the objectives of a study.

2.3. Procedure

An emergent research procedure, characteristic of qualitative research, was used with the application of each instrument and its procedures dependent on the previous phases to which they relate. There were three phases intended to explore the two study objectives (Table 1).

TABLA 1. Summary of phases of the qualitative research design applied.

Aim of the research	Phase	Instrument	Agents
1. Analysing #TikTokChallenges relating to physical-motor and/or corporal-expressive content from a gender perspective and its influence on virality	1	Observational-critical scale of the co-educational value of physical-motor #TikTokchallenges	5 researcher(s) 3 analysts applied the scale 2 analysts took part to reach a consensus and perform an audit
2. Identifying elements that can transmit gender stereotypes and discrimination in these challenges as the basis of future educational interventions	2	System of observational coding of physical-motor #TikTokchallenges with a gender perspective applied to the videos that transmitted more gender (in)equality after applying the previous scale	2 researcher(s)
	3	Content analysis of the diary of the research team: information contained and expressed by the analysts in the section of observations of the categorisation of the observational-critical scale of the co-educational value of physical-motor #TikTokchallenges.	1 researcher

During phase 1 and after selecting the sample of videos, the observational-critical scale was applied to identify transmission of gender (in)equality in the selected sample. To do so, meetings were held between three experts and researchers in the field of physical-sporting activity and gender perspectives, with the videos being watched in successive meetings and each indicator from the scale being discussed to determine whether the indicators were fulfilled. The discussion was set out in a summarised form in the observations of the document, with this part comprising the researcher diary. Consensus was reached on all of the indicators

from the scale except for 8 videos that required a second round of review on 11 indicators. These were analysed by two external reviewers who are experts in physical activity with a gender perspective who participated in the construction of the scale. The external reviewers agreed on the categorisation of 10 of the 11 indicators, and so a final review was done by the first analysts to categorise the remaining item, thus reaching consensus on all of them.

During phase 2, and taking this analysis as a starting point, the most unequal videos were selected, identified with a GII of 4 or more. The observational coding system for physical-motor #TikTokchallenges with a gender perspective was applied to these challenges. In this procedure, a first pilot test was carried out to ensure that this categorial group would be applied appropriately between two analysts (one of whom had participated in phase 1) who applied the categories independently in the definitive coding.

During the third and final phase, inductive content analysis was applied to the observations made in the observational-critical scale of the co-educational value of physical-motor #TikTokchallenges applied in phase 1. The purpose was to identify for discussion the thematic axes on which the analysts centred their attention and establishing whether or not the indicators from this scale were fulfilled.

2.4. Data analysis

The information from the observations (researcher diary) contained in the coeducational scale was processed qualitatively using Atlas.ti version 24. This analysis was done through in-depth inductive coding in several cycles using the networks tool from Atlas.ti to refine and relate the categories. The data from the application of the Coeducational Scale and the Coding System applied in the observation of the videos were processed quantitatively using the SPSS version 23 software program. Descriptive statistics were applied, namely frequencies and percentages for the categories observed. The normality of the data was assumed owing to the number of videos analysed ($n = 86$), and the Pearson correlation test was used to inquire into the relation between the GII and the virality data (likes, views, and comments).

3. Results

The results of the analysis of the selected physical–sporting #TikTokchallenges showed a low GII. The mean was of 1.53 ± 1.29, with videos with a GII of 1 being most numerous ($n = 55$, 64%) (Table 2).

TABLE 2. Results of the #TikTokchallenges by gender inequality index.

Gender inequality index	Frequency	Percentage
0	8	9.3
1	55	64
2	8	9.3
3	4	4.7
4	7	8.1
5	3	3.5
6	1	1.2
Total	86	100

In-depth analysis of each indicator (Table 3) showed that transmission of gender inequality mainly occurred through fulfilment of the following indicators: 1, manifestation of gender supremacy and/or discrimination behaviour (Yes = 15 videos); 4, transmission of a stereotyped vision of women or men (Yes = 15 videos); and 3, manifestation of skills or capacities classified by gender (Yes = 13 videos).

TABLE 3. Fulfilment of the indicators from the coeducational scale.

Indicators		Frequency	Percentage
1. Gender supremacy and/or discrimination behaviours are apparent in the interactions observed in the video.	Yes	15	17.4%
	No	71	82.6%
2. There is no explicit treatment of gender equality, no assertions appear in the form of hashtags or other verbal or non-verbal audiovisual indications (for example, audio or music).	Yes	78	90.7%
	No	8	9.3%
3. Skills or capacities characterised by gender that transmit stereotypes are present (skill or capacity traditionally regarded as feminine done by men or vice versa).	Yes	13	15.1%
	No	73	84.9%
4. A stereotyped view of women, hypersexual, submissive, shallow-unintelligent, hypersensitive, etc.) and/or of men (insensitive, aggressive, etc.) is expressed shaping diversity in free expression of gender.	Yes	15	17.4%
	No	71	82.6%
5. Spaces that are stereotyped by gender are used without a critical sense (football pitch, dance studio, pole dance room, etc.).	Yes	3	3.5%
	No	83	96.5%
6. Equipment stereotyped by gender is used without a critical sense (rhythmic gymnastics ribbon, beauty equipment, football or rugby balls, resistance bands, gender-marked clothing such as skirts, cropped tops, caps, handbags, waist bags, etc.).	Yes	8	9.3%
	No	78	90.7%

The Pearson correlation test found no statistically significant correlations between the GII and the number of likes, views, or comments, but did find significant relationships and a medium and positive association (between .3 and .5) between comments, likes, and views (Table 4).

TABLE 4. Correlation between GII and virality of content.

		No. of likes	Inequality index	No. of views	No. of comments
No. of likes	Pearson correlation	1	-.027	.356**	.406**
	Sig. (two-tailed)		.805	<.001	<.001
	n	86	86	86	86
Inequality index	Pearson correlation		1	.069	.005
	Sig. (two-tailed)			.525	.967
	n		86	86	86
No. of views	Pearson correlation			1	.122
	Sig. (two-tailed)				.263
	n			86	86
No. of comments	Pearson correlation				1
	Sig. (two-tailed)				
	n				86

Note: ** the correlation is significant at the .01 level (two-tailed).

To consider in more depth the elements that transmit gender stereotypes, the #TikTokchallenges were categorised in three levels: low level of inequality (GII 0 and 1, $n = 63$), medium level of inequality (GII 2 and 3, $n = 12$), and high level of inequality (GII 4, 5, and 6; $n = 11$). The observational system was applied to the 11 videos identified as most unequal. The results are shown in Table 5 grouped by: circulation and audience, production, and image (González-Ramírez, 2022; Rose, 2016).

In relation to circulation and audience, the videos were most frequently published by elite influencers (45.5%) who are female (63.3%). The predominant settings were urban and non-sporting ($n = 9$, 81.8%), with the most frequent spaces being: the home ($n = 5$, 55.6%), streets ($n = 2$, 22.2%), shopping centres or shops and studios or multi-purpose halls ($n = 1$, 11.1%, respectively). With regards to sport spaces, the most unequal #TikTokchallenges were recorded on multisport courts ($n = 2$, 18.2%).

In relation to the production, the most frequent categories of these challenges displayed perceptive-motor content ($n = 6$, 54.5%) or physical conditioning content ($n = 3$, 27.3%). The language present was mainly non-verbal ($n = 10$, 90.9%) and the most frequent musical style was reggaeton ($n = 4$, 18.2%).

In relation to image, the challenges were done without equipment ($n = 9$, 81.8%), in pairs ($n = 5$, 45.5%), and in homogeneous male or female groups ($n = 6$, 54.5%). The most frequent type of topic was imaginary ($n = 9$, 81.8%) and the movements done were abstract ($n = 9$, 81.8%). Considering the emotional expression identified in the videos in more depth, expressions of happiness were most common ($n = 9$, 69.2%).

Table 5. Characteristics of less coeducational #TikTokchallenges in the circulation and audience dimension.

Dimension	Category	Subcategory	n	%
Circulation and audience	Type of influencer[1]	Elite (1-5M followers)	5	45.5
		Macro influencer (500K-1M followers)	0	0
		Intermediate influencer (50K-500K followers)	3	27.3
		Micro influencer (10K-50K followers)	3	27.3
		Nano influencer (1K-10K followers)	0	0
		Non influencer (fewer than 1K followers)	0	0
	Influencer gender	Male (one or more people)	2	18.2
		Female (one or more people)	7	63.6
		More than two people of different genders	2	18.2
Production	Type of content	Perceptive-motor	6	54.5
		Basic or specific motor skills	1	9.1
		Physical conditioning	3	27.3
		Perceptive-motor and motor skills	1	9.1
	Language used	Verbal	0	0
		Non-verbal	10	90.9
		Combined	1	9.1
	Style of music	Reggaeton	4	18.2
		Pop	2	12.6
		Rap/Hip-Hop	1	9.1
		Electronic music	1	9.1
		Dance	2	18.2
		No music	1	9.1

			n	%
Image	Equipment (physical education perspective)	No equipment	9	81.8
		Conventional physical education	1	9.2
		Recycled or alternative use	1	9.2
	Groupings	Individual	3	27.3
		Pairs	5	45.5
		Three or more people	3	27.3
	Groups from the perspective of gender	Individual	3	27.3
		Heterogeneous	2	18.2
		Homogeneous	6	54.5
	Type of theme[2]	Imaginary	9	81.8
		Real-concrete	1	9.1
		Real-abstract	1	9.1
	Type of movement[2]	Abstract movement	9	81.8
		Figurative-imitative movement	1	9.1
		Figurative-symbolic movement	1	9.1

Note: *n* = number of quotes; % = percentage; 1 = classification by González-Ramírez (2022); 2 = classification by Learreta et al. (2006, p. 56).

The content analysis of the observations from the observational-critical scale (researcher diary) identified the following as elements that transmit gender stereotypes and (in)equality in the #trends analysed (Figures 1 and 2): shot type; interactions between people in the video; body image; physical-motor and corporal-expressive activities/content; music in the challenge; and verbal language or hashtags used.

In the case of shot type, it was found that the way male and female performers share space and the gender of the protagonists of the physical-motor challenge could transmit gender (in) equality, acting as an assertion of equality or displaying supremacy of one gender over the other. This was recorded in the researcher diary:

- "The women with quite sexualised movements are directed by a man who dictates the tempo and control of the video" (video 70).

- "You can see a muscular and stereotypical body image of the man, who dominates the video and expresses himself with a certain superiority with phrases like 'I asked my wife to do this acrobatics and she didn't say no.' He dominates the video compared with the woman who follows the instructions of the man in the background" (video 9).

With regards to interactions, the diary reflected a debate about whether people of different genders need to be present in #TikTokchallenges. It was also found that mixed groups and cooperative challenges featuring people with diverse ethnic, gender, age, etc. characteristics could promote gender equality. The following quotes reflect these results:

- "Doubts about skipping as a skill classed as feminine. We do not see it like that because of the type of cooperative skipping and the music used" (video 33).

- "Positive appearance and participation of people of different gender, age, ethnicity…" (video 13).

In relation to verbal language and captions, the use of hashtags as elements asserting gender equality stood out, and there was also discussion of the use of these hashtags to dominate TikTok's algorithm and control the audience for the published content, as expressed in the following quote from the researcher diary:

- "Reflection on the initial hashtag (SEXTOU, 'sex for you') when a challenge with a skill typically seen as masculine, such as football, is done by women, while the men only start up and receive the challenge, without participating as protagonists. Maybe this could send a gender message" (video 80).

It was also found that the captions and information in the #TikTokchallenges could act as a virality strategy that transmitted gender (in)equality in physical-motor challenges, as expressed in the following extract on a #trend done by a man in which it is stated that "no woman can do this":

- "We think doing the challenge is more feasible, including for the female gender, for reasons of flexibility. The message is constructed to generate inequality and features an explicit treatment of gender inequality. There is also an athletic and shirtless image of the man that is unnecessary for the challenge that is manifested. We reflect on these virality strategies that can transmit stereotypes…" (video 16).

In relation to this quote, body image appears as an element of gender (in)equality in the results from the researcher diary. With regards to this element, the researchers' reflections found how the normotypical body image associated with femininity and masculinity was manifested on several occasions, with an athletic and muscular image for men and another slimmer, more slender, and sexualised one for women. However, in other #TikTokChallenges, it was found that the image appeared free from stereotypes, favouring free gender expression. Likewise, there was discussion of the origin of a new aesthetic stereotype that promotes an athletic female image associated with building strength with the label *fitness girl*. Clothing was another axis of discussion regarding body image, with challenges being seen where this could transmit traditional gender stereotypes and others where it favoured free expression of gender. The following quotes reflect these results:

- "It can be seen that the traditional attire, despite being different and being bound by rules, can transmit stereotypes, but it does not transmit a hypersexualised female gender image. Debate on the different male and female clothing in the types of sport" (video 2).

- "The body image of the person on the left breaks with stereotypes, which we regard as positive for the topic in question" (video 37).

- "There is debate on 'the muscular or strong image of the woman at present'. Movement or change towards this stereotype?" (video 9).

Another thematic axis categorised in the researcher diary was the physical-motor activities/content itself, identifying how activities are classified by gender (football for example was associated with masculinity and dancing or poledancing were linked to femininity) and how this might or might not transmit gender stereotypes according to the focus of the challenge and the protagonism of female or male performers within them. As an example, in the following

quotes, the same piece of dramatised content was identified as transmitting inequality and equality in two different challenges:

- "The dramatisation of the man is interpreted as a possible criticism of the macho culture in relationships of couples. The more feminine movements and carrying of the child in parenting tasks is an assertion of equality" (video 84).

- "The question is raised of whether (dramatised) parody sought to exaggerate features and attributes of femininity, thus contributing to inequality and the transmission of stereotypes" (video 76).

Furthermore, a debate arose regarding strength and flexibility as attributes associated with masculinity and femininity, with an openness and a break with the traditionally transmitted gender ideology regarding these capacities being apparent. This was reflected in the following extract from the researcher diary:

- "The figure of the woman as base [a person in acrobatic gymnastics who performs supporting and pitching roles] and element of maximum strength in the figure as positive point of the challenge stands out" (video 9).

One last thematic axis that was discussed as an element that transmits gender stereotypes was the music. Several #dancechallenges were filmed using songs with macho and discriminatory content, with reggaeton being the musical style that the researchers identified most often as a cause of hypersexualisation and submission of women. This is reflected in the following quotes:

- "The music shapes the type of hypersexual dance and so seems to be linked more to femininity. Reggaeton music features moves, like the *conejita*, that can be discriminatory" (video 69).

Figure 1. Elements that transmit gender stereotypes in #TikTokchallenges based on the researcher diary.
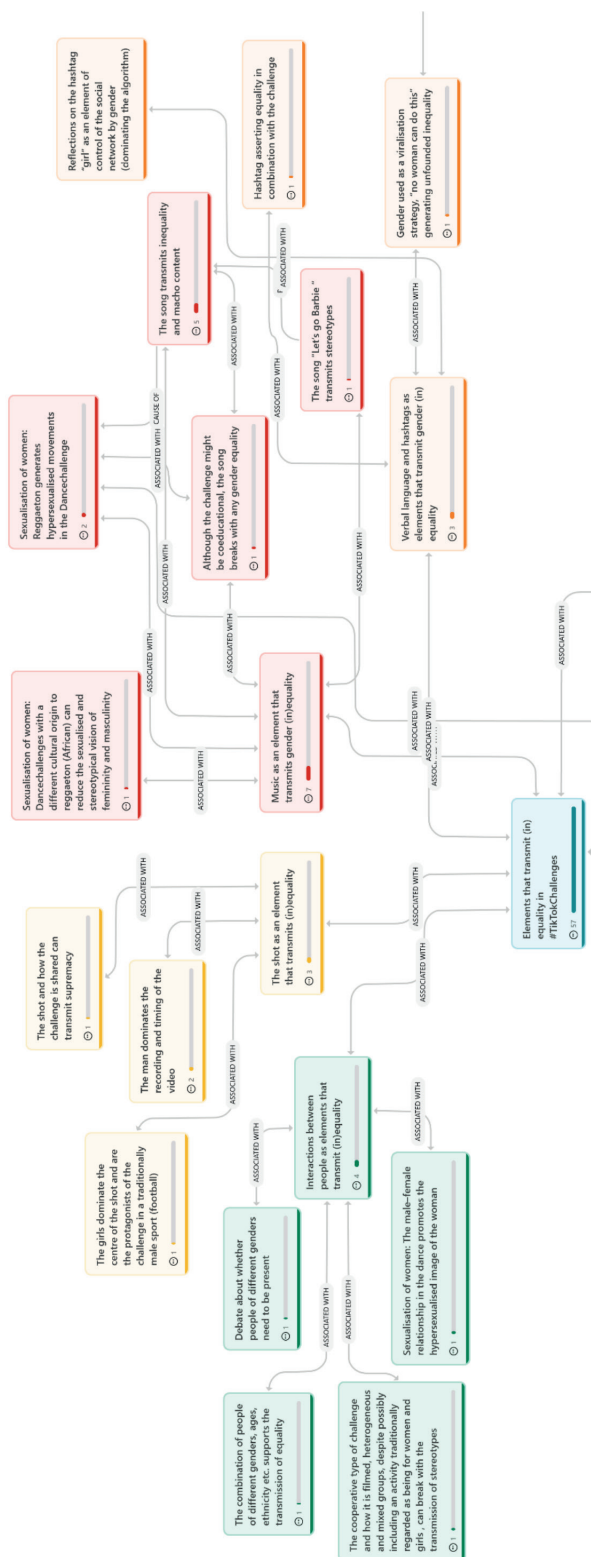
Figure 2. Elements thatatransmit gender stereotypes in #TikTokchallenges based on the researcher diary (continuation of Figure 1).
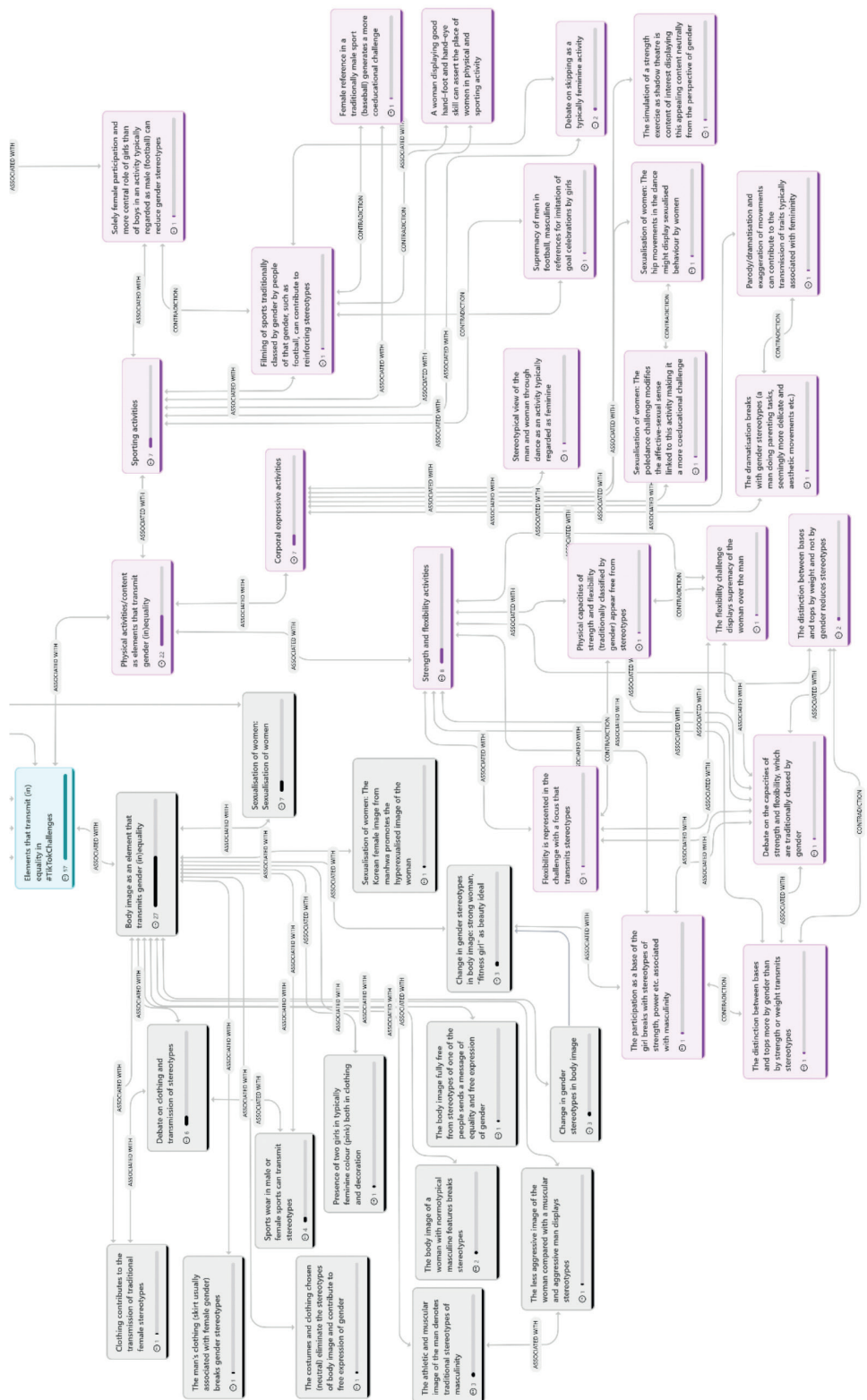
Another finding that emerged in relation to almost all of the elements that transmitted gender (in)equality in #TikTokchallenges (physical-motor and corporal-expressive activities/content, personal interactions, body image, and music) was sexualisation of women (Figure 3). Reggaeton #dancechallenges, the Korean feminine image spread in the manhwa genre, and the interactions and movements in some dances contributed to the transmission of a sexualised vision of women. This is reflected in the following quotes from the researcher diary:

- "The song's lyrics seem to be about flirting with a man. Discussion of the normalisation of the somewhat more sensual hip movements in women owing to their body type and the fact that it seems to be flirtation or seduction through movement and that the positions acquired being more sensual" (video 26).

- "The music shapes the type of hypersexual dance. Reggaeton music features moves like the *conejita*, that can be discriminatory in reggaeton" (video 69).

However, the results identified two #trends whose recording favoured the elimination of this vision: one linked to tonal-postural control in poledancing and another in which the use of an African dance and music reduced the normotypical and sexualised view of the woman. These results are reflected in the following quotes:

- "The fact its deals with poledancing, a typically feminine behaviour can be interpreted as transmitting stereotypes. However, the fact it transforms it both with the body image and with the challenge itself removes affective-sexual meaning from the habitual/frequent behaviour or poledancing" (video 23).

- "There is reflection on differences (regarding sexualisation) of this type of culturally African dances and others like reggaeton" (video 81).

FIGURE 3. Sexualisation of women in #TikTokchallenges based on the researcher diary.
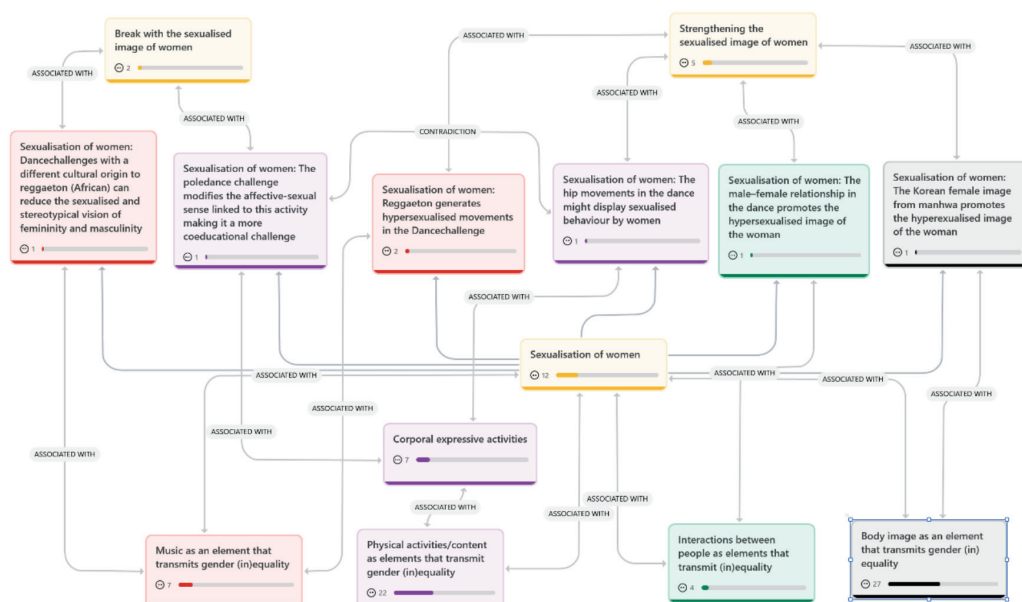
4. Discussion

The main aim of this study was to explore from a gender perspective the construction of gender manifested in #TikTokchallenges, analysing their influence and how that can transmit stereotypes with a critical focus to guide and inform possible future educational interventions. The results showed a low gender inequality index in the #trends observed, with level 1 of the coeducational scale designed and applied for this work being predominant. However, only 8 of the 86 #TikTokchallenges analysed featured content that was completely free from stereotypes and was equal in nature. These results coincide with previous research that has noted the prevalence of gender stereotypes in popular dance challenges on TikTok (González-Ramírez, 2022; Kennedy, 2020), and the perpetuation of hegemonic masculinity, for example, in the #sugardaddy tag (Suárez-Álvarez, 2022). The results also reflected the presence of #trends with physical-motor content that transmit an ideology of equality and act as feminist content, which is aligned with studies that found a reduction in gender stereotypes in content published by adolescent influencers (Suárez-Álvarez & García-Jiménez, 2021). This supports the idea that TikTok is a platform that needs special attention owing to the high cultural and social load of its content, with a significant influence on the construction of adolescents' identities (Micaletto-Belda et al., 2024). Thus, it is necessary to include training in and on the use of TikTok (and other social networks) in secondary and higher education, as adolescents and young adults participate most in these platforms (Garcés-Fuenmayor et al., 2023). According to these researchers, digital literacy at these educational stages should promote students' critical judgement regarding the consumption of these short videos, which, as shown by their results, might be surrounded by explicit and implicit gender ideology (González-Ramírez, 2022; Kennedy, 2020).

In relation to the virality of the content, TikTok's "For You" algorithm can transmit stereotyped content based on the user's gender, thus perpetuating gender stereotypes and hegemonic masculinity and increasing contact with similar content (Bueno-Fernandes & Campos-Fellanda, 2022; González-Ramírez, 2022). This is especially worrying when the viral content comes from the accounts of influencers, as the least equal videos identified in the study came from the accounts of elite, intermediate, and micro influencers (González-Ramírez, 2022). Furthermore, it should be noted that physical-motor #TikTokchallenges require physical contact in their recording, which underlines the need to reflect on the potential of social networks to stimulate physical contact (Delbosc & Mokhtarian, 2018). The findings of this study underline the need to increase the sensitivity of the TikTok algorithm towards potentially discriminatory content to protect the youth and adolescent population, as use of social networks starts at increasingly early ages (Caldeiro-Pedreira & Yot-Domínguez, 2023). Furthermore, this study underlines the importance of literacy and the development of digital competence in educational institutions for responsible and ethical use of social networks. In fact, previous studies have shown how creators of TikTok content have advanced digital competences (Micaletto-Belda et al., 2024), something that should be accompanied by a responsible performance.

The second objective of this research was to identify elements that transmit gender stereotypes in the challenges analysed. One of these elements was the music that accompanies #TikTokchallenges, something that is coherent with earlier research where the music and lyrics of the songs reinforce gender discrimination (Suárez-Álvarez, 2022). Reggaeton in particular was identified as transmitting gender ideology and discrimination. This coincides with other studies that note its popularity among adolescents and the fact it is good for dancing (Cremades-Andreu et al., 2024). Among the variety of physical-motor #trends, therefore, #dancechallenges deserve special attention, being one of the types of content most spread by adolescents (Suárez-Álvarez & García-Jiménez, 2021), especially among the Hispano-Latin population, where reggaeton is the trend for the production of challenges that display sensual movements and a normotypical and sexualised vision of women (González-Ramírez, 2022). In line with previous works, the results warn of the macho culture and patriarchal model transmitted in its lyrics (Díez-Gutiérrez & Muñiz-Cortijo, 2023). In fact, the qualitative analysis

identified that one of the factors associated with this musical style was the encouragement of sensual movements and behaviours, especially by women who dance, for they reinforce a sexualised image of women.

The sexualisation of women was a theme present in the observations by the researchers, who identified some #TikTokchallenges that contributed to self-sexualisation by women. This phenomenon is not only associated with music, but also with body image, with some videos representing men as strong and dominant and objectifying women as attractive and objects of desire (Moreno-Barreneche, 2021). Nonetheless, some #trends that broke with stereotypical gender images were identified. In this sense, the analysis of the researcher diary acknowledged a thematic axis on a new image and model of beauty in women representing in some #TikTokchallenges and derived from the opening up of strength activities to femininity: the *fitness girl* as an aesthetic ideal of body image. These results are aligned with those obtained by Roberts et al. (2022), showing how the model of a toned body, fundamentally transmitted by peer groups and social networks, combines with the beauty ideal of a slim body in women at present. Nonetheless, the diversity of corporal realities present in the physical-motor #TikTokchallenges analysed and also reflected in the content analysis of the researcher diary revealed a new line of research into this phenomenon at a time like the present one, where the pressure of social networks is apparent in dissatisfaction with the body image and well-being, especially among adolescents (Jarman et al., 2021; Roberts et al., 2022).

Another element that transmits gender ideology was the verbal language used, especially the hashtags. Some hashtags acted positively for equality, while others transmitted a discriminatory discourse, constructing gender in the #TikTokChallenges and segregating users (González-Ramírez, 2021; Suárez-Alvárez, 2022). The researchers identified some challenges in which this segregation and gender, deliberately developed and proposed through messages such as "No woman can do this", "#twinsgirls", or "#blondegirls", might be a strategy for the virality and diffusion of the challenge. This fact deserves, at least some reflection, and is grounds for future research on #TikTokchallenges with physical-motor content and/or corporal-expressive content, with this type of content not being disconnected from what is known as hashtag activism (Schultermandl, 2022), which allow the vindication of inequalities and contact with a desired audience with shared interests and identity (Suárez-Álvarez, 2022).

Finally, the physical-motor activities were also elements that transmit gender stereotypes, perpetuating the traits socially attributed to femininity and masculinity (Blández et al., 2007). Nonetheless, some #TikTokchallenges displayed positive aspects in relation to the free development of physical activities, breaking with pre-established gender models. The researcher diary found that strength or flexibility activities and collective and artistic-expressive types of sports fostered debate and reflection by the analysts. Indeed, indicator 3 from the scale, linked to this topic, was one of the ones most identified as not being coeducational in the #trends analysed. The findings bolster the debate around this social network and identify TikTok, at least in the #trends analysed, as something that can contribute to a break with hegemonic models (Suárez-Álvarez, 2022) that classify physical activities as being for a specific gender, as addressed in previous research (Xiang et al., 2017).

This study strengthens the debate about TikTok as a platform that is active in constructing gender, even though the range of results, sometimes promoting equality and sometimes promoting inequality, requires more consideration of the topic. It is crucial to observe these phenomena through an intersectional prism that considers factors such as race, culture, and age to understand the complexity of the identities formed and expressed in #TikTokchallenges (Alvermann et al., 2021; Suárez-Álvarez & García-Jiménez, 2021). In-depth knowledge of this reality provides support for the pedagogical approximation to a world with a high potential for socialising young people and adolescents to go beyond the limits of the classroom and develop relevant teaching interventions with a pedagogical, alternative, and critical focus (Garcés-Fuenmayor et al., 2023; Meirbekov et al., 2024).

5. Conclusions

This work started with the intention of analysing a specific type of TikTok #trend: ones that display physical-motor and/or corporal-expressive content or content with a gender perspective. The results do not enable any uniform or strong conclusions to be reached. Coeducational content or content that displays gender equality was found, as was other content with performances that could transmit inequality and encourage gender-based discrimination. This reinforces the need for deeper knowledge of a problem that has been little explored (González-Ramírez, 2022).

Regarding the first study objective, analysing #TikTokChallenges relating to physical-motor and/or corporal-expressive content from a gender perspective and their influence on virality, no significant relationships were observed between the virality of content and whether the videos displayed more or less gender inequality. This fact requires the scientific-educational community to consider the physical-motor content that is popular on TikTok closely and carefully, making gender inequalities visible to young people and acting to raise awareness of the content of the #TikTokchallenges in educational contexts that address physical and corporal-expressive activity.

In relation to the second objective of the study, to identify elements that can transmit gender stereotypes and discrimination in these challenges as the basis of future educational interventions, the following foci of attention were found: body image, the type of physical activity displayed in the challenge, interactions between participants, shot type, the music linked to the challenge, and the verbal language or hashtags. The results have implications for the development of future interventions with #TikTokchallenges in the field of physical-sporting and artistic-expressive education. Future interventions should consider these elements in the design and development of physical and corporal-expressive #trends with students in order to transmit an equal image to the educational community. Similarly, an intervention on raising consciousness and critical awareness of gender (in)equality in the field of physical education based on TikTok (or other social networks), should consider certain factors (for example, body image, the type of physical activity, hashtags, or music) in order to achieve its educational goals.

Nevertheless, this study has some limitations that give rise to future lines of research. While this research considered the field of physical activity, inequalities can manifest themselves in other spheres that can contribute to the construction of gender and the transmission of inequalities. Therefore, we propose further inquiry into the impact of content generated on social networks, evaluating other educational contexts beyond the physical and expressive sphere of movement. Furthermore, the pioneering, qualitative, and emergent focus of the research, with a design using ad hoc instruments, based on rigorous criteria such as the triangulation of researcher and techniques, is a basis for the development of future quantitative studies. In view of the design of an observation scale, we suggest validating the coeducational scale for studying the problem, reaching a broader sample of #TikTokchallenges with a quantitative observational methodology. Finally, there is growing interest in measuring impact on gender beliefs among students after applying educational proposals that consider the elements that transmit gender identified in this work and encourage responsible use of TikTok to promote inclusive activities and a consciousness of equality in young adults and adolescents on social networks.

Authors' contributions

Jorge-Agustín Zapatero-Ayuso: Conceptualisation; Data curation.

Elena Ramírez-Rico: Writing (original draft).

Miguel Villa-de Gregorio: Conceptualisation; Visualisation.

Irene Ramón-Otero: Visualisation; Conceptualisation.

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Practicum mediated by photo-elicitation: Contribution to initial teacher training and the professional development of the teacher-tutor

Prácticum mediado por fotoelicitación: aportación a la formación inicial docente y a la permanente del profesorado-tutor

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Abstract:

This article investigates to what extent teaching degree students, during the three months of traineeship in schools, converse about, reflect on and rethink their tutors' teaching practices through photo-elicitation processes to find professional development and improvement in both groups. A qualitative research methodology was used, focusing on the study of two cases. A photo-elicitation approach was implemented, guided by the trainee teachers to enable them to reflect on their tutors' practice in the classroom and school, through photography. The results indicate that the educational situations captured by the student teachers are of an instructional and formative nature, with a predominance of denotative and connotative levels in the content of the first group and of denotative, connotative and affective levels in the second group. The photo-elicitation process followed led to the development of three main types of relationship between the trainee teachers and their tutors, defined as confirmation, contribution and reference, which fostered complicity, involvement, joint responsibility and mutual professional development.

Keywords: teacher education, professional development, practicum, teacher tutoring, participatory reflection, photo-elicitation.

Resumen:

El artículo indaga en qué medida el alumnado del Grado en Maestro, durante los tres meses de Prácticum en un colegio, analiza, debate y replantea las prácticas docentes de sus tutores mediante procesos de fotoelicitación para conseguir el desarrollo y la mejora profesional de ambos colectivos. Se siguió la metodología de investigación cualitativa basada en el estudio de dos casos. Se aplicó un tipo de fotoelicitación dirigido por los maestros en formación inicial para que estos pudieran cuestionar las prácticas de sus tutores en el aula y en el centro con base en sus tomas fotográficas. Los resultados apuntan que las situaciones educativas registradas de forma visual por las estudiantes de magisterio participantes son de naturaleza instructiva y formativa; en su contenido, predominan los niveles denotativo-significativo para las primeras y denotativo-significativo-afectivo para las segundas. El proceso de fotoelicitación seguido ha facilitado la emergencia de tres tipos principales de interacciones entre las alumnas en prácticas y sus tutoras: de confirmación, de aportación y de referencia, que promovieron su complicidad, implicación y corresponsabilidad y el desarrollo profesional mutuo.

Palabras clave: formación del profesorado, desarrollo profesional, prácticum, tutoría docente, reflexión participativa, fotoelicitación.

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1. Introduction

Academic literature shows a clear interest in understanding the situation of professional teaching practices in the third decade of the twenty-first century. Among other issues, it studies how agreements between university centres and schools should be established (Darling-Hammond, 2017; Mauri et al., 2021; Rachamim & Orland-Barak, 2018) to facilitate the transfer of teaching knowledge in the relationship between tutors and trainee teachers (Burroughs, 2020; Colén & Castro, 2017; Häggström, 2022). Agreements where professional experience is understood as a commitment, as an activity built jointly by the tutor or mentor and the teacher in the initial training stage (Allen et al., 2019; Falcón & Arraiz, 2020; Flores, 2019). Along these lines, White & Forgasz (2016) and McCardle et al. (2022) note the scarcity of studies that explore how school teachers and those who are preparing to be teachers in the future envision their roles and construct them socially. Mauri et al. (2019) and Mauri et al. (2021) indicate the need for future research for a deeper analysis of the interactions between the participants in the different areas during traineeship, as well as the discursive strategies that could help to encourage and consolidate collaboration between schools and universities. We aim to contribute to this with our research.

2. Theoretical framework

Initial teacher training and the professional development of the teacher-tutor has been addressed from different traineeship approaches. Among others, instructing school tutors in critical analysis using research-action loops (Betlem et al., 2019; Foong et al., 2018; Jones et al., 2021), or encouraging a wider awareness and reflection in terms of their beliefs, theories, identity and values, thereby improving these aspects and their decision-making about their teaching activity (Korthagen, 2017; Schön, 2016; Sinclair & Thornton, 2018; Weng & Troyan, 2023).

Schön (2016) proposed a model of reflexive practicum as a key element in professional education, with the following main characteristics: learning by doing, training or mentoring (coaching) instead of teaching, and a reciprocal dialogue involving reflection-in-action between mentor and student. This reflection is two-way: it tries to help students to master a type of reflection-in-action and involves a dialogue, when it works well, between the aforementioned people, which takes the form of reciprocal reflection-in-action.

Critical, evidence-based analysis of teacher training approaches led Korthagen (2017) to propose what he termed *professional development 3.0.* He understood this to be the process of aiming for

coherence between the different layers of the *onion* model, that is, between one's core qualities, ideals, sense of identity, beliefs, competencies, behaviour and the environment. Encouraging essential reflection and providing the teacher with regular information about this coherence can reinforce the teacher learning that occurs when theory, practice and person connect.

Among the elements relating to the quality of teaching preparation programmes, highlighted by Darling-Hammond (2020), there are two that are closely related to this research: experiences in prolonged, well-supervised traineeships, chosen with care to support the closely connected ideas presented during the course, and beliefs and practices shared by teachers in schools and universities, with well-established partnerships between these two institutions. For this reason, she recommends creating professional policies that involve investment in the above-mentioned educational partnerships for professional development.

Specifically in Spain, these traineeships take place as part of a subject called the Practicum, which basically involves students in their final year of a teaching degree being placed in a school, under the supervision of a teacher-tutor. Our study fits in with this activity but structures it around photo-elicitation processes (Collier, 1954; Harper, 2002; Torre & Murphy, 2015).

The contribution of this research lies in the fact that the photo-elicitation situations are aimed at the future teacher, that is to say, they organise the analysis, discussion and participation in the Practicum using photographs of moments in classroom and school life, photos that are also taken by the students of this subject, with subsequent viewing of the photographs and a discussion of their content by the tutors of the educational centre, the university and the students themselves. We understand that the benefits of this traineeship procedure, and the relationship between the academic and school environments, come from the progressive involvement and relationship of mutual help between tutors and student teachers that may be fostered in the photo-elicitation sessions.

2.1. Photo-elicitation in teacher training: Elements and procedure

The connection between photography and verbal forms, which convey the meaning assigned to the former by an interviewee in the investigation process, has given rise to a new procedure, termed *photo-elicitation*. This links data collection techniques from observation and survey methods and expresses two ways of presenting and communicating aspects of reality: the image and the word, leading to a fuller, more appropriate perception and understanding of these aspects (Rayón et al., 2021), since images, as indicated by Harper (2002), evoke deeper elements in the human consciousness than words do. Therefore, in the above-mentioned process, they provide different, richer information, containing feelings, memories and desires, all drawn from a deep and meaningful conversation.

In the review of this issue there is agreement that any photo-elicitation session requires elements that are material (mainly cameras, projectors, recorders) and human (students, teachers, external observers, among others), as well as an order to the interventions and the relationship between these elements (Bautista, 2023). McLaughlan (2023) and Walker et al. (2017) mention that this process involves two stages, with the first consisting of taking a photograph and viewing it and the second involving the participants' intervention about its content. The most frequent type of session is that which is initiated by a teacher who is committed to improving their teaching practice, who in turn is the author of the photographs regarding their own work (Dockett et al., 2017*)*. Photo-elicitation has also been used when the images are taken by somebody from outside the classroom, such as other teachers or students' relatives (Richard & Lahman, 2015; Ruto-Korir & Lubbe-De Beer, 2012). Within this procedural structure, the photo-elicitation sessions have been designed with the purpose of questioning a specific teacher to discover their preconceptions (Birkeland & Grindheim, 2022), reveal contradictions and inconsistencies in their work (Savva & Erakleous, 2018) or analyse and understand student life in community settings (Lee, 2024; Walls & Louis, 2023).

Regarding who should speak and in which order, in the review of the studies using photo-elicitation situations, we have seen that there is a tendency for the people who take the photographs to speak first, which will make the above-mentioned process more dynamic. This practice is justified by the auteur theory (Mannay, 2017; Rose, 2001), which states that the

most important feature of a photograph is the motivation of the person who took it. The floor is then given to the other participants, in line with the proposal by Raven (2015) of questioning all the individuals present at the viewing of the image, in order to enhance the revelatory function (Barthes, 1989; Woolhouse, 2019) of the verbal elements that interpret the content of the photograph. In this regard, Golombek and Johnson (2017) recommend public scrutiny of the ideas and arguments provided by the author of the image, on account of the wealth of mental processes prompted by external observers in these educational settings.

Within this preliminary framework, our research explores and is based on two issues. The first involves analysing the educational potential of photo-elicitation in the teaching Practicum when the photographs are taken by students on teaching degree courses. The second concerns expanding knowledge about the relationships that arise between student teachers and their school tutors, that begin with the incorporation of photo-elicitation into their practices, by focusing on its impact on mutual learning.

3. Research objectives

We aim to meet three objectives. The first two relate to the first issue outlined and the third relates to the second issue:

- To understand the relationship between the experiences of students on Early Childhood Education degree courses during the Practicum and the photographs they take (representing situations that are unexpected or unusual for them) when they are in the classroom with second-stage pupils, who are 5 years old, or in other areas of the educational centre.

- To identify the degree of educational influence or significance of the photo-elicitation procedure guided by the trainee teachers in their relationships with the Practicum tutors at the school.

- To discover the frequency and types of interactions that are produced between the Practicum students and the school tutors during the photo-elicitation sessions.

4. Methodology

The kind of knowledge that needs to be built in order to meet the foregoing objectives deals with the special experiences of teachers undergoing their initial training and the types of relationships between them and their tutors, which entail involvement and mutual help. These interactions do not have unambiguous points of references to interpret and, consequently, it is not possible to measure them. These circumstances led us to use an interpretive research approach and a methodology that focuses on case studies (Stake, 2020).

4.1. Participants

As the research was conducted in a natural context, the requirements of the educational centres where the traineeships took place and their specific realities became the selection criteria. These were as follows:

- Having a high percentage of socioculturally diverse pupils.

- Belonging to the network of centres where students on teaching degree courses can do their teaching practice during the Practicum.

- Having civil service teachers in definitive posts.

- Obtaining the commitment to participate in this study from the management team at the educational centres.

Among the state schools in this network in the city of Madrid, there were three that met the foregoing requirements, CEIP (state primary school) A, CEIP B and CEIP C. Out of these, the last-named was chosen.

The two female teachers of the five-year-old pupils at this centre who met these criteria were the teaching practice tutors for two female trainee teachers at University X, chosen at random, from the 2021-22 and 2022-23 academic years.

4.2. Instrument

The instrument to collect the information in this study is part of the photo-elicitation situations (Birkeland & Grindheim, 2022; Raven, 2015), with recent studies having used it to determine the trainee students' point of view and interpretations (McLaughlan, 2023; Pirker et al., 2023).

In these sessions, the trainee is allowed to ask the centre tutor questions, as these are based on the content of the photographs that the trainee took at a specific moment to capture one of the tutor's actions or decisions that she did not understand and, so as not to interrupt the class, she had to save her question or doubt for the situation planned for this purpose. It may also help the aforementioned tutor because, in some way, she is required to clarify the theories and beliefs underlying her decisions and actions, which emerge from the images taken that are being analysed (Ndione & Remy, 2018).

Thus, we understand that these photo-elicitation sessions, apart from providing visual, verbal and textual information about the process, are spaces where both the tutor and the future teacher, who is currently on her traineeship, can express, interpret and question what has been observed, by fulfilling and performing the functions of teaching and learning. In turn, this dual educational function may provide mutual help that will strengthen the relationship between them and, in turn, the agreements between the university and school institutions where teaching practices take place.

4.3. Procedure

At the beginning, we obtained consent from the parents of the schoolchildren and from the centre itself, as we were committed to using this for teaching and research purposes. The Practicum students freely accepted the procedure. The names of the students, tutors and children have been anonymised. A higher ethical level was achieved by blocking out minimal areas of the photographs without creating a significant loss of comprehension and meaning. By doing so, we ensured that there were no negative consequences.

Within this context of ethical commitment, the students in the fourth year of their teaching degree and the school tutors were introduced to photo-elicitation by the director of the research group, who was the teacher-tutor at the university. The task schedule was established by mutual consent. In the week before the photo-elicitation sessions, the students were requested to take photos of the most significant events or tasks. There were 31 of these photos in total. The photo-elicitation sessions, eight in all, were held every two or three weeks while the students were at the centre, each with a duration of between 45 and 60 minutes.

Beforehand, the students provided their tutors with the photographs and sent them to the project director. During these photo-elicitation situations, the images were viewed and the students and tutors were invited to reflect, in a dialogue with two members of the research team, about their motivation for taking the photographs and about their doubts, and both researchers asked them questions about the content of these photos. A sound recording was made of these sessions and this was subsequently transcribed. The analysis of their content involved coding and the establishment of categories, mainly based on the data (Gibbs, 2012; Rapley, 2014). However, those identified in previous studies were considered. Following this, we interpreted the data and drew conclusions.

We classified the students' motivations when taking photographs, based on the work by Bautista (2013), into two categories: instructional and educational situations, which were not mutually exclusive. The former were the situations oriented towards acquiring instrumental content such as reading or calculation, among others. The latter were aimed at developing the mental processes of perception, analysis and reasoning, as well as introducing values accepted within the educational community, such as respect or empathy, among others.

The information presented in the photographs was classified according to Barthes' (1989) typology, which consists of three levels: the connotative or physical reference point, the denotative or meaningful, and the affective.

We analysed the type of relationship between the student teachers and their tutors, in line with the aforementioned inductive route, in two contexts and stages, as there were no previous categories for analysis. Firstly, the participating groups (student teachers, teacher-tutors and teacher-researchers) agreed to read the transcripts of two photo-elicitation interviews, chosen at random, one for each student, and in a discussion session they conceptualised the relationships of mutual help and involvement, and complicity in these terms: group of actions, attitudes and verbal expressions apparent in the interactions between the trainee teachers and the tutors at the educational centres, in which they showed agreement and joint responsibility by their willingness and intention to foster the personal and social development of their students. Five types of interactions were identified in this conceptualised category:

a) Reference to the other person: type of interaction defined as one of the teachers or students referring to the other as the grounds or reference point that motivates or justifies a proposal for action, or a decision taken in the classroom.

b) Confirmation of something the other person has said or done: relationship that occurs when both people, student and teacher, intervene consecutively and the second one confirms what the first person has contributed.

c) Contribution: intervention that either the tutor or the trainee teacher performs following something the other person has expressed, to contribute an idea, datum or argument that leads to a better understanding of the content being analysed or the activity being described.

d) Confirmation and contribution: type of interaction where one of the two people, the trainee or the tutor, as well as confirming what the other person has said, adds some information or a meaning that improves the argument or idea being presented.

e) Simultaneity: temporal coincidence of the same response by both people.

In the second stage and context, the research group analysed the transcripts and, in the analysis of the interactions, moved to a more detailed level, thereby identifying six new types. These were also validated by the students and tutors:

f) Concatenated contributions: consecutive and continuous interactions between a student and her Practicum tutor about certain aspects of occurrences in the classroom or centre, in order to answer each of the questions raised by an external observer-researcher to describe or explain the school tasks recorded photographically.

g) Request for confirmation: interaction based on a request, by the student to her tutor or vice versa, for assent or validation of what the other person has previously expressed.

h) Shared satisfaction: relationship identified by the emotional utterance of a student and her tutor caused by specific student behaviour, either individual or as a group.

i) Questions: interventions in which a student or a tutor requests information from the other person during a photo-elicitation session.

j) Clarification: utterance by a student or tutor to clarify the other person's previous statement, in order to gain better understanding of a content or element of the activity being analysed.

k) Evaluation: positive comment by a student or tutor about the activity, in the classroom or the centre, or about the decision the other person took.

For each photograph, we collected the data obtained from the classifications and other complementary specifications, such as the tutors' evaluations after viewing the photographs, changes or the inclusion of actions indicated in the photo-elicitation sessions, and the requests made by the students to their tutors. Table 1 shows a small sample.

TABLE 1. Sample of data on motivation and level of information in the photographs, including evaluations, changes and interactions during the photo-elicitation sessions.

Photograph	Session no.	Motivation	Level of information	Evaluation by tutor M	Changes or inclusions of actions	Requests made by the Practicum student A to her tutor	Mutual involvement and complicity	
							Type of interaction	f
	1	(I) Difficulty in acquiring a habit: "When a pen doesn't work, you throw it in the bin"	(D) Physical situation. (CN) What do I do with a pen that doesn't work? (A) This is a way of attracting attention (asking for affection)	Affective: "You have to bear in mind what this child is going through"	(SP) Instead of repeating the rule (throw the pen in the bin), ask them "What do you think you should do?"	No	(R) E. g., "As tutor M says" or "Explain that, SP"; (C) E. g., "Yes, yes" (SP)	2; 5; 4
	3	(I) Constructions with recycled material in psychomotricity class. Successful activity	(D) Image of construction. (CN) Success of the task (A) Satisfaction with happiness as a result of the completed task	Conceptual: "It's true that we recycle a lot of things in class. But they also love this activity"	(SP) This game gives a new meaning to the rods, encouraging mental agility using constructions	Yes. SP mentions that her tutor consulted her "Would you like us to laminate the sheets?"	(R) by SP; (R) by TM; (C) 1 each; (CO) by SP; (CO) by TM	3; 1; 2; 3; 4

Note: C = confirmation; CN = connotative; CO = contribution; D = denotative; A = affective; I = instruction; TM = tutor M; R = reference to the other person; PS = Practicum student A; e.g. = for example.

5. Results

For the purpose of meeting the first research objective, we analysed and cross-checked the frequencies obtained in the categories relating to the motivation for taking the photographs and the levels of information they represented (see table 2).

TABLE 2. Number of photographs taken according to their level of information and educational purpose.

	Educational purpose	
Level of information	Instruction	Education
Denotative and connotative	13	10
Denotative, connotative and affective	6	8

The students took the photographs with an almost identical educational and instructional intention. These images each presented two or three levels of information, with about half of the instructional photos lacking the affective level, while this level had a similar presence in the two educational categories. The experiences that the students perceived as special were significant and the link connecting the cognitive dimension with the affective, with the expression of emotions and values such as understanding and empathy, was one of the components of educating both the schoolchildren and the trainee teachers.

A more detailed analysis of some of the reasons stated by the students in relation to the second objective reflects qualities pertaining to the educational value of photo-elicitation.

- Looking for a solution to a pupil's lack of instrumental behaviour.
- Refraining from using a worthwhile procedure that the trainee teacher does not know about.
- Recording an activity that works well.
- Studying and looking for a solution to pupils' difficulties.
- Feeling helpless after trying several actions.
- Request for help when faced with developmental delays or difficulties with comprehension and language.
- Noticing a major change in a pupil.
- Appearance of a regulatory-affective conflict in relation to a child's behaviour.
- Arousal of a student's tenderness as a result of the schoolchildren's behaviour.
- Noticing a relationship between a colour and a child's mood.
- Surprise at the positive influence of stories on schoolchildren's attention span.
- Checking a pupil's ability.

48.4% of the photographs generated requests from the trainee teachers to their tutors, such as questions, confirmations or suggestions for instructional activities (for example: "Why do children have trouble learning the concept *quantity* with the roll call?"). Others involved evaluating children's specific behaviour or difficulty and led to educational analysis, such as the one mentioned above regarding "the power of storytelling to hold five-year-olds' attention and encourage them to participate". The tutors answered instructional requests by

providing practical knowledge, while they responded to the educational ones using affective expressions, such as the following: "With such huge shortcomings, you say 'My goodness, of course these children are going to be like this'".

The very complexity and dialectics that emerged in the photo-elicitation interviews involved moving from the instructional content to the educational in 40% of the students' requests and in 35.5% of the evaluations and observations of their tutors (see columns 5 and 7 of Table 1). Such requests, evaluations and observations explained the grounds for the practical knowledge, that is to say, their theories and beliefs in action. For example: the visual support comes first and it is the basis for mental calculations; compensating positive reinforcement with autonomy, integrating affectivity and behaviour; modifying conduct by giving children tasks to avoid unsuitable behaviours; including procedures that encourage students to think and take decisions.

The interventions by the external teacher-researchers proved to be a source of reflection and investigation for the two students and their tutors, as these interventions represented questioning that was at times the result of a deviation from the planned tasks or of the decisions taken in view of unexpected situations in the classroom. Of the eight interventions involving the tutors' answers, six were educational, for instance, referring to the "dilemma of whether a child should repeat a year or not", or about "families' involvement in children's adaptation to school". Additionally, after the above-mentioned interventions by the external observers, the tutors and trainee teachers maintained a common position and were united in their answers to the questions put to them.

In relation to the type of interactions between the trainee teachers and their tutors, the results, recorded in our third research objective, are illustrated in column 8 of Table 1 and Table 3 shows the quantity of the results. These students contributed 12.9% more interactions than their tutors. This greater prominence is in keeping with the recording function of the school images in photo-elicitation processes. Both students interacted in all the sessions, with an increase of 16 to 22 interactions for one of them and 13 to 17 for the other.

TABLE 3. Interactions established by the students and their tutors in the Practicum.

Interactions	Students		Tutors	
	f	%	f	%
Reference	36	78.26	10	21.74
Confirmation	86	64.18	48	35.82
Contribution	54	43.20	71	56.80
Confirmation and contribution	3	33.33	6	66.67
Simultaneity	7	50.00	7	50.00
Concatenated contributions	13	50.00	13	50.00
Request for confirmation	2	100.00	0	0.00
Shared satisfaction	1	50.00	1	50.00
Questions	1	100.00	0	0.00
Clarification	0	0.00	2	100.00
Evaluation	2	100.00	0	0.00
Total	205	56.47	158	43.53

The most frequent type of interaction was *confirmation*, which rose to 36.9%. This assent by one of the people regarding what the other has done is one of the most important indicators of the good relationship of agreement and mutual support between the students and the tutors during the traineeship. The trainee teachers lead 64.2% of these interactions by agreeing with what their tutors have said. In their evolution throughout the photo-elicitation sessions, there is a notable decrease, both from the students (from 11 to 4 and from 13 to 7) and from the tutors (from 10 to 5 and from 8 to 2). The results demonstrate the significance of this interaction in building connections of mutual help and complicity. This decrease as the sessions progress is in parallel to the increase in other relationships and a change in the roles.

The second place in relationships is for *contribution*, with 34.4%. In this category, it is the tutors who have contributed more, with 56.8% of these interactions, due to their greater practical knowledge. Throughout the process, we can see a considerable increase for one of the tutors (from 8 to 15) and the students (from 3 to 4 and from 3 to 8), while there is a very slight drop for the other tutor (from 8 to 7). This tendency represents an improvement in the relationship of help and coexistence between them, as the trainee teachers progressively contribute information that complements the information provided by their tutors, a fact that involves a greater degree of joint responsibility in the classroom.

The third type of relationship in order of importance is *reference*, with 12.7%, coming mainly (78.3%) from the students. This difference relates to the deference to the teacher's authority, their proven professional experience and the institutional role that they initially hold. In the case of the tutors, the relationship remains stable throughout the sessions, while it shows a slight growth for the students (from 2 to 5 and from 3 to 4). This, as they indicated, is because the good relationship that was created with their tutors gave them access to their knowledge, which the students were able to use to analyse and understand the teaching and learning situations in the classroom.

The other types of relationships identified which have contributed to the complicity and mutual help between students and tutors, albeit less frequently, correspond to interactions that enable the nature of this connection to be clarified and further understood. Two of them are derivatives of contribution: *concatenated contribution* (7.2%) and *confirmation and contribution* (2.5%). The former indicates the function that the agent, who is external to the classroom, may have, as their interventions requesting information about the reasons for actions and decisions lead to a union of joint responsibility between the tutor-student pair. Equally, as the researcher gradually linked questions to the answers given, a dialogic relationship emerged in their interventions. We could say that this dialogic relationship has fostered learning and mutual professional development. The interventions by the external agents likewise explain the interaction defined as *simultaneity*, which represents 3.9%.

Other relationships such as *shared satisfaction*, *request for confirmation*, *questions*, *clarification* and *evaluation*, although they have only occurred sporadically (together they represent 2.5% of all the interactions), demonstrate aspects of closeness, openness and affection between these students and their tutors during the Practicum.

In view of what has been expressed by the trainee teachers and their tutors, we can state that these 11 identified interactions are an indicator of the constant exchange of teaching-learning actions performed by both sides, and, consequently, of their teacher and student roles, which shows and confirms their shared professional development.

6. Discussion and conclusions

These results provide evidence of the educational value of photo-elicitation in student teachers' Practicum and in their school tutors' professional development, as it fosters relationships of help and co-operation, and of complicity, leading to mutual learning. This

statement is supported by Schön (2016), who mentions the benefits of a Practicum that involves reciprocal reflection-in-action, and by Darling-Hammond, who endorses the quality of this formative period.

This procedure has driven in-depth training of the trainee teachers, in accordance with their needs and interests, by making them question, explore and reflect on the whys and wherefores of the actions and decisions taken in the classroom and the centre. Their requests for information and the dialogue with their tutors and the external agents have enabled them to understand the basis of their experiential learning through the explanation of their tutors' tacit and formal knowledge, also providing the latter with a means of observation and reflection, as well as a reconsideration of their practices. These findings are consistent with those obtained by, among other authors, Monforte-García and Edo-Agustín (2024), as they reveal that photo-elicitation has helped Practicum students to reflect on and understand educational inclusion, with the teacher-tutor as its backbone, in particular through emotional intelligence. They are also in line with the results obtained by Rezvani (2024), as they indicate that the affectionate relationship between teacher and student is essential and plays a crucial role in the student's learning.

Additionally, photo-elicitation has provided ways of observing and communicating, as well as the teaching and learning of knowledge, feelings and values among teachers, both in their initial and in-service training, who have expressed and confirmed their shared professional development. This result endorses the multidimensionality that, according to Korthagen (2017), is present in teacher learning. The visual procedure proves to be a powerful tool for essential reflection.

Our research also provides evidence that confirms other results from the few previous studies that have indicated the value of photo-elicitation in exploring and reflecting on professional educational practice, being aware of and reflecting on the beliefs, theories and values involved in educational work and its transformation, as well as fostering thought and in-depth learning of teachers in initial and in-service training (Lee, 2024; Ruto-Korir & Lubbe-De Beer, 2012; Savva & Erakleous, 2018; Sinclair & Thornton, 2018; Stockall & Davis, 2011). At the same time, it presents new information that reveals the type of relationships that have developed with the use of this approach in the Practicum, an aspect that has been advocated in specialised literature (Mauri et al., 2019; Mauri et al., 2021; Schön, 2016).

Without a doubt, the results obtained from the two cases examined have a limited scope and would need to be considered in subsequent works. In our opinion, applied photo-elicitation, with the constitutive structure of the sessions, proves to be suitable for initial and in-service teacher training during the practicum, as argued and detailed in previous publications (Bautista, 2023; Rayón et al., 2021). For this reason, we recommend it for this line of research, although the modality to adopt will depend on the epistemology and the objectives to be achieved. We believe that it is worth registering the procedure in a participatory epistemology (Heron & Reason, 1997), involving more students and teachers in one centre or, even better, in several centres.

Regarding the special experiences photographed by the trainee teachers which are referred to in the first objective, we conclude that both have recorded instructional and educational situations in similar proportions. That said, in relation to the levels of information of the images, in those with an instructional purpose the use of *denotative and connotative* is double the amount for *denotative, connotative and affective*, while in the educational images both levels are used in almost equal proportions.

With reference to the second research objective, the photo-elicitation procedure based on the prominent role of the two trainee teachers in the photographic record and as they were the first to speak in the sessions, has encouraged these future teachers to be dynamic and flexible about analysing the whys and wherefores of the teaching practice implemented in the classroom. The structure of this process of investigation with and about the photographs, in which the researchers' intervention as external observers has monitored the students and tutors, has led to shared reflection and discussion focused on life in the two classrooms and

the centre. This threefold relationship between the educational agents has increased their knowledge and professional development.

Finally, regarding the type of interactions between the trainee teachers and their school tutors referred to in the third objective, the results demonstrate the emergence of three main types of interaction based on complicity and mutual help, defined as *confirmation*, *contribution* and *reference* to the other person. These, along with the other kinds of mutual interaction detected, consist of the need to provide a joint response to the questions or an explanation of the actions and decisions taken in the classroom and captured in a photograph. We should add to the foregoing that all these interactions are the result of the continued exchange of teaching and learning experiences and the role of joint responsibility that was gradually developed, practised and perceived in the classrooms and the centre.

Authors' contributions

Antonio Bautista-García-Vera: Conceptualisation; Data curation; Visualisation; Writing (original draft); Writing (review and editing).

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Belinda Uxach-Molina: Data curation; Visualisation; Writing (review and editing).

Artificial Intelligence (AI) Policy

The authors do not claim to have made use of Artificial Intelligence (AI) in the preparation of their articles.

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Peer tutoring to improve writing competence in primary education

La tutoría entre iguales para la mejora de la competencia escrita en educación primaria

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Abstract:

Knowing how to write is essential for academic success and lifelong learning. This study presents and evaluates an innovative peer tutoring programme ("Reading and writing in pairs") for improving the writing skills of primary school students. A pre-test-post-test design was used to assess improvements in the writing skills of 75 students from years five and six of primary education, and a descriptive design was used to analyse teachers' and students' perceptions of peer tutoring. The results showed significant improvements in all dimensions of writing skills apart from grammar. According to the participants' evaluations, these improvements can be attributed to the highly structured organisation of the programme's writing activity and effective interaction between tutor and tutee. Students and teachers alike reported an increase in motivation towards writing. However, two key challenges were identified for effective peer-tutoring practice: initial training for the role of tutor, and support for text revision and preparation of improvements activities by the tutor. In conclusion, the study's results suggest that sharing the teaching role with students through peer tutoring can be an effective way to motivate and improve writing skills in primary education.

Keywords: writing, writing instruction, written competence, collaborative writing, peer tutoring, primary education.

Resumen:

Saber escribir es clave para el éxito académico y el aprendizaje a lo largo de la vida. Este estudio presenta y evalúa un programa innovador de tutoría entre iguales («Leemos y escribimos en pareja») para la mejora de la competencia escrita de los estudiantes de educación

primaria. Se adoptó un diseño pretest-postest para evaluar las mejoras en la competencia escrita de 75 estudiantes de quinto y sexto de educación primaria y un diseño descriptivo para analizar las percepciones de docentes y estudiantes sobre la tutoría entre iguales. Los resultados muestran mejoras significativas en todas las dimensiones de la competencia escrita excepto en gramática. Según las valoraciones de los participantes, estas mejoras pueden atribuirse a la organización altamente estructurada de la actividad de escritura que ofrece el programa y a la interacción efectiva entre tutor y tutorado. Tanto estudiantes como docentes destacan un aumento en la motivación hacia la escritura. Sin embargo, para la práctica efectiva de la tutoría entre iguales, se identifican dos retos clave: la formación inicial del rol de tutor y los apoyos para la revisión del texto y la preparación de actividades de mejora por parte del estudiante-tutor. En conclusión, los resultados del estudio sugieren que compartir la capacidad de enseñanza con los estudiantes mediante la tutoría entre iguales puede convertirse en una vía efectiva para la motivación y la mejora de la competencia escrita en la educación primaria.

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1. Introduction

Primary school students' writing competence and its teaching are of concern internationally (Bañales et al., 2020; De Abreu et al., 2023; Graham et al., 2014; Graham et al., 2023). In the case of Catalonia, the report on the basic competences assessment tests (Consell Superior d'Avaluació del Sistema Educatiu, 2023), which assessed students in year six of primary education, found that written expression in Catalan is the linguistic competence with the worst results: 18% of students have a low level and 24.6% a medium-low level. These data are very concerning, given that writing is a key skill for educational success and for lifelong learning (UNESCO, 2017).

Writing is an especially complex task, as it involves making decisions about what to write, who to write for, and how to do it (Castelló et al., 2007; Solé, 2004). It is a social and situated practice that requires the production of texts according to discourse genres and specific communicative situations (Hyland, 2015; Graham, 2018). From a cognitive and emotional perspective, writing requires the simultaneous activation of multiple types of knowledge: command of the topic; use of writing strategies (planning, textualisation, and revision); knowledge of the linguistic code; comprehension of the discourse genre and communicational situation; and the motivation and identity of the writer (Castelló et al., 2007; Graham, 2018). Accordingly, written competence not only involves command of grammar and spelling rules, but also the ability to structure ideas logically, use argumentative strategies, and adapt the register and style of the text to the communicative purpose and the audience. As a result of this intrinsic complexity, new writers can find the process of writing overwhelming (De Smedt & Van Keer, 2018; Graham et al., 2018; Graham et al., 2023).

In primary education, especially at its higher levels, it is essential to put in place interventions that help students manage the complexity of the process of writing. To do so, pedagogical practices that foster reflection on one's own writing process and incorporate strategies for feedback between students are key, thus enabling the development of writing as a tool for building thinking and effective communication (Álvarez-Angulo, 2010; Álvarez-Angulo & García-Parejo, 2011). So, peer learning emerges as a valuable tool for helping students to manage complex processes, fostering a collaborative setting that facilitates the acquisition of writing strategies (Corcelles-Seuba & Castelló, 2015).

1.1. Peer learning for teaching writing

Teaching writing, from a constructivist sociocultural perspective (Vanderburg, 2006), highlights the importance of social interaction and, specifically, peer learning. Peer learning is based on acquisition of knowledge and skills by means of mutual help between people of the same status, for example students (Topping, 2005).

Meta-analyses of research show that collaborative writing (with previous training) has a positive effect on the quality of writing, with an effect size of 0.74 in primary and secondary school students (Graham & Harris, 2018). Research recommends combining collaborative writing practices with explicit teaching of strategies to boost their effectiveness (De Smedt et al., 2020; De Smedt & Van Keer, 2014, 2019).

Despite the large positive effect of collaborative writing interventions, it should be noted that this term covers various models and methods (Yarrow & Topping, 2001). In most research, help between peers is produced for the purpose of revising a text (e. g., Corcelles-Seuba et al., 2017; Topping et al., 2012) or at the moment of planning (Grünke et al., 2017). In some interventions, the collaboration is done throughout the whole of the writing process, principally through cooperative learning (Fitzgerald & Palincsar, 2017; Corcelles-Seuba & Castelló, 2015), but few interventions use peer tutoring (Christianakis, 2010; Duran & Monereo, 2008; Yarrow & Topping, 2001). The intervention set out in the present study centres on this last method.

1.2. Peer tutoring for teaching writing

Peer tutoring is a peer-learning method in which people of the same status (in this case students) share a common objective and help one another learn through an asymmetrical relationship, with one person adopting the role of tutor and the other that of tutee (Topping et al., 2016). These roles can be fixed or reciprocal when they are swapped. In the case of writing, the system called paired writing (Nixon & Topping, 2001; Sutherland & Topping, 1999; Topping et al., 2000; Yarrow & Topping, 2001) is a method that combines the teaching of metacognitive strategies (for learning writing processes) with interaction between students in the form of peer tutoring. Based on a diagram, the interaction between tutor and tutee is structured in six phases (generating ideas, composition, reading, editing, producing an improved version, and assessment) to learn the cognitive and metacognitive strategies relating to the process of writing. In each stage of the process, there is a clear division of tasks for each role with the aim of promoting scaffolding between peers, the motivation to write, and reducing anxiety about writing (Nixon & Topping, 2001; Sutherland & Topping, 1999; Topping, 1998; Topping et al., 2000; Yarrow & Topping, 2001; Topping, 2005). Studies that analyse tutor-tutee interaction show it taking forms that range from collaboration (asking for help or joint construction of knowledge) to more tutorial forms (offering help, using prompts, or guiding teaching and learning processes) (Duran, 2010; Duran & Monereo, 2005). The study by Yarrow and Topping (2001) shows that students mainly follow the roles of the guide and internalise the processes of writing as the programme progresses. Research shows evidence for the effectiveness of this method, with positive effects on the quality of writing and on attitudes towards writing in both formats (fixed and reciprocal) compared with control groups that wrote texts individually (Nixon & Topping, 2001; Sutherland & Topping, 1999; Yarrow & Topping, 2001). The "Reading and writing in pairs" programme (Duran et al., 2018), which is the focus of this study, emerges based on Paired Writing, but incorporating reading processes into the activity of writing and expanding the role of the tutor in the revision of the writing. This programme offers a series of materials that teachers adapt to implement in their classes. Unlike in many writing interventions, which are usually done exclusively by researchers, the engagement of the teachers in the contextualisation of the programme favours its sustainability (Finlayson & McCrudden, 2020).

1.3. The "Reading and writing in pairs" programme

The "Reading and writing in pairs" programme proposes a structured guide with a sequence of tasks for each tutor-tutee pair, with the aim of facilitating the processes of reading comprehension and writing. Research indicates that reading and writing skills are strongly

related (Philippakos & Graham, 2023; Shanahan, 2019). Accordingly, the programme includes a short text in each activity to be read before moving on to writing, with the dual objective of contextualising the topic and analysing the genre of the text. Each reading and writing activity is structured around an initial session, an intermediate session, and a final session (Table 1 on the structure of the sessions).

TABLE 1. Structure of the "Reading and writing in pairs" sessions.

Initial session: reading and first draft (1 h)	
Tutor role	**Tutee role**
READING	
Ask about prior knowledge Read aloud acting as a model Read together Pause-prompt-praise (PPP) Reading comprehension questions Listen to the tutee	Answer questions about prior knowledge Listen to the tutor Read together Read aloud Answer reading comprehension questions Read aloud expressively
WRITING	
PLANNING	
Ask about the introduction, the conflict, the conclusion, and the title of the micro story Write down ideas following the structure of the genre Encourage	Suggest ideas
FIRST DRAFT	
Find errors and offer help following the quality markers template (QMT) for the text (genre, coherence, cohesion, vocabulary, grammar, and spelling) Encourage	Write the first draft
EXPRESSIVE READING	
Active listening Read aloud	Read aloud Active listening

REVISION	
Ask questions following QMT	Answer
Intermediate session: revision and design of two activities (30 min)	
Individually assess the draft using the QMT Prepare two improvement activities for the first two indicators from the list that are marked as not having been achieved.	-
Final session: final revision (1 h)	
EXPRESSIVE READING	
Active listening	Read aloud
REVISION BASED ON THE IMPROVEMENT ACTIVITIES	
Explain the limitations of the text through the QMT and teach your tutee through the two activities to improve the text	Do the improvement activities prepared by your tutor
EXPRESSIVE READING	
Read aloud Listen and revise using the QMT	Listen and revise using the QMT Read aloud

1.4. Initial session: reading and first draft

The process of reading in each pair is organised in three interactive steps. Firstly, the tutors question the tutees before the reading to activate their prior knowledge and formulate hypotheses. Secondly, a short meaningful text (250-500 words) is read aloud (first the tutor reads it as a model, then the tutor and tutee read it together, and finally the tutee reads it with the supervision of the tutor through the pause–prompt–praise technique) (Wheldall & Colmar, 1990). Lastly, the student-tutor directs the questions to comprehend the reading and the discourse genre of the text.

After reading, the process of writing the first draft begins. The tutor and tutee cooperatively write a text about what they have just read. The tutor helps the tutee plan the text based on questions to generate ideas, and the tutee writes the first draft with the help of the tutor and following the steps indicated (Table 1 on the structure of the sessions).

1.5. Intermediate session: revision by the tutor and designing activities

The "Reading and writing in pairs" programme requires the student-tutors to revise the first draft individually, based on the previously negotiated QMT (Appendix 1). They then prepare two activities for their tutees to improve the text (Corcelles-Seuba et al., 2023). The programme's aim is for the tutor to learn by acting as a teacher who proposes teaching activities for the

student or tutee. Possible improvement activities include thinking about different alternatives for a word, specific sentence, or title; using the pause-prompt-praise technique to correct errors (Wheldall & Colmar, 1990); or using writing resources (for example, a thesaurus).

1.6. Final session: final revision

In the final session, the student-tutors meet with their tutees again, and after rereading the draft and commenting on its positive aspects and areas for improvement, they help them do the two activities for improving the text.

Until now, the "Reading and writing in pairs" programme has proven to be effective in improving the reading comprehension and self-concept in both roles (Flores & Duran, 2013, 2016). However, evidence for its effectiveness in improving written competence has not been gathered. The efficacy of peer tutoring has been amply demonstrated (Bowman-Perrott et al., 2013; Cohen et al., 1982; Leung, 2015) as both the tutor and the tutee have learning opportunities; the tutee learns with the tailored help of the partner, and the tutor learns by teaching (Duran, 2016, 2017). Nonetheless, few interventions have used this method to teach writing (Christianakis, 2010; Duran & Monereo, 2008; Yarrow & Topping, 2001) and have also incorporated the students' own perspective on their role as tutor or tutee, as well as that of the teachers who participate in and manage the intervention. In view of this gap in research, the present study has two objectives:

1. To analyse improvements in students' written competence after participation in the "Reading and writing in pairs" programme; specifically, in knowledge of genre, coherence, cohesion, vocabulary, grammar, and spelling.

2. To discover students' and teachers' perceptions of the "Reading and writing in pairs" programme to identify positive aspects and areas for improvement.

2. Method

2.1. Contextualisation of the "Reading and writing in pairs" programme

The "Reading and writing in pairs" programme, promoted by the "Research group on peer learning" (GRAI in its initials in Catalan), comprises reading and writing in pairs from six activity sheets (six weeks of intervention), with the result of four micro stories written through peer tutoring. The micro story genre is used (Corcelles-Seuba et al., 2023) because it is an excellent discourse genre for teaching writing thanks to its short and concise character, which means students can produce writing and revise its quality in a small number of sessions.

Before the start of the programme, the teachers do a one-hour preliminary training session with the students to define the roles of tutor and tutee. After the initial training, the programme starts with explicit training on the genre of micro story in the first and second activity sheets, with examples of micro stories and comprehension questions aimed at familiarising students with this discourse genre. These activities serve to negotiate the guidelines for revising the text (QMT, Appendix 1). The reading and writing in pairs activity then starts with the remaining four activity sheets. The programme has a total duration of 15 hours of intervention.

2.2. Design

The research uses a pre-test-post-test design to assess improvements in students' written competence and a descriptive design to analyse teachers' and students' perceptions of the programme.

2.3. Participants

Four teachers from four schools in Catalonia and 75 students aged between 10 and 12 years, who were in years five and six of primary education, took part in the research. The teachers

participated in the standard training for the "Reading and writing in pairs" programme, certified by the Department of Education of the Government of Catalonia with 60 hours. This training is intended to guide schools in how to implement and tailor this programme in class. It consists of three in-person training sessions (one per term), online follow-up, and autonomous and supervised work activities, with interchange of experience between schools. All of the schools were supervised by the research team to ensure the correct implementation and adaptation of the programme through the training sessions and the virtual follow-up. In the standard training, all of the schools implement the reading component ("Reading in pairs") and they have the option to implement the writing part as well ("Reading and writing in pairs"). The four schools that chose to implement the writing in pairs component were included in this study. The teachers grouped the students into homogeneous pairs (with similar levels of reading comprehension and written expression) as the students swapped the roles of tutor and tutee after every two activity sheets. All of the participants and their legal guardians were informed of the research objectives and agreed to participate. The teachers assigned a code to each participant to avoid participants being directly identified with the responses given, fully guaranteeing the confidentiality of the data before they were sent to the researchers.

2.4. Data collection and analysis tools

Firstly, to assess improvements in their written competence, students wrote an individual micro story before and after the intervention. To assess the micro stories, the PECES (spontaneous written composition assessment test) instrument was adapted. This assesses writing in the narrative genre in primary education (Calaforra-Faubel, 2017). The adapted instrument comprises 20 binary items (yes/no) grouped in 5 dimensions: the micro story genre (7 items), coherence (3), vocabulary (2), grammar (3), and spelling (2). The sum of the items assessed positively gives a maximum total score of 20 points. The instrument was validated by consensus by two experts in writing and three primary school teachers. This instrument was used both for revising the drafts by the students and for the researchers to assess the texts (Appendix 1). The inter-rater test, carried out by the first and third author, gave 95% in this evaluation, with 30% of the sample. The remaining texts were distributed between the two researchers and were analysed independently. In addition, the words per spelling mistake index was calculated, by dividing the total number of words in the text by the number of mistakes, to give a quantitative marker of orthographic precision (Fontich, 2024). This method makes it possible to assess the frequency of errors in the writing objectively, giving a ratio that shows the number of words per spelling mistake, thus enabling comparison between different-length texts.

Once the scores were obtained from the initial and final texts, the Shapiro–Wilk test was applied to calculate the normality of the sample. The results suggested a deviation from normality (p <.001) in all dimensions of the guidelines, other than the *micro story genre* dimension and the final mark. Therefore, the non-parametric Wilcoxon signed-rank test was used to calculate the differences between the pre-test and the post-test in the dimensions of *coherence*, *cohesion*, *vocabulary*, *grammar*, *spelling*, and *spelling index*. For the *micro story genre* dimension and the final mark, Student's parametric *t* test was applied. The effect size was reported: rank biserial correlation in the case of the Wilcoxon signed-rank test, and Cohen's *d* in the case of Student's *t* test. All of the statistical analyses were done using JASP 0.16.4.0.

Secondly, to evaluate the process of writing in pairs and satisfaction with the programme, a questionnaire was administered to the students at the end of the intervention. A total of 45 responses were obtained from the 75 participants. The questionnaire comprised 9 closed questions answered on a 4-point Likert-type scale and 3 open questions. The closed-response questions asked students to evaluate how much they had enjoyed writing with a partner (question 1) and how much they thought the programme had helped them improve their written competence, considering improvements in planning (2), revision (3), and writing micro stories (4), as well as in expressing their ideas in writing (5), in the use of punctuation marks (6) and connectives (7), and in improving spelling (8) and vocabulary (9). Two of the three

open questions referred to the aspects of the programme that they liked the most (10) and the least (11). The last question (12) asked them to complete the phrase "Writing is..." to reflect their perception of writing.

Thirdly, a final questionnaire was administered to the four participating teachers to evaluate their view of the programme. This comprised 6 open-ended questions centred on the positive aspects of the programme and on improving its three stages: the first session of planning and preparation of the draft, the tutor's autonomous work to revise the text and prepare the improvement activities, and the last session, in which the improvement activities proposed by the student-tutors were done.

Descriptive statistics were calculated based on the answers to the closed questions from the questionnaires. In the case of the open questions, content analysis was used (Prasad, 2008). The categories formed from the participants' quotes were reviewed by a second rater until 100% agreement was reached.

3. Results

3.1. Improvements in written competence

The descriptive statistics suggest that there are improvements in the different dimensions between the pre-test and post-test (Table 2 on pre-test–post-test comparison). These improvements are significant in the dimensions of *coherence*, *cohesion*, *vocabulary*, *spelling* and *spelling index*, and in the overall score, with a large effect size (0.53 ≤ ES ≤ 0.73); and in the dimension of suitability of the micro story discourse genre with a small effect size (ES = 0.22). There are no significant differences in the grammar dimension.

TABLE 2. Pre-test-post-test comparison of written competence.

Dimension	Maximum score	Pre-test M (SD)	Post-test M (SD)	Test	Result	p	ES
Discourse genre	7	2.55 (1.66)	2.99 (1.67)	Student	-1.88	.032	0.22
Coherence	3	1.84 (1.04)	2.23 (0.97)	Wilcoxon	119	.002	0.58
Cohesion	3	1.49 (1.14)	1.99 (1.02)	Wilcoxon	213	< .001	0.57
Vocabulary	2	1.43 (0.72)	1.69 (0.62)	Wilcoxon	47	< .001	0.71
Grammar	3	2.27 (0.94)	2.40 (0.92)	Wilcoxon	186	.059	0.30
Spelling	2	1.03 (0.79)	1.43 (0.66)	Wilcoxon	75	< .001	0.73
Spelling index	n/a	6.90 (5.37)	11.08 (12.57)	Wilcoxon	541	< .001	0.62
Total	20	10.60 (4.27)	12.72 (4.05)	Student	-4.60	< .001	0.53

Note: the statistical analyses were done using JASP 0.16.4.0.

3.2. Students' perceptions

The students' appraisal of what they learned on the programme is fairly high for all items (Table 3 on appraisal of what was learned).

TABLE 3. Appraisal of what was learned on the programme.

Item	M	SD
I learned how to plan a text.	3.1	1
I learned how to revise a text.	3.1	0.8
I learned how to write micro stories.	3.1	0.9
I learned how to express what I want to say better in writing.	2.8	0.9
I learned to use punctuation marks better.	3.2	0.8
I learned to use connectives better.	2.9	0.9
I am more aware of the spelling mistakes I make.	3.1	0.9
I learned new vocabulary.	3.4	0.7

Of the students, 86.67% (f = 39) stated that writing with a partner was something they quite liked or liked a lot. The content analysis (Prasad, 2008) of the open-ended questions shows that the students positively rated writing in pairs (f = 20; 44.4%), peer tutoring (f = 17; 37.7%), or both aspects (f = 5; 11.1%).

In the case of writing in pairs, the students reported that they liked writing micro stories to invent stories with their partner (E5: "Writing micro stories is lots of fun"; S42: "I liked writing the micro stories, having to think up and invent stories with my tutee"). They also mention the act of planning (S1: "What I liked most is planning the text with my partner") or revising the text to learn to write (S11: "I learned to write better and not make as many mistakes"; S10: "I have improved how I write, how I do a text, thanks to the programme").

With regards to peer tutoring, students positively valued mutual help between tutor and tutee (S10: "What I liked most is helping my partner and she also helped me". S15: "The tutor and the tutee can learn things"). Some emphasised that they liked being tutors (S31: "Being a tutor was very strange it was fun and I liked it a lot"), preparing activities to help the tutee (S44: "Preparing our text, correcting it, knowing what my partner finds hard. That way I can help her"; S17: "Helping my partner"), and teaching a partner (S20: "I liked that my partner liked me teaching her and that she is happy when I teach her"; S8: "Teaching my tutee"). They also positively identified the relationship built with the partner (S41: "What I liked most was working with my partner"; S18: "Doing it with partners because that way we learn and we make friends").

Only 13.33% (f = 6) negatively valued having to write with a partner. These six students reported difficulties in the tutor-tutee relationship (S36: "I did not like my tutee"), they mentioned that the tutor did not resolve their doubts (S19: "My tutor did not resolve my doubts"), or they reported difficulties when playing the role of tutor and when preparing the improvement activities (S35: "What I liked least is preparing the activities"; S26: "Being a tutor"). Some of the

students who positively rated the programme also reported difficulties when playing the role of tutor (f = 18; 40%), especially in revising writing and helping the tutee (S42: "Revising the writing. Looking for mistakes; they are very hard to find. Also, not having any ideas to help the tutee") or the difficulty of getting the tutee to pay attention to learn and do the improvement activities (S45: "My tutee does not want to write and I find it hard to convince her that we should write"; S7: "Sometimes my tutee did not listen to me").

Finally, it should be noted that on completion of the intervention, 95.56% (f = 43) of the students attributed positive characteristics to writing, defining it as a fun and creative learning activity, as the following statements show: "Writing is something very nice, it is like you enter another place in your imagination. You can learn from your mistakes and reflect…" (S10); "Writing is fun and makes us develop our imagination" (S4); "Writing helps you express emotions, good ones and bad ones, and also adventures, of sadness, happiness, or mystery… to make people happy with your stories" (S37).

3.3. Teachers' perceptions

Analysis of the open-ended questions shows that, as positive aspects, the four teachers value writing in pairs (the joint work by the tutor and tutee to improve the text as students help one another in the planning and revision). From the tutor's autonomous activity, they positively value the tutors' motivation to revise the texts and design improvement activities for the tutees. They view this as a good way for the tutors to be able to consider the content covered in class, to become aware of errors in the text, and so to learn. The teachers also positively value the engagement that tutees showed when doing improvement activities with the tutor and the explanation of the errors in the text by a peer, something that helps the tutee identify aspects to improve and be motivated to revise them.

As areas for improvement, they underline the fact that some pairs were less autonomous and needed more help. They note that some students did not do the planning (necessitating intervention) or that some tutors dictated ideas without letting the tutee have a say. With regards to tutors' autonomous activity, they note that some tutors did not feel capable of playing the role of teacher because they were not used to it, lacked support, and lacked examples to devise improvement activities and guide the tutees. Accordingly, they note the importance of offering a space in the classroom to do this revision activity with guidance by the teacher, indeed one school did choose to do it in this way. The fact that the tutors worked autonomously generated much inconsistency among them with regards to the quality of the preparation. The teachers agree that, despite this type of teaching activity being very enriching, students are still not accustomed to peer teaching activities.

4. Discussion and conclusions

This study focussed on presenting and evaluating the "Reading and writing in pairs" programme, a pedagogical intervention based on peer tutoring, with reciprocal roles in the case of the sample analysed. The following conclusions can be drawn from this research.

Firstly, the programme seems to be effective for improving participating students' written competence, in line with the evidence of the effectiveness of writing interventions based on peer collaboration (Corcelles-Seuba & Castelló, 2015; Fitzgerald & Palincsar, 2017; Graham & Harris, 2018) and, more specifically, on peer tutoring (Christianakis, 2010; Duran & Monereo, 2008; Yarrow & Topping, 2001).

The students perceived improvements in aspects such as planning, written expression, and revision of the micro story genre. The teachers also positively valued writing in pairs, as working jointly helps with planning and revising the text. These perceptions of improvement are confirmed in the pre-test-post-test results, which show significant advances in all dimensions of the written competence apart from *grammar*. The complexity of this dimension could require more extensive attention or a prolonged intervention to observe significant changes

(Camps & Fontich, 2021). The effect size of these advances is high, except in the dimension of the *micro story genre*. The programme might have to offer more explicit training on this genre to improve results further.

Secondly, the programme increased students' motivation for writing. The results show that what they liked most was writing micro stories in pairs and the relationship created with their partners to learn from and teach one another reciprocally. The teachers positively value the interest and motivation of the tutor to revise the text and design improvement activities, as well as the engagement of tutees when doing improvement activities with the tutor and their motivation to revise the text. Furthermore, on completion of the intervention, the students regard writing as a fun and creative learning experience. This finding is especially important, as motivation is a key factor in learning and many students view writing as a difficult and demotivating task (De Smedt et al., 2018). According to Bruning and Horn (2000), motivation increases when students perceive that writing tasks are meaningful, and when they are done in an emotionally pleasant context where help is offered to regulate writing processes. Consequently, it seems that reciprocal peer tutoring provides this emotional and cognitive support, which contributes to generating a pleasant and meaningful experience of writing. The relationship created with the partner, the mutual help, and the audience provided during writing in pairs contribute to making the task meaningful and are key to learning and motivation (De Smedt et al., 2018; Hyland, 2015; Magnifico, 2010; Yarrow & Topping, 2001).

Therefore, improvement in students' written competence can be attributed to the highly structured organisation of the writing activity and of the interaction between peers through the reciprocal roles of tutor and tutee (Yarrow & Topping, 2001). This interaction requires students to negotiate and share decisions about the text, develop thinking, and jointly regulate the processes of writing, something that favours metalinguistic activity as a means of learning writing (Corcelles-Seuba & Castelló, 2015; Vanderburg, 2006; Wigglesworth & Storch, 2012). Furthermore, the tutor-tutee interaction helps distribute the cognitive load involved in the activity of writing. This interaction favours both participants' learning and motivation: of tutees, who receive constant and tailored help from their partner, and of tutors, who, thanks to the interaction with their partners and the revision of the text and prior preparation of improvement activities, can learn by teaching (Duran, 2016, 2017). When swapping roles, reciprocal tutoring means that both students can enjoy the benefits of both roles.

Nonetheless, the study does identify some difficulties associated with peer tutoring, for example, in the relationship between tutor and tutee or with the role of tutor. In reciprocal tutoring, where both students in a pair have a similar level of competence, it is vital for the tutor to prepare the material in advance to create the asymmetry needed to be able to teach the partner (Duran, 2016). These difficulties pose two key challenges for improving the programme. The first relates to the need for more thorough prior training on the tutor's role at the start of and during the programme to give the tutor resources and confidence to revise the text. The second relates to the need to ensure quality advance preparation of the material by the student tutors. Both of these aspects are fundamental to ensure that the tutor and the tutee learn (De Backer et al., 2015; Duran, 2016, 2017; Topping, 2005) and they require supervision by the teachers, who can help the tutors revise the writing and offer them guidance material with more specific examples to carry out the improvement activities. For example, online resources can be offered to analyse the dimensions of the revision guidelines (Appendix 1) and/or guides for using artificial intelligence with the aim of revising the text and helping the tutor to plan improvement activities for the tutee.

In essence, this study shows that students who participated in the "Reading and writing in pairs" programme improved their written competence. This research also records the perceptions of students and teachers about peer tutoring as a method for teaching writing. Given that studies that analyse these perceptions are still scarce, these findings offer a valuable

perspective for identifying opportunities and difficulties. In conclusion, despite the difficulties mentioned, the positive results indicate that sharing the role of teaching with students can create an effective pathway for motivation and improving written competence in primary education.

4.1. Limitations and future research

This study has several limitations that should be considered. Firstly, despite significant improvements in the quality of participants' writing, the lack of a comparison group prevents precise evaluation of the impact of peer tutoring compared with other forms of non-tutorial writing, such as individual writing. Nonetheless, numerous meta-analyses have shown that collaboration between peers is more effective than individual writing for learning and improving writing skills, thus supporting the validity of this approach (Graham & Harris, 2018; Graham et al., 2023; Graham & Perin, 2007). Secondly, the study does not analyse the interaction between tutor and tutee during the process of writing in pairs. Thirdly, the fact that the intervention features a reciprocal peer tutoring role limits the possibility of analysing the differences between the roles of tutor and tutee, and does not allow for measurement of the effectiveness of the programme if a fixed role is performed. Fourthly, the study sample is small and comes from two years of primary education. A subsequent study evaluated the effectiveness of the programme in compulsory secondary education, again with positive results (Corcelles-Seuba et al., in press). Fifthly, the study does not consider whether there are factors of the students or of the task that can generate differences in the effectiveness of the intervention.

Given these limitations, future studies should consider the use of comparison groups, analysis of tutor–tutee interaction, implementation in other tutoring formats and educational stages, and analysis of student and task variables. These approaches will enable a deeper comprehension of the mechanisms that explain the effectiveness of peer tutoring for improving the written competence. The need for further study of this type of intervention implemented by the teachers (instead of by the researchers themselves) in teaching writing in primary education should be noted (Finlayson & McCrudden, 2020). Evaluation of the programme's long-term sustainability in schools will be key. Although the sustainability of the "Reading in pairs" programme has been promoted and documented through peer learning networks (Miquel & Duran, 2017), future studies must also analyse the sustainability of the writing component as part of this programme.

Authors' contributions

Mariona Corcelles-Seuba: Conceptualisation; Data Curation; Formal Analysis; Investigation; Resources; Visualisation; Writing (original draft); Writing (review and editing).

Jesús Ribosa: Conceptualisation; Data Curation; Formal Analysis; Investigation; Visualisation; Resources; Writing (original draft); Writing (review and editing).

Patricia-Jara Calaforra-Faubel: Conceptualisation; Data Curation; Formal Analysis; Resources; Visualisation; Writing (original draft); Writing (review and editing).

Artificial Intelligence (AI) Policy

The authors do not claim to have made use of Artificial Intelligence (AI) in the preparation of their articles.

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Annex 1. Micro story quality markers template (QMT)

AUTHORS:

TITLE: DATE:

DIMENSIONS AND MARKERS	ACHIEVED		COMMENTS
MICRO STORY NARRATIVE GENRE			
1.1. Is the story's content original and does it impact the reader?	Yes	No	
1.2. Does it contain the three parts of a micro story: introduction, conflict, and ending?	Yes	No	
1.3. Are there elements of surprise, fiction, or humour?	Yes	No	
1.4. Is the ending unexpected or thought-provoking (does it invite the reader to think)?	Yes	No	
1.5. If they are needed, are exclamation and/or question marks used?	Yes	No	
1.6. Is the title original?	Yes	No	
1.7. Is it a short text? Is the text between 70 and 120 words long?	Yes	No	How many?
COHERENCE			
2.1. Is what happens in the story understandable?	Yes	No	
2.2. Are the ideas well ordered?	Yes	No	
2.3. Does the title relate to the story?	Yes	No	
COHESION			
3.1. Are punctuation marks used correctly? (More than 3 errors score 0)	Yes	No	
3.2. Does it avoid repeating words used in previous sentences?	Yes	No	
3.3. Are connectives (of time, place, cause, consequence, opposition) used correctly?	Yes	No	
VOCABULARY			
4.1. Is specific vocabulary with a variety of words used? (Not always the same ones)	Yes	No	
4.2. Does it avoid using foreign words or expressions from other languages? (More than 1 interference scores 0)	Yes	No	
GRAMMAR			
5.1. Do the sentences in the text include all of the elements they need to make sense? (More than 1 error scores 0)	Yes	No	

5.2. Is there agreement between the elements (subject and verb, noun and objects...)? (More than 1 error scores 0)	Yes	No	
5.3. Does it use verb tenses correctly (e. g., past, present, future, conditional)? (More than 1 error scores 0)	Yes	No	
SPELLING			
6.1. Are there fewer than 5 spelling mistakes (not counting accents)?	Yes	No	How many?
6.2. Are there fewer than 5 mistakes with accents (when they are left off or used incorrectly)?	Yes	No	How many?

Once you have assessed the markers and applied the spell check, revise in order the ones you marked as not achieved. Before you meet your tutee again, prepare two improvement activities for the first two indicators from the list that are marked as not having been achieved.

IMPROVEMENT ACTIVITY (1)	**IMPROVEMENT ACTIVITY (2)**
What needs improving? Marker __.__	What needs improving? Marker __.__

Do motivation and perceptions of equality and discrimination in Physical Education impact physical activity in secondary education students? A sex-based analysis

¿Inciden la motivación y la percepción de igualdad y discriminación en Educación Física sobre la actividad física en estudiantes de educación secundaria? Un análisis por sexo

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Abstract:

The benefits of physical activity in the school setting are widely proven; however, factors such as student motivation and equality perceptions are determinants of participation and learning opportunities in Physical Education. The aim of the present research was to analyse existing relationships between physical activity, motivation and perceptions of equality and discrimination in Physical Education as a function of sex, as well as to identify the extent to which motivation and equality affect physical activity engagement in secondary education students. The sample was made up of 310 students (13.9 ± 1.2 years) with the PAQ-C, the motivation in Physical Education questionnaire and the questionnaire of perception of equality and discrimination in Physical Education being administered for data collection. Data were analysed according to Mann-Whitney U, Spearman correlation and linear regression outcomes. Main outcomes demonstrate statistically significant sex differences in physical activity engagement and perceptions of equality and discrimination. In turn, physical activity engagement was observed to be positively associated with intrinsic and extrinsic motivation (identified, introjected and external regulation). Further, perceived equality was related with self-determined forms of motivation, whilst perceived discrimination was related with less self-determined forms of motivation. Finally, regression outcomes revealed that identified regulation positively and significantly predicts physical activity engagement, whilst perceived

equality was inversely related with this variable. In conclusion, males present higher levels of physical activity engagement, lower perceptions of equality and higher perceptions of discrimination. Furthermore, more self-determined levels of motivation contribute towards higher levels of physical activity engagement in the context of Physical Education.

Keywords: physical education, motivation, gender equality, discrimination, physical activity, secondary education.

Resumen:
   Los beneficios de la actividad física en el ámbito escolar están ampliamente comprobados; sin embargo, factores como la motivación y la percepción de igualdad de los estudiantes son determinantes para las oportunidades de participación y aprendizaje en Educación Física. La presente investigación tiene como objetivo analizar las diferencias por sexo y las relaciones entre la actividad física, la motivación y la percepción de igualdad y discriminación en Educación Física, así como predecir la incidencia de la motivación y la igualdad sobre la actividad física en estudiantes de educación secundaria. La muestra estuvo conformada por 310 estudiantes (13.9 ± 1.2 años) y los instrumentos utilizados para la recolección de datos fueron el PAQ-C, el cuestionario de motivación en la Educación Física y el cuestionario de percepción de igualdad y discriminación en Educación Física. Los datos se analizaron con la prueba U de Mann-Whitney, el coeficiente de correlación de Spearman y un análisis de regresión lineal. Los resultados principales demuestran diferencias estadísticamente significativas por sexo en la actividad física y la percepción de igualdad de trato y discriminación. A su vez, se observa que la actividad física se asocia de manera positiva con la motivación intrínseca y extrínseca (regulación identificada, introyectada y externa); la igualdad de trato, con niveles de motivación más autodeterminados, y la discriminación, con los niveles de motivación menos autodeterminada. Por último, el análisis de regresión demostró que la regulación identificada predice de forma positiva y significativa los niveles de actividad física, mientras que la igualdad de trato lo hace de modo inverso. En conclusión, los hombres presentan mayores niveles de actividad física, menor percepción de igualdad de trato y mayor discriminación. Además, niveles de motivación más autodeterminados contribuyen a mayores niveles de actividad física en el contexto de la Educación Física.

Palabras clave: educación física, motivación, igualdad de género, discriminación, actividad física, educación secundaria.

1. Introduction

   The main benefits of physical activity (PA) at the school level are that it helps to maintain a healthy energy balance and prevent overweight and obesity, reduce risk factors for cardiovascular diseases and stress, and improve psychological wellbeing, mental health, social interactions, cognitive function and academic performance (Galeano-Rojas et al., 2024; Infantes-Paniagua et al., 2023; Rodríguez-Torres et al., 2020). In this sense, the World Health Organisation (WHO, 2022) defines the reduction of physical inactivity in children and adolescents as a crucial task, outlining Physical Education (PE) as a vital setting for physical activity promotion, given its potential benefits in terms of cardio-metabolic, bone, physical, cognitive and mental health. This is important due to the fact that PA engagement tends to decrease as children grow up, above all in females, and that it has been demonstrated that those who are physically active at school age are more likely than those who are not to maintain an active lifestyle throughout the rest of their life. This makes it vital to identify solutions and preventive strategies to address this issue (Muñoz-Donoso et al., 2023; Solmon, 2015).

Schools and, particularly, PE classes, emerge as suitable settings for the promotion of PA given that they provide opportunities to guarantee that a minimum amount of time is spent in moderate and vigorous engagement, in addition to boosting motivation to integrate motor experiences into one's lifestyle outside of school (Lobo et al., 2023; Moral-García et al., 2023). In this sense, it is key to identify aspects that can improve student engagement and adherence to PA in the PE context (Montes-Reyna et al., 2024), especially considering the fact that children and young people spend a large part of their day at school (Camacho-Miñano et al., 2012). In addition, for many students, PE classes represent the only space in which they can engage in PA (Zueck et al., 2020). For this reason, Solmon (2015) and Urrutia-Medina et al. (2024) indicate that it is crucial to conduct more in-depth research into student motivation in PE classes, given that these motivations impact the way in which students act and learn, the decisions they make and, essentially, the way in which they choose to live their lives.

Motivation has been shown to be a key factor in teaching processes pertaining to PE (Castro-Sánchez et al., 2019) and, even, a predictor of extracurricular PA (Alcaraz-Ibáñez et al., 2022; Leo et al., 2016). One of the most commonly applied theories for studying motivation in the context of PE is self-determination theory. This describes forms of motivation towards performing an activity that range on a continuum from the most to least the self-determined (Castro-Sánchez et al., 2023). Three core types of motivation are illustrated: intrinsic motivation, extrinsic motivation (integrated, identified, introjected and external regulation) and demotivation (Deci & Ryan, 1985).

According to Deci and Ryan (1985, 2000), intrinsic motivation is when engagement in an activity is driven by satisfaction, pleasure and the benefits offered by the activity, with the activity being an outcome in itself, as opposed to participating in order to achieve some other objective. Extrinsic motivation, on the other hand, comprises four types of regulation. Firstly, integrated regulation refers to activities that are aligned with lifestyle habits. Secondly, identified regulation manifests when students perform an activity to gain certain benefits that they identify for themselves at a personal or social level (Deci & Ryan, 2000; Ryan & Deci, 2020). Introjected regulation is displayed when engagement is driven by personal pride and ego, in addition to avoid feelings of shame or guilt. Finally, external regulation pertains to performing an activity as a means of earning external rewards or avoiding punishment and criticism. The final core motivational type, demotivation, refers to a lack of interest in activity or activity not having meaning (Ryan & Deci, 2020).

In this sense, motivation is a determining aspect when it comes to identifying student drivers towards PE classes and PA engagement. Nonetheless, it is necessary to clarify that student behaviour in this subject is mediated by situations and experiences that only arise as a function of gender. Such experiences lead individuals to form more negative or positive attitudes towards PA engagement (Carcamo et al., 2020), given that, in PE classes, gender stereotypes are more acutely perceived than in other subjects due to the greater interaction between students. This can give rise to perceptions of equality or discrimination that condition the way in which one acts with other students (Valdivia-Moral et al., 2018). Some of the main factors that can lead to inequality in the PE setting, a setting in which physical differences are heightened, include activity type, the curriculum, student likes and interests, language, feedback, material and grouping strategies (Arcila-Arango et al., 2022).

In this way, the role of the teacher is crucial for avoiding or reducing the perception of stereotypes by striving to motivate and encourage both males and females, given that the way in which they act will influence perceptions around whether or not equal treatment exists (Pérez et al., 2018). In addition, learning experiences must be structured in such a way that success is framed in terms of mastery, effort and individual task progress, incorporating content that is aligned with the needs and interests of all students (Cañabate et al., 2023; León-Reyes et al., 2024; Montes-Reyna et al., 2024). This is due to the fact that activities are often targeted more towards males than females, or vice versa, which generates feelings of inferiority, and affects participation, motivation and, even, self-esteem (Martínez-Abajo et al., 2020). For this reason, it is necessary to recognise student perceptions of certain attitudes and behaviours as a function of context, the subject matter and ways of interacting with teachers and peers. Previous research has demonstrated that students who perceive more equal treatment are more active during PE classes (Arcila-Arango et al., 2022). Particularly in women, this rebounds on preventing dropout and promoting greater commitment and enthusiasm towards PA engagement (Lamoneda et al., 2023; Llanos-Muñoz et al., 2022).

Students with stronger perceptions of equal treatment tend to have more active lifestyles and exhibit greater PA adherence, cooperation, self-confidence, positive affective feelings, rule compliance, effort and skill mastery pertaining to PA (Arrebola et al., 2019; Castillo et al., 2013; Navarro-Patón et al., 2020). In addition, equality has been found to be mediated by student perceptions of motivational climate and teacher interaction styles. Specifically, discrimination is linked with an ego-oriented motivational climate and teacher control strategies (Moreno-Murcia et al., 2011). In this case, motivation tends to be external and so experiences of success are scarcer, and disappointment, anxiety and dropout are higher (Castillo et al., 2013; López, 2021). In this sense, it is necessary to conduct a more in-depth analysis of student motivation, in addition to their perceptions of equality and discrimination in PE classes. This will support the provision of greater opportunities for participation and promote positive learning experiences of PA engagement in both males and females, with the aim of improving adherence to a more physically active and healthy lifestyle. Thus, against this backdrop, the aims of the present study are to: (a) analyse sex differences in the relationships between PA engagement, motivation and perceptions of equality and discrimination in PE; and (b) determine the predictive value of intrinsic motivation, extrinsic motivation (identified, introjected and external regulation) and perceptions of equal treatment in PE in terms of PA engagement.

2. Method

2.1. Design and participants

The present study was quantitative in nature and employed an experimental, cross-sectional and descriptive research design. The sample was composed of 310 students enrolled on years one to four of compulsory secondary education (CSE). The average age of participants was 13.9 ± 1.2 years. In terms of distribution, 169 (54.5%) participants were male, 125 were female (40.3%) and 16 did not report their sex (5.2%) (see Table 1). Students came from one of three participating public CSE institutions located in the province of Granada and had a medium-low socioeconomic status. Non-probabilistic convenience sampling was used due to the fact that element selection does not depend on probability, but on the characteristics of the research (Hernández-Sampieri et al., 2014). Inclusion criteria used when forming the sample dictated that participants must be enrolled on CSE during the 2022-2023 academic year, belong to a mixed educational institution and count with written informed consent of the parents or legal guardians. On the other hand, participants were excluded if they failed to adequately complete all questions, or if their parents or legal guardians did not provide written informed consent.

TABLE 1. Descriptive statistics pertaining to the sample.

Sex	n	%	Acd. year	n	%	Age	n	%
Male	169	54.5	1st	82	26.5	12	51	16.5
Female	125	40.3	2nd	74	23.9	13	57	18.4
Missing	16	5.2	3rd	96	31	14	98	31.6
Total	310	100	4th	58	18.7	15	66	21.3
			Total	310	100	16	29	9.4
						17	9	2.9
						Total	310	100

2.2. Variables and instruments

2.2.1. Sociodemographic characteristics

An ad hoc questionnaire was used to gather sociodemographic participant data with regards to age, sex, nationality, type of educational institution and academic year.

2.2.2. Physical activity

For analysis of PA engagement, the Spanish version of the Physical Activity Questionnaire PAQ-C (Manchola-González et al., 2017) was employed. This instrument comprises ten items, nine of which estimate PA levels and one which evaluates whether some pathology or other event had impeded PA engagement during the week prior to questionnaire completion. Items are rated along a Likert scale that ranges from 1 to 5. In the case of item 1, total response scores are summed and then averaged by dividing by the number of activities considered by the questionnaire. With regards to items 2, 3, 4, 5, 6, 7 and 8, scores between 1 and 5 are given. Item 9 describes the weekly frequency with which students engage in PA. Finally, final scores of between 1 and 5 are obtained, with higher scores indicating greater PA engagement. In the original validation study for this instrument, internal consistency was found to be $\alpha = .83$, which is slightly lower than the value obtained in the present study ($\alpha = .91$), whilst composite reliability (CR) was .79 and extracted mean variance (EMV) was .36.

2.2.3. Motivation

In order to assess motivation, the motivation in Physical Education questionnaire (CMEF) (Sánchez-Oliva et al., 2012) was administered. This questionnaire comprises 20 items that are rated along a Likert scale ranging from 1 (totally disagree) to 5 (totally agree) and assess the following types of motivation: intrinsic motivation (items 1, 6, 11 and 16), extrinsic motivation (identified regulation: items 2, 7, 12 and 17; introjected regulation: items 3, 8, 13 and 18, and; external regulation: items 4, 9, 14 and 19) and demotivation (items 5, 10, 15 and 20). Original validation of this scale produced internal consistency values of between $\alpha = .77$ and .83, whilst in the present study values were $\alpha = .86$, CR = .90 and EMV = .36.

2.2.4. Perceptions of gender equality and discrimination

In order to evaluate perceptions of equality and discrimination, the perceptions of equality and discrimination in PE questionnaire (CPIDEF) (Cervello et al., 2004) was administered. This questionnaire is composed of 19 items that are rated along a Likert scale ranging from 0 (totally disagree) to 10 (totally agree) and assess the following dimensions: equality of treatment (items 1, 2, 3, 5, 6, 10, 13, 15, 16, 17, 18 and 19) and discrimination (4, 7, 8, 9, 11, 12 and 14). The instrument has previously presented internal consistency of $\alpha = .77$ (Valdivia-Moral et al., 2018) and obtained values of $\alpha = .78$, CR = .78 and EMV = .26 in the present study.

2.3. Procedure

Initially, during the month of December in 2022, the study was submitted to the Committee of Research Ethics at the University of Granada and, in the month of March, approval was received under the reference number 3324/CEIH/2023. Following this, for data collection, contact was made with educational institutions, via management teams, informing them about the nature of the study and requesting the participation of their students. Given that the students were minors, an informed consent form for parents or legal guardians to sign was included within the information pack. Likewise, it was stated that study participation was entirely voluntary, with participants being free to leave the study at any time. Anonymity was also guaranteed throughout the research process.

Following the receipt of authorisation from participating educational institutions and signed consent from parents or legal guardians, a date was scheduled to complete questionnaire administration. Questionnaires were administered to students in paper format. During administration, a member of the research group was on hand at all times in order to ensure that the process was completed properly and to resolve any potential doubts. Finally, gathered data was extracted and integrated into a database for later analysis. The present research complied with recommendations laid out in the Declaration of Helsinki (World Medical Association, 2008).

2.4. Data analysis

All statistical analyses were performed using the software IBM SPSS Statistics 28.0. First, preliminary analysis was performed of descriptive data (mean and standard deviation) and questionnaire reliability was estimated according to Cronbach alpha (α) and complimentary values such as composed reliability and extracted mean variance. Further, the Kolmogorov-Smirnov test was applied in order to check whether data followed a normal distribution. Outcomes of this led to non-parametric tests being opted for (p <.05). Next, the Mann-Whitney U test was employed to compare differences in variables as a function of sex. This was complimented with effect size and statistical power estimates according to Hedges g. Finally, Spearman correlation coefficients were calculated to examine associations between variables and multiple linear regression was performed to estimate the predictive power of variables when it comes to explaining PA engagement.

3. Results

Table 2 presents outcomes of the descriptive analysis and Mann-Whitney U analyses used to compare mean differences between males and females. Initially, statistically significant differences emerged for PA engagement (p = .005, g = 0.71, 1-β =.71) with males reporting higher mean scores. At the same time, significant differences were observed for perceptions of equality of treatment (p = .031, g = 2.33, 1-β = .51) with females reporting higher mean scores, whereas, in terms of perceptions of discrimination, males reported higher scores (p = .002, g = 2.63, 1-β = .87). In contrast, no significant differences were found for any of the dimensions pertaining to motivation.

TABLE 2. Mean comparisons according to sex.

Variables	Males			Females			p	g	1-β
	M	SD	Mean range	M	SD	Mean range			
Physical activity	2.77	0.687	99.58	2.49	0.74	77.60	.005	0.71	.71
Intrinsic motivation	3.31	1.286	132.04	3.33	1.15	130.77	.893	1.23	.05
Identified regulation	3.06	1.180	130.92	3.11	1.11	132.27	.886	1.15	.06
Introjected regulation	2.85	1.059	134.93	2.78	0.99	130.45	.636	1.03	.08
External regulation	2.78	1.027	133.50	2.60	0.97	119.38	.129	1.01	.30
Demotivation	2.48	1.273	133.34	2.27	1.17	121.97	.22	1.23	.26
Equality of treatment	7.42	2.435	104.62	8.03	2.16	123.48	.031	2.33	.51
Discrimination	5.06	2.651	129.61	3.98	2.58	102.05	.002	2.63	.87

Note: M = mean; DE = standard deviation; p = significance (<0.05); g = Hedges effect size; 1-β = statistical power.

Table 3 presents outcomes of the correlation analysis performed via the Spearman correlation coefficient. Firstly, it can be observed that PA engagement is positively correlated with intrinsic motivation (p = .001, rho = .439), identified regulation (p = .001, rho = .477), introjected regulation (p = .001, rho = .329) and extrinsic regulation (p = .044, rho = .155). Turning attention to intrinsic motivation, this was found to be positively correlated with identified regulation (p = .001, rho = .776), introjected regulation (p = .001, rho = .512), external regulation (p = .001, rho = .373) and equality of treatment (p = .001, rho = .393). whilst also being negatively correlated with demotivation (p = .001, rho = −.280).

With regards to identified regulation, outcomes revealed that this is positively associated with introjected regulation (p = .001, rho = .577), external regulation (p = .001, rho = .421) and equality of treatment (p = .001, rho = .324), whilst also being negatively associated with demotivation (p = .001, rho = −.224). Moving on, introjected regulation was revealed to be positively associated with external regulation (p = .001, rho = .655) and equality of treatment (p = .032, rho = .147). External regulation was positively associated with demotivation (p = .001, rho = .224) and discrimination (p = .026, rho = .151). Finally, findings indicated that demotivation is positively related with discrimination (p = .001, rho = .268) and negatively related with equality of treatment (p = .001, rho = −.270), with equality of treatment and discrimination being negatively related (p = .001, rho = −.261).

TABLE 3. Correlation analysis.

	2	3	4	5	6	7	8
1. Physical activity	.439**	.477**	.329**	.155*	−.131	−.022	−.057
2. Intrinsic motivation		.776**	.512**	.373**	−.280**	.393**	−.086
3. Identified regulation			.577**	.421**	−.224**	.324**	−.079
4. Introjected regulation				.655**	.045	.147*	.060
5. External regulation					.224**	0.133	.151*
6. Demotivation						−.270**	.268**
7. Equality of treatment							−.261**
8. Discrimination							

Note: * = p <0.05; ** = p <0.01.

Table 4 presents outcomes produced from the multiple linear regression performed, using the enter method, to examine the predictive power of intrinsic motivation, extrinsic motivation (identified, introjected and external regulation) and equality of treatment in terms of PA engagement. Outcomes revealed an R^2 value of .266. In other words, intrinsic motivation, extrinsic motivation and equality of treatment predicted 26.6% of variance in PA engagement. The model was confirmed to be statistically linear (F = 8.685; p = <.001). It can be observed that identified regulation is the variable that most significantly and positively predicts PA engagement AF (p = .008), whilst equality of treatment emerges as a significant predictor but with an inverse effect (p = −.032). In other words, higher identified regulation goes hand in hand with greater PA engagement, whilst stronger perceptions of equality of treatment predict lower PA engagement. No statistically significant outcomes were produced for any of the remaining variables.

TABLE 4. Linear regression outcomes.

Model	B	Standard error	β	p
Constant	2.153	.238		<.001
Intrinsic motivation	.101	.085	.175	.236
Identified regulation	.250	.093	.398	.008
Introjected regulation	.051	.086	.071	.552
External regulation	-.092	.073	-.126	.211
Equality of treatment	-.060	.028	-.189	.032

Note: B = unstandardized coefficient; β = standardised coefficient; *p* = significance.

4. Discussion

The present research aimed to determine differences according to sex and relationships between PA engagement, motivation and perceptions of equality and discrimination in PE. Another aim was to estimate the predictive power of intrinsic motivation; identified, introjected and external regulation, and equality of treatment perceptions in PE in terms of PA engagement. The importance of this study stems from the fact that it takes a sex perspective and shines a light on the relationships between variables and predictive power of these relationships regarding PA engagement. Indeed, whilst numerous different studies have previously examined the relationships between these variables (Castillo et al., 2013; Ordoñez & Heredia, 2021; Schenker, 2019; Zapatero et al., 2021), no prior evidence exists in which the overall impact of motivation and perceptions of equality and discrimination on PA engagement is examined in schoolchildren. In this sense, findings of the present study offer a new perspective of the role of PE for improving PA adherence and promoting physically active lifestyles.

Firstly, significant differences in PA engagement and perceptions of equality of treatment and discrimination emerged as a function of sex. Males reported higher mean scores than females for PA engagement, as supported by other previous research (Galeano-Rojas et al., 2024; Gasiūnienė & Miežienė, 2021; Vargas-Viñado & Herrera-Mor, 2020). This may be explained by the fact that males follow more physically active lifestyles, as much in the school setting as outside of school, possibly due to their tighter bond with sport, stronger predisposition towards high-intensity activities, and family and social influences that help males to have more time available at times of the day outside of the school timetable. In contrast, females exhibit more sedentary behaviours and higher PA dropout rates, which may be due to the diverse social stereotypes that emerge within and outside of the school setting (Bobo-Arce et al., 2024; Burton et al., 2020; Castillo et al., 2013; Vargas-Viñado & Herrera-Mor, 2020).

With regards to equality of treatment, females report higher mean scores, whilst males perceive greater discrimination. This finding is similar to those reported in previous research, such as in studies conducted by León-Reyes et al. (2024) and Valdivia-Moral et al. (2018), in which females also perceived greater equality of treatment in PE classes in comparison with males. However, studies conducted by Arcila-Arango et al. (2022) and Pérez et al. (2018) revealed that, despite females perceiving greater equality of treatment, they also reported higher levels of discrimination. In this sense, males perceived lower levels of equality of treatment and higher levels of discrimination. These differences tend to be associated, to a large extent, to the types of motivation encouraged by teachers (León-Reyes et al., 2024; Oliver et al., 2023), who may perceive that females are in need of greater motivation and, consequently, focus more on females and generate feelings of discrimination amongst males (Arcila-Arango et al. 2022; Jiménez et al., 2021). In addition, according to Blández et al. (2007) and Frühauf et al. (2022), even when teachers strive to motivate all students equally, females tend to be more impacted by these behaviours.

In terms of the relational analysis, PA engagement was positively related with intrinsic motivation and the different types of examined extrinsic motivation. This finding concurs

with those reported by Ordoñez and Heredia (2021) and Vaquero-Solís et al. (2020) which also revealed PA engagement to be positively associated with all dimensions of motivation, with the exception of external regulation and demotivation which were negatively related. In this sense, it has been argued that, as students engage in more PA, they exhibit higher levels of more self-determined forms of motivation (Chu & Zhang, 2020; Ley, 2020), which, in parallel, breeds adaptive behaviours regarding PA (Deci & Ryan, 2000).

Turning attention to motivation, positive associations were observed between the most and least self-determined forms of motivation, with intrinsic motivation and identified regulation being inversely related with demotivation. In line with these findings, studies conducted by Fierro et al. (2019) and Ordoñez and Heredia (2021) reported similar outcomes, whilst also revealing a negative relationship between intrinsic motivation and introjected regulation. Further, work conducted by Charchaoui et al. (2017), similarly, found demotivation to be negatively related with more self-determined types of motivation. In this way, it is crucial that students have opportunities to participate in environments that ensure positive experiences (Carcamo et al., 2020; Frühauf et al., 2022), given that success in PA is mediated by student task engagement, with the main reasons for participation being physical and mental wellbeing, peer relationships, skill development, and fun and recreation (Carcamo et al., 2020; Castillo et al., 2013).

Finally, relational analysis revealed existence of an inverse association between equality of treatment and discrimination, with equality of treatment being positively associated with more self-determined forms of motivation and discrimination being positively related with less self-determined forms of motivation. This finding is in line with that reported by Vera et al. (2009) who found equality of treatment and discrimination to also be negatively associated. In addition, in accordance with Lamoneda et al. (2023) and Martínez-Abajo et al. (2020), motivation is key for understanding diverse student perceptions linked to equality of treatment and discrimination in PE. Students with greater perceptions of equality of treatment also perceive more satisfactory motivational climates and interact more effectively with teachers and peers. In contrast, environments permeated with the use of control strategies and framed by ego-oriented motivational climates breed greater perceptions of discrimination and demotivation. This takes on special importance when it comes to PA dropout, particularly in women (Castillo et al., 2013; López, 2021; Moreno-Murcia et al., 2011; Solmon, 2015).

In light of that discussed above, given that gender stereotypes condition behaviour (Arcila-Arango et al., 2022; Arrebola et al., 2019; Jiménez et al., 2021; Valdivia-Moral et al., 2018), a clear need exists for teacher training in relation to gender, as well as a broad array of materials and methodologies which nudge teachers away from sexist behaviours that may affect student participation. This would help teachers overcome, amongst other issues, the failure to adapt culturally and socially accepted models of masculinity and femininity, which give rise to discriminatory and, even, aggressive behaviour (Martínez-Abajo et al., 2020; Mujica-Johnson et al., 2023). The surge of movements such as feminism shapes educational programs so that they pay more attention to girls in classes (Chihuailaf-Vera et al., 2024) and, consequently, boys may develop perceptions of discrimination. Further, according to Carcamo et al. (2020), boys tend to limit themselves to engaging in one or two sports, whereas girls tend to adapt more easily to different types of activities.

Finally, with a view towards identifying the extent to which intrinsic motivation, extrinsic motivation and perception of equality of treatment predict PA engagement, findings highlight identified regulation as the variable that most significantly and positively predicts PA engagement, whilst equality of treatment is the most pronounced negative predictor. This finding coincides with that reported by Vaquero-Solís et al. (2020), who also found identified regulation to be a strong predictor of PA engagement, alongside intrinsic motivation and external regulation, with the latter being negatively associated, as was the case (although not significantly) in the present study. Similarly, Merino-Barrero et al. (2019) and Franco et al. (2017) argue that more self-determined levels of motivation predict the intention to be physically active and adhere to healthy lifestyle habits. This, in turn, provides a solid foundation for maintaining PA engagement over the entire life course (Habib et al., 2022). In another sense, the inverse predictive power of perceived equality of treatment is reflected through the finding that males reported higher mean values of PA engagement, but, at the same time, also exhibited lower perceptions of equality of treatment.

4.1. Limitations and future perspectives

With regards to study limitations, it serves to highlight that the research design used impedes conclusions from being made regarding causality, whilst the relatively small sample size also limits generalisability of the findings. In addition, with a view towards the future, it would be useful to employ instruments, such as accelerometers, which can provide more accurate information about PA engagement. Another approach could be to integrate qualitative measurement techniques, such as semi-structured interviews, in order to gather additional information related with student motivation and perceptions of equality and discrimination in PE. Likewise, it is recommended that intervention programs be designed that use autonomy-supportive pedagogical models in order to promote greater engagement and self-determined motivational predispositions and examine their impact on PA engagement and perceptions of equality and discrimination. In conclusion, initiatives are required that provide students with opportunities to participate in PE classes with high levels of motivation and equality. This will promote PA adherence and encourage healthier lifestyle habits.

5. Conclusions

With regards to the study goals, it can be concluded that statistically significant differences exist between males and females in the study variables of PA engagement, equality of treatment and discrimination, with males exhibiting higher PA engagement, lower perceptions of equal treatment and greater perceptions of discrimination. At the same time, PA engagement is positively related with intrinsic motivation, as well as identified, introjected and external regulation. When it comes to perceptions of equality and discrimination in PE, evidence supports that greater perceptions of equality are associated with higher intrinsic motivation, and identified and introjected regulation. At the same time, greater perceptions of discrimination were related with greater demotivation and external regulation. In other words, higher levels of self-determined motivation was associated with greater perceptions of equality and higher PA engagement, whilst, in contrast, lower levels of self-determined motivation went hand in hand with greater perceptions of discrimination.

Finally, regression outcomes demonstrated that identified regulation was the most powerful determinant of greater PA engagement, whilst perceptions of equal treatment had the opposite effect. This supports findings that males engage in higher levels of PA but have lower perceptions of equality of treatment. Further, both males and females exhibited higher levels of self-determined motivation in PE.

Authors' contributions

Dilan Galeano-Rojas: Conceptualization; Data collection; Formal analysis; Writing (original draft); Writing (review and editing); Research; Methodology.

Claudio Farías-Valenzuela: Data collection; Formal analysis; Methodology; Resource management.

Claudio Hinojosa-Torres: Supervision; Visualisation; Writing (original draft); Writing (review and editing).

Pedro Valdivia-Moral: Project management; Methodology; Resources; Supervision; Visualisation; Writing (review and editing).

Artificial intelligence (AI) policy

Authors declare that they have not used artificial intelligence (AI) for article elaboration.

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Intercultural sensitivity of teachers towards the immigrant community: A mixed research with three public schools

Sensibilidad intercultural del profesorado hacia el colectivo inmigrante: una investigación mixta con tres escuelas públicas

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Abstract:

The inclusion of immigrant students in public schools set out important challenges for education professionals in contexts of intercultural emergency. In this sense, sensitivity to diversity becomes a key competence to promote respectful and harmonious coexistence in educational communities. Thus, this study analyses the degree of intercultural sensitivity of teachers working in culturally diverse classrooms in three public schools in the Valparaíso Region, Chile. For this purpose, a cross-sectional-mixed research design was adopted, specifically, through the application of a scale and narrative talks developed with a sample of 102 teachers. The findings show that the participating teachers have a moderate-high degree of intercultural sensitivity, with the most highly valued dimensions being commitment and enjoyment in interaction. They also express high expectations regarding the academic and professional integration of immigrant students. These inputs could strengthen the design of public policies and the implementation of intercultural educational practices.

Keywords: cultural diversity, immigration, intercultural education, immigrant education, teachers, social inclusion.

Resumen:

La inclusión de estudiantes inmigrantes en la escuela pública plantea importantes desafíos para los profesionales de la educación en contextos de emergencia intercultural. En este

sentido, la sensibilidad hacia la diversidad se convierte en una competencia clave para promover una convivencia respetuosa y armoniosa en las comunidades educativas. Así, en este estudio, se analiza el grado de sensibilidad intercultural del profesorado que trabaja en aulas con diversidad cultural en tres escuelas públicas de la Región de Valparaíso, Chile. Para ello, se adoptó un diseño de investigación transeccional-mixto, en concreto mediante la aplicación de una escala y conversatorios narrativos desarrollados con una muestra de 102 docentes. Los hallazgos dan cuenta de que el profesorado participante posee un grado de sensibilidad intercultural moderado-alto; las dimensiones mejor valoradas son el compromiso y el disfrute en la interacción. Asimismo, manifiestan expectativas elevadas en torno a la inserción académico-profesional del estudiantado inmigrante. Estos insumos pudieran fortalecer el diseño de políticas públicas y la implementación de prácticas educativas interculturales.

Palabras clave: diversidad cultural, inmigración, educación intercultural, educación de los inmigrantes, profesorado, inclusión social.

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1. Introduction

Recently, Chile has positioned as an important receiving nation of immigrants, mainly from Latin American countries (McAuliffe & Triandafyllidou, 2021). In that regard, the National Center for Migration Studies of Universidad de Talca (CENEM, 2023) indicates that there are 1 482 390 foreigners with habitual residence in Chile; they come mainly from countries like Venezuela (30%), Perú (16.6%), Haiti (12.2%), Colombia (11.7%) and Bolivia (8.9%). On its part, Valparaíso Region has the third highest number of immigrant children and adolescents (hereinafter NNA), which corresponds to 6.6% of the total among regions according to the data from the National Migration Service and from the National Institute Statistics (INE & SERMIG, 2023). In line with the above, the current emergence of this intense and accelerated south-south intraregional migratory flow coincides with a considerable increase of the enrollment of NNA in public schools in the area, bring it with it an important expansion in the diversification of Chilean student body in the classrooms (Flanagan-Bórquez et al., 2021; Jiménez-Vargas, 2022; Stefoni & Corvalán, 2019). In this sense, the arrival of immigrant students set out new challenges for education professionals (Baeza, 2023; Barriga et al., 2024).

Particularly, in Valparaíso Region, there are about 11 912 foreigners between the ages of 0 and 19 years. The 10 to 14 years age group concentres the largest number of immigrants NNA with a 34.7%, while the 15 to 19 years age group has 29.1% (INE & UNICEF, 2023). According to these sources, the Venezuelan group is the main group in the region with the 43.3% of the population of minors. In second place is the Colombian group with a 9.1%. In third and fourth place are the Argentinian and Haitian groups, with a 7.5% and 6.5%, respectively. Thus, we can see how different socio-cultural groups have been integrating to the region's educational system, resulting in a notable more diverse student population in social, economic, gender and ethnic terms. As a consequence, new student groups with diverse characteristics and need, among them, the immigrant nucleus.

According to several researches developed in Chile (Barriga et al., 2024; Venegas, 2020; Verdejo, 2019), the social inclusion of this groups of non-traditional students in the Chilean school system demands a deep understanding of the social representations and expectations of teachers toward this group of students. These studies postulate that these factors linked to the development of successful educational transitions. Thus, the perception of teachers can have a significant influence on learning, academic performance, and student well-being. Thus, teachers are responsible for implementing in the classroom innovations and pedagogical strategies aimed at promoting healthy coexistence and cultural respect through critical reflection (Contreras-Bravo, 2021; Pavez-Soto et al., 2023). For that purpose, teaching staff should integrate the philosophical and social beliefs that an intercultural-educational perspective entails.

In the view of the above, it is relevant to know what the intercultural representations of teachers regarding the emergency of immigrant students in the Chilean educational system are; what their academic-professional expectations regarding the core group of students coming from international contexts are. To answer these questions, this mixed research design analyzes the degree of the intercultural sensitivity of teachers to the migratory emergency in the Chilean school context, particularly, the degree of affection toward diversity expressed to the immigrant school group.

2. Theorical framework

2.1. Approaching concept of intercultural sensitivity

As an affective dimension of the communicative competence (Aksin, 2023), the intercultural sensibility is a construct that provides the possibility of assessing and distinguishing how people differ in terms of behavior, perceptions or feelings in the process of intercultural communication. In other words, interculturally sensitive people are aware of their behavior and the language they use in social interactions, being able to appreciate and respect the exchange of ideas (Rodríguez-Izquierdo, 2022), no matter how idiosyncratic they may be.

Thereon, several studies that examine intercultural communication competence (CCI) in South America (Ramírez-Pavelic & Contreras-Salinas, 2022) and North American contexts (Kim & Connelly, 2019), reveal that teachers with a higher degree of intercultural sensitivity have greater teaching competence in the management of diversity within the classroom and, along with is, more positive beliefs and attitudes towards the intercultural education. Other studies (Huang, 2023; Leal, 2020; Tovar-Correal et al., 2024) reveal that CCI has traditionally been approached from the perspective of bilingualism and second language acquisition. This implies the need to broaden the perspectives of study to investigate in a deeper way the cultural diversity in education.

In particular, Chen and Starosta (1997) conceptualize intercultural sensitivity as "the person's ability to develop a positive emotion toward understanding and appreciation of cultural differences that fosters an appropriate and effective behavior in the intercultural communication" (p. 5). The authors specify five dimensions involving the degree of intercultural sensitivity: engagement in interaction, respect for cultural differences, trust, enjoyment and attention in the interaction (Chen & Starosta, 2000). They are developed below.

- Commitment to interaction: reflects a person's willingness to actively participate in exchanges with individuals from different cultures and backgrounds. This commitment implies an open and proactive attitude, fundamental to build bridges of mutual understanding in intercultural environment.

- Respect for cultural differences: highlights the importance of recognizing and valuing the cultural diversities without negative or pejorative judgements. This translates into a genuine appreciation for different perspectives, traditions and values, fostering and inclusive environment where all people feel valued.

- Confidence with the interaction: refers to the security with which a person handles and manages situations of intercultural communication. The confidence reduces the anxiety and increases the effectiveness of social interactions, allowing people to feel comfortable facing misunderstandings or cultural differences. This is relevant to maintaining open and constructive communications at school.

- Enjoyment in the interaction: reflects the pleasure and satisfaction a person experiences when interacting with individuals from other cultures. This implies a positive attitude to the intercultural experiences, being these interactions an opportunity for understanding the other, learning and personal growth.

- Attention to the interaction: refers to a person's ability to be fully present and focused during communicative interaction. These factors demand a careful attention to the

verbal and non-verbal aspects of communication, ensuring an appropriate and culturally sensitive response. Attention in interaction is crucial to grasps the implicit meanings and ensure effective and respectful communication in different contexts. This perspective seeks to facilitate a more positive interaction and harmonious coexistence between people of different nationalities (Ramírez-Pavelic & Contreras-Salinas, 2022; Kim & Connelly, 2019), being key to deepen the representations and expectations through the work developed together with the faculty in this research.

2.2. Teachers' representations in intercultural terms

In the context of the growing cultural diversity that emerging in Chilean classrooms, the teachers' representation plays a significant role in the setting of inclusive school environment (Campos-Bustos, 2022). As a concept, it refers to the set of teachers' perceptions built around cultural diversity in the classrooms. This type of subjectivity includes how students' cultural differences are interpreted and valued, as well as the expectations elaborated regarding their academic success. Such representations influence directly in pedagogical practices and in the creation of inclusive educational environments.

This type of perception is influenced by a variety of factors, including one's own personal and professional experiences, as well as the socioeconomical and cultural contexts of schools. Indeed, Segovia and Rendón (2020) postulate that perception about cultural diversity can range from acceptance to resistance and rejection. In this sense, understanding teachers' representations allows access "not only to the way in which community systematizes and interprets reality, but also to observe whether these forms are positive or negative, and whether they promote a fair social coexistence or not" (Campos-Bustos, 2022, p. 6).

In this regard, studies conducted both in different regions of Chile (Contreras-Bravo, 2021; Flanagan-Bórquez et al., 2021; Gaete, 2019) and in international contexts (Etxeberria et al., 2018; Ünsal & Atanur-Baskan, 2021) report a set of obstacles and difficulties related to teachers in the insertion of immigrant students in schools. Between them, language barrier is mentioned (Toledo-Vega et al., 2024), as it makes teaching complex as well as the educational integration of immigrant who does not speak the local language. In addition, there are great challenges related to initial training and its lack of intercultural education, which later limits the way to effectively address the educational needs of NNA (Segovia & Rendón, 2020). These difficulties can generate stress and frustration among the teachers, negatively affecting the quality of teaching and the well-being of their students.

On the other hand, research that addressed the barriers of migrant students in the Chilean school context (Díaz-Pacheco et al., 2024; Jiménez-Vargas, 2022) show that teacher play a key protective role in school inclusion and in the optimal development of student's educational, highlighting the possibility of enriching the teaching-learning process through the integration of multiple cultural perspectives. Other factors of inclusion consist of the existence of intercultural educational policies, institutional reception mechanisms, educational support programs and the commitment of the school community as a whole. (Jiménez-Vargas, 2022). In this sense, collaboration between education professionals, students and their families enhance the creation of more inclusive educational environments (Etxeberria et al., 2018).

In terms of opportunities, the presence of immigrant students could strengthen the develop of citizenship competencies in schools, promoting values such as tolerance, respect and empathy. The migratory impact is valued as an opportunity to innovate in pedagogical practices, adopting strategies that benefit the teaching-learning process, healthy coexistence and inclusion in educational communities (Manghi et al., 2022).

2.3. The role of teaching expectations in educational transitions

The admission of immigrant students into Chilean public schools has increased considerably in the last years, challenging teachers to adapt and respond appropriately to their needs and demands. In this sense, teachers' expectations play a crucial role in educational success of immigrant students. Precisely, "in Chile there are few studies focused

on determining which variables affect the formation of such expectations, especially those that consider the students' previous performance and teacher's work experience as explanatory factors" (Barriga et al., 2024, p. 359). In relation to the above, Ayala (2022) explains in one of her studies that immigrant students whose teachers had high expectations showed better academic performance and greater motivation to learn. This relationship is crucial since high expectations can influence the overcoming of academic, cultural and linguistic barriers that many immigrant students face when integrating into a reception educational system. In this regard, research conducted in the Ecuadorian context by Cabrera-León et al. (2019) shows that students immersed in environment where teaching staff manifests high expectations tend to show greater self-efficacy and resilience, a factor that has a positive impact on school success.

Thus, high teacher expectations would ask as protective factors that would facilitate the educational success of immigrant students. Seen this way, when a teacher configures high expectations about his/her student's learning, they will tend to show better academic performance. On the contrary, when low expectations are built on the achievement of their students, they will tend to achieve lower performance and learning (Flanagan-Bórquez, 2021).

In view of the above, it is postulated that teachers' expectations are determinant for migrant NNA to develop successful educational transitions. This type of social representations would not only promote better academic performance, but would also function as facilitator of inclusion of the optimal development of the educational cycle (Venegas, 2020; Verdejo, 2019), strengthening students to face future academic and professional challenges (Rodríguez-Esteban & González-Mayorga, 2023) such as entry into higher education and the world of work. It is essential, then, that the educational system strengthens the development of high expectations and inclusive intercultural practices, recognizing the value of diversity in educational communities.

In context of cultural diversity such as the one investigated, great challenges are faced at work with immigrant students, between them the lack of teacher training in intercultural education (Kim & Connelly, 2019). In this sense, based on studies conducted in Valparaíso and Santiago by Flanagan-Bórquez et al. (2021) and Pavez-Soto et al. (2023), it is recognized that many educational communities in Chile do not have methodologies, didactic resources or technical-pedagogical guidelines that enhance the effective inclusion of the migrant population, beyond the personal will of managements or teaching teams. In response to this, the implementation of training and continuous professional development programs could contribute to the achievement of the intercultural education that enhances the formation of high educational expectations, as much as the acquisition of intercultural pedagogical strategies that promote the inclusion and management of diversity in the school.

3. Method

3.1. Participants

The sample of participants is made up of 102 teachers (w = 67, m = 35) who reports an average of 11.5 years of professional experience and work in 3 public high schools with immigrant students (2 technical-professional and 1 scientific- humanist) in Valparaíso Region, Chile. Together, 40 teachers indicated that they teach at the primary level and 62 at the secondary level. In addition, they reported working or having work (in decreasing order) with students from countries such as Venezuela, Colombia, Haiti, Peru, Argentina, Ecuador and Bolivia. For its realization, this investigation was approved by the respective bioethics commission and the corresponding informed consents were signed for participation.

3.2. Design and approach

This study uses a cross-sectional mixed research design (Bagur-Pons et al., 2021; Creswell & Creswell, 2023) through which intercultural representation and expectation of teachers regarding the inclusion of immigrant students in Chilean public schools are analyzed. The

combination of quantitative and qualitative approaches responds to the need to identify statistical patterns as well as to explore the experiences and subjectivities of teachers regarding the intercultural emergence in educational spaces. Through the application of intercultural sensitivity scale, the degree of affection of teachers towards diversity was characterized, in this particular case, about immigrant student group. In addition, narrative discussions were held which offered a deeper and more contextual vision of the educational phenomenon, in which barriers, opportunities and expectations related to cultural diversity in schools were explored (Rodríguez-Izquierdo, 2022). Through a convergent design (Bagur-Pons et al., 2021), the procedures are integrated from both approaches to offer an enriching interpretation of investigated problematic, connecting statistical with subjectivities and social perceptions.

3.3. Data collection

3.3.1. Intercultural sensitivity scale

The quantitative work consisted of the application of the intercultural sensitivity scale developed by Chen and Starosta (2000). The Spanish translation of the instrument was validated by 3 English-speaking researchers and 3 translators. The instrument was then adapted to the context of migration. Thus, in paper format, the instrument was applied to teachers in 3 Chilean public schools. This scale is composed of 24 statements distributed in 5 dimensions (Table 1). Of the total, 15 statements have a positive meaning and 9 have a negative meaning. For the statements formulated in a positive sense, the highest score was given to the favorable option and the lowest to the least favorable. For those formulated in a negative sense, the most favorable option was assigned the lowest score and the least favorable option the highest. Regarding reliability, it should be noted that the internal consistency of the 24 items of the scale is high, with a Cronbach's Alpha coefficient ($α$) of .719. In this regard, Romo-Sabugal et al. (2021) establish a high acceptance range between .61. and.88.

TABLE 1. Instrument dimensions and assessments.

Dimension	Positive assessment	Negative assessment
Commitment to interaction	1, 11, 13, 21, 23 and 24	22
Respect for cultural differences	8 and 16	2, 7, 18 and 20
Confidence in interaction	3, 5, 6 and 10	4
Enjoyment in interaction		9, 12 and 15
Attention in interaction	14, 17 and 19	

As the assessment given to the statements, an odd scale (Liker type) of 5 grades was included, which were scored from lowest to highest for the purpose of analyzing the results. Once the survey was completed, discussions were held with the teachers.

3.3.2. Discussions

Three discussions were held with de teachers of the 3 participating schools, with the objective of deepening the educational narratives and broadening the understanding of their perceptions on the inclusion of immigrant students (Bravo-Villa et al., 2022; Navarrete-Mora et

al., 2024). These spaces for dialogue were designed as reflective and participatory instances, where they could share their experiences in an atmosphere of trust, thus favoring a more detailed explorations of their representations and pedagogical practices in contexts of cultural diversity. For that purpose, a script of questions was prepared to guide the exchange of ideas, covering key aspects as the barriers perceived in the teaching of immigrant students, the opportunities that diversity brings to the school environment and academical-professional expectations they project to their students.

Throughout the sessions, the emerged stories highlighted both everyday challenges, such as language difficulties, differences in learning levels and the need to adapt pedagogical strategies, as well as the positive assessments of migration and its potential to enrich the educational practices. These sessions were audio recorded, which made it possible to record the richness of the stories in a rigorous manner. This process not only facilitates the data transcription, but also codified and identified discursive patterns in the way teachers conceptualized the inclusion of immigrant students in the Chilean educational system.

4. Data analysis

First, the result of the scale was coded according to their real value based on the responses obtained. Then, a reverse coding was applied to the negative item (Chen & Starosta, 2000). Data processing was carried out using the SPSS statistical program (version 30.0.0) and the analysis techniques were mainly descriptive statistics of central tendency (mean) dispersion (standard deviation) and calculation of the frequencies and percentages. For sample distribution, the Kolmogorov-Smirnov normality test was applied. It shows that *intercultural sensitivity* variable follows a normal distribution, since the *p*-value is greater than alpha ($p = .161 > .05$) based on the use of parametric tests. The student's *t*-test for independent samples indicated that there are no statistically significant gender differences in the sample, nor in the type of educational institution in which the participants work (technical-professional or scientific-humanist).

Second, for the analysis of the textual data of the discussions, the recordings were transcribed into a textual corpus which was coded using Atlas Ti software (version 8.4.5). thus, data were analyzed according to the central themes addressed: the barriers and opportunities posed by immigration in the school environment and the academic-professional expectations of teachers about immigrant students. After the thematic content analysis (Contreras-Bravo, 2021), the information was triangulated with the results obtained both in the scale applied and, in the discussions, allowing the quantitative data to be contrasted with the qualitative data. Thus, the speech registered were selected, which allowed to deepen the dimension of the applied scale and provided an enriched approach on the perceptions and expectations of teachers regarding migration in the Chilean school context.

5. Results

The following section presents the results of the analysis of the five dimensions that make up intercultural sensitivity. Each dimension is presented with tables illustrating the percentages of responses obtained for the specific items of each factor, which allows visualizing trends and variations in the degrees of sensitivity.

Besides of the quantitative results, qualitative results are included, expressed in the speech record produced in the discussions, which provide research inputs that enrich, deepen and contextualize the findings obtained, thus revealing nuances and subjective experiences complementary to the statistical data.

5.1. Commitment to interaction

Regarding the commitment to interaction (Table 2), 94.1% of the faculty expressed "enjoyment in interacting with students from different countries".

TABLE 2. Descriptives "commitment to interaction".

ITEM	M	SD	TD	D	I	A	TA
1. I enjoy interacting with students from different countries.	4.7	0.6	0.0	0.0	5.9	**19.6**	**74.5**
11. I tend to wait before forming an impression of students from other countries.	4.4	1.0	3.9	2.0	3.9	28.4	61.8
13. I am open-minded with students coming from other countries.	4.7	0.5	0.0	0.0	2.0	**30.4**	**67.6**
21. I tend to give positive feedback to my students from other countries during our interaction.	4.3	0.9	2.0	1,0	11.8	33.3	52.0
22. I avoid situations where I have to deal with students from other countries.	4.8	0.5	1.0	0.0	1.0	**11.8**	**86.3**
23. I often express my understanding to my students from other countries through verbal and non-verbal cues.	3.8	1.2	6.9	5.9	16.7	38.2	32.4
24. I have feelings of enjoyment and appreciation for the cultural differences of my students from other countries.	4.4	0.9	2.0	2.0	13.7	21.6	60.8

Note: TD: totally disagree; D: disagree; I: indecisive; A: agree; TA: totally agree.

Likewise, 98% of the sample declared themselves to be "open-minded" when interacting with foreign students and 98.1% objected to the "statement I avoid situations in which I have to deal with students from other countries". In line with these findings, we were told in the discussions about the opportunities that the arrival of immigrant students in Chilean schools implies for the future:

> I see the future as a great opportunity for Chilean children to learn from other cultures by making friends with children and adolescents of the same age with cultures rich in meaning. Likewise, we and the institutions should take responsibility for the guidelines and practices we develop to achieve an education that integrates immigrants. (Tech.History.20)[i]

5.2. Respect for cultural differences

According to the frequency distribution (Table 3), most of the participants state that they respect both the values and the different ways of behaving of the foreign students.

TABLE 3. Descriptives "respect for cultural differences".

ITEM	M	SD	TD	D	I	A	TA
2. I believe that students from other countries are closed minded.	4.2	1.0	0.0	8.8	14.7	26.5	50.0
7. I don't like being in the classroom with students from other countries.	4.9	0.5	1.0	0.0	0.0	**6.9**	**92.2**
8. I respect the values of students from other countries.	4.8	0.6	2.0	0.0	0.0	15.7	82.4
16. I respect the diverse ways of behaving of students from other countries.	4.4	0.9	2.0	1.0	10.8	31.4	54.9
18. I would not accept the different opinions of students from other countries.	4.7	0.9	3.9	0.0	2.0	**14.7**	**79.4**
20. I think my culture is better than other cultures.	4.5	1.0	4.9	2.0	3.9	**14.7**	**74.5**

Note: TD: totally disagree; D: disagree; I: indecisive; A: agree; TA: totally agree.

As can be seen, a large percentage of the sample (99.1%) disagrees with the statement "I do not like being in the classroom with students from other countries". Similar are the values of disagreement with statements such as "I would not accept the opinions of students from other countries" (94.1%) and "I think my culture is better than other cultures" (89.2%). In line with these results, one of the participating teachers commented:

> I see migration as a great opportunity for Chilean students and for us as well. With time we will be forced to learn to respect and understand the other, what their cultural characteristics are, to understand that many things that for us are very normal and every day, for others are completely different. (Philo.ScientHum.5)

5.3. Confidence in interaction

The results in this dimension reveal a high degree of confidence in interacting with immigrant students (Table 4). The vast majority of the teachers surveyed feel confident and capable of handling intercultural interactions in their educational context. For example, on the item "I can be very sociable when interacting with students coming from other countries", 94.2% report high sensitivity, with a mean of 4.6 and a standard deviation of.6. This reflects a positive tendency towards sociability in culturally diverse environments, demonstrating security and comfort of the faculty when interacting with students of different nationalities.

TABLE 4. Descriptives "confidence in interaction".

ITEM	M	SD	TD	D	I	A	TA
3. I feel confident when interacting with students from different countries.	4.7	0.5	0.0	0.0	3.9	18.6	77.5
4. I feel it is very difficult for me to speak in front of students from other countries.	4.6	0.8	2.9	0.0	2.9	25.5	68.6
5. I always know what to say when interacting with students from other countries.	4.0	**1.0**	2.9	6.9	**9.8**	**46.1**	34.3
6. I can be very sociable when interacting with students coming from other countries.	**4.6**	**0.6**	0.0	1.0	4.9	**27.5**	**66.7**
10. I feel confident when interacting with students from other countries.	4.7	0.6	0.0	1.0	3.9	22.5	72.5

Note: TD: totally disagree; D: disagree; I: indecisive; A: agree; TA: totally agree.

However, in the item "I always know what to say when interacting with students from other countries", it is observed that 46.1% agree with the statement, with a standard deviation of 1.0, and 9.8% of the sample is undecided. This suggests that, although in general they show confidence in intercultural interaction, there are those who also face difficulties when interacting with students with these characteristics (Campos-Bustos, 2022).

The above is related to various investigations (Ayala, 2022; Toledo-Vega et al., 2024) that report certain obstacles that teachers identify in their work with foreign students, among them, the difficulty in handling the local language of non-Spanish-speaking students and the low level of learning in mathematics. In line with the above, one of the participants reflects on these difficulties:

> The learning issue is a problem, and in some cases also the language. The low level of learning that some bring from their countries of origin has an impact and, in addition, arriving at an educational establishment in a discontinuous manner, uff. Because it is not that they arrive and have continued studying in a sustained way, some have been one or two years without attending school. So, of course, that's when discouragement sets in. (Biol.Tech.12)

5.4. Enjoyment in interaction

In this case, a predominantly positive attitude of teachers towards interaction with immigrant students is reflected (Table 5). The item "I get uncomfortable easily when interacting with students from other countries" indicates that 95.1% of the sample rejects this statement, suggesting that most do not experience discomfort in such interactions. In other cases, they express similar opinions, showing disagreement with certain statements. Precisely, in the item "I often get discouraged when I am with students from other countries", 96.1% express disagreement, with a mean of 4.8. This shows that the majority not only do not get discouraged, but find these interactions satisfying and motivating. The low dispersion of responses (standard deviation of .7) reinforces the consistency of this trend.

TABLE 5. Descriptives "enjoyment in interaction".

ITEM	M	SD	TD	D	I	A	TA
9. I get uncomfortable easily when interacting with students coming from other countries.	4.7	0.9	4.9	0.0	0.0	**11.8**	**83.3**
12. I often get discouraged when I am with students from other countries.	**4.8**	**0.7**	2.0	1.0	1.0	**9.8**	**86.3**
15. I often feel incompetent when interacting with students coming from other countries.	4.6	0.9	2.0	3.9	3.9	**14.7**	**75.5**

Note: TD: totally disagree; D: disagree; I: indecisive; A: agree; TA: totally agree.

Similarly, about the statement, "I often feel incompetent when interacting with students from other countries", 75.5% do not feel incompetent in these situations. Although a small percentage (14.7%) showed lower responses, the data show that enjoyment and feeling competent are dominant characteristics when interacting with students from different cultures (Tovar-Correal et al., 2024). In this regard, we are told in the group activity:

> I like Chilean students can interact with foreigners in the classroom, that they can get to know other cultures, other customs, other cuisine. I also like that they can share their different way of being and thinking with each other. (Art.Scient-Hum.12)

5.5. Attention in interaction

In this case, a moderate to high level of attention is observed when interacting with immigrant students (Table 6), highlighting that a large percentage makes an effort to better understand their immigrant students, which suggests an active and empathetic disposition to improve intercultural communication. On the item "I am very observant when interacting with students from other countries", 33.3% of the sample was in the highest agreement category, and 38.2% in agreement, with a mean of 3.9.

However, the standard deviation of 1.0 suggests that there is some dispersion in the responses, indicating that not all faculty share the same level of observation. This implies that, although a large majority express positive levels of attention, there is also some variability, with some being farther from the mean in terms of observation and others reporting lower levels of attention in the interaction.

TABLE 7. Descriptives "attention in interaction".

ITEM	M	SD	TD	D	I	A	TA
14. I am very observant when interacting with students from other countries.	**3.9**	**1.0**	2.0	7.8	18.6	**38.2**	**33.3**

	TD	D	I	A	TA		
17. I try to obtain as much information as possible when I have to interact with students from other countries.	4.1	0.9	1.0	5.9	14.7	42.2	36.3
19. I am sensitive to the culture and meanings of students from other countries.	**4.1**	1.1	4.9	3.9	10.8	36.3	**44.1**

Note: TD: totally disagree; D: disagree; I: indecisive; A: agree; TA: totally agree.

In relation to the statement "I am sensitive to the culture and meanings of students from other countries", 44.1% placed themselves in the highest category of agreement, with an average of 4.1. This reflects that almost half perceive themselves as highly sensitive to the cultural aspects of students from other nationalities, which is linked to various studies (Ayala, 2022; Flanagan-Bórquez et al., 2021) that report on teachers' commitment to fostering respect for cultural diversity. This is evident in the teachers' reflections:

> My expectations for immigrants are the same as for all my students. I don't differentiate between them. Some want to go to university and will probably achieve that. Others want to enter the workforce directly. As a technical school, we will help them enter the workforce. And yes, I have high expectations for everyone. (Math.Tech. 4)

6. Discussion and conclusions

The intercultural representations of teachers in this study reflect a predominantly inclusive orientation and a positive attitude toward cultural diversity in the classroom. The presence of immigrant students is valued as an opportunity to enrich the school environment, strengthen intercultural sensitivity, and foster mutual respect (Chen & Starosta, 1997, 2000). However, challenges also emerge related to confidence in interaction, especially in areas such as language barriers and differences in student learning, which could end up generating uncertainty among teachers (Toledo-Vega et al., 2024; Ünsal & Atanur-Baskan, 2021). Despite these difficulties, teachers express a proactive attitude and a high sense of self-efficacy in their ability to manage diversity in the classroom. In terms of academic and professional expectations, high aspirations are identified regarding the educational continuity of immigrant students, linked to an equitable conception of opportunities for access to higher education and the world of work. This finding is relevant, given that the literature suggests that high teacher expectations directly influence students' educational trajectories, impacting their academic performance and academic and professional projections (Cabrera-León et al., 2019; Barriga et al., 2024; Verdejo, 2019). However, questions remain about how these expectations translate into concrete practices of accompaniment in the vocational guidance processes and support in the educational transitions of this group of non-traditional students.

In line with the research objectives and questions, the findings identify both obstacles and protective factors in the inclusion of immigrant students in Chilean schools (Díaz-Pacheco et al., 2024). Studies conducted in Valparaíso, Santiago, and other regions of Chile (Baeza, 2023; Contreras-Bravo, 2021; Flanagan-Bórquez et al., 2021; Pavez-Soto et al., 2023) warn that, although teachers generally have a receptive attitude toward diversity, challenges remain related to pedagogical adaptation, intercultural training, and the need to develop teaching strategies that promote equity in learning processes. This is key to ensuring effective inclusion, in which cultural differences are considered an educational resource rather than a barrier. In view of this, it is important to strengthen ongoing training in Intercultural sensitivity in order to provide teachers with the tools they need to manage diversity in the classroom effectively.

At the methodological level, the mixed approach adopted has allowed for a comprehensive approach to teachers' intercultural representations and expectations, combining the

interpretive richness of qualitative analysis with the robustness of quantitative analysis (Bagur-Pons et al., 2021; Creswell & Creswell, 2023). Its potential for international transfer lies in the possibility of replicating this design in other contexts of intercultural emergency, adapting it to different territorial and educational realities. In this sense, the study not only provides knowledge about the Chilean reality, but also offers methodological tools that can be applied in other countries with similar migratory dynamics.

Among the limitations, it is recognized that the sample, which is intentional and restricted to a specific region, limits the generalization of the results. Likewise, the research does not address variables such as socioeconomic status, gender, curriculum, or teacher training in intercultural competencies, aspects that could influence their representations and expectations. For future research, it is recommended to include these variables, expand the study to other regions of the country, and incorporate a comparative study to contrast these findings with other geographical areas. It would also be relevant to evaluate the impact of continuing education programs on intercultural sensitivity and teaching practices in order to strengthen inclusion in schools (Manghi et al., 2022).

Finally, the results of this study could contribute as a relevant input for the design of more inclusive public policies and culturally sensitive educational practices. The growing emergence of immigrant students in Chilean classrooms requires rethinking reception mechanisms and teaching strategies, ensuring that diversity is promoted as a core value. In this sense, it is essential that educational centers adopt intercultural approaches that not only meet the needs of immigrant students but also foster the development of intercultural communication skills (Aksin, 2023; Tovar-Correal et al., 2024) among all students, teachers, and education workers. In this way, the promotion of intercultural, anti-racist, and more humanized education (Aldayuz-Henríquez, 2023) could actively contribute to the construction of more cohesive societies that are respectful of diversity.

Notes

[i] Teacher's discipline - type of educational institution - years of professional experience.

Authors' contributions

César Díaz-Pacheco: Conceptualization; Data curation; Fund acquisition; Methodology; Project management; Research; Resources; Software; Supervision; Visualization; Writing (original draft); Writing (review and editing).

Claudio Vergara-Reyes: Data curation; Methodology; Software; Validation; Visualization; Writing (original draft); Writing (review and editing).

María Leonor Conejeros-Solar: Fund acquisition; Resources; Supervision; Writing (review and editing).

Artificial intelligence (AI) policy

We declare that artificial intelligence (AI) was used for the purposes of editing and final correction of the manuscript.

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The impact of perceived student engagement on teacher burnout: The mediating role of anger and the moderating role of the teacher-student relationship

Impacto del compromiso escolar percibido en el burnout *docente: el rol mediador del enfado y el papel moderador de la relación docente-estudiante*

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Abstract:

Teacher burnout is a critical issue in the field of education and is a psychological occupational hazard with negative impacts on both teacher well-being and students' academic outcomes. Based on the job demands-resources model, it is proposed that teacher burnout can be predicted by perceptions of job demands and resources. This study aimed to analyse how teachers' perceptions of student engagement (resource) affect their burnout, considering the mediating role of anger (demand) and the moderating role of the teacher-student relationship (resource) in this association. An explanatory cross-sectional correlational design was used, involving 338 Chilean teachers (76% women) aged from 23 to 73 years ($M = 41$; $SD = 10.29$). Measures of student engagement (perceived by teachers), teacher emotions, teacher-student relationship, and burnout were used. To test the proposed relationships, a moderated mediation analysis was performed using Hayes model 14 PROCESS macro. The results showed a moderated mediation effect of anger and the teacher-student relationship on the association between teacher-perceived student engagement and burnout. Specifically, the quality of the teacher-student relationship moderates the negative mediating impact of anger on the relationship between perceived student engagement and teacher burnout. These findings highlight the importance of promoting student engagement and positive teacher-student relationships as job resources to mitigate teacher burnout, thereby improving the educational climate and teacher well-being.

Keywords: student engagement, teacher burnout, teacher anger, teacher emotions, teacher-student relationships, teacher well-being.

Resumen:

El *burnout* docente es un problema crítico en el ámbito educativo y un riesgo laboral psicológico, con impactos negativos tanto en el bienestar del profesorado como en los resultados académicos del estudiantado. Desde el modelo de demandas y recursos laborales, se propone que el *burnout* docente es predicho por las percepciones de demandas y recursos laborales. Por ello, el presente estudio tuvo como objetivo analizar cómo el compromiso escolar percibido por los docentes (recurso) impacta en su *burnout*. En esta asociación, se consideró el rol mediador del enfado (demanda) y el rol moderador de la relación docente-estudiante (recurso). Se empleó un diseño transversal correlacional de tipo explicativo; participaron 338 docentes de Chile (76 % mujeres) de entre 23 y 73 años (*M* = 41; *DE* = 10.29). Se utilizaron medidas de compromiso escolar (percibido por el docente), emociones docentes, relación docente-estudiante y *burnout*. Para testear las relaciones propuestas, se realizó un análisis de mediación moderada a través de la macro PROCESS (modelo 14) de Hayes. Los resultados obtenidos muestran una mediación moderada del enfado y de la relación docente-estudiante en la asociación entre compromiso escolar percibido por el docente y el *burnout*. Es decir, la calidad de la relación docente-estudiante modera el impacto mediador negativo que tiene el enfado en la relación entre el compromiso escolar percibido y el *burnout* docente. Los hallazgos subrayan la importancia de promover el compromiso estudiantil y las relaciones docente-estudiante positivas en tanto que recursos laborales para mitigar el *burnout* docente. Así, mejoraría el clima educativo y el bienestar de los y las docentes.

Palabras clave: compromiso escolar, burnout docente, enfado docente, enojo docente, emociones docentes, relación docente-estudiante, bienestar docente.

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1. Introduction

Despite growing interest in teacher well-being, research into the effect of teachers' perceptions of student engagement on their experience of burnout remains limited (for an exception, see Covell et al., 2009). Moreover, underlying mechanisms that might explain this relationship, such as the role of the emotions that teachers experience in the classroom, have not been explored. From the perspective of attribution theory (Weiner, 1985), teachers' interpretations of the causes of their students' behaviour, for example, their level of engagement, can significantly affect their own emotions, attitudes, and behavioural responses, such as pedagogical practices (Chang, 2009). So, when teachers interpret low engagement by a student as the result of lack of interest in the subject, it is probable that they will experience negative emotions such as frustration or anger. In contrast, if they attribute it to external circumstances, such as family difficulties, they might display a more understanding and supportive attitude. The present study seeks to analyse how the student engagement perceived by teachers, classed as a resource in the demands-resources explanatory model of Demerouti et al. (2001), affects their burnout, considering the mediating role of anger (demand) and the moderating role of the teacher-student relationship (resource) in this association.

1.1. Teacher burnout

Freudenberger (1974) coined the term burnout to describe gradual emotional depletion and loss of motivation, defining it as a state of mental and physical exhaustion relating to professional life. According to Freudenberger, this phenomenon occurs because of accumulated fatigue from the demands of work and because of reduced motivation, especially when the efforts invested in one's work do not produce the expected results. Maslach and

Jackson (1981) subsequently conceptualised burnout as a psychological syndrome that arises as a prolonged response to chronic interpersonal stressors in work, and which comprises three principal dimensions: emotional exhaustion; depersonalisation; and reduced personal accomplishment or inefficacy (Maslach et al., 2001; Maslach & Leiter, 2016; 2017). Emotional tiredness refers to the perception of emotional exhaustion derived from constant contact with other people. Depersonalisation entails negative attitudes or an excessive disconnection from the people who receive services or care from the worker. Finally, inefficacy relates to a reduction in the perception of competence and success in job performance.

In the educational setting, understanding of the burnout experienced by teachers has aroused notable interest, with evidence that it has harmful consequences for teacher well-being, especially for their self-perceived health, mental health, and job satisfaction (Klassen et al., 2010; Robinson, et al., 2019; Saloviita & Pakarinen, 2021; Schonfeld & Bianchi, 2016) and also for students' performance and adaptation (Herman et al., 2018; Saloviita & Pakarinen, 2021). Similarly, teacher burnout has been linked to elevated levels of absence, retirement, and turnover, as well as a fall in the quality of job performance (Ingersoll & May, 2012; Klusmann, et al., 2008).

The present study uses as its conceptual framework the job demands-resources (JD-R) model (Demerouti et al., 2001), which proposes that teacher stress and burnout are predicted by their perceptions of job demands and resources (Hakanen et al., 2006; Lorente et al., 2008). The central assumption of this model is that work-related stress appears when a person's resources have been exceeded, producing an imbalance between demands and resources that can have a negative impact on teachers' well-being indicators and cause high levels of burnout (Bakker & Demerouti, 2007; Bakker et al., 2014; Wischlitzki et al., 2020). Job demands include aspects such as work overload; conflicting roles; the school environment; conflicts with colleagues; and problems with student behaviour (Hakanen et al., 2006; Pyhalto et al., 2011; Skaalvik & Skaalvik, 2010; Wischlitzki, et al., 2020). The following job resources are distinguished: teacher efficacy; support from colleagues and management; participation in decision making; public recognition; and professional development (Rudow, 1999; Wischlitzki et al., 2020).

Given that teacher burnout has harmful effects at individual, student, organisational and social levels, the factors or variables associated with teacher burnout require more attention from research. From this perspective, it is of interest to study the impact of teachers' perceived student engagement (resource), the teacher-student relationship (resource), and anger or annoyance as the teachers' emotion (demand), on the levels of burnout that teachers experience.

1.2. Student engagement and its impact on teachers

Student engagement refers to students' level of involvement and the sense of belonging that in their educational institution that they experience, as well as their motivation to achieve academically (Fredricks et al., 2004). This construct has proven to be a significant predictor of academic performance (Dogan, 2015) and is inversely associated with problematic behaviours, such as early school leaving and disruptive behaviour (Delfino, 2019; Finn & Zimmer, 2012; Wang & Fredricks, 2014). The multidimensional conceptualisation of student engagement has four dimensions: cognitive, behavioural, emotional, and social (Wang et al., 2019). Each of these dimensions can be influenced by contextual factors, including support from key figures such as parents, peers and, in particular, support from teachers (Ansong et al., 2017; You & Sharkey, 2009).

Teachers play a crucial role in promoting student engagement. Different studies have shown that a teacher-student relationship characterised by warmth, emotional support, and closeness favours greater engagement among students (Pérez-Salas et al., 2021; Quin, 2017; Roorda et al., 2011). However, the impact of student engagement is not unilateral; instead it can significantly influence the teachers. A greater perception of student engagement by teachers positively impacts their enjoyment of teaching, their teacher self-efficacy (Martin, 2007),

their job satisfaction (Burić et al., 2024; Kengatharan, 2020), and their instructional behaviour of support for students (André et al., 2023), all of which can in turn positively affect students' academic results (André et al., 2023; Brandmiller et al., 2024). In contrast, when teachers perceive low student engagement, they can experience more negative emotions such as frustration or anger (Frenzel et al., 2018; Yu et al., 2021) or emotional exhaustion (Burić et al., 2024), and this can ultimately contribute to teacher burnout (Chang, 2013; Covell et al., 2009; Wang & Burić, 2023).

To date, few studies have examined how student engagement perceived by teachers impacts their burnout levels (e.g., Covell et al., 2009) and no studies have considered what mechanisms could mediate this relationship, such as the emotions teachers experience. In line with attribution theory (Weiner, 1985), teachers' perceptions of the causes of student behaviour (such as engagement) could affect their own emotions, attitudes, and behavioural reactions (Chang, 2009). For example, if a teacher attributes the low engagement of a student to a lack of interest in the content of the subject, the teacher could react with loss of motivation or with anger, while attribution to external factors, such as family problems, could evoke a more empathetic and supportive response.

1.3. Teachers' emotions: teacher anger

In the educational context, the work of teachers is intrinsically emotional owing to interpersonal demands, conflict management, and the need to be deeply involved in the learning and well-being of students (Chang, 2009; Wang et al., 2023). Accordingly, the relevance of emotions lies both in their impact on teachers' well-being and in their capacity to influence the emotional atmosphere of the classroom, in turn affecting the emotions and performance of the students (Frenzel et al., 2018)

Emotions are multidimensional states comprising motivational, physiological, and affective elements (Pekrun, 2006). Anger, in particular, is one of the most common negative emotions in the field of teaching (Frenzel et al., 2016; McPherson et al., 2003; Prosen & Smrtnik-Vitulić, 2019) and it has significant implications for well-being (Çankaya, 2011), professional self-efficacy (Burić et al., 2020), and the risk of burnout in teachers (Chang, 2009). The literature has observed that anger in the educational context frequently arises from the perception of a lack of respect and interpersonal conflicts (McPherson et al., 2003), poor discipline (Hagenauer et al., 2015), and low engagement by students (Chang, 2013; Hagenauer et al., 2015)

Nonetheless, the role of teachers' emotions has been little explored. This is because the majority of studies on emotions in the educational sphere have centred on students' emotions rather than teachers' emotions, especially in variables such as anxiety about exams (Pekrun et al., 2002). The little literature that does exist with regards to teachers' emotions finds that negative emotions, such as anxiety, are related to increased plans to leave the teaching profession (Wang & Hall, 2021) and that negative emotions mediate the relationship between burnout and well-being (Varela et al., 2023). A low level of anger is associated with greater self-efficacy and enthusiasm for one's work (Romo-Escudero et al., 2024); in contrast, a high level of anger is associated with more aggression (Çankaya, 2011).

Given the high prevalence of burnout among teachers (García-Carmona et al., 2019) and the growing rates of teachers leaving the profession (Gonzalez-Escobar et al., 2020), is essential to research how negative emotions like anger contribute to this phenomenon and explore what variables could moderate this relationship, such as, for example, the teacher-student relationship.

1.4. Teacher-student relationship

The teacher-student relationship is a bond built through affective and academic interactions in the classroom, and it has been identified as a key factor in predicting student engagement and student well-being (Roorda et al., 2011). The teacher-student relationship is bidirectional, that is to say, the two parties mutually influence one another's perceptions and emotions. According to Sabol and Pianta (2012), the teacher-student relationship has frequently

been understood as a variable with three dimensions: proximity, conflict, and dependency. Proximity refers to the positive emotional connection and mutual support that generate an environment of trust and security, favouring the student's learning and emotional regulation. Conflict implies tensions or difficulties in the interaction, which can degrade the classroom environment and affect both teacher well-being and student behaviour. Finally, dependency refers to an excessive student need for constant attention or validation from the teacher, which can limit the development of the student's autonomy and generate an emotional burden for the teacher (Sabol & Pianta, 2012).

From the teacher's perspective, the quality of the relationship with students also plays a crucial role in their professional well-being (Dreer, 2023; Spilt et al., 2011). Studies have shown that a positive relationship with students is associated with greater enjoyment, less emotional exhaustion (Taxer et al., 2019), and greater job satisfaction (Lavy & Bocker, 2018). In contrast, conflictive or distant relations can increase emotional exhaustion, as teachers face greater emotional challenges and difficulties in classroom management, which can increase the risk of burnout (Rodríguez-Mantilla & Fernández-Díaz, 2017).

2. Method

The aim of the present study is to analyse how student engagement, as perceived by teachers, affects their burnout, considering the mediating role of anger and the moderating role of the teacher-student relationship on this association. To do so, two hypotheses are proposed. Firstly, it is proposed that anger, as a job demand that requires regulatory effort, could function as a mediator in the relationship between perceived student engagement (resource) and teacher burnout, suggesting that the levels of engagement that teachers observe in their students could influence their emotion of anger, which, in turn, would contribute to teacher burnout. Secondly, a moderating role of the teacher-student relationship is hypothesised, classifying it as a job resource, which suggests that a quality relationship could mitigate the impact of anger on teacher burnout. Understanding the interactions between these variables is key for designing interventions that promote an emotionally healthy teaching environment, thereby reducing burnout and improving teacher well-being and job satisfaction, thus contributing to teacher retention and effectiveness and ultimately to students' academic performance.

2.1. Design

An explanatory cross-sectional correlational design was used (Johnson, 2001) to test the proposed relationships.

2.2. Participants

Convenience sampling was used to collect data from 338 teachers in Chile (76% women), aged between 23 and 73 years (M = 41; SD = 10.29). The inclusion criteria were being a teacher or a special educational needs teacher by profession (similar to the figure of the therapeutic pedagogy teacher in Spain) and delivering classes in mainstream schools with or without a school integration project (PIE). A school integration project (*proyecto de integración escolar*, PIE) is a Chilean policy initiative that promotes the inclusion of students with special educational needs in mainstream education through specialised support.

Teaching in special education schools was used as an exclusion criterion to ensure greater homogeneity in the conditions of the educational environment. This decision sought to control potential exogenous variables associated with the particular characteristics of special schools (such as internal organisation, specific resources, and student profile) that might have affected the data.

The sample size was estimated following the guidelines of Fritz and MacKinnon (2007), which indicate that at least 148 participants are required to detect medium-sized mediation

effects in both paths ($\alpha = 0.26$, $\beta = 0.26$) with a power of 80% and with a bootstrapping method. In this study, the sample of 338 teachers amply exceeds this threshold, guaranteeing sufficient power for medium-sized effects. This ensures the statistical validity of the results obtained.

2.3. Tools

Teacher burnout is defined as the syndrome of professional depletion characterised by physical, emotional, and mental depletion resulting from prolonged exposure to stressor factors in the educational context. The version of the Maslach Burnout Inventory-General Survey (MBI-GS) by Maslach and Jackson (1986) adapted and validated for Chile was used to evaluate this. This version consists of 15 items assessed on a 7-point Likert scale and grouped in 3 subscales: emotional exhaustion ("I feel emotionally worn out by my work"), depersonalisation ("I have been losing enthusiasm by my work"), and personal accomplishment ("I feel that I have achieved many valuable things at work"). The validation of this adaptation was done with two samples of workers from the education ($n = 206$) and health ($n = 214$) sectors, with both samples displaying adequate construct validity, internal consistency, and metric invariance indices (Rodríguez, 2024). In the present study, the reliability was $\alpha = .87$ for the exhaustion dimension, $\alpha = .77$ for inefficacy, and $\alpha = .75$ for depersonalisation.

In turn, student engagement is defined as a multidimensional construct that describes the level of active and emotional involvement of students in their learning process and in school activities. To measure the perception of student engagement, the adapted scale of Frenzel et al. (2018) was used, which comprises 4 items evaluated using a 4-point Likert scale (for example: "These students participate enthusiastically in the classes"). In their study, the scale displayed high internal consistency with a coefficient of reliability of $\alpha = .88$.

Thirdly, teachers' emotions were measured. Teachers' emotions are defined as affective states that emerge during the exercise of the teaching profession, influenced by interactions with students, peers, families, and the educational context. These emotions can be positive, such as enjoyment and enthusiasm, or negative, such as stress and frustration. To evaluate the emotions linked to teaching, the TES scale (Frenzel et al., 2016) was used. This measures 3 principal emotions: enjoyment, anxiety, and anger. The scale comprises 12 items in groups of 4 for each emotion (for example: anxiety, "preparing to teach these students often causes me to worry"; anger: "teaching these students frustrates me"; enjoyment: "I enjoy teaching these students"). In the validation study conducted by Frenzel et al. (2016), the scale displayed high reliability, with a coefficient of reliability of $\alpha = .73$ for enjoyment, and $\alpha > .80$ for anger and anxiety. The reliability in the present study was $\alpha = .89$ for enjoyment, $\alpha = .85$ for anger, and $\alpha = .78$ for anxiety.

Finally, the teacher-student relationship was measured. This is defined as the affective and professional link established between teachers and their students, characterised by emotional closeness, mutual respect, and trust. To evaluate this construct, the scale of Klassen et al. (2012) was used, which consists of 4 items such as "I feel connected to my students1", using a 4-point Likert scale. In the study by Klassen et al. (2012), this measure displayed high reliability ($\alpha = .80$). In the present study, the reliability was $\alpha = .87$.

2.4. Procedure

Authorisation was requested from the ethics committee of the institution sponsoring this research before collecting the data (CEBB 1399-2023). During September 2023, permission was requested from the local education authority in charge of the public establishments to be contacted in the Biobío region of Chile. After giving authorisation, this authority sent the survey to all of the teachers via SurveyMonkey in October 2023 and the survey remained open for 45 days. The universe of teachers who received the survey was 1792. Of these, 475 entered the platform but only 338 answered the survey, which is equivalent to 18.86% of the total contacted.

2.5. Data analysis

The variables were treated as average scores on the scale and therefore as quantitative variables. Missing values were replaced with the arithmetic mean. This meant that cases with missing data did not have to be eliminated and the sample size could be preserved in the analyses performed, giving the analyses greater statistical power.

Descriptive analyses were performed (mean, standard deviation, minimum and maximum values, skew and kurtosis) and fulfilment of the assumptions of the parametric techniques was verified, in particular the normality and homoscedasticity of the residuals. To test the proposed relationships, a moderate mediation analysis was subsequently performed using the SPSS program, version 25 and the Hayes PROCESS macro model 14, with 10 000 bootstraps (resampling) (Hayes, 2018).

3. Results

The final sample for the study comprised teachers from pre-school education to secondary education, as well as special educational needs teachers. The mean age of the teachers was 41.8 years (SD = 10.33), and on average they had 14.3 years of experience (SD = 9.48). Table 1 shows the details of the demographic characteristics of the teachers who took part in this research.

TABLE 1. Sociodemographic characteristics of participating teachers.

Level at which they work	n	Male (n)	Female (n)	Binary/did not say (n)	Age M(SD)	Years of experience M(SD)
Pre-school education	36	3	33	0	40.06(8.18)	12.19(6.75)
Primary education	145	25	116	1	42.03(9.77)	14.73(8.87)
Secondary education	120	39	80	1	41.93(11.24)	14.43(10.72)
Primary and secondary education	26	12	14	0	43.50(12.46)	15.81(10.81)
Special education	11	3	8	0	39.00(8.44)	10.73(6.25)
Total	338	82	254	2	41.80(10.33)	14.31(9.48)

No statistically significant differences were found by gender, age ($F_{(1.334)}$ = 1.023, p = 0.313), or years of teaching experience ($F_{(1.334)}$ = 1.365, p = 0.244). Nor were any statistically significant differences detected between men and women in any of the study variables (p >0.05), except for perception of student engagement, where male teachers displayed a slightly lower perception (M = 2.92; SD = 0.66, $CI_{95\%}$ [2.78, 3.07]) when compared with women (M = 3.09; SD = 0.53, $CI_{95\%}$ [3.03, 3.16]) ($F_{(1.334)}$ = 5.415, p = 0.021, f = 0.116). The effect size of this comparison, according to Cohen, was very small.

In relation to teachers' emotions, the average values for enthusiasm ($M = 3.48$, $SD = 0.53$) and teacher-student relationship ($M = 3.64$, $SD = 0.47$) are between the categories of *agree* and *strongly agree* on the Likert scale used, indicating positive perceptions in these dimensions. In contrast, negative emotions like anger ($M = 1.70$, $SD = 0.60$) and anxiety ($M = 1.87$, $SD = 0.60$) are closer to the category of *disagree*, reflecting a lower perceived intensity in these emotions in the teaching work context.

With respect to the student engagement perceived by the teachers, a mean of 3.05 ($SD = 0.58$) was obtained, suggesting that, in general, participants tend to regard this aspect as closer to the *agree* category than *strongly agree*.

As for total burnout and its dimensions, the results show that, on average, teachers report experiencing these symptoms "a few times a month". Total burnout displayed a mean of 2.37 ($SD = 0.92$), with the exhaustion dimension being the highest ($M = 3.51$, $SD = 1.38$), followed by depersonalisation ($M = 2.37$, $SD = 1.21$), and inefficacy ($M = 1.66$, $SD = 0.84$).

The skew and kurtosis values indicate a normal distribution in the majority of the variables, with exceptions such as teacher-student relationship (kurtosis = 3.14, skew = -1.51) and inefficacy (kurtosis = 2.13, skew = 1.55), where more biased distributions are observed (Table 2).

TABLE 2. Descriptive statistics for teacher emotions, assessments, and burnout.

Teacher variables	*n*	Min.-Max.	Mean (*SD*)	Kurtosis	Skew
Enthusiasm	338	1-4	3.48 (.53)	1.73	-0.985
Anger	338	1-4	1.70 (.60)	0.35	0.678
Failure	338	1-4	1.87 (.60)	0.16	0.483
Student engagement	329	1-4	3.05 (.58)	0.53	-0.379
T-S relationship	314	1-4	3.64 (.47)	3.14	-1.51
Total burnout	317	1-7	2.37 (.92)	0.88	1.03
Exhaustion	317	1-7	3.51 (1.38)	-0.49	0.44
Inefficacy	316	1-7	1.66 (.84)	2.13	1.55
Depersonalisation	316	1-7	2.37 (1.21)	1.03	1.19

The correlation analyses show that positive emotions, such as enjoyment and the teacher-student relationship, are negatively associated with total burnout and its dimensions, indicating that, with higher levels of these emotions, the levels of burnout and its components tend to reduce. In contrast, negative emotions such as anger and anxiety display significant positive correlations with total burnout and with the dimensions of exhaustion, depersonalisation, and inefficacy, suggesting that these emotions are associated with a higher level of teacher burnout. Similarly, the student engagement perceived by the teacher also displays a negative relationship with burnout and its dimensions, with its possible protective role against burnout being especially notable (Table 3).

TABLE 3. Correlation between teacher emotions and assessments regarding burnout and its dimensions.

	Enjoyment [CI$_{95\%}$]*	Anger [CI$_{95\%}$]	Anxiety [CI$_{95\%}$]	Commitment [CI$_{95\%}$]	T-S relationship [CI$_{95\%}$]
Burnout	-.376**	.475 **	.425**	-.333**	-.227**
	[-.277, -.467]	[.556,.385]	[.511,.330]	[-.231, -.427]	[-.119, -.329]
Exhaustion	-.309**	.415**	.383**	-.267**	-.136*
	[-.206, -.405]	[.502,.320]	[.473,.285]	[-.161, -.366]	[-.026, -.243]
Inefficacy	-.348**	.288**	.276**	-.275**	-.306**
	[-.247, -.441]	[.387,.184]	[.375,.171]	[-.169, -.374]	[-.202, -.403]
Depersonalisation	-.235**	.419**	.359**	-.252**	-.172**
	[-.128, -.337]	[.506,.324]	[.452,.259]	[-.146, -.353]	[-.062, -.277]

Note: *[upper limit, lower limit]

Before the moderate mediation analysis, the assumptions of the regression were evaluated. The standardised residuals displayed a slight deviation from normality (skew = 0.993; kurtosis = 2.063) and a slight heteroscedasticity for higher predicted values. Although some extreme values were identified, no patterns that compromised the validity of the model were observed, and the use of bootstrapping mitigated possible effects of these deviations.

The results showed a significant total relationship between perceived student engagement and teacher burnout (b = - 0.319; p < 0.001). The moderate mediation analysis gave the following results:

TABLE 4. Results of the moderate mediation model.

	b	Standard error	t	p	Bootstrap	
					CILL	CIUL
Constant	0.2801	1.0181	0.2751	0.7834	-1.7227	2.2829
Student engagement	-0.1914	0.0924	-2.0722	0.0390	-0.3731	-0.0097
Anger	1.5261	0.4877	3.1292	0.0019	0.5667	2.4854
TSR	0.4611	0.2755	1.6740	0.0951	-0.0807	1.0030
Anger × TSR	-.2647	0.1334	-1.9834	0.0481	-0.5271	-0.0022

Note: CILL = confidence interval lower limit; CIUL = confidence interval upper limit; TSR = teacher-student relationship.

The results indicated a significant relationship between perceived student engagement and teacher anger (b = -0.495, p <0.001), which suggests that the greater the engagement that teachers perceive in their students, the less their anger. This effect was robust, as confirmed by the bootstrap 95% confidence interval (CILL = -0.5941, CIUL = -0.3953).

When anger was included as a mediator, the direct effect of engagement on burnout was reduced, but it remained significant (b = -0.191, p = 0.039), indicating partial mediation. The bootstrap 95% confidence interval (CI) confirmed the effect, as it did not include the zero value (CILL = -0.3731, CIUL -0.0097). The indirect effect of engagement on burnout mediated by anger was significant at all levels of the moderator (teacher-student relationship), although its magnitude reduced as the teacher-student relationship improved. Specifically, the effects of teacher anger on burnout were higher when the teachers reported not so positive relationships with their students (b = -0.26, p = 0.0481, LLCI = -0.5271, ULCI -0.0022) (Figure 1).

FIGURE 1. Moderate mediation model: mediating role of anger and moderator role of the teacher-student relationship.
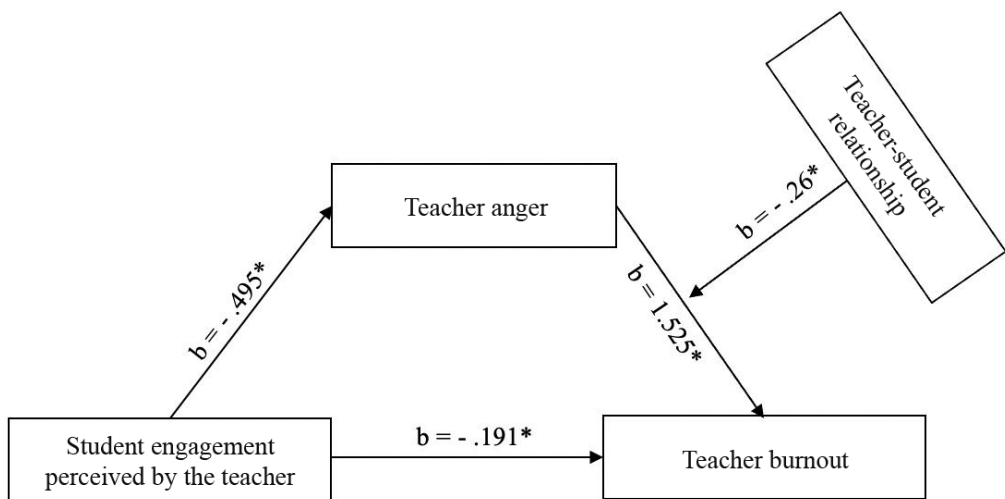
Note: b = non-standardised coefficients.

The analysis of the moderated mediation showed that the impact of perceived student engagement on burnout through the mediator of anger was significant in all of the evaluated levels of the moderator (teacher-student relationship), although its magnitude reduced as the teacher-student relationship improved. Table 5 shows the indirect conditional effects of engagement on burnout.

TABLE 5. Indirect conditional effect of engagement on burnout through anger.

Teacher-student relationship	Indirect effect	Standard error*	CILL*	CIUL*
3.00	-0.3622	0.0778	-0.5390	-0.2311
3.75	-0.2640	0.0544	-0.3782	-0.1645
4.00	-0.2313	0.0629	-0.3642	-0.1150

Note: *bootstrapping.

The results in Table 5 indicate that when the teacher-student relationship is perceived to be at its lowest level (3.00), the indirect effect of engagement on burnout is b = -0.3622. Meanwhile, with higher levels of teacher-student relationship (3.75 and 4.00), the effect of engagement on burnout falls to b = -0.2640 and b = -0.2313, respectively. In all cases, the confidence intervals did not include zero, which confirms that the indirect effect was statistically significant. This suggests that the anger mediator has a stronger impact on the relationship between engagement and burnout when the teacher perceives a poor teacher-student relationship and that this impact reduces as the perception of the teacher-student relationship improves.

4. Discussion

The aim of the present study was to analyse how student engagement perceived by teachers impacts their burnout, considering the mediating role of anger and the moderating role of the teacher-student relationship on this association. The findings confirm the proposed hypotheses, showing that higher levels of engagement perceived by the teacher are associated with lower levels of teacher anger, which in turn significantly reduces its effect on total burnout. It was also found that the teacher-student relationship moderates this relationship. That is to say, when teachers perceive not so positive relationships with their students, anger has a more profound effect on burnout. In contrast, when the relationships are more positive, this impact reduces significantly.

These results are in line with previous research that has shown how teachers' perception of low student engagement is associated with negative emotions such as frustration and anger (Frenzel et al., 2018; Yu et al., 2021), as well as with an increase in teacher emotional exhaustion (Burić et al., 2024), which in turn contributes to their symptoms of burnout (Chang, 2013; Covell et al., 2009; Wang & Burić, 2023). Equally, the results support the notion that the teacher-student relationship acts as a key protective factor, favouring greater professional well-being for teachers (Dreer, 2023; Spilt et al., 2011), increasing their enjoyment, reducing their emotional exhaustion (Taxer et al., 2019), and increasing their job satisfaction (Lavy & Bocker, 2018). The moderating role encountered in this study also agrees with other pieces of research that have identified conflictive relationships with students as a risk factor that intensifies emotional exhaustion and negatively affect teachers' well-being (Rodríguez-Mantilla & Fernández-Díaz, 2017).

From the perspective of the job demands and resources model, these findings can be understood given that the availability of resources influences the teacher's capacity to confront the demands of the job (Demerouti, et al., 2001; OCDE, 2019; Viac & Fraser, 2020). In this sense, strengthening job resources such as perceived student engagement and the teacher-student relationship can lessen the effect of teacher anger understood as a demand.

In practical terms, the importance of improving student engagement stands out as an indirect strategy for reducing teacher stress. When the students are motivated, participate actively and meet their school responsibilities, this favours positive emotions in the teacher. Some key strategies for improving student engagement include creating opportunities for participation in school activities and extra-academic events, something that strengthens the sense of belonging and the connection to the school (Eccles et al., 2003; Pérez-Salas et al., 2021; Pérez-Salas et al., 2019; Galarce et al., 2019). It is also crucial to constantly monitor indicators such as attendance, academic performance, and respectful relationships, with the aim of identifying signs of school disconnection in time and being able to intervene effectively (Lehr et al., 2004; Sinclair et al., 2003; Wilder Research Center, 2003). Finally, teaching people constructive conflict resolution strategies can be a powerful tool to help students face challenges effectively, something that has a positive effect on the classroom climate (Sinclair et al., 2003).

Beyond the interventions aimed at students, one even more relevant strategy is to work with teachers on the assessment and attribution of student behaviour given that, independently of students' real behaviour, the way teachers interpret it and the causes to which they attribute

it (internal or external) can be decisive for their well-being (Chang, 2009; Weiner, 1985). In this sense, training teachers in cognitive reinterpretation strategies and more adaptive attributions of the students' behaviour could be an effective intervention to reduce the negative impact of anger.

Similarly, the results underline how strengthening the teacher-student relationship is a key resource for mitigating the negative effects of anger on teaching practice. A relationship characterised by mutual respect, trust, and emotional support can protect against stress and promote a more positive learning environment (Roorda et al., 2011; Split et al., 2011). This suggests a need to train teachers in effective strategies for communication, conflict management, and empathy. Moreover, school initiatives that foster spaces for positive interaction between teachers and students, such as personalised tutorials or extracurricular activities, might be especially useful to strengthen these healthy bonds.

Finally, it is fundamental to develop strategies for managing anger in teachers. When not adequately regulated, anger can contribute significantly to emotional depletion and to burnout, affecting not only the teacher but also the quality of teaching and the classroom environment. Training programmes in emotional regulation skills, based on focuses such as cognitive behavioural therapy or mindfulness, could provide practical tools for adaptive management of emotions (Kemeny et al., 2012; Von der Embse et al., 2019).

One of the principal limitations of this study is missing data, as approximately 30% of the participants who accessed the survey did not complete it. This dropout rate might have introduced self-selection bias into the results, given that teachers with higher levels of exhaustion or less perceived student engagement might have been less likely to complete the questionnaire.

Similarly, the sample only included publicly run schools in urban settings with a low socio-economic level, which limits the possibility of generalising the findings to other educational contexts. Although the results provide valuable evidence about the dynamic between perceived student engagement, teachers' emotions, and burnout in this particular group of teachers, future research should expand the range of contexts to evaluate the generalisation of these effects in different school realities.

Another limitation to consider is the absence of contextual variables that could have enriched the analysis, such as institutional policies, working conditions, or administrative support within each school. These factors could affect teacher well-being and emotional depletion, modulating the impact of perceptions on student engagement. Including these elements in future studies would make it possible to obtain a more holistic understanding of the phenomenon and of its relationship with the organisational setting in which the teachers operate.

Finally, one aspect that deserves special attention in future research is evaluation of student disengagement along with perceived engagement. A lack of interest and participation by students can not only be interpreted as an absence of engagement, but it could also represent an additional emotional demand for teachers, increasing their levels of stress and exhaustion. Examining the coexistence of these two phenomena and their joint impact on the teaching experience would make it possible to obtain a more complete vision of the emotional processes that influence teacher burnout and occupational health.

Despite these limitations, this study provides valuable evidence for the role of perceived student engagement and the teacher-student relationship as job resources that can mitigate the impact of emotional demands on teaching work. The findings suggest that boosting student engagement and the affective links between teachers and students not only contributes to a school climate that is more positive and beneficial for students (Pérez-Salas et al., 2021), but that it also reduces the emotional burden and stress of teachers, promoting their well-being and job satisfaction. This study also provides empirical evidence for the moderating role of the teacher-student relationship on the association between anger and burnout, underlining the relevance of strengthening it in interventions aimed at teachers' occupational health.

Authors' contributions

Claudia Pérez-Salas: Conceptualisation; Formal analysis; Funding acquisition; Methodology; Writing (original draft); Writing (review and editing).

Isidora Zañartu: Data curation; Research; Writing (original draft); Writing (review and editing).

Yasna Chávez-Castillo: Data curation; Research; Writing (original draft); Writing (review and editing).

Viviana Rodríguez-Díaz: Methodology; Writing (original draft); Writing (review and editing).

Artificial intelligence (AI) policy

The authors do not declare to have used artificial intelligence (AI) in the preparation of this article.

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Note

[1] In the original version, the items referred to students in general. However, in the present study, the items were adapted into Spanish and modified to refer specifically to a particular class, rather than to students in general. For example, the item "I feel connected to my students" was adapted to "I feel connected to the students in this class".

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Humanising the university to progress towards a more inclusive model. An approach from social pedagogy

Humanizar la universidad para transitar hacia un modelo más inclusivo. Una aproximación desde la pedagogía social

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Abstract:

Research in social pedagogy is situated within a methodological framework that must be consistent with the epistemological principles of the discipline. These include the premises from the classic approaches of critical pedagogies, as well as other more contemporary models that allow these postulates to be specified within the framework of current neoliberalism, such as post-feminist, inclusive, decolonial or common good pedagogies, among others. Taking these positions into account, we present a case study whose objective has been to analyse the elements that define the processes of inclusion of socioeconomically and culturally disadvantaged students in a university institution. The research is qualitative in nature and includes elements from ethnographic study designs. Forty-seven people from different groups in the university community took part in the study, using the in-depth interview as the central data production technique, as well as the field diary and a review of institutional documentation. Data analysis was carried out by coordinating a system of open, axial and selective coding. The final results obtained from the selective coding are defined in relation to seven themes: (1) otherness as the basis of discrimination and exclusion; (2) the positive and the threatening; (3) envisioning utopia and acting on reality; (4) university education as a liberating or banking praxis; (5) the university must be constituted as an inclusive space: from the adaptation of individuals to the transformation of the environment; (6) on groups and identities: labels, stigmatisation and visibilisation; (7) the representation of reality from the voices of the participants. The final considerations address two paradigms that define the institutional culture that underlies the definition of inclusive models: the claims of humanising the university or the university for excellence and the elite.

Keywords: social inequality, case study, inclusion, social justice, social pedagogy, educational policy, critical theory, university.

Resumen:

La investigación en pedagogía social se sitúa en un marco metodológico que debe ser coherente con los principios epistemológicos de la disciplina. Ello supone incluir las premisas de los planteamientos clásicos de las pedagogías críticas, aYes como otros modelos más contemporáneos que permiten concretar estos postulados en el marco del neoliberalismo actual, como las pedagogías posfeministas, inclusivas, decoloniales o del bien común, entre otras. Atendiendo a estos posicionamientos, se presenta un estudio de caso cuyo objetivo ha sido analizar los elementos que definen los procesos de inclusión del alumnado en situación de desventaja socioeconómica y cultural en una institución universitaria. La investigación es de naturaleza cualitativa e incluye elementos de los diseños etnográficos. En el estudio, han participado 47 personas de diferentes grupos de la comunidad universitaria. Como técnica central de producción de datos, se ha utilizado la entrevista en profundidad junto con el diario de campo y la revisión de documentación institucional. El análisis de datos se ha realizado coordinando un sistema de codificación abierta, axial y selectiva. Los resultados finales obtenidos a partir de la codificación selectiva se definen en relación con siete temas: (1) la otredad como base de la discriminación y la exclusión; (2) lo positivo y lo amenazante; (3) Proyectar en la utopía y actuar sobre la realidad; (4) la educación universitaria como praxis liberadora o bancaria; (5) la universidad se tiene que constituir como un espacio inclusivo: de la adaptación de las personas a la transformación del entorno; (6) sobre los grupos y las identidades: etiquetas, estigmatización y visibilización; (7) la representación de la realidad desde las voces de las personas participantes. Las consideraciones finales abordan dos paradigmas que definen la cultura institucional que subyace a la definición de los modelos inclusivos: las reivindicaciones de humanizar la universidad o la universidad para la excelencia y la élite.

Palabras clave: desigualdad social, estudio de casos, inclusión, justicia social, pedagogía social, política educacional, teoría crítica, universidad.

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1. Introduction

The question of the identity of social pedagogy, as well as its foundations and dimensions, has been widely discussed among researchers in this field (Belando-Montoro et al., 2023). In this respect, one of the elements on which there seems to be a certain historical consensus is the importance of guaranteeing consistency between socio-educational praxis (including research) and the discipline's own epistemological principles.

Within the epistemological framework of social pedagogy, it is essential to transit through the principles of critical pedagogies, from the classic approaches of Freire (1974), which question the relations of privilege and power and the banking strategies of maintaining the status quo in favour of models with a dialogical, liberating and transformative orientation towards situations of oppression; to the more contemporary anti-fascist orientations that allow us to situate these approaches within the framework of current neo-liberalism, such as post-feminist, inclusive, decolonial or common good pedagogies, among others (Díaz, 2022).

With regard to the methodological frameworks that enable research processes to be tackled within the discipline itself, it is important to recognise research in the educational sciences as a form of study capable of transcending mere knowledge of what exists. Instead, it should be identified as something which enables the construction of socio-educational intervention processes' capacity to transform social, cultural and historical contexts (Belando-Montoro et al., 2023) and to establish new paths to connect academia and society (Sotelino-Losada et al., 2024). In this way, within the transformative orientation inherent to the discipline itself, it is essential that the researcher assume this task as "a political exercise in the production

of knowledge" (Brígida et al., 2021, p. 33) and accepts elements inherent to this process such as the importance of the unexpected or the non-existence of an objective reality of the world outside the observer within a post-qualitative research framework far removed from attempts to positivise, discipline and objectify qualitative research (Hernández-Hernández & Revelles, 2019).

Taking these epistemological and methodological frameworks into account, a case study is presented with the aim of analysing the elements that define the processes of inclusion of socio-economically and culturally disadvantaged students in a university setting.

This study is based on a concept of inclusion understood as a socio-educational model that takes as its starting point the concept of diversity as an inherently human characteristic and, therefore, as a value. Drawing on this model, socio-educational processes with a transformative orientation are enacted based on the human right to education and on the principles of equity and social justice, whose ultimate aim is to break the circle of reproduction of social inequality. In this sense, inclusive models must be based on critical pedagogy (García-Berrera, 2023) and consider historical traditions of discrimination, structural factors and identity markers in the production and perpetuation of inequalities (Artiles, 2025).

In relation to the idea of *diversity* that underlies these models, it is important to note that it is a somewhat problematic concept. Although the word is conceptualised as an inherent characteristic of the human condition, it demands recognition of the premise that there are certain non-hegemonic identity characteristics that translate into inequalities. It is therefore essential to assume a certain caution in the use of this term so as not to fall into the traps of discourses that deny structural inequality, which hold that all people are diverse and, therefore, nothing needs to be done, except perhaps rare and highly targeted interventions to address specific and concrete needs (Naranjo-Crespo, 2024).

Another critical point in the approach to inclusion processes, and one which justifies the methodological decisions presented below, has to do with the personal vision of reality (Freire, 1974), which implies that actions oriented towards apparently laudable ends are based on the vision of the world of the person who carries those actions out (who usually has a hegemonic identity), without considering the vision of the people towards whom the action is directed. The latter are the people who have the best possible view of the situation.

Finally, the study emphasises the dimension of culture, since, although institutional actions (both in their political and practical dimensions) are susceptible to change with greater or lesser ease, culture is linked to other structural elements such as ideology, hegemony and power, whose transformation towards the principles of equity and social justice is neither simple nor immediate.

2. Methodology

2.1. Design

This study was conducted with a qualitative framework, involving a post-qualitative view. The study design had practically no adherence to the study processes of the neo-positivist and standardised perspectives of research (Hernández-Hernández & Revelles, 2019). Within this paradigm, the research process has included elements of ethnographic designs.

In keeping with the purpose of the research, as well as with the critical epistemological framework in which the study is located, a commitment has been made to conduct research on inclusion with a foundation on inclusive models. It is therefore essential that the design allows the research participants to have a voice, as these people are the ones who have the more complete view of the reality being studied. This lets a representation of the social unit being studied to be generated through the eyes of the participants.

Another of the aspects that justify this decision is the concern that the chosen design should allow for the construction of meanings along one of the dimensions that are considered

key to the study of inclusion processes in university institutions: culture. In this regard, Hammersley and Atkinson (2009) highlight the power of this method to capture meanings about daily human actions and to understand "the meaning that gives form and content to social processes" (p. 1).

2.2. Context and participants

The research was carried out in the Faculty of Education of a public university in Madrid, Spain between 2018 and 2024. We note that this study was conducted over the course of two rectoral terms. Participants were selected via a non-probabilistic purposive sampling, as described in (Hernández et al., 2019). Care was taken to ensure that a wide variety of voices from the community under study was represented, as well as to include participants who could provide expert views due to their links with the institutional structures for inclusion at this university or because they have faced situations of disadvantage in the university setting. Thus, 47 people from the university community volunteered and were accepted as participants (Table 1).

TABLE 1. Participants from the university community.

Group	Subgroup	Interview code
Institutional leaders (9)	Rectoral team leaders (2)	E_RTL_H_01 E_ RTL_M_02
	Administrative leaders (4)	E_AL_M_01 E_AL_M_02 E_AL_M_03 E_AL_M_04
	Student leaders (3)	E_SL_M_01 E_SL_M_02 E_SL_M_03
Teaching and research staff – TRS (11)	Department of Research and Psychology in Education (3)	E_TRS_M_01 E_TRS_M_02 E_TRS_M_03
	Department of Language Teaching, Art and Physical Education (2)	E_ TRS_M_04 E_TRS_H_05
	Department of Educational Studies (2)	E_TRS_M_06 E_TRS_M_07
	Department of Applied Sociology (2)	E_TRS_M_08 E_TRS_H_09
	Department of Didactics of Experimental, Social and Mathematical Sciences (2)	E_TRS_M_10 E_TRS_H_11

Technical management, administration and services staff – TMASS (4)	Management (1)	E_TMASS_H_01
	Administration departments faculty (1)	E_TMASS_M_02
	Administration assistant faculty (vice-dean's office and secretariat) (2)	E_ TMASS _M_03 E_ TMASS _M_04
Students – Faculty of Education (14)	PhD (2)	E_STUD_H_01 E_ STUD_M_02
	Master (2)	E_ STUD_M_03 E_ STUD_M_04
	Undergraduate and double degree (10)	E_ STUD_M_05 E_ STUD_M_06 E_ STUD_H_07 E_ STUD_H_08 E_ STUD_M_09 E_ STUD_H_10 E_ STUD_M_11 E_ STUD_M_12 E_ STUD_H_13 E_ STUD_M_14
International mobility students from the Faculty of Education (4)	Master (2)	E_INTER_M_01 E_INTER_M_02
	PhD (2)	E_INTER_H_03 E_INTER_M_04
Associations with a presence in the Faculty of Education (3)	Association (1)	Association
	Student associations (2)	Student association 1 Student association 2
Other (2)	University professor with links to the Spanish political sphere	University professor – national political
	Dean of the Faculty of Education from a foreign university (research stay at the faculty)	International university dean

2.3. Data production techniques

The interview is conceived of in this study as something beyond its traditional role as technique or instrument. Here it constitutes the cornerstone of the entire research process. As a starting point, the interview protocols for TRS, TMASS, students, social actors and institutional

leaders described in García-Cano et al. (2021a, 2021b, 2021d, 2021e, 2021f) have been used. These protocols have been adapted to the context of this particular study based on a review of the institution's documentation on diversity and inclusion (see data analysis techniques below) following the document analysis protocol of García-Cano et al. (2021c). Thus, we obtained a final interview protocol divided into three blocks according to three major classes and ten categories of analysis:

1. Conceptions: Recognition of differences and social justice; Equity of opportunities and equal opportunities; Individual and group actions; Adaptive actions and actions for institutional transformation; and Constraints on current conceptions.

2. Attitudes: Socio-educationally disadvantaged groups; and Educational access, retention, participation and attainment.

3. Alignment with the institutional conception: Alignment between personal and institutional discourse; Inclusion in the institution; and Responsibilities to or within the institution.

In addition, a field diary or *hypomnemata* was used, which made it possible to collect not only elements directly related to the data production process, but also everyday elements that warranted further elaboration due to their relationship with the point in time during the study.

The interviews were audio-recorded and all personal data obtained were processed in accordance with Spanish Organic Law 3/2018, of 5 December, on the Protection of Personal Data and the guarantee of digital rights. All participants signed an informed consent form prior to the interview.

2.4. Data analysis techniques

The analysis of the institutional documents as they relate to the interview protocols is based on an axial coding system. The definition of the categories and subcategories of the documentary analysis was based on a review of the international literature linked to university policy on the inclusion of socio-economically and culturally disadvantaged students in university settings:

1. Protected characteristics: ethnicity, language, socio-economic status, migrant background, religion or creed.

2. Motivation towards inclusion: university initiative, legal imperative.

3. Type of document: comprehensive plan, specific plan or protocol.

4. Level of action: university, faculty of education.

The analysis of the interviews was carried out by creating an open and axial coding system. The initial parameters of the axial coding system are related to the families and categories of the final interview protocol (see data production techniques). This axial coding system was appropriately redefined throughout the data production phase, starting from the open coding that was carried out in order to identify emerging categories and subcategories. The final system of themes and categories from which the interviews were analysed is as follows:

● Discourses and perspectives towards diversity and inclusion: concept of diversity, attitudes towards inclusion and institutional concept of diversity.

● Inclusion policies and practices: motivation towards inclusion, institutional organisational chart for inclusion, actions for inclusion, participation in actions for inclusion.

● Proposals for transformation: priorities for action and emerging issues, barriers and facilitators, institutional recognition, proposals.

Finally, a selective or third-level coding system was developed around seven themes to produce the results of the study. Those themes were:

1. Otherness as a basis for discrimination and exclusion.

2. The positive and the threatening.

3. Envisioning utopia and acting on reality.

4. University education as a liberating or banking praxis.

5. The University must be constituted as an inclusive space: from the adaptation of people to the transformation of the environment.

6. On groups and identities: labels, stigmatisation and visibilisation. Challenges ahead.

7. The representation of reality from the voices of the participants. Limitations.

3. Results and discussion

3.1. Otherness as the basis of discrimination and exclusion

The first result drawn from the study is that otherness is the basis of discrimination and exclusion. Although this premise has been widely discussed in research within the framework of critical pedagogies, outside this epistemological framework there is a certain denial. The basic line of the denialist argument is that all people are diverse and, therefore, there is no discrimination towards non-normative identities, because the norm does not exist, only diversity (Sánchez, 2019). The coarsest form of this argument is that discrimination and exclusion towards non-normative identities is justified by arguing that people who hold these identities should renounce them and assimilate the hegemonic normative identity.

One element to highlight at this point is that, insofar as otherness is established on the basis of a dialectical relationship with the norm, if the norm depends on the context, so does otherness. In this sense, although the social sphere and the educational sphere are permeable (Artiles, 2025), based on the interviews, a case has been identified in another university context in which the identities that are configured as hegemonic in the social sphere were not hegemonic in the educational sphere. This is specifically in the public universities of Israel. In an interview with an institutional leader in the Faculty of Education of a public university in that country who was in Spain on a research stay, that administrator stated the following:

> In Israel, for example, I tell you openly, if in a classroom the absolute majority are Arab students, the Jewish boys and girls, which is the only place in Israel where they are going to feel like a minority, and they are going to hear them talking to each other in Arabic and not in Hebrew, although they know Hebrew, but that is not their natural language, they are going to feel like what is going on here, what is going on with the university, etc. (International university dean)

Having identified this element in the interviews, a bibliographic search was carried out on studies in the Spanish context that had used a similar methodology and obtained similar results. A study by Gallego-Noche et al. (2021) on the perception of discrimination in eight Spanish universities, with a focus on the student body, was identified. Among the main conclusions, they point out that almost half of the students who feel discriminated against feel this way for more than one reason. Among the identities highlighted, one group stands out: being right-wing politically, Catholic and with a high income. As the authors point out, these are hegemonic values in Spanish society. In this sense, it is possible that, despite the broadly dominant position of these values in Spain, these identities are not hegemonic in Spanish public universities. This allows us to assess the possibility that normality or otherness may be signified in relation to a certain context that does not necessarily have to be consonant with the wider social circumstances.

3.2. The positive and the threatening

The second result, closely linked to the first, is that a distinction can be made within the identities that are on the other side of the norm. On the one hand, it is possible to differentiate between identities that are usually associated with positive signifiers (diversity as a value), and on the other hand there are identities that are not only considered a defect, but are even attributed threatening connotations in view of the possibility that the normative identities could lose their hegemony. Among the former, functional diversities have been identified, especially sensory and motor diversities. In the case of intellectual disabilities and learning difficulties, this is not the case. As pointed out by one of the associations interviewed: "[At the university] they talked about diversity, but of course, it is a very specific diversity of this group, right?".

Among the identities that are seen as threatening, cultural diversities stand out, especially those linked to migration and ethnicity (Gallego-Noche et al., 2021; Goenechea et al., 2020; Martínez et al., 2024). On these threatening identities, there is an extract from an interview with an institutional leader that stands out:

> I think that in every country there really are groups that people and politics and budgets help because there is a goal, a socially appropriate goal, etc. But there are other cultural or religious groups that, even if they are offered help, there is not an attitude that really embraces them, brings them in... they are not really welcome […]. Many times, when we say "We would like these groups to assimilate, to integrate, to include them...", what we really want is to change them, for them to stop being so different and to be like us, like the majority, quote unquote […]. There is a question of who we really want, who we want to open our doors to and who we want to accept and include, and who we would like to come, but in certain numbers, in certain proportions […]. I think the threat is the feeling that the majorities who have always had the power and access to education and wealth, etc., feel threatened. They feel threatened, in my opinion, at the level of identity, not only economically, of what is going to happen when these groups begin to fill our social groups. (International university dean)

In the case of socio-economic diversity, the pandemic has changed the rules. The fact that the process of collecting information began prior to that event has made it possible to see how situations of disadvantage associated with social and economic aspects have become highly visible from that moment onwards. This is undoubtedly a very positive sign, since, as has been pointed out in some of the interviews, the Pandemic has shed light on situations that existed previously but were largely out of view, and made it easier to take action for these groups. Note this interview comment:

> It seems that everyone has a computer, that everyone has access to WiFi and that's not true. There are many students who don't have that kind of help, sometimes not even a place to study at home. We are detecting types of problems that I think we had once thought about, […] that are now coming to the surface much more. (E_AL_M_04)

However, this fact also shows that when certain situations affect (or may affect) people with hegemonic identities (and not only the population of the third and fourth world) actions are taken immediately and without prior debate to question them, unlike actions aimed at groups with non-hegemonic identities, which are questioned to protect the gulf between the group identities of *us* and *them* (Curren, 2023). Beyond the university and educational sphere, this has also been observed at the social level, as can be seen when we compare the discourses on the reality of refugees arriving in Spain or the European Union. In this case, the reality of refuge experienced during this time has made it clear how people who have come from other parts of Europe represent that close *us*, while those who continue to come from Africa or Latin America represent the threatening *them*.

3.3. Envisioning utopia and acting on reality

The third result can be defined almost as a learning process constructed during the research that answers the question *how to move towards an inclusive university model?* The answer has two parts:

1. Envisioning utopia: what is an inclusive university?, what processes of institutional (and even educational and social) transformation would have to take place to move towards an inclusive university model?

2. Acting on reality: what can be done (from the current institutional or personal reality) to move towards an inclusive university model?

These two levels are articulated on the basis of a dialectical relationship in which utopia allows us to direct our gaze towards what we wish to achieve, and while accepting that this ideal is unattainable, there are no limits when defining utopia. Reality, on the contrary, does have defined characteristics that demarcate the limits of actions. Therefore, utopia is necessary to project the ideal model and outline the path that leads to it, and reality is essential to specify the actions that will allow progress along that path. These actions, moreover, should not only be thought of in terms of institutional policies, but from a broader perspective that includes any action that can be taken by any person or group in the community. An example of this is an everyday action such as that of a Social Education student who, with the aim of improving the classroom climate, decided to bring to class "an omelette and a glass of wine" to celebrate his birthday. Or, as another Social Education student interviewed pointed out, "inclusion can hardly be promoted if we are not friends, or if we don't know each other, or if we don't have any bonds. And if we can't organise ourselves to demand this inclusion".

3.4. University education as a liberating or banking praxis

The fourth result reflects the tensions involved in talking about inclusion in the university context. Álvarez-Castillo et al. (2021) highlight that at least two purposes can be identified in the university that do not have the same value: "those of the market, of a hegemonic nature, and those of diversity, of a subaltern type" (p. 8). In this sense, it is important to differentiate between genuine actions that are guided by a view that understands education as a liberating praxis, and those that, under a discourse of apparent good intentions, remain in a banking vision of education (Freire, 1974).

Fostering this type of discourse is one of the main barriers to advancing toward an inclusive university model. It prevents any possibility of change under the protection of a discourse in which, although what is expected is to maintain the *status quo*, the stated aim is to transmit that work is being done to change the state of affairs (Naranjo-Crespo, 2024). In this way, it is justified that there is no need to change anything else, but simply to continue working along already existing lines and to respond to specific situations as they arise, without acknowledging that inequalities and barriers associated with certain identity characteristics do exist:

> The barriers I think are first of all. The barriers of thought, the invisibility of certain diversities, that it seems that it is not necessary, that it seems that why are we going to… if it is already obvious that, I don't know, that they can get married. Or it is obvious that there are churches that protect different cultures. Or it is obvious that there is a law on dependency. It seems like there are things that are obvious and it is not necessary to make certain things visible. (E_TRS_M_07)

3.5. The university must be constituted as an inclusive space: From the adaptation of people to the transformation of the environment.

The fifth result implies a change of perspective when identifying situations that generate discrimination and exclusion, as well as taking action to reverse them. It is common that, when faced with this type of scenario, there is a tendency to more or less consciously attribute *blame* (Díez, 2022; O'Shea et al., 2016) to the people or groups experiencing these situations, or, in the best of cases, to their personal or social condition. However, institutions still need to question whether or not the institutional environment (from the physical elements to the culture) is supportive for all people (not just some or most) and allows them to proceed with their education in conditions of equity.

This institutional transformation can be accomplished in two ways. Consistent with the principles of the inclusive paradigm itself, the ideal path would be a process in which the whole community participates in a system of dialogical relationships. However, as highlighted in previous paragraphs, in order to move towards an inclusive university model, it is necessary to envision utopia and act on reality. And the reality is that today, although there are ways for the entire university community to participate in decision-making processes, actions with the capacity to impact the entire educational community are still carried out in a system of vertical relationships headed by university leadership. A notable element in this second framework of vertical relations is the presence of people with identities that have traditionally been excluded from leadership positions in the institution, although it is somewhat controversial because it confronts the recognised principle of meritocracy (Turner et al., 2017). These identities may include LGTBIQA+ people, migrants, people of colour, people with intellectual disabilities, women, etc. The presence of people with these identities would contribute, albeit from an equally vertical system, to this change of perspective, as these people are the ones who have an especially clear view of what it means to experience these situations of exclusion and discrimination: "If we talk about cultural diversities, if I talk about ethnicity…, then no. It will have to be people of colour, people who have suffered the oppressions of being treated differently on account of race, who will speak (E_TRS_M_07).

3.6. On groups and identities: Labels, stigmatisation and visibilisation. Remaining challenges

The sixth result is related to the pending challenges in educational praxis. When talking about groups and identities, there is a gap that prevents us from clearly determining whether these types of labels make realities visible or stigmatise people:

> Sometimes labels are necessary to make realities visible […]. Labels serve to make their existence evident, they are made visible and other people can identify with them. There are people for whom labels are a great help in the construction of their identity and others for whom they are not necessary at all. It should not be forgotten that people are more important than the labels they put on themselves and that the personal desire to use them or not should be respected.

> [Moreover], reference groups can be constituted by nothing more than the wishes of their members, but they may also be designated from outside, ignoring the self-identification of each person. (Delegación del Rector para la Diversidad e Inclusión de la UCM , 2021, pp. 40, 57)

For all these reasons, only two partial results are provided on the subject addressed, which can guide future actions in the framework of both educational practice and research:

1. There is a problem of under-representation of certain groups within the university institution, both in the student body and in the teaching and research staff, and especially in leadership positions:

> It is true that the university community is becoming more and more diverse, there are fewer and fewer barriers to access, but it is still squarely a minority. And that means that the profiles of the teams that make decisions are biased from the outset. (E_SL_M_02)

2. This problem of under-representation in turn generates a lack of literature and of complete and updated statistics that provide a comprehensive view of the problem.

3.7. The representation of reality from the voices of the participants. Limitations.

The seventh result relates to the limitations of the study and the idea of representation of reality. From the beginning of the study, we have been aware of the fact that the representation of reality mediated by the research process is not the same as the reality itself. It is therefore important to stress that the results presented here only reflect the voices of the people who took part, not of the entire university community. Furthermore, it should be borne in mind that

most of the people who agreed to participate had an interest in the issue of inclusion in the university environment, from different perspectives and with varying levels of knowledge. Those who were not interested in these issues either declined the invitation or simply did not answer.

In addition, part of the information collection process was affected by the covid-19 pandemic, so that both the contact to request participation and the interview process were often carried out online. This has especially limited contact with TMASS and international students, as it has only been possible to contact people with whom there was already a preexisting relationship or with contacts obtained through the snowballing technique. On the question of having to conduct part of the interviews online, although only the audio was recorded, the researcher deemed it important to conduct the interviews in audiovisual format in order to try to generate a space for dialogue that was as human as possible despite the boundary of the screen.

4. Final considerations

The study duration of over more than four years has run parallel to awareness-raising exercises (Freire, 1974) about the research topic that has been reflected in the field diary or *hypomnemata*. The field diary and the results obtained from the interviews have contributed to the understanding of the powerful impact of the ideology of normality in defining situations of inclusion and exclusion, in relation both to the experiences lived in first person as a woman and, especially, to others lived in third person as a pedagogue who during this period worked with adolescents and young unaccompanied migrants.

By transferring the understanding of these situations to university contexts, it has been concluded that, although not all situations of inequality remain in all their dimensions (presence, retention, participation or educational achievement), the fact that certain groups have reached the milestone of accessing university studies does not mean that inequalities associated with certain identities cease to exist (Belando-Montoro et al., 2022). Therefore, it is both difficult and dangerous to accept denialist discourses around the existence of these types of inequalities, discourses which often draw from the paradigm of meritocracy and equal opportunities (Díez, 2022). These discourses define diversity from the mere recognition of difference, denying the existence of barriers associated with certain identities under the premise that all people are diverse and, therefore, nothing needs to be done (Sánchez, 2019); perhaps actions aimed at resolving the specific and concrete needs of each person would be permissible, but in no case would actions with a transformative orientation to ensure equity and social justice be acceptable (Naranjo-Crespo, 2024). Furthermore, it has been observed how certain situations of exclusion and even violence against people with identity characteristics that are *on the other side of the norm* can be legitimised (Díez, 2022) and lead to a situation of total defencelessness for those who suffer them.

One of the central points of the study that has been most difficult to define has been to conclude what we mean when we say diversity. However, in January 2021, in an interview with an international student, a spontaneous response was obtained from the researcher in response to a question that allowed us to narrow down this concept:

> In the end, I have understood that diversity is the norm, or at least that's the idea that has stayed with me. Yes, I couldn't say it any other way: in the end diversity is the norm. We are all different in some way. But it is true that there are differences that have a series of associated disadvantages, either because we are women, or because we come from more complicated family backgrounds. But well, in short, difference is the norm in the end, what happens is that sometimes that diversity is linked to situations of inequality, I think. (Author)

About a month later, the return of another question from a teacher brought to light one of the major challenges linked to this issue:

> People are very concerned about political correctness and I don't know if that somehow leads to the fact that there are things that are not only not made visible, but that people don't even think about them [...]. So the most striking thing is that it is not something that remains to be done, it is something that is not even thought about [...] nothing can be done until it is thought that it is a situation that is happening. (Author)

Along with the meanings of the concept of diversity, this study revealed that the underlying question behind the definition and articulation of inclusion processes has to do with institutional culture (Boonzaier & Mhkize, 2018), which can be concretised from two approaches present both in the context of the study and at the macro-contextual level.

The first approach, in the words of a participant in the study, can be defined as "excellence and elite: authentic, unique and exquisite":

> There are professors who are against, to be clear, that this whole idea of opening up more, of including more, of making it more accessible. [His personal name] is wrong. The university was not created for that; they should go to another type of institution. The university is for academic excellence [...]. There are professors who are reluctant and antagonistic to this idea of, well, let's open up. The threat they feel is to the academic level: we are too flexible and we are losing the authentic, the unique and the exquisite. I often tell them to take into account that when they are talking it is because they are part of this elite, they are part of this elite that wants to reproduce itself. (International university dean)

In contrast to this approach, other voices interviewed brought up difficulties, support, challenges, proposals, etc., which basically had to do with a demand to humanise the university. These people highlighted such basic issues as going up to teachers simply because they knew their names or because they were not afraid of them (and this reminded them of their favourite teachers at school). Or feeling fortunate because "between missing work and missing classes, I'm managing to do everything the way I wanted: to have enough money to be able to afford the degree and to be able to dedicate enough time to be able to pass the subjects" thanks to the support of their bosses and some of the teachers. As for the ways in which they propose to humanise the university, giving participants the opportunity to come up with situations that fall somewhere between the more realistic and the more utopian, led to responses that ranged from "hippie faculty week" to "having parties" to "having an omelette and a glass of wine to celebrate my birthday". More practical proposals were also made, such as creating welcome and reception spaces, establishing collaborative relationships between different stakeholders and making good practices visible; building multi-religious spaces; creating mentoring, tutoring and guidance figures; as well as other actions aimed at improving the sense of belonging to the university and opportunities for participation, such as giving more voice to the student body or improving the visibility of activities, services, procedures and associations.

These responses, together with other elements of analysis, led to the conclusion that both the elements that define the institution and those that have the capacity to transform it are part of the culture, because culture runs to and through the rest of the elements that make up the university community: leadership, curriculum, training, actions for equity (or lack thereof), etc. Furthermore, as culture is a transversal element that cuts across the entire university community, if there is a sincere desire to move towards an inclusive university model, the process of institutional transformation must be participatory and horizontal. Otherwise, actions with more or less impact will continue to be fostered, but they will be insufficient to transform the paradigm that underlies any type of action.

Author's contributions

María Naranjo-Crespo: Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Resources; Validation; Visualization; Writing (original draft); Writing (review & editing).

Artificial Intelligence (AI) Policy

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"I began to wonder whether I am becoming emotionally numb". Sociocultural background, hidden curriculum, and moral self-reflection in the development of medical professional identity: A qualitative study

«Empecé a preguntarme si me estoy volviendo emocionalmente insensible». Antecedentes socioculturales, currículo oculto y autorreflexión moral en el desarrollo de la identidad profesional médica: un estudio cualitativo

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Abstract:

The focus of our study is personal, emotional, and moral development of medical students in the context of their medical school experience, and the impact of hidden curriculum on the formation of their professional identity. We conducted interviews with 26 fourth-year students and analysed them by methods of content and discourse analysis. Several factors impacting the adaptation to the medical environment and the adoption of professional identity emerged as significant: their sociocultural background, the institutional culture of medical school, and the practice of moral self-reflection. The adaptation to medical environments and the appropriation of professional roles come more easily to students from medical families, yet present significant challenges to students from non-medical families who are more likely to be impacted by both positive and negative aspects of the hidden curriculum. Students who expressed moral self-reflection were capable of critically assessing the impact of the medical environment on their personal and professional development. We suggest that the provision of safe space for students to reflect on their subjective experiences might be both an educational and therapeutic intervention supporting development of moral and professional integrity, while faculty mentorship might partially compensate for the lack of privilege of medical family background.

Keywords: medical students, medical education, professional identity, hidden curriculum, moral self-reflection, institutional culture, sociocultural background.

Resumen:

El enfoque de nuestro estudio es el desarrollo personal, emocional y moral de los estudiantes de Medicina en el contexto de su experiencia en la Facultad de Medicina y el impacto del currículo oculto en la formación de su identidad profesional. Realizamos entrevistas con 26 estudiantes de cuarto año y las analizamos mediante métodos de análisis de contenido y discurso. Se detectaron varios factores significativos que influyen en la adaptación al entorno médico y en la adopción de la identidad profesional: sus antecedentes socioculturales, la cultura institucional de la Facultad de Medicina y la práctica de la autorreflexión moral. La adaptación a los entornos médicos y la apropiación de roles profesionales resulta más fácil para los estudiantes de familias médicas, pero presenta desafíos significativos para los estudiantes de familias no médicas, quienes son más propensos a verse afectados por aspectos tanto positivos como negativos del currículo oculto. Los estudiantes que expresaron una autorreflexión moral fueron capaces de evaluar de manera crítica el impacto del entorno médico sobre su desarrollo personal y profesional. Sugerimos que dotar a los estudiantes de un espacio seguro donde puedan reflexionar sobre sus experiencias subjetivas podría ser una intervención tanto educativa como terapéutica que apoye el desarrollo de la integridad moral y profesional, mientras que la mentoría del profesorado podría compensar de manera parcial la falta del privilegio de contar con un entorno familiar médico.

Palabras clave: estudiantes de medicina, educación médica, currículo oculto, autorreflexión moral, cultura institucional, antecedentes socioculturales.

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1. Introduction

The educational neuropsychologist Peter Gray defines education as a form of cultural transmission, "a set of processes by which each new generation of humans acquires and builds upon the skills, knowledge, rituals, beliefs, and values of the previous generation" (Gray, 2015, p. 112). Medical curricula tend to focus on the transmission of the necessary knowledge and skills, while the transmission of values, beliefs, rituals, and practices, is often absorbed unwittingly by immersion in the social environment and institutional culture of medical schools and teaching hospitals. Yet these factors are of paramount significance to the personal, emotional, and moral development of young people, while also exerting significant influence on the appropriation of their professional identity and internalisation of characteristics and practices defining the social role of medical doctors. This process aligns with Pierre Bourdieu's concept of *habitus*, which describes the deeply ingrained habits, dispositions, and ways of being that individuals acquire through socialisation within specific contexts (Bourdieu, 1977).

One of the key requirements for the medical profession is moral and professional integrity (World Medical Association, 2022). According to Edgar and Pattison (2011), integrity is "a competence or capacity for reflection and discernment in the midst of the conflicting demands between professional and personal values, roles, and ethical systems" (p. 95), which can be cultivated to achieve subtle competence in dealing with the complexities, ambiguities, and tensions of professional life (Edgar & Pattison, 2011). Many consider the ability for critical reflection as an essential characteristic for professional competence of a medical doctor, and a core element of professional identity (Epstein & Hundert, 2002; Mann et al., 2009; Van Oeffelt et al., 2018).

Richard Cruess (2014) defines professional identity as the gradual internalisation of the characteristics, values, and norms of the medical profession. The process of adopting a social role and the identification with this role is shaped by sociocultural factors (Al-Rumayyan et al., 2017; Polyakova et al., 2020), and the social environment of medical schools plays a significant role in presenting cultural patterns and values that define the profession. These factors have been described as *hidden curriculum*, i.e., unwritten rules, norms, values, attitudes, patterns of social interactions, which exert significant influence over the personal development and

professional development of students, both in positive and negative ways (Martimianakis et al., 2015; Hafferty & O'Donnell, 2015). There has been increasing focus on hidden curriculum of medical schools ever since Hafferty and Franks (1994) presented an argument that the outcomes of medical training are as influenced by the social environment and institutional culture as by formal teaching, and that these factors must be taken into consideration in order to nurture desirable characteristics of medical graduates.

Medical education tends to be divided into two phases: pre-clinical courses of natural sciences, providing the scientific foundation essential for medical practice, with usually only very limited contact with patients, and subsequent clinical training that combines lectures and bedside teaching by clinicians. Therefore, the teachers in medical schools are researchers and clinicians, with very little or without any formal advanced training in paedagogy. According to Spencer (2003), clinicians may struggle with estimating the complexity of teaching, face unclear objectives and expectations, experience time constraints that limit student engagement, and often lack adequate supervision and feedback. Moreover, the demands of clinical work and research which are perceived as primary objectives, leave very little time, but also very little recognition and reward for teaching, with very little resources and only limited opportunities for reflecting on the learning process of students.

The transition from pre-clinical to clinical training is commonly perceived by students as a significant and challenging milestone, often accompanied by stress and uncertainty (Ottrey et al. 2024). This shift involves moving from classroom-based theoretical learning to direct patient care, where students must apply their knowledge in real-world settings, and it is at this stage students gradually assume the professional role of medical doctors. Research highlights the psychological and emotional strain associated with this transition, emphasizing the need for supportive learning environments (Xu, 2014; Radcliffe & Lester, 2003; Moss & McManus, 1992). As demonstrated by Ottrey et al. (2024) in their qualitative longitudinal study of medical students before and after clinical training, significant number of students reported feeling unprepared for various aspects of clinical practice, including practical skills and tasks, interpersonal communication, medical knowledge, and professional conduct.

Our research aims to contribute to the field of the emotional and moral development of students, in context of the interpersonal and sociocultural aspects of their medical school experience. Our focus was on the subjective experience and introspective aspect of reflection, rather than the outwardly manifest patterns of appropriation of professional identity, and signs of individual identification with the medical role. This perspective aligns with Maurice Merleau-Ponty's (2002) argument that our perception is fundamentally embodied, suggesting that our subjective experiences are deeply intertwined with our physical and social environments. This notion is particularly pertinent in medical education, where the hidden curriculum, as well as students' sociocultural background, influence their subjective experiences and form their professional identities (Gomes & Rego, 2013).

In our study, we were interested in medical students' self-understanding, reflection of their motives and actions, their perception of personal transformation in the course of their studies, and in particular, the spontaneous expression of moral self-reflection (the introspective and critical assessment of their conduct and its justification from the moral perspective) (Cambridge Dictionary, 2024; David, 2017; Xie, 2020). By examining these aspects together, we gain a comprehensive understanding of the multifaceted influences on medical students' development, aiding in the creation of supportive educational environments that foster personal and professional growth (Mezirow, 1997).

2. Methods

Our qualitative research consisted of individual semi-structured interviews with fourth-year medical students of the six-year curriculum at the Third Faculty of Medicine, Charles University, Prague, Czech Republic, conducted between February and May 2023.

We have chosen fourth-year medical students as the target group of our study because they have recently experienced the transition from pre-clinical to clinical training, and represent a suitable cohort for studying the formation and development of their emerging professional identity, yet still have more than two years of clinical training ahead where this role will be rehearsed and refined.

All 208 medical students in the fourth year received an email with the invitation to online interviews about their understanding of the moral dimension of the medical school, healthcare, and wider society. As an expression of gratitude for their time they were given a book, with no other compensation received.

The interview questions were developed based on a scoping review of relevant literature on the development of professional and personal identity among medical students. This theoretical foundation informed the design of the questionnaire, ensuring that key aspects of students' experiences were explored systematically. The questions aimed to illuminate three core areas: (1) students' motivations and expectations related to medical school and their chosen profession; (2) observations and reflections on interpersonal interactions, the social environment, and the institutional culture of the medical school; and (3) reflections on personal transformation throughout their medical studies, as well as aspirations for their future careers. A detailed list of the specific interview questions can be found in Appendix 1.

The study was conducted using online interviews, which were audio-visually recorded. The duration of interviews ranged from 46 to 71 minutes. Prior to the interviews, participants were provided with informed consent forms, outlining the study's purpose, procedures, and confidentiality measures.

After the interviews, the recordings were transcribed verbatim. To ensure participant confidentiality, all identifying information was removed from the transcripts during the anonymisation process.

The transcribed data were subjected to analysis using both content and discourse analysis techniques, with a constant comparison approach.

Content analysis involved identifying recurring themes, patterns, and motives within the data. Both authors independently coded the transcripts using codes that represented significant themes, patterns, and motives emerging from the data, describing student's expressions. After this initial coding, the authors compared their identified codes. This comparative process involved detailed discussions to reconcile any discrepancies and to refine the codes. Through this collaborative effort, the authors developed a comprehensive coding framework that accurately represented the data, in which each code was assigned a clear definition specifying its scope and meaning to ensure consistency. The final set of codes was then used to systematically analyse the entire dataset, ensuring that all relevant data were captured and appropriately categorised. The table of codes is attached as Appendix 2.

Discourse analysis focused on examining the ways in which participants constructed and communicated their experiences and views, with a particular focus on whether they were aware of the influence of the hidden curriculum on themselves and whether moral self-reflection spontaneously emerged in their responses.

The research team consists of two authors of this text, both graduates of the medical school (2016 and 2004, respectively), who therefore also draw on their personal experience in designing the research. Tereza Pinkasová is additionally qualified as a psychotherapist and enrolled in PhD programme in medical ethics, while Lydie Fialová holds a doctorate in social anthropology. Tereza Pinkasová has been involved in medical ethics teaching, but was not and will not be directly involved in examination of any of the participating students.

The research was approved by the Ethics Committee of Third Faculty of Medicine, Charles University.

3. Results

Of all invited (208, by email) fourth year medical students, 26 (12.5%) expressed their interest to be interviewed. Of these, 17 were female and 9 male, with the age range 22 (7), 23 (15), 24 (3) and 28 (1). 22 students were Czech (CZ) and 4 Slovak (SK) nationals. Among the interviewees, eight students (30.7%) had one (5) or both (3) parents with medical degree; additional eleven (42.3%) had one (3) or both (8) parents with university education, while seven students (26.9%) came from families where neither of the parents attended university, having completed secondary education (6) or vocational training (1). The characteristics of the students are summarised in Table 1.

TABLE 1. The characteristics of the students.

	Gender	Age	Nationality	Family	
A	F	23	CZ	NMF	both parents university educated
B	F	22	CZ	MF	both parents doctors and both grandparents on mother side doctors
C	F	22	CZ	NMF	both parents university educated
D	F	22	SK	MF	mother doctor
E	F	23	CZ	NMF	father university educated, sister studying medicine
F	M	22	CZ	MF	both parents doctors
G	F	22	CZ	NMF	both parents vocational training
H	M	23	CZ	NMF	both parents university educated, grandmother doctor
I	M	23	CZ	NMF	both parents university educated, grandmother doctor
J	F	24	CZ	MF	mother doctor, grandfather doctor
K	F	23	CZ	NMF	both parents secondary education, aunt doctor

L	M	23	CZ	NMF	both parents university educated
M	F	24	CZ	MF	both parents doctors
N	M	28	CZ	NMF	both parents secondary education
O	F	23	CZ	MF	mother doctor
P	F	23	CZ	NMF	mother university educated (nurse)
Q	F	23	CZ	NMF	both parents secondary education, aunt doctor
R	F	23	CZ	MF	mother doctor
S	F	23	CZ	NMF	both parents university educated
T	F	23	CZ	NMF	both parents secondary education
U	M	24	CZ	MF	father and great grandfather doctors, mother university educated, brother studying medicine
V	M	23	CZ	NMF	both parents university educated
W	M	22	SK	NMF	both parents secondary education
X	F	23	SK	NMF	both parents university educated
Y	F	22	CZ	NMF	both parents secondary education
Z	M	23	SK	NMF	father university educated

The representativeness of this sample with regard to the sociocultural and socioeconomic background of students was impossible to establish since the medical school does not collect these data. There are very few studies on the demographics of medical schools, the available data from Sweden in 1990 (Polyakova et al., 2020) and in 2014 (Simmenroth-Nayda & Görlich, 2015) both identify 20% of medical students coming from medical families, and data from the USA in 2018 identify 22% (Fokas & Coukos, 2023).

For the purposes of this article we focus our analysis on the (1) sociocultural background and its impact on the self-understandings of medical students, including hopes for their future professional life, (2) the interpersonal interactions and institutional culture they notice and reflect upon in medical school and teaching hospitals, and (3) reflections of personal transformation and moments of moral self-reflection. The students were not explicitly asked about formation of their professional identity nor the impact of hidden curriculum, but the themes, patterns, influences, and signs of identification with professional role, or the lack thereof, emerged in their reflections and were subsequently analysed.

3.1. Sociocultural background

Among the most significant factors that impact the experience of medical students and their expectations of medical practice, including its ethical dimension, was the family background of students, especially whether they come or don't come from a medical family (which they often mentioned spontaneously as a way of explanation of their experience). Almost a third of the interviewed students come from families where one (5) or both (3) parents are medical doctors. The medical (MF, 8) vs. non-medical (NMF, 18) family background of students correlated with their expressed expectations of the demands of medical study, their understanding of the realities of clinical work in hospital environment, but also with the support (emotional, financial, practical) and understanding that they receive from their families. All MF students have spontaneously expressed the highest possible level of support and understanding from their parents. "I have 100% support" (U), and "They understand that I don't have much time. They understand that sometimes I feel down and overwhelmed, they understand how much time I need to master the learning, and they are able to help me when I don't feel well" (B). Among the 18 NMF students, only a minority mentions that their parents are supportive (6) and understanding (2), while others explicitly say that they lack parental support (3) and understanding (5), or that their parents' attitude is more of admiration rather than support (3):

> They put me on the pedestal, because they consider medical school as very hard, and think I am doing really well, so they are rather uncritically excited... but when it comes to how much we have to learn and what it actually takes, they don't really understand that at all. (T)

This puts the NMF students in the position of disadvantage which can be further exacerbated by the needs of their families that they have to provide for.

> Sometimes it comes to a light confrontation, my mother needs a lot of help and it was really hard to draw the boundaries, that I really need to focus on my studies now and don't have much time left to help out. It was a really hard internal conflict. On one hand I really wanted to devote myself fully to my studies, but on the other hand I knew that my mother expects all this help from me. (K)

The differences between MF and NMF students extends also to the expectations they had from medicine and the demands it will make on them, with the former being more realistic: "I expected the studies to be hard, that I will have to learn discipline in working and be more organised and plan ahead. And get used to the stress, as there is a lot of stress in the medical environment" (U). Another student articulates that her mother prepared her for the reality of the medical world: "She was very clear that it is a hard and actually rather unpleasant environment" (R). These students notice both advantages and disadvantages of these insights: "I consider it an

advantage because I can always ask my parents and through them I also have understanding of the clinical context. On the other hand, I also get to see the darker sides of healthcare, that it can be rather harsh" (O). And similarly,

> It is an advantage because I am not naive about medicine and the way it works in the hospitals. That I don't think it is just this beautiful profession where you help others. That is an advantage because I can see that many of my classmates had this idea initially and then they are completely crushed by the reality of clinical practice, and they start doubting whether they actually want to do it or not. So being familiar with that environment helped me a lot. (J)

The NMF students express a variety expectations about the medical school and its challenges, and some reflect on the naivité of their initial expectations: "I thought that we will learn all the magic how to make people feel better, that they will introduce us to all these secrets of life... so I did not expect it to be just about hard data and hard science" (E), while others express the feeling of being paralysed by the reality of clinical practice: "I feel like I am getting used to hopelessness" (A).

Faced with the realities and demands of clinical practice, many students wonder whether this is the right path for them, and whether they would be able to integrate it into their life. 11 students (42%) seem to fully identify with the role of the doctors, they feel part of the medical school and hospital environment, and plan for their future medical career. 6 of these come from MF, 3 from university educated families (UF), and 2 with non-university background (NUF). Of these, 6 students identify with the role to a certain degree, but also reflect critically on the environment and think creatively about the ways in which it can be changed: "I would certainly like to contribute to the change of the system" (M). Another 9 students (35%) express ambivalence about becoming doctors. Among these, 2 are from MF, 5 from UF, and 2 from NUF: "Perhaps I want to have a different life than this. Have a family, interests, something beyond medicine. So it is a constant struggle" (L). 3 UF students (11.5%) express distance and doubts over their future: "I wonder whether it is worth the effort to give so much of your energy to something that is mentally, psychologically so demanding" (I). Finally, 3 students (11.5%) are considering leaving for another profession: 2 of them come from NUF, 1 from UF also enrolled in another university degree; and neither of these students mentions support and understanding of their parents in the course of their studies.

3.2. Hidden curriculum

The students reflected on the atmosphere, social interactions with classmates, teachers and clinicians. All MF students perceived the atmosphere of medical school positively or expressed understanding about the impossibility of perfection in medicine. On the other hand, the NMF students responded more strongly and with emotions to the situations they encounter which do not feel right or fair. In some instances, this difference in their family background establishes a certain hierarchy: "It is easy to feel inferior" (G). Yet it also brings a sense of community with others who equally struggle: "Shared hardship brings people closer" (E). About 62% commented on the atmosphere of faculty and on the level of support and understanding among students: "It seems to me that the student community is quite open, everyone is trying to help each other. There is an atmosphere of shared community, since we can see we are all on the same boat" (H). Other students comment on the necessity of such a community: "It is so good that we have each other. I think it won't be possible to manage without the others, being on your own would make the study of medicine impossible" (B).

However, there were others who expressed disappointment from the lack of conviviality which made the adaptation to the medical environment much harder:

> I was looking forward to being at the university, finding new friends, but somehow it does not work for me here. The negative aspect of medical school is actually the classmates who exert so much pressure. I do not feel like I am suitable for the study of medicine and then it is easy to

feel like an outcast, when everyone seems to be doing well and I struggle, they are all so high achieving and smart and I don't know what to do about that. (I)

About half of the students also mention that being active and engaged in the faculty life brings certain advantages, such as being noticed by teachers and offered participation on research projects, being glorified as *an ideal student*, or in some instances offered additional chances to pass an exam: "There are students who have certain advantages, and it seems to me… unjust, unethical even towards the others" (A). 23% of the students consider this pressure on being active and engaged as negative, while some interiorise this imperative to accommodate to the culture and expectation of the medical school: "You have to achieve academically, but you also have to achieve socially" (G). These students, all of which came from NMF, do not feel this pressure as motivating, rather, it becomes a source of frustration. Their additional obligations and responsibilities make it harder to participate.

> I experience this pressure among the classmates that the more you do the better it makes you. So it is often admired that you take the night shift and from there you go to classes, and then back to the hospital… It creates this rather unhealthy environment that already at this stage you don't get to sleep and give yourself entirely to this calling… It gets normalised, and even during the exam period the library is open 24/7 which gives the impression we have to study the whole night. I think it is really important to draw the boundaries within yourself. (X)

46% of the students commented on their teachers, recounting positive experiences with those who are enthusiastic for their specialty area, who are supportive and communicate with them with respect, which motivates them to do well. However, many also shared negative experiences where the teachers humiliated and criticised them, or exposed them to unnecessary pressure: "On our first lab session we were doing some calculations and we did not get it right and the teacher said, 'You have just killed the patient'" (L). The students also note how this negative experience impacts on their ambitions, confidence, and self-expression: "It was an oral exam and they treated me like a piece of shit. It killed all my workaholism, my ambitions. It was a decisive experience" (V). Some interpret the teacher's assessment as a judgement that they belong among the less talented students: "So I got to learn my place" (I)

54% of students also commented on interpersonal relationships in the hospitals, the atmosphere, hierarchies, and attitudes towards the patients. Sometimes these encounters are source of inspiration:

> Although it was a very busy emergency ward where there is very little time for patients, the doctor still kept to this humane side, he did not act superior to them, he was still able to find time to explain the treatment and was interested in the patient's perspective, and when the patients know what is going on he can even feel better in the hospital. (W)

In other instances they witnessed practices they disapproved of:

> We went to see the patient who was quite disoriented and did not want the medical students to be there, but the doctor insisted we should listen to her lungs… We thought it unnecessary, the doctor brought us into this situation in which we did not want to be, and it seemed rather arrogant and entitled, superior. (C)

Some students do not feel well in the hospital environment and can not imagine working in this setting: "Attending the clinical training I can't actually imagine being a doctor. It is so busy, and I feel that once I enter the system I will get lost in it, it will crush me" (Q). For others, the negative experience are attributed to be a characteristic of a particular specialty which they decide to avoid: "You can feel the difference among medical specialties, for example surgery, the doctors have a certain kinds of expression, behaviour, and even values and attitudes towards the patients, and there I know I certainly don't want to be part of it, for these reasons" (W).

All MF students spontaneously identified their parents as motivations for studying medicine, and they also referred to them as their role models from whom they learn appropriate ways of responding to clinical and ethical challenges.

> My mother is a radiologist who often has to breach the diagnosis to patients with breast cancer, and so she told me about how to share these difficult news and she simply said, you have to do it slowly... Even when you know that the prognosis is not good you have to give it in small drops, tell them that further assessment is needed and prepare them for that... I am not sure whether it is good or not but it gives me an insight into how it actually works in clinical practice. (F)

For some of the NMF students the motivation for studying medicine was an encounter with doctors that were taking care of them or their family members:

> I was five when I became seriously ill and had to be hospitalised regularly. I met this really inspiring doctor who has been taking care of me, she was very kind and wise and tolerant and always had plenty of time for her patients, and I always wished, and still wish, to be like her. (T)

Others had deep personal reasons: "I was 16 when my father died of cancer, and that was this moment that I realised I want to do this work" (P). All NMF closely observe teachers and clinicians in the medical school, and 10 out of 16 explicitly stated they search for role models among them: "It does not have to be a professor, it can be an ordinary medical doctor who knows what they are doing. That really motivates me when they are knowledgeable in their area, and I want to be like them in order to really help the patients" (Z). In contrast to MF students who treat the medical doctors they meet in clinical attachments on almost equal terms and are more inclined to be critical towards them: "You always have to check whatever they say, you have to look critically on it, and be careful about people you consider your role models" (F). The NMF tend to perceive doctors from an inferior and submissive position and be generous in their admiration: "He was a consultant, so wise, tolerant, humble, and so knowledgeable, so educated" (T).

3.3. Expressions of moral self-reflection

While most students were reflective on the personal transformation in the course of their studies, 4 students spontaneously expressed moral self-reflection. They considered situations that challenged them and expressed awareness of the danger that they might not act in accordance with their values, while recognising the necessity of constant self-reflection to prevent this from happening: "I became rather cynical somehow. Some problems might be quite serious for people and I felt like I am lightening it up. I began to wonder whether I am becoming emotionally numb, and became quite concerned about being like that... So I decided not to be like that" (U). One student wonders about the impact of the institutional environment on her conduct:

> I try to be conscious about these influences. It seems to me that every year you spend in medical school, medicine eats out a little of your empathy. But it is difficult, because unless you consider this personally important, it is very easy to be taken away by the system, and patients disappear for you into their diagnoses and codes for the insurance companies. (X)

All these students expressed a strong support and understanding of their families (3 of them coming from MF, 1 from UF). Additional 4 students have expressed signs of moral self-reflection, and the awareness of the sense of danger of becoming someone they don't want to be as a result of the situations they face (3 of them from UF, 1 from NUF). These situations often involved students feeling empathy towards the patient, and experiencing feelings of pity, shame, or awkwardness when witnessing a doctor treating a patient poorly. "I really hope I won't give up on my moral convictions. I don't want to be dismissive or superior" (C). They expressed the need to face up to their mistakes and inappropriate behaviour, and correct these. One of these students also commented on the *expansion* of his empathy by reflecting on the situation of patients he encountered:

It helped me to gain real understanding of the alcoholics and drug addicts, because I thought, if I were in their life situation, perhaps I would end up the same, and perhaps even much worse. So it gave me this understanding. Often they are judged and condemned by society, but once you hear their stories, it actually deepens your understanding of another person. (Z)

Nevertheless, they also reflect on the need for a balance between empathy and emotional distance. As one student expressed,

it's about being able to communicate with strangers, to empathize while maintaining a certain perspective, perhaps even some distance. Although I might not want to create distance entirely, keeping a sense of perspective is important to realize that not everyone is like me and that I can, and must, approach each person differently; and that's okay. (S)

4. Discussion

This research provides insights into personal, emotional, and moral development of medical students. We have identified three interrelated variables that contribute to the formation of personal integrity and professional identity in the course of medical studies: sociocultural background, the hidden curriculum, and the capacity for critical moral self-reflection. The main limitation of our research is the self-selected nature of participation in our study, therefore, the research findings may not fully represent the wider student population. Future research may consider implementing random selection methods to mitigate these limitations.

While pursuing careers in fields such as science or teaching is often influenced by broader sociocultural factors such as community values, educational experiences, and societal norms (Bourdieu, 1977; Gore et al., 2015; Mansour, 2013), we found a medical family background to be a significant influence on medical students' adaptation to the medical environment and the development of their professional identity. While fields such as teacher education place significant emphasis on the sociocultural backgrounds of students, both at the institutional level and in academic research (Gay, 2018), medical faculties tend to overlook this aspect, and research in this area remains comparatively underdeveloped.

Our research shows that, in comparison to other students, those from MF had the best possible support system and secure grounding, which also allowed them more time and space for thinking and reflection. They had realistic expectations about life in medicine, the adaptation to hospital environment and appropriation of professional medical roles come more easily to them, and they benefit from their parents' guidance throughout their medical education. According to Choi et al. (2018), students from medical families (MF) benefit from familiarity with the medical environment, which can lead to better-informed decisions about practice locations and facilitate connections with established practitioners.

In the case of NMF, these students did not have the advantage of being familiar with the medical environment to the degree that their expectations of medical school and clinical practice would be realistic, which seems to cause higher stress levels and make the adaptation to this environment more challenging. Moreover, they are at a disadvantage in the level of support and understanding they receive from their families, and often also in terms of demands on their time and additional responsibilities. These factors also impact their social participation and enculturation into the medical world, and the ways in which they identify with their future professional role. Research indicates that NMF students often lack an understanding of how medical specialties are structured, and what prestige they convey to their practitioners. This unfamiliarity can lead to greater uncertainty during medical school, particularly when compared to peers who strategically plan their specialty choices early on. The competitive nature of certain specialties, such as surgery, discourages some students who are unwilling to engage in the struggle to gain access to surgical training opportunities (Olsson et al., 2019). According to Choi (2018), medical students from NMF are more likely to pursue primary care and other less prestigious specialties.

Our findings imply that medical schools, in addition to its focus on the transmission of knowledge and skills, have a profound responsibility to provide a respectful and nourishing environment which is supportive of students from all backgrounds, especially those whose lack of family support and professional cultural background which sets them in disadvantage in a wide range of ways. This is especially true for the first generation of medical/university students who bring diversity into the medical profession, as emphasised by other studies (Choi et al., 2018; Ryder et al., 2022; Romero et al., 2020).

Our research highlights the impacts of the hidden curriculum, especially the institutional culture of social hierarchies and competitiveness, and the importance of clinicians and teachers as inspiration and role models. NMF students tend to be more exposed to and impacted by the negative aspects of the hidden curriculum, from which the MF students are sheltered by their privilege. Long-lasting faculty mentorship might partially compensate for the lack of medical family-transmitted *insider* position, while also providing opportunities for reflection on the personal experiences in the medical environment and their ethical dimension, as a prerequisite of development of moral integrity and professional identity. These mentors, who ideally would be available to students for the time of their entire studies, might emerge from tutorships or perhaps long-term internships in GP practices. While the cost of dyad mentoring can be significant, the investment may be justified if mentorship can help reduce student burnout (Winkel et al., 2017). However, medical faculties currently still pay insufficient attention to the sociocultural contexts of their students. Investigating the influence of these backgrounds through research would be highly valuable, particularly to better understand how such factors shape students' professional identity. Additionally, it is worth considering not only the sociocultural background of students but also of faculty members, as this dynamic may influence teaching practices and mentoring relationships.

Medical schools and hospitals should also devise mechanisms for identifying both positive and negative aspects of the hidden curricula, create spaces for ongoing collective critical reflection of institutional practices, and deliberately work on these issues for the benefit of students, as well as patients.

While numerous studies (Farkas et al., 2019) acknowledge the positive impact of reflective practices in general, there is a lack of research specifically on moral self-reflection. We explored the role of moral self-reflection in the formation of professional identity with regards to ethical values and attitudes, and our finding suggest that the ability for moral self-reflection is essential in preventing perpetuation of negative and unethical practices and patterns of behaviour to which students are potentially exposed in the medical school and in the hospital, and represent additional protective factor for negative influence of the hidden curriculum. The capacity for moral self-reflection and its transformative potential for medical students should be taken into consideration by medical schools in devising educational and therapeutic interventions.

Reflective practice focused on one's own (un)ethical conduct can be integrated into existing ethics and clinical courses at medical faculties, and new elective courses centred on moral self-reflection, including collective reflection, should be incorporated into the curriculum (Pinkasová, 2022). These courses may focus on reflective writing assignments and group discussions that encourage students to explore and articulate their experiences from the medical environment and the ethical dilemmas that arise.

Students and staff might also be encouraged to participate in reflective or psychotherapeutic groups. Students may benefit from participation in Balint and psychotherapeutic groups, which create a safe environment for self-reflection (Richards et al., 2020), as well as in individual consulting or psychotherapeutic services provided by the faculty.

Medical educators may be encouraged to participate in peer-reflection groups, which, according to Boerboom et al. (2011), seems to enhance reflection quality in clinical teachers more than usual self-assessment reflection. Since sharing personal reflections can be challenging for both students and teachers, it is worth considering facilitation strategies, such as incorporating ice-breakers or art-based approaches (Meltzer, 2020). However, as Gomes

and Rego (2013) emphasise, the long-term development of the entire school environment, relationships, and institutional culture is paramount when aiming to achieve meaningful and sustainable change.

In conclusion, our research encourages medical schools to recognise the nuanced needs of students, particularly those without medical family background, reflect on institutional practices that have detrimental effects and work towards preventing and mitigating these, while cultivating those that contribute to positive experiences and personal growth of both students and staff. Creating interventions that address the sociocultural challenges and emphasise the need for moral self-reflection can contribute to a more inclusive and supportive educational environment, preparing students to better and time-variably navigate complexities of the medical worlds, while enhancing and refining ethical sensibility and critical reflectiveness of the medical profession.

Authors' contributions

Tereza Pinkasová: Conceptualization; Data curation; Formal analysis; Investigation; Project administration; Writing (original draft); Writing (review and editing).

Lydie Fialová: Methodology; Formal analysis; Writing (review and editing).

Artificial intelligence (AI) policy

The authors do not claim to have made use of artificial intelligence (AI) in the preparation of their articles

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APPENDIX 1. Semi-structured interview: areas of enquiry/questions/prompts

1. Motivations and expectations of students related to medical school

Can you remember who or what inspired you to study medicine?

Were you first in your family to study medicine?

>Were you the first in your family to study university?

Is your family supporting you in your studies?

What were your expectations from the medical school in terms of personal and professional development?

>Have these expectations been fulfilled? In what way?

>Is there anything that surprised you? In what way?

2. Observations and reflection of interpersonal interactions, social environment and institutional culture of the medical school

How do you perceive the social environment of the medical school (in terms of interpersonal interactions, systems, explicit and implicit rules)

>Does it suit you?

>Did you have to adjust in any way?

>Do you perceive there is an image of the *ideal student*?

If so, what kind of ideal? Do you endeavour to achieve this ideal? Do your classmates endeavour to achieve this ideal?

Are there any rules or processes in the medical school that you don't agree with?

Have you encountered anything unusual or unpleasant in the course of your studies?

Have you ever had to act against your convictions/believes/values?

How do you perceive the clinical attachments in the hospitals?

>How do you perceive the actions/behaviours/ways of the medical doctors?

>Has any situation occurred in which you were surprised by someone's action/behaviour?

>Has any situation occurred in which you wish to have acted differently but could not?

Would you have had a different attitude/approach if you were not wearing a white coat?

>Has any situation occurred in which you were moved/touched personally/emotionally?

Have you taken part on clinical attachments abroad?

>If so, was there anything that inspired you?

3. Reflection of personal transformation in the course of medical studies

Have you learned anything from your classmates? teachers? clinicians? patients?

Have you learned anything that you did not assume to learn?

Do you consider yourself transformed by medical studies?

>If so, how?

What kind of medical doctor/person would you not like to be?

What kind of medical doctor/person would you like to be?

APPENDIX 2. Content analysis - Codes

Content analysis - Codes	
Certain people have advantages	A, B, G, I, J, K, M, O, R, T, V, W, X
Sexism	A, B, D, G, J, O, R, V, W, Z
Conflict ideals and reality	B, T, U
Inadequate study organisation	B, D, E, J, M, P, R, U
Faculty and group environment	
- Lucky to be in a good group	A, B, D, E, P, N, Q, R
- Didn't fit in the group	I
- Didn't resonate with peers	J
- Atmosphere of community, mutual support	H, W, X
- Motivating environment	N, U
- Welcoming environment	F, V, Y
Teachers	
- Friendly teachers	R, H, M
- Teachers who do not want to teach	C, D, H, M
- Teachers who stress out students	R
- "If you don't know this, you will kill a patient"	C, L
- Abuse of power	A, H
- Lack of attention during lab sessions	O
- Yells at us for being stupid	K, T
Doctors in the hospital	
- Rude, disrespectful, arrogant doctors	S, Q, R, V
- Younger doctors contribute to good atmosphere	C
- Laziness and indifference	F, L
- Paternalistic attitude	M, U

Pressure to be active	
- Suited for extroverted students	D
- Pressure to perform and participate	Q, S, R
- Not allowed to be sick	E
- Active peers make others feel inferior	G, K
Approach to patients	
- Impersonal approach	J, K
- Avoid causing discomfort	X
- Importance of communication	M, P, G, Y
Other	
- Nudity	K, O, Z

The teacher-student relationship as a predictive variable of school engagement: The mediating role of subjective well-being in a structural equation model with indigenous students aged 10 to 14 years old

La relación docente-estudiante como una variable predictora del compromiso escolar: el rol mediador del bienestar subjetivo en un modelo de ecuaciones estructurales en estudiantes indígenas de entre 10 y 14 años

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Abstract:

The teacher-student relationship is a key factor in students' academic performance, school engagement, and subjective well-being. However, little is known about how this relationship influences these variables among Indigenous students, particularly Mapuche students in Chile. This study evaluates a predictive model of the teacher-student relationship on school engagement and the role of subjective well-being in this relationship in Mapuche students aged 10 to 14. A cross-sectional design was used, with a sample of 300 students aged 10 to 14. Structural equation modeling (SEM) was employed to analyze the relationships among the teacher-student relationship, school engagement, and subjective well-being. Results revealed a moderate significant direct effect of the teacher-student relationship on school engagement (β = .359, p <.001) and subjective well-being (β = .398, p <.001). Moreover, subjective well-being had a significant positive direct effect on school engagement (β = .402, p <.001), suggesting that students with higher levels of well-being exhibit greater school engagement. An indirect effect was also observed between the teacher-student relationship and school engagement, mediated by subjective well-being (β = .160, p <.001). These findings support the hypothesis that subjective well-being strengthens the impact of teacher-student relationships on school engagement. Although the effect size was small, the statistical power of the findings highlights their relevance. Limitations such as the cross-sectional design -restricting causal inferences- and suboptimal reliability indices in the behavioral dimension of school engagement must be considered in future replications. These findings contribute valuable evidence for the development of culturally relevant educational interventions aimed at improving Indigenous students' engagement and enhancing well-being of Indigenous students. They also underscore

the urgency of formulating public policies that focus not only on academic achievement but also on the holistic development of students.

Keywords: teacher-student relationship, subjective well-being, school engagement, Mapuche students, Chilean education, intercultural education.

Resumen:

La relación docente-estudiante es un factor clave en el rendimiento académico, el compromiso escolar y el bienestar subjetivo de los estudiantes. Sin embargo, se conoce poco acerca de cómo esta relación influye en estas variables en estudiantes indígenas, en particular en estudiantes mapuche en Chile. Este estudio evalúa un modelo predictivo de la relación docente-estudiante con respecto al compromiso escolar y al rol del bienestar subjetivo en estudiantes mapuche de entre 10 y 14 años. Se utilizó un diseño transversal con una muestra de 300 estudiantes. Para analizar los vínculos entre la relación docente-estudiante, el compromiso escolar y el bienestar subjetivo, se empleó el modelamiento de ecuaciones estructurales (SEM por sus siglas en inglés). Los resultados revelaron un efecto directo moderado y significativo de la relación docente-estudiante sobre el compromiso escolar (β = .359, p <.001) y el bienestar subjetivo (β = .398, p <.001). Asimismo, el bienestar subjetivo mostró un efecto directo positivo y significativo sobre el compromiso escolar (β = .402, p <.001), lo que indica que mayores niveles de bienestar se asocian a un mayor compromiso escolar. También se observó un efecto indirecto entre la relación docente-estudiante y el compromiso escolar, mediado por el bienestar subjetivo (β = .160, p <.001). Estos resultados respaldan la hipótesis de que el bienestar subjetivo actúa como un mediador y fortalece la asociación entre la relación docente-estudiante y el compromiso escolar. Aunque el tamaño del efecto fue pequeño, la potencia estadística de los hallazgos resalta su relevancia. No obstante, deben considerarse en futuras réplicas algunas limitaciones, como el diseño transversal, que restringe la inferencia causal, y los índices de confiabilidad subóptimos en la dimensión conductual del compromiso escolar. En conjunto, estos resultados aportan evidencia valiosa para el diseño de intervenciones educativas pertinentes en el ámbito cultural, que promuevan el compromiso y el bienestar de los estudiantes indígenas. Asimismo, destacan la urgencia de generar políticas públicas focalizadas no solo en lo académico, sino también en el desarrollo integral de los estudiantes.

Palabras clave: relación docente-estudiante, bienestar subjetivo, compromiso escolar, estudiantes mapuche, educación chilena, educación intercultural.

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1. Introduction

1.1. The challenges related to interculturality in Chilean school education

School education in Chile comprises twelve mandatory levels (plus two optional levels of preschool education). The twelve mandatory levels are divided into basic education (eight levels) and secondary education (four levels). Drawing a parallel with the North American system, basic education corresponds to elementary and middle school, while secondary education aligns with high school (Ministerio de Educación, 2010).

Intercultural education in Chile aims to promote respect and coexistence among diverse cultures by integrating various aspects of Indigenous peoples, including their language, worldview, and other cultural dimensions, into the educational system (Arredondo & Paidacán, 2023).

In 2023, a dropout rate of 1.66% was recorded, corresponding to 50 814 students who discontinued their studies. This represents an increase of 0.2 percentage points compared to

the 2022 rate (Ministerio de Educación, 2023). Focusing exclusively on students of Indigenous origin, they face significantly higher school dropout rates compared to their non-Indigenous peers. This disproportionate representation in dropout rates is attributed to systemic factors that contribute to educational disparities between Indigenous and non-Indigenous students (Burgess & Lowe, 2022). Some of these systemic factors are related to a disconnect between policy and practice, to socio-economic factors or to discrimination, among others (Burgess & Lowe, 2022; Snijder et al., 2021)

The discrimination exerted by the educational system also manifests in its treatment of Mapuche knowledge, both on personal and structural levels, permeating the school context and influencing the curriculum. This is particularly evident in the implementation of the bilingual intercultural education initiative. Although this initiative originally sought to create specialized schools integrating both Western and Mapuche knowledge (addressing content and language), it ultimately segregated Mapuche culture into a distinct category of institutions. By marginalizing Mapuche students and isolating them from traditional schools, this approach has amplified racism and prejudice against Mapuche identity within the educational system (Arias-Ortega et al., 2023; Quilaqueo-Rapiman, 2023).

The characteristics of the teacher and the presence of the aforementioned elements shape the teacher-student relationship, which influences various educational variables at both the student and teacher levels (such as academic performance, motivation, and learning). Moreover, this relationship is interconnected with variables from other domains, including the subjective well-being of both the teacher and the student (Farhah et al., 2021).

1.2. Teacher-student relationship

The teacher-student relationship, defined by Skinner and Pitzer (2012) as the bond between student and teacher, is determined by the quality of affective ties established between them. According to the model proposed by Sabol and Pianta (2012), this relationship constitutes a dyadic bond characterized by three fundamental dimensions: closeness, conflict, and dependency. These dimensions dynamically interact and significantly influence variables such as academic performance, socioemotional development, and school behavior. Teacher-student relationships characterized as supportive alliances promote student engagement and serve as predictors of motivation and academic performance (Pan & Yao, 2023). Given the issues of racial discrimination and teacher prejudice against Indigenous students in our country, it is crucial to examine the respect and acceptance teachers hold toward Indigenous populations and their cultures, as these aspects are central to fostering a positive sense of identity among Mapuche students (Purdie et al., 2000).

In terms of teacher respect and warmth, the presence of teacher prejudices is evident. These prejudices manifest through various patterns of behavior directed toward Indigenous students in our country and are linked to discriminatory acts. Examples include creating relational distance, conveying low academic expectations, dismissing academic progress, and exhibiting paternalistic attitudes toward Mapuche students (Muñoz-Troncoso et al., 2023). Teachers tend to hold lower educational expectations for Indigenous students (Chen, 2024; Medina & González-Jimenez, 2023). This discrimination is pervasive, occurring across gender, educational levels, and socioeconomic status, significantly undermining the teacher-student relationship for this specific group (Arias-Ortega et al., 2023; Castillo et al., 2022).

The teacher-student relationship is a critical factor influencing students' academic and personal development. A positive relationship between teachers and students fosters an environment conducive to learning, emotional well-being, and social competence. Research indicates that when students perceive their teachers as supportive and caring, they are more likely to experience enhanced self-efficacy, reduced anxiety and mental health issues, and improved academic performance (Oh & Song 2021; Lei et al., 2023; Mallik, 2023; Wanders et al., 2020; Wang, 2024; Zhang et al., 2022; Zou et al., 2024). This supportive dynamic is particularly vital in primary education, where students often seek recognition and emotional support from their teachers, which can significantly influence their motivation and engagement in learning activities (Wang, 2024).

The teacher-student relationship significantly affects several other variables that influence the development of students, such as the subjective well-being and school engagement (Engels et al., 2021). Empirical evidence supports the notion that positive interactions between teachers and students can enhance students' emotional states and their involvement in school activities (Goetz et al., 2021; Mastromatteo et al., 2021). Affective teacher-student relationships are positively correlated with students' school engagement and achievement. When students perceive their teachers as supportive and caring; they are more likely to engage actively in their learning processes, leading to improved academic outcomes. This relationship is particularly crucial as students transition to higher grades, where academic challenges increase, and the need for supportive relationships becomes more pronounced (Sadoughi & Hejazi, 2021).

Quality of the teacher-student relationship directly influences school engagement (Hofkens & Pianta, 2022). Positive relationships with teachers lead to higher levels of school engagement, while negative relationships can result in disengagement. Also, positive teacher-student dynamics foster a sense of belonging and motivation, essential for students' overall well-being and engagement in school activities (Thornberg et al., 2022).

1.3. School engagement

School engagement is defined as a meta-construct, a biopsychosocial phenomenon that refers to the simultaneous experience of focus, interest, and intense enjoyment by students in relation to their participation in the teaching-learning process (Fredericks et al., 2004).

According to Sáez-Delgado et al. (2023), school engagement is characterized by students' active participation in academic activities, their emotional connection to the school environment, and their commitment to learning (Pérez-Salas et al., 2021). This systematic review emphasizes the importance of methodological approaches in understanding how engagement manifests among secondary students, suggesting that engagement is not merely a singular experience but rather a composite of various interactions and experiences within the school context.

González et al. (2022) further elaborate on this concept by utilizing the Student Engagement Instrument (SEI), which assesses different dimensions of engagement, including the emotional, behavioral, and cognitive aspects. Their analysis indicates that school engagement is crucial for academic success and is influenced by various factors, including teacher-student relationships and the overall school climate. The SEI serves as a valuable tool for measuring these dimensions and understanding the underlying factors that contribute to student engagement.

Additionally, Pérez-Salas et al. (2021) highlight the role of teacher-student relationships and special educational needs in shaping student engagement and disengagement. Their findings suggest that positive interactions with teachers and supportive peer relationships are essential for fostering engagement among students, particularly those with special educational needs. This underscores the relational aspect of engagement, where the quality of interactions within the school environment significantly impacts students' motivation and involvement in their learning processes.

1.4. Subjective well-being

Subjective well-being is conceptualized as an individual's self-evaluation of their happiness and life satisfaction, integrating both affective responses and cognitive appraisals of life circumstances. This multidimensional construct has been extensively studied, highlighting its complexity and broad applicability (Diener et al., 2009; Diener, 2000; Cobo-Rendón et al., 2024).

The framework of subjective well-being distinguishes between emotional and cognitive components. Emotional aspects encompass positive and negative affect, while cognitive evaluations are captured through measures of life satisfaction, reflecting an individual's overall assessment of their quality of life (Diener et al., 2009).

As a measure of societal progress, subjective well-being provides valuable insights into population-level quality of life. The systematic evaluation of happiness and life satisfaction underscores the critical role of subjective well-being in shaping individual behaviors and influencing broader societal outcomes (Diener, 2000).

1.5. Empiric evidence of subjective well-being and school engagement

Perceived teacher support, a fundamental component of the closeness dimension of the teacher-student relationship, positively contributes to significant changes in students' school engagement, particularly in the behavioral dimension: the greater the perceived teacher support, the stronger the emotional and behavioral engagement (Diestra et al., 2023). This phenomenon has also been observed among Indigenous students. For instance, Canadian Indigenous students attribute part of their academic success to the development of strong and meaningful relationships with their teachers (Ribeiro et al., 2023).

Empirical evidence suggests a significant relationship between subjective well-being and school engagement among students. Subjective well-being has been shown to positively influence students' engagement in their educational environments. Students who perceive higher levels of well-being are more likely to exhibit greater school engagement, which includes behavioral, emotional, and cognitive dimensions of participation in school activities (Cui et al., 2023). This relationship underscores the importance of fostering a supportive school environment that enhances students' overall well-being.

Other studies suggest that students with higher levels of subjective well-being tend to have a more robust internal locus of control, which in turn enhances their engagement in academic activities (Cui et al., 2023). This aligns with the notion that positive emotional states can lead to increased motivation and commitment to schoolwork, thereby fostering a more engaged learning experience.

Saxer et al. (2021) also provide a multidimensional approach to measuring well-being in students, emphasizing that aspects such as positive relationships and engagement in school activities are interconnected. Their findings suggest that interventions aimed at improving students' social relationships and overall well-being can lead to increased engagement in school, particularly during critical developmental stages.

Other studies reinforce the idea that social support from peers, parents, and teachers plays a crucial role in enhancing both subjective well-being and school engagement. Students who feel supported in their social environments are more likely to engage actively in school, highlighting the interdependence of social factors and individual well-being (Nguyen & Nguyen, 2021; Estell & Perdue, 2013).

1.6. Associations between the teacher-student relationship, school engagement, and subjective well-being

The teacher-student relationship represents a dyadic system where both student and teacher engage in reciprocal interactions. Based on Bowlby's (1969) framework, the teacher-student relationship plays a crucial role in the emotional development and educational engagement of students. When these relationships are positive, they become not only a pivotal factor in an individual's academic trajectory but also in their personal development. This relationship constitutes a critical element in fostering various processes associated with students' development and educational trajectories, such as school engagement (Fredericks et al., 2004).

The impact of the teacher-student relationship extends both within and beyond the classroom, acting as a protective factor. Students who experience higher-quality relationships with their teachers are more likely to seek help and receive treatment for mental health issues and report better results in subjective well-being measurements. Conversely, students with lower-quality teacher relationships are more prone to isolation when facing mental health challenges (Stein & Russell, 2021). For indigenous students, friendly and caring teachers are

perceived as positive influences with a significant impact on fostering school engagement (Tessaro et al., 2021).

The quality of the teacher-student relationship is a significant predictor of school engagement, particularly for students at risk of behavioral problems. Their study highlighted those positive relationships with teachers foster better academic habits and contribute to students' overall adjustment in school, thereby enhancing their subjective well-being (Pedditzi et al., 2022). This underscores the idea that supportive teacher-student relationships can act as a protective factor, promoting both emotional stability and academic success.

1.7. Gap and research questions

Analyzing the collected evidence and the interrelation among variables reveals the existence of profound connections between these concepts. However, significant gaps remain regarding the directionality of the influence between variables and the potential impact each exerts on the other.

Moreover, we have not found studies that analyze or delve into the existence of theoretical models that reveal a structure explaining the linkage among the variables. While we have encountered models that encompass interactions between the teacher-student relationship and school engagement, none have been tested that include the influence of subjective well-being.

This knowledge gap becomes even more pronounced when exploring differences across student sociodemographic characteristics. If the impact of teachers on students varies depending on their vulnerability and individual traits, it raises the question of whether a model exists to describe the relationship among these variables and whether it is possible to structure a model that effectively describes the relationship among these variables. Among the sociodemographic variables, this study aims to provide a deeper understanding of the teacher's role in culturally diverse contexts, an area that has been scarcely studied in Chile.

The general objective of the study is to evaluate a predictive model of school engagement, using the teacher-student relationship as a predictor variable and subjective well-being as a mediating variable in Mapuche students aged 10 to 14.

The specific objectives are:

- Estimate the psychometric properties of the three scales in Mapuche students aged 10 to 14.

- Analyze the direct effect of the teacher-student relationship over the school engagement in Mapuche students aged 10 to 14.

- Analyze the indirect effect of the teacher-student relationship over the school engagement in Mapuche students aged 10 to 14.

2. Method

2.1. Design

The present study adopted a non-experimental, correlational and explanatory, utilizing a cross-sectional design.

A cross-sectional design is particularly well-suited for this study as it enables the concurrent examination of the relationships between teacher-student interactions, school engagement, and subjective well-being across diverse sociodemographic variables, including age, gender, and cultural background (e.g., Mapuche/Chilean). This methodological approach permits the collection of data at a single point in time, allowing researchers to identify patterns and associations without requiring the extended time and resources associated with longitudinal studies. Specifically, cross-sectional designs are adept at capturing the dynamics of teacher-

student relationships and their influence on student engagement, particularly within primary education contexts (Yi & Kutty, 2023).

This design holds significant value in educational research, as it facilitates the exploration of how multiple factors, such as the quality of teacher-student relationships, shape student behaviors and levels of engagement in heterogeneous populations (Endedijk et al., 2021). Moreover, cross-sectional studies yield valuable insights into the associations between teacher-student relationships and student outcomes, making them an appropriate choice for investigating the complex interactions that underpin students' subjective well-being and engagement (Pérez-Salas et al., 2021).

By adopting a cross-sectional design, this research aims to address the stated research questions effectively, providing a nuanced understanding of the factors influencing school engagement and well-being across diverse student populations.

2.2. Participants

The study sample was selected through a non-probabilistic convenience sampling method, comprising 300 students (133 male and 167 female) from ages 10 to 14. For The mean age was 13.1 years (SD = 1.247). The age distribution is shown below in Table 1.

TABLE 1. Age distribution.

Age	Mapuche students	Chilean students
10 years old	17	47
11 years old	27	78
12 years old	42	67
13 years old	51	99
14 years old	163	134
Total	300	425

Inclusion criteria were an age range of 10 to 14 years, identifying as Mapuche, having a Mapuche last name and enrollment in formal education at a public school. Conversely, exclusion criteria were defined as having limited proficiency in reading in Spanish, which could impede the ability to respond to questionnaires, or being part of an educational setting outside the scope of regular education (such as hospital schools, special schools, among others).

2.3. Instruments

Various instruments were used for data collection:

- Teacher-student relationship (TSR): the teacher-student relationship subscale of the Student Engagement Instrument (Appleton et al., 2006) was utilized. It consists of nine Likert-type items, scored from 1 to 4. The adaptation for the Chilean population by González et al. (2022) was used, showing acceptable reliability for Chilean students (ω = .700) and adequate validity according to the cited article. The scale contains items such as "My teachers are there for me when I need them". The 9 items are measured on a Likert scale ranging from 1 to 5 (1 = strongly disagree / 2 = disagree / 3 = neither agree nor disagree / 4 = agree / 5 = strongly agree).

- Student Engagement (SE): the 19 items of the student engagement subscale within the Multidimensional Student Engagement Scale by Wang et al. (2019) were applied. Psychometric properties were measured for the Chilean school population by Pérez-Salas et al. (in press). For the student engagement scale, high results were found regarding internal consistency and reliability (ω = .949). To respond to the 19 items, a Likert-type response scale was used, consisting of five points. The scale is subdivided into behavioral engagement, cognitive engagement, affective engagement, and social engagement. The scale contains 19 items measured on a Likert scale ranging from 1 to 5 (1 = very different from me / 2 = somewhat different from me / 3 = neither different nor similar to me / 4 = similar to me / 5 = very similar to me).

- Subjective Well-being (SWB): the Subjective Well-being Scale short version (EBS-8) by Calleja et al. (2022) was utilized to measure subjective well-being. The scale consists of 8 Likert-type items scored from 1 to 6. They found high results regarding internal consistency and reliability (α = .958, ω = .957). This scale was developed and tested with the general Mexican population, specifically among individuals aged between 12 and 81 years. This original version, in neutral Spanish, was applied to the participants.

2.4. Procedure

The current study constitutes the preliminary phases of a more extensive research endeavor, subject to analysis and scrutiny by the Scientific Ethics Committee of the Faculty of Medicine of the University of Concepción (CEC 25/2022), as well as the Ethics, Bioethics, and Biosafety Committee of the Vice-Rector's Office for Research and Development of the same university (CEBB 1476-2023). The study obtained validation from both committees

Subsequent to receiving authorization letters, the project underwent assessment by the respective organizations in charge of the schools. Upon approval, contact was initiated with the establishments to engage them in the project.

Upon securing authorization from the educational establishments, informed consents and assents were extended to the students. Subsequent to the collection of these consents, coordination was undertaken to determine the date and time for the application of the instruments, a process executed within each school.

2.5. Data analysis

Due to the lack of psychometric properties estimation for the Mapuche sample, confirmatory factor analyses were conducted for the three scales to be used. In addition, reliability analyses were performed. A structural equation model was evaluated, incorporating the correlations found in the confirmatory factor analyses. All the analysis were conducted using Mplus Version 8.8. The data is available upon request.

3. Results

3.1. Teacher-student relationship subscale

3.1.1. Confirmatory factor analysis

The original confirmatory factor analysis (CFA) model exhibited a moderate fit, with an RMSEA of .089 and a CFI of .986, which, although indicating acceptable fit, also revealed room for improvement. In order to optimize the model's adequacy, changes based on modification indices were implemented by incorporating correlations among the measurement errors of certain items (TSR1 with TSR2, TSR5 with TSR6, TSR7 with TSR8, TSR5 with TSR4, and TSR5 with TSR3). These variations resulted in a significantly improved fit. Moreover, the inclusion of error correlations reflects the nature of the measured construct, reducing unexplained variance without compromising the model's validity. Consequently, the modified CFA version reflects

a more robust factorial structure that is better adjusted to the data, thereby providing stronger empirical support for the interpretation of the scale.

The results of the CFA for the unidimensional structure of the scale, after the modifications, show an excellent fit (χ^2(22) = 31.377, p = .0887, CFI = .998, TLI = .997, RMSEA = .038 [90% CI: .000-.066] [Jordan, 2021]). In the corresponding figure (see Figure 1), the results of the CFA are graphically presented. The obtained factor loadings, all statistically significant, ranged between .677 and .901. In particular, items TSR6 and TSR9 exhibited the highest factor loadings (.846 and .901, respectively), while item TSR8 displayed the lowest loading (.677).

Regarding convergent validity, an average variance extracted (AVE) of .621 was obtained, indicating good convergent validity. These results support the factorial validity of the scale within the proposed model.

FIGURE 1. Confirmatory factor analysis of the teacher student-relationship subscale.
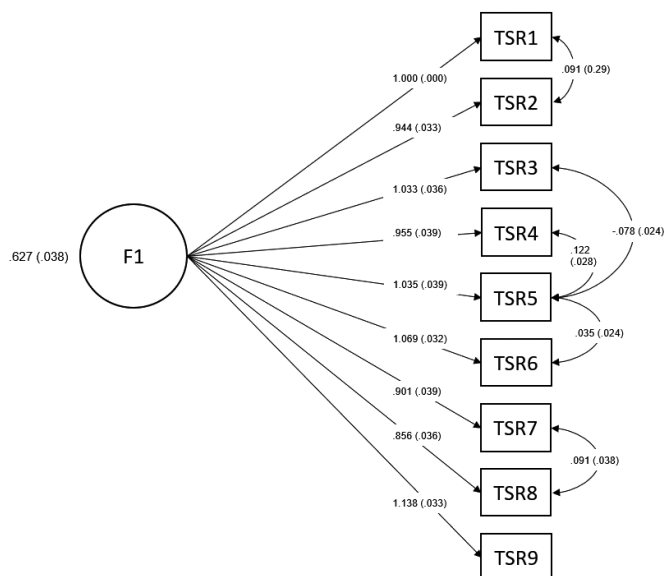
Note: the values shown in the figure correspond to unstandardized coefficients.

3.1.2. Reliability

The internal consistency coefficients for the teacher-student relationship scale in the Mapuche sample were as follows: Cronbach's α = .917 (95% CI: .902–.930) and McDonald's ω = .917 (95% CI: .903–.931).

## 3.2. Subjective Well-Being Scale

3.2.1. Confirmatory factor analysis

The original confirmatory factor analysis (CFA) model for the Subjective Well-Being Scale (SWB) exhibited inadequate fit, with a χ^2(20) = 100.300, p = .0000, an RMSEA of .116 (90% CI: .094-.139), a CFI of .997, a TLI of .996, and an SRMR of .010. These values indicated deficiencies in the model's fit to the data, evidencing the need for modifications to improve its adequacy. Based on the modification indices, correlations among the measurement errors of items SWB3 with SWB7, SWB4 with SWB7, and SWB6 with SWB7 were incorporated. The inclusion of these correlations reflects the structure of the measured construct, reducing the unexplained variance without compromising the model's validity.

As a result of these modifications, the adjusted CFA model showed a substantial improvement in fit, with a $\chi^2(17) = 42.743$, $p = .0005$, an RMSEA of .071 (90% CI: .045-.098), a CFI of .999, a TLI of .998, and an SRMR of .007. This indicates that the revised model fits the data more adequately. In the corresponding figure (see Figure 2), the results of the adjusted model are graphically presented. The factor loadings obtained, all statistically significant, ranged between .839 and .951. In particular, item SWB4 exhibited the highest factor loading (.951), while item SWB8 showed the lowest (.839).

Regarding convergent validity, the average variance extracted (AVE) was .852, which supports the model's adequate convergent validity. Overall, these results confirm the factorial validity of the Subjective Well-Being Scale within the proposed model, ensuring a more robust representation of the evaluated construct.

FIGURE 2. Confirmatory factor analysis of the Subjective Well-Being Scale.
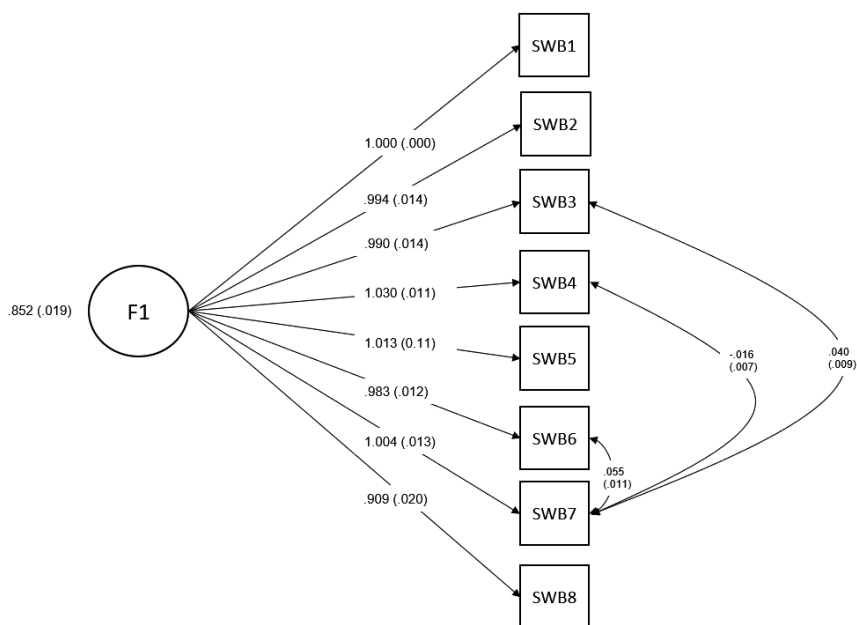
Note: the values shown in the figure correspond to unstandardized coefficients.

3.2.2. Reliability

In the Mapuche sample, the internal consistency coefficients for the Equality-Based Respect Scale were as follows: Cronbach's α = .968 (95% CI: .963-.974) and McDonald's ω = .969 (95% CI: .963-.974).

3.3. School engagement subscale

### 3.3.1. Confirmatory factor analysis

The original confirmatory factor analysis (CFA) model yielded a CFI of .920, a TLI of .906, and an SRMR of .063, which, although indicative of an adequate fit, suggested room for improvement given an RMSEA of .106. In order to optimize the model's adequacy, modifications based on modification indices were implemented by incorporating correlations among the measurement errors of certain items (SE1 with SE4, SE1 with SE10, SE5 with SE6, SE8 with SE9, and SE11 with SE12), as well as correlations between factors (F2 with F1, F3 with F1 and F2, F4 with F1, F2, and F3) and between some items and certain factors (SE10 with F1 and F2, SE14 with F1 and F2). These modifications resulted in a significantly improved fit. Furthermore, the inclusion

of error correlations reflects the nature of the measured construct, reducing unexplained variance without compromising the model's validity. Consequently, the modified CFA model reflects a more robust factorial structure that is better aligned with the data, thereby providing stronger empirical support for the interpretation of the scale.

The results of the CFA for the four-factor structure of the scale, after these modifications, indicate an adequate fit, with $\chi^2(137) = 377.823$, $p = .001$, CFI = .961, TLI = .952, and RMSEA = .077 (90% CI: .067-.086) (Jordan, 2021). In the corresponding figure (see Figure 3), the results of the CFA are graphically presented. The factor loadings obtained, all statistically significant, ranged between .477 and .831. In particular, items SE16 and SE19 exhibited the highest factor loadings (.831 in both cases), while item SE10 showed the lowest loading (.477).

Regarding convergent validity, the average variance extracted (AVE) for the four factors was as follows: F1 = .45, F2 = .57, F3 = .60, and F4 = .62, indicating acceptable convergent validity, especially for factors 2, 3, and 4. Discriminant validity was assessed using the Fornell and Larcker criterion, and it was verified that, in general, the AVE of each factor exceeded the square of the correlations between factors, thereby supporting the discriminant validity of the final model. Overall, these results corroborate the factorial validity of the scale within the proposed model.

FIGURE 3. Confirmatory factor analysis of the school engagement subscale.
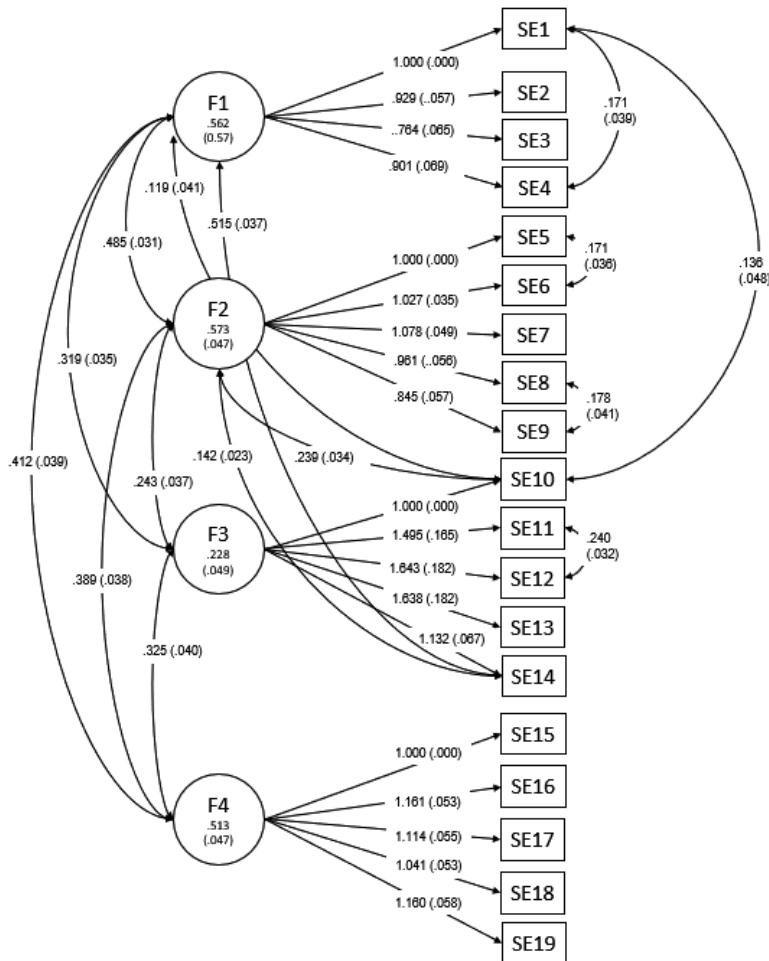
Note: the values shown in the figure correspond to unstandardized coefficients.

3.3.2. Reliability

The reliability coefficients (with scores ranging from α = .666 to .920 and ω = .674 to .922) are detailed for each factor and for the overall scale in the table below (see Table 2). Although the internal consistency obtained for the behavioral engagement factor falls within a moderate range, its inclusion is justified by the confirmatory factor analysis results, which indicate adequate factorial validity within the proposed theoretical model.

TABLE 2. McDonald's omega and Cronbach's alpha for school engagement.

Dimension	McDonald's omega (range)	Cronbach's alpha (range)
Conductual (F1)	.674 (.613–.734)	.674 (.613–.734)
Cognitive (F2)	.840 (.812–.869)	.840 (.812–.869)
Emotional (F3)	.854 (.828–.880)	.850 (.822–.875)
Social (F4)	.835 (.803–.862)	.835 (.803–.862)
Total scale	.810 (.776–.843)	.810 (.776–.843)

3.4. Model

This section presents the results obtained from applying Structural Equation Modeling (SEM) to data collected in the Mapuche sample. The aim is to examine the relationships among various latent variables: Teacher-Student Relationship (TSR), Subjective Well-Being (SWB), and School Engagement (SE).

The analysis was conducted using Mplus Version 8.8, employing the WLSMV estimator due to the categorical nature of the observed variables. Data from 300 participants were analyzed, distributed across three main latent variables.

The model fit indices indicate a good fit:

- Chi-squared (χ^2) = 1482.494, with 584 degrees of freedom and p <.001

- RMSEA = .072 (.067 - 0.76)

- CFI = .961, TLI = .958

- SRMR = .067

These results suggest that the proposed model adequately represents the underlying structure of the data. The model included three latent factors, and the structural relationship are detailed in Table 3.

TABLE 3. Standardized coefficients of the structural relationships.

Structural relationship	B	p value
Teacher student relationship → school engagement	.359	<.001
Subjective well-being → school engagement	.402	<.001
Teacher student relationship → subjective well-being	.398	<.001

Regarding the indirect effects, the model showed a low magnitude (β = .160) mediation of the subjective well-being, but with a great statistical power (*p* <.001). Hereafter is presented the figure of the full model (Figure 4 below).

FIGURE 4. Structural equations model.
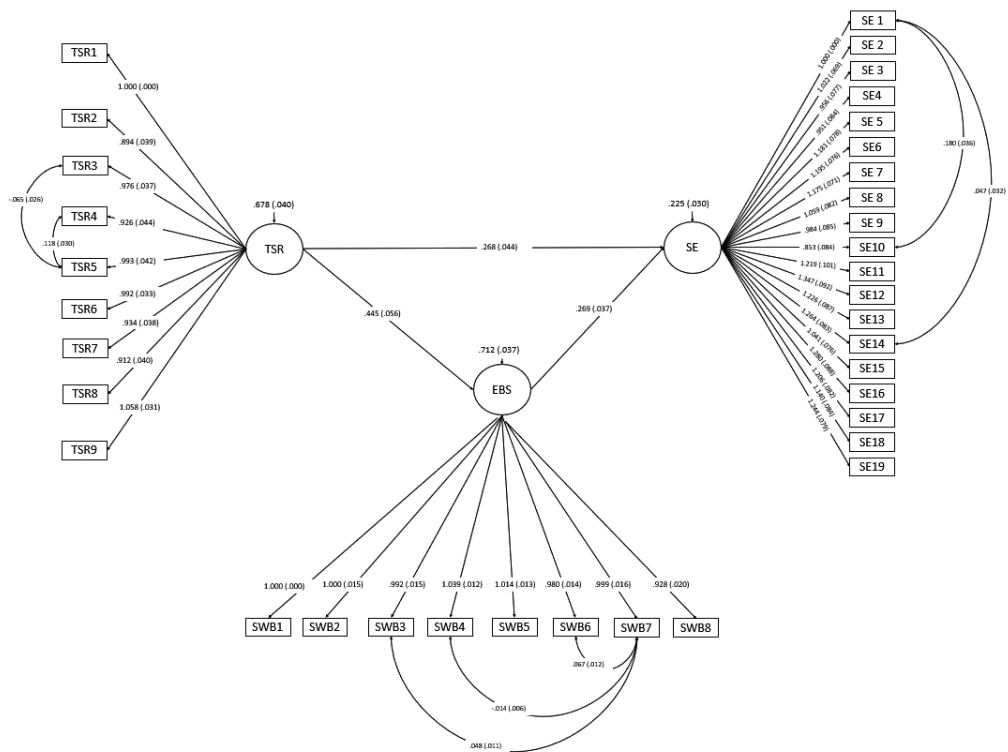
Note: the values shown in the figure correspond to unstandardized coefficients.

4. Discussion

Regarding the first specific objective, it was possible to estimate the psychometric properties of the three instruments used. All demonstrated good reliability and validity, except for the behavioral dimension of school engagement. While this constitutes a limitation of the study, the dimension was nonetheless included due to its theoretical relevance and the results of the confirmatory factor analysis.

With respect to the factor analyses, all scales exhibited good fit indices, supporting the adequacy of the specified factorial structure in representing the variables. This is of utmost importance given the limited cultural relevance of certain measurement instruments, representing a step forward in the consolidation of tools with sociocultural pertinence.

Regarding the second specific objective, a moderate significant direct effect was found from the teacher-student relationship to the school engagement (β = .359, *p* <.001). This finding suggests that strong and positive bonds between teachers and Mapuche students, fortify the school engagement. This aligns directly with previous studies that have established emotional support and the perception of a positive relationship with teachers as significant predictors of school engagement (Gil et al., 2023; Miranda-Zapata et al., 2021).

Research suggests that the impact of the teacher-student relationship is even more pronounced in contexts where additional educational or sociodemographic challenges are present (Gutiérrez et al., 2017). This becomes particularly relevant in the case of Mapuche students, considering that ethnic background entails various educational barriers and increases the risk of school dropout due to the inadequate adaptation of the educational system to sociocultural differences (Muñoz, 2021; Muñoz & Millán, 2019; Mansilla et al., 2016).

A significant positive direct effect of subjective well-being on school engagement was also found (β = .402, *p* <.001), suggesting that higher subjective well-being is associated with greater school engagement among Mapuche students. These findings are consistent with previous research, which has demonstrated that students with higher levels of subjective well-being tend to exhibit greater personal involvement in learning activities, indicating that subjective well-being functions as a precursor to school engagement (López et al., 2022; Saracostti et al., 2019).

Finally, a significant positive indirect effect was identified between the teacher-student relationship and school engagement, mediated by the subjective well-being (β = .160, *p* <.001). This suggests that subjective well-being functions as a mediator in this relationship, influencing the connection between these two variables. These results are consistent with previous research indicating that subjective well-being mediates this link, affecting factors such as intrinsic motivation, social support, and academic resilience, among others (Pazmiño et al., 2024; González, 2021; Lara et al., 2021).

The results establish important relationships between the variables described in the model, fulfilling the general objective of evaluating a predictive model of the teacher-student relationship on school engagement and subjective well-being in Mapuche students aged 10 to 14. Although the effect size is small, it demonstrates significant statistical power, which enhances the relevance of the findings.

Nevertheless, this study has notable limitations that should be addressed when replicating the model. First, the cross-sectional design limits the ability to infer causality from the observed effects. Additionally, suboptimal reliability indices were found for the behavioral dimension of school engagement, suggesting the need for further refinement when replicating the results.

This study highlights critical sociocultural implications for Chile, particularly regarding the Mapuche population. The findings demonstrate that positive teacher-student relationships significantly enhance school engagement and subjective well-being, suggesting the need for culturally responsive educational practices. Strengthening these relationships can help mitigate the historical educational disadvantages faced by Indigenous students in Chile.

Future research should employ longitudinal designs to clarify causal relationships and further refine culturally sensitive instruments, particularly for measuring behavioral engagement. Expanding qualitative approaches could deepen the understanding of Indigenous students' experiences, while comparative studies across Latin American Indigenous groups may reveal broader patterns relevant to intercultural education.

Authors' contributions

Joaquín Brieba-Fuenzalida: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Software; Supervision; Validation; Visualization; Writing (original draft); Writing (review and editing).

Artificial intelligence (AI) policy

Generative artificial intelligence was used to assist in the language refinement of selected paragraphs in this manuscript.

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Authors' biography

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Book reviews

Mukherji, P. y Albon, D. (2022).
Research methods in early childhood: An introductory guide.
(Paula Martínez Enríquez)

Cantón-Mayo, I. (2024).
Las escuelas rurales del valle de Jamuz y la Valdería [The rural schools of theJamuz valley and la Valdería].
(Luis Ángel Prieto Carnicero)

Gil Quintana, J. (2023).
Educación y comunicación en una sociedad postdigital. Investigación documental y análisis de perspectivas [Education and communication in a post-digital society: Documentary research and analysis of perspectives]
(Leticia Porto Pedrosa)

Jonas, M. y Yacek, D. (2024).
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(Jose María Camean Ariza)

![REP Revista Española de Pedagogía]

Book reviews

Mukherji, P. & Albon, D. (2022).

Research methods in early childhood: An introductory guide.

SAGE Publications. 448 pp.

Research in the field of early childhood education is a vital and constantly evolving area that requires effective and accessible tools for researchers. The work before us, *Research methods in early childhood: An introductory guide*, by Penny Mukherji and Deborah Albon, academics linked to London Metropolitan and Roehampton universities respectively, contributes to this specific need. This work has a structured and methodological focus that guides readers in the process of research in early childhood education, from conceptualisation to data analysis. Accordingly, the work's introduction lays a solid foundation by defining concepts such as basic, applied, evaluation, action, and targeted research.

Through practical examples, an accessible writing style, and a focus on ethical considerations, this book facilitates understanding of complex concepts and fosters responsible and reflective research. It also includes complementary resources such as videos and glossaries that add to its value as a fundamental text, both for students and for professionals in the field. This edition includes two new chapters on quantitative and qualitative data analysis, updating the book's content to reflect the latest methodological advances.

We will now synthesise the thematic nuclei that it covers. The book is divided into five parts addressing the essential aspects of the process of research on early childhood. The first one details the planning stages of a project, from developing a field of research to formulating questions and hypotheses, choosing an appropriate design and methods, and selecting the sample. It considers the importance of reliability and validity, and also considers probability and non-probability sampling techniques. It also explains what a research proposal is and the need of keeping a research diary and collaborating with a supervisor. Finally, this section explains the significance of doing a literature review, the elements that comprise a good review, and how to do literature reviews in both quantitative and qualitative research. It also provides strategies to identify, evaluate, and synthesise the existing literature.

The second part explores the different paradigms and principles that underpin research in early childhood education. It starts with positivist research, discussing the origins and meanings of positivism, the scientific method, and quantitative methodologies, including experimental and correlational methods. The opportunities and limitations of positivist research are considered, emphasising the need for validity and reliability. In addition to positivism, interpretative, critical, post-structuralist, and post-humanist theories are analysed, providing a broad overview of qualitative focuses. This section invites readers to consider multiple

theoretical perspectives and focusses. It also underlines the importance of maintaining ethical practices throughout the whole of the process of research, encompassing inclusive research.

The third part details various research focusses that are applicable to early childhood education. It describes how to design and use surveys, providing guidelines for designing questionnaires and interpreting results. Next, it explains the steps in carrying out ethnographic field work and discusses its possibilities and limitations. It also reviews the history, design, and methods of case studies, noting their advantages and disadvantages. Lastly, it presents the role of the researcher in action research, describing the cycle of this methodology, the methods used, and the importance of reflection and continuous improvement in educational practice.

The fourth part considers specific data-collection techniques in depth. It provides a historical overview of observation, noting that it is fundamental in educational research and discussing appropriate situations, types and methods for recording information. It describes interviews, when to use them, the different types, and how to carry them out and record them, offering tools to obtain rich qualitative data. It considers the usefulness of questionnaires as well as types of question, design and administration. It analyses the use of documents, written texts, visual resources, and digital communication in research, emphasising the evaluation of documentary sources. It explores journalling as a tool for studying the self and for self-reflection. Finally, it describes creative methods for listening to young children, such as photography, play, telling stories, and the mosaic approach. This last part is undoubtedly a significant contribution by this work compared with other manuals on educational research. Furthermore, the possibilities and limitations of each technique are discussed, and illustrative practical examples are offered.

The final section of the book centres on how to analyse and present data that has been collected, relating to the type of data and their collection method. For this reason, the book explains quantitative data analysis methods (and how to present results) as well as qualitative methods, where it describes different focuses, including discourse analysis and grounded theory, as well as possibilities for using software packages. The text describes detailed strategies for statistical analysis and creating effective visual representations, along with tools designed to facilitate the interpretation of complex qualitative data. Finally, it emphasises the importance of communicating findings clearly and effectively to diverse audiences.

In view of the above, *Research methods in early childhood: An introductory guide* is not just of undoubted value for starting researchers but is also of great value for experienced academics in the field. More than a simple guide, the book is a fundamental reference work that researchers can turn to throughout their academic careers. Its structured focus not only helps researchers navigate methodological complexities, but it also provides experienced academics with a framework for perfecting their research methodologies and tackling emerging challenges.

The book includes a solid bibliography that enriches the reader's comprehension and serves as a resource for further exploration. One especially notable section discusses case studies, where the book refers to groundbreaking works by authors such as Greig et al. (2013) or Arnold (2003), as well as more recent contributions by Denscombe (2021) and Schwandt and Gates (2017). This exhaustive compilation of references increases the text's credibility and encourages readers to examine specific topics in greater depth, fostering critical enquiry and academic rigour.

In conclusion, *Research methods in early childhood: An introductory guide* is not only of note for its up-to-date content and practical focus, but also for its relevance in a constantly changing educational context. Its consideration of the ethical dimension, inclusion of diverse paradigms and methodologies, and orientation towards a reflective practice make this work an indispensable tool. As research into early childhood education advances, meeting contemporary challenges such as cultural diversity and the integration of digital technologies, this book offers researchers a solid and adaptable base. It not only provides guidance for students who are starting out in research, but it also offers experienced researchers a resource

to deepen their knowledge and practices. In this sense, the text is a continuous reference resource that can accompany researchers throughout their careers, ensuring that their research projects are relevant and rigorous.

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Cantón-Mayo, I. (2024).

Las escuelas rurales del valle de Jamuz y la Valdería [The rural schools of the Jamuz valley and la Valdería].

Eolas Ediciones. 354 pp.

School is children's first point of reference when they leave the family environment and it opens the door to the outside world for them. However, it has never been studied in sufficient depth or valued highly enough. The impact of the school centre on shaping children's minds is reflected in a saying attributed to Churchill: if we live in a hovel, we will act like beggars, but if we live in a palace, we will act like princes. Evidently, the school building will shape children's vision and behaviour in their earlier years, and so studying it and its physical characteristics is of particular importance for the future of the adults.

This work by Dr Cantón seeks to recover the heritage of schools that are now mainly disused in two districts in León: the Jamuz valley and la Valdería. Both areas are located close to La Bañeza and the author justifies selecting them for study by the closeness to their origins and a personal preference for reclaiming schools in an area where it seems inevitable that they will disappear.

The book opens with a chapter that summarises the context of the schools studied and references to the school architects who designed them. The context refers to the acceptance of the administrative division of the districts studied, without questioning debatable aspects of their allocation to the valleys of the rivers Jamuz and Eria where the school buildings described are physically located. The importance of the architects in the years before the Spanish civil war is noted, with the intervention of Antonio Flórez, who headed the School Construction Office of the Ministry of Education, and Andrés Sánchez Sepúlveda, with whom he cooperated in the plans for the schools in Nogarejas. After the war, architects from León stand out: Ramón Cañas del Río, Juan Torbado, Luis Aparicio Guisasola, and Daniel Calleja.

The central chapters provide an inventory of schools by council, grouping in each one the villages that they contain. So, the district of Jamuz has four councils: Alija del Infantado, Quintana del Marco, Quintana y Congosto, and Santa Elena de Jamuz. Meanwhile, the councils in the Eria Valley are: Castrocontrigo, Castrocalbon, and San Esteban de Nogales. In total, these cover 25 locations, most of which have two and some three school buildings. These locations provide a broad journey through the two districts of León on which this study focusses. The documentary recovery of various school buildings that are now gone was only possible through intensive archival work and is something that stands out.

There are significant differences in how school buildings were constructed: the oldest schools were the result of the impetus of each village's residents, who, working communally in shifts, would build a humble single-storey school building with a pitched roof and one or two classrooms to house a large group of students from the place. The case of Jiménez is striking, as to build the school in 1929, they had to lease out farmland, dispense with guards, or move forward the payments of the rent charged for communal land. Most schools from around 1900 were built by the villagers' own labour.

However, the 1930s saw the intervention of the Educational Administration, which distributed funds for building schools, with the architect Antonio Flórez (a descendent of the philanthropists from León who had founded the Santa Luisa home for the elderly) as director of the School Construction Office in Madrid. In 1931, this architect along with Andrés Sánchez Sepúlveda drew up the plans for the first school in Nogarejas and for the one in Congosto.

In 1953, the School Constructions Law was passed, which subsidised half of the costs of school building, and the majority of towns and villages made use of this, either to construct new school buildings (as in Quintana, Alija, Herreros, Pinilla, and others) or to thoroughly modify them (as in the case of Castrocalbón).

The time span of the buildings in Jamuz and la Valdería is the same as that since the establishment of public schooling in Spain: from the Quintana report of 1813, through the Moyano law of 1857, up to the 2020s. This study is always based on documentary evidence, which substantiates each school having existed or its continued survival.

So, the first schools in the area appear in documents from the Provincial Council and in the tax payments for 1900, but there are older ones. Madoz mentioned these in his study of 1857, and almost none of them remain open today, as in the cases of Nogarejas, Alija, Navianos, Quintana del Marco, Quintana y Congosto, Torneros de Jamuz, Castrocontrigo, Morla, etc. These schools, which were open for the whole academic year, mainly no longer exist, having been replaced by others in the 1930s and 1950s.

With regards to times when the schools were open, data are provided about seasonal schools that were open during the three months of winter in places such as Genestacio, Herreros de Jamuz, Santa Elena, Villanueva de Jamuz, Quintana del Marco, Castrocalbón, Pinilla, Nogarejas, etc.

In the case of villages such as Palacios de Jamuz, Tabuyuelo, Felechares, Calzada, Torneros de la Valdería, Pobladura de Yuso, and others, there is no reference to schools in Madoz's work.

In any case, the oldest school mentioned is in Nogarejas (in the photo on the cover of the book), where in 1661 Domingo Álvarez was named as the village's teacher. The newest school, which sadly has already closed, is the one in Quintana del Marco, from the 1990s, which has been categorised as an *escuela chalet* (a cottage school, as the locals call it). Owing to the decline of the villages and falling pupil numbers, no new schools have been built in the area since 2000.

The fates of the school buildings vary widely after their closure, mostly in 1981: from demolition (as in Torneros de la Valdería), and falling into disrepair (like the ones in Tabuyuelo and Quintanilla de Flórez) to disputes over restoring them to turn them into cultural centres (San Esteban, this is the smallest category), village cafes and bars (Nogarejas), medical centres (as also Nogarejas, San Esteban, Jiménez, and Palacios), and even mortuaries, as in Santa Elena with the teachers' homes. The group of schools of Castrocontrigo, which had almost 900 students, now has just 9, surviving as a rural school group where various levels are taught together. In other cases, they remain closed, awaiting a destiny that the neighbours will decide in due course.

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Gil Quintana, J. (2023).

Educación y comunicación en una sociedad postdigital. Investigación documental y análisis de perspectivas [Education and communication in a post-digital society: Documentary research and analysis of perspectives].

Octaedro. 268 pp.

This book, which provides a well-documented overview of communication scenarios and learning environments from an educational-communicative focus, is unquestionably a work of great intellectual and human value. It is required reading for understanding the new digital paradigm shaped by the connection between people, online learning, and technology, understood as a *relational factor*. In this labyrinth, education and the values that lead to a civic-minded and engaged citizenship will be the great allies to advance decisively in the era of *netmodernity* in which we find ourselves.

Gil Quintana has a great knowledge of education and communication, and has a long academic career that enables him to position himself with regards to current needs and rigorously address the principal challenges of the post-digital society. This concept "does not seek to describe a life beyond the digital space. It is a question of detailing the current opportunity to explore the consequences of the information or communication society" (p. 63, author's own translation). This author presents a historical approach to edu-communication framed in a context dominated by technologies. It is no longer easy to separate the analogue arena from the digital sphere. Everything comes together and mixes in the same space–time, creating new modes of participation supported by interdependent networks. In *netmodernity*, everything is connected.

This author's new title makes a great effort to explain current frameworks of action and how they oblige us to confront everyday routines from new perspectives, where communication and education come together in a single path. It is a fact that we no longer learn how we did in earlier decades, nor do we communicate in the same ways. The figure of the teacher or instructor has become more complex; the subject and object of education have been transposed. In this reality where technology is an active and immersive part of educational processes, knowledge and critical capacity will be the foundations of an authentic humanist project that can respond to people's role in the post-digital society.

The analysis of the results of the research that this book contains are set out in seven categories, each of which in turn is structured as a chapter. In addition to these seven chapters, there is an initial one ("Documentary research and analysis of perspectives") that sets out the methodology used and the starting point of the study. At the end of this chapter, the author synthesises some of the key ideas as a conclusion. This is very useful as, in the great quantity of information that he provides, this final overview helps establish the key concepts of each section. This book is of undoubted academic interest, although it does require prior knowledge some of the principal theories of communication and reference authors in the matter of the history of education and the ability to handle them to enable a better understanding of its very broad itinerary. Some of the theories reviewed in it require a significant grounding in hermeneutics in some points to be able to interpret the classical focusses and how they converge in the more current frameworks in which we are positioned.

Chapter one ("Discipline communication and education: Edu-communication") covers basic concepts, including information, communication, and digital competences, weaving them into the reality of the *ecology of communication*, *interlearning*, *connectivism*, and *endogenous and exogenous educational models*. Accordingly, it invites thorough reflection and argues in detail on the importance of media literacy and the need to understand the media "not only as a didactic resource, but also as an object of study, with the aim of creating an analytic outlook" (p. 61, author's own translation) that critiques what surrounds us.

These initial concepts are integrated in chapter two ("Principles of edu-communication: Interactiveness, participation culture, and dialogic action"), which includes a new typology of prosumers "(EAV [exploited, stalked, and victim of the market], CD [digitally constructed], VE [emotionally linked], MM [digital and analogue dead], and I-I [interacting and interacted]), but also influencers who have positioned themselves in social networks with significant impact and influence at a social level" (p. 93, author's own translation). These new forms of action open up parallel spaces to those that were previously known and can be in-person, virtual, or hybrid. Therefore, it is a matter of "promoting a communication and education with fewer instructors and more influencers of learning who position themselves before the market as emirecs [emitters/receptors]" (p. 94, author's own translation).

The third chapter ("Edu-communicative methodological strategy: Media construction of reality through the image") is constructed from a dual perspective. That is to say, the image as "de-educator" (p. 95) or as an essential tool to introduce knowledge from early childhood. Among other tools, the use of film is considered as a powerful and widely researched educational resource in regards to the impact and effects that it generates from the formative sphere. Chapter four ("Edu-communicative methodological strategy: Social networks") takes these new learning pathways from the classroom as a model for citizen empowerment.

"Social networks are scenarios for participation, spaces for bidirectional and horizontal communication" (p. 142, author's own translation).

Chapter five ("Edu-communicative methodological strategy: Gamification") covers active methodologies from a historical vision and the connection between learning and play from early childhood. As learning scenarios, ludic environments are based on two principal components: "the person's motivation and commitment to the ludic experience" (p. 144, author's own translation). Academic interest in this innovative focus underlines its enormous impact on learning, contrasting with more traditional methods that seek student interaction and empowerment. Gamification enables "the creation of a new narrative where the concepts of interacting, sharing, participating, and collaborating connect to one another" (p. 170, author's own translation).

Chapter six ("Massive and open edu-communicative strategy: sMOOC and tMOOC") focuses on massive open online courses, which have emerged as an alternative to traditional systems of education. "MOOCs have become established in the second decade of the 21st century as a tool for social change and for the development of active and collaborative learning" (p. 196). The last chapter ("Future edu-communicative perspectives: Learning influencers"), as a conclusion, considers the call for people to participate in *free culture*, *collaborative action*, *critical pedagogy* and the swapping of roles between teachers and students, *communality*, *activism*... and the novelty of the concept *learning influencer*. In relation to it, the author considers its two categories: the role of *learning influencer* and the IGPEC model (incentivise, guarantee, propose, produce, and share) (p. 220, author's own translation).

This book is an excellent reading from communication and education of these exciting directions in digital and technological reality. However, as mentioned above, a first reading will not suffice to grasp all that it contains. It is a most interesting work, but it is so comprehensive and exhaustive that we suggest taking each section separately and deliberately, and digesting it slowly to be able to understand its full potential. In this regard, Sara Osuna-Acedo who wrote the prologue to the book, very astutely mentions some of the work's essential foundations that are worth keeping at hand. Mentioning just some of these, they include Paulo Freire's contributions on the need to seek personalisation and humanisation in educational processes. She also notes Pierre Lévy's ideas and concepts relating to the multiple open and virtual spaces where all information is interconnected, with post-digital literacy presents an enormous challenge for the active citizen. George Siemens completes this particular triad, as one of the fathers of connectivism theory, in relation to knowledge construction in the digital era.

Readers who are more conversant in edu-communication will gain from this work a deeper understanding of some ideas they have already acquired. For those who are less familiar with the field of communication or education, the book offers a good introduction to very current and emerging concepts that permeate post-digital society. Many of the notions and theories found in the book are in day-to-day use, but not everyone really knows the importance or origin of most of them. On this point, the author creates an excellent space to offer an illustration of the importance of these dominant elements backed by documentary evidence and to achieve a more participatory, responsible, and informed society. This work ultimately seeks to enable the reader to understand that "the post-digital society offers different and innovative possibilities in digital spaces that are progressively driving public empowerment" (p. 217, author's own translation).

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Jonas, M. & Yacek, D. (2024).

Al borde del asiento: Lo que hacen los mejores profesores para implicar e inspirar a sus alumnos [On the edge of their seats: What the best teachers do to engage and inspire their students].
Post & Lintel Books. 189 pp.

What can we do so that students do not *have to* be in class and learn, but instead *want to* be in class and learn? Can we awaken, sustain, and strengthen their interest, so that they connect to learning in general and to a subject in particular and stay connected? Mark Jonas and Douglas Yacek argue that we can. We can awaken students' interest so that they are *on the edge of their seats in class*. And this depends on the most influential factor in any class: the teacher.

In this work, the authors condense the results of recent academic research and the experience of successful teachers whom they have interviewed, observed, and monitored over years, to propose effective strategies to make the classroom a space for inspiration and engagement. They call these four strategies the hook, the pitch, the awakening, and the strengthening.

After an overview of their proposal's theoretical framework, they dedicate the subsequent chapters to each strategy's pitch with the following framework: a brief definition, description, and justification of the strategy in question; a description of the experience of teachers who have used it with success; analysis and comprehension of these experiences; the steps to follow when planning the strategy; and, finally, possible problems in the implementation. The book is very practical in nature, especially with regards to the steps to follow when planning each strategy. One very useful supplement is the questions that are asked, as a sort of guide, at the end of each step in the planning.

The first strategy that Jonas and Yacek propose is the hook. This comprises a series of actions by the teacher to capture students' attention in the first moments of the course or the class. Some chose to change the layout of the tables before the first class, others decided to decorate the room with thought-provoking quotes by celebrities from the world of sport... The key to the hook lies in its surprising character which, being unexpected, inspires students' curiosity and expectations of what is to come.

The second step or strategy is pitching the subject. In this, the teacher does certain actions with the aim of inspiring the students to value what they are expected to learn. Some teachers will choose to share their experience of and personal relationship with the subject with the students. Others will carefully choose the words to describe their subject and what relates to it. It is a matter of showing students that the subject has the potential to enrich their lives independently of any practical relevance it might have in their future. If the hook seeks to capture students' attention towards the teacher, now it is a case of fostering students' attention towards the particular subject or topic.

In chapter five, the authors go on to present the third strategy: the awakening. This involves fostering a profound intellectual and emotional experience in the students that transforms how they see themselves and the world. When this experience occurs, students find that their way of perceiving and discovering certain things up to that moment was, in a sense, limited or even erroneous. This experience and discovery are built on the positive tension produced in the previous steps: the hook and the pitch. The awakening will result in a new way for students to see the subject and, in the best cases, their lives inside and outside class. As the impact of this experience tends to fade over time, it is necessary to reinforce it with specific tasks and activities. In this way, it leads into the last of the strategies that the authors propose: the strengthening.

The specific aim of the strengthening, described in chapter six, is to consolidate awareness that the subject is of value in itself and so merits attention. The authors share the conviction that genuine commitment and engagement not only result in better academic results, but that they offer an incentive to develop virtues such as attention, diligence, persistence, and curiosity. These virtues will result in a great benefit for the student, beyond the context of the subject itself. The aim of this strategic move is not only to underline the need for learning for the future, but to help students discover the beauty and wealth of the world that surrounds them. To help them grow as people of character and purpose.

Chapter seven synthesises the four steps or strategies explained previously, in the personal experience of Katie, a literature teacher. Katie wanted her students to read for more than just to

pass the course; she also wanted them to find a source of inspiration in the books. A description is given of the actions and activities she used to put into practice the hook, the pitch, the awakening and the strengthening with the aim of her students experiencing a turning point in their personal relationship with literature.

As a conclusion, chapter eight briefly considers the usefulness of these strategies in two particular circumstances: in the preparation of an individual class and in applying them to a context of cultural diversity. In this way, the authors approach a question that, more than being strategic, is the heart of teaching as a vocation and mission. Jonas and Yacek suggest that the key to effectiveness in teaching and learning lies in the love that teachers professes for their subjects and, above all, for their students. It is this benevolence that motivates teachers to create the transformational experiences described so far. They conclude the chapter by revealing what for them comprises the key to this work: reminding teachers how enlivening teaching can be. The same task that can be perceived as difficult, frustrating, and exhausting, can also be experienced as fascinating, joyful, and profoundly fulfilling.

Finally, the last chapter serves as a sort of appendix where the authors suggest answers to questions that readers might naturally ask themselves or ask the authors: do these strategies increase the teacher's professionalism? Do they increase the students' intrinsic motivation? Do they contribute to social equality? Do they improve educational outcomes? Are they applicable in classes with special circumstances? We can already sense that the answer to each of them is positive.

This work by Mark Jonas and Douglas Yacek provides a practical guide for teachers who seek to improve their students' learning, while at the same time being philosophical and inspiring. Beyond specific strategies, it proposes profound topics for personal reflection, such as the nature of the relationship or link between teachers and students. At a time when education systems are marked by the abundance of content and the urgency of measurable results, this book reminds the reader of the transformational nature of teaching as a vocation, and the profound impact teachers can have in their students' lives, beyond the subject and beyond the school setting. It offers ideal material not just for personal reading but also for group reflection among colleagues.

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Instructions for authors

A. Purpose of the journal

Revista Española de Pedagogía was created in 1943 and its search for excellence has always distinguished itself. It has been the first journal of pedagogical research in Spanish that has been indexed in the most relevant international databases. It accepts only original, high quality submissions from anywhere in the world that help advance pedagogical knowledge, avoid mere opinion polls, and are of general interest. Articles must follow commonly accepted ethical criteria; in particular, in cases of plagiarism and falsification of data, the author will be penalized by the rejection of their submissions. Articles with more than three authors will only be accepted if a reasoned explanation is provided, and in any case, the intellectual collaboration of all the signatories must be certified, not just data collection. Three issues a year are published.

B. Languages used in the journal

REP publishes all scientific articles and bibliographic reviews in Spanish and English.

When an article is accepted for publication and in order to guarantee the use of correct academic language in both languages, an agreement will be reached with the authors for the translation of their article into English or Spanish. If necessary, the translation will be made by professional experts who are native speakers of each language according to the conditions described in **H. Article Processing Charges (APCs)**. All contents of the original article, including tables and graphs, must be translated.

Texts cited in the article that were originally published in Spanish, even if they were later published in an English translation, must also be included in their original language. In this way, translators will not have to translate these texts again. In particular, it is preferable for a classic text to be cited with both versions: that of its original and that of the printed translation.

C. Requirements of originals

C.1. The publication of research articles must be in accordance with the *Publication Manual of the American Psychological Association* 7th Edition, 2020, (www.apastyle.org). Here are some basic points which must be strictly followed by the authors.

1) The length of the contributions, including all sections, will be between 6000 and 7500 words, using the Times New Roman font.

2) Articles should be submitted following the structure and formats indicated in the template that can be found on the journal's website (https://www.revistadepedagogia. org/rep/plantilla_articulo_eng.docx).

3) In cases where authors have compound names or use more than one last name, such as Hispanic authors, they should be connected with a hyphen. Example: María-Teresa Calle-Molina.

4) The authors must indicate the role of each one using **CREDIT taxonomy** (example available in the template).

5) 6 to 8 keywords should be included.

6) Following the APA model, the References list will be at the end of the article, in alphabetical order by surname, naming all the authors up to a maximum of twenty, with the second line indented.

The translation into English or Spanish should be included in square brackets next to the original title of the publications, since in the Spanish version of the article, the Spanish translations of the titles of the works published in English will be provided. **DOI of publications should be always included whenever possible.**

Some examples are given below:

• **Books:**

Genise, N., Crocamo, L., & Genise, G. (2019). *Manual de psicoterapia y psicopatología de niños y adolescentes [Manual of Psychotherapy and Psychopathology of Children and Adolescents]*. Editorial Akadia.

• **Journal articles:**

Siegel, H. (2002). Philosophy of education and the Deweyan legacy. *Educational Theory, 52* (3), 273-280. https://doi.org/10.1111/j.1741-5446.2002.00273.x

• **Chapters in multiauthor books:**

Mendley, D. M. (2005). The research context and the goals of teacher education. In M. Mohan & R. E. Hull (Eds.)*, Teaching Effectiveness* (pp. 42-76). Educational Technology Publications.

• **References to web page:**

Guarino, B. (2019, January 3). How will humanity react to alien life? Psychologists have some predictions. *The Washington Post*. https://www.washingtonpost.com/news/speaking-of-science/wp/2017/12/04/how-will-humanity-react-to-alien-lifepsychologists-have-some-predictions

U.S. Census Bureau. (n.d.). *U.S. and world populatíon dock. U.S.* Department of Commerce. Retrieved July 3, 2019, from https://www.census.gov/popclock/

7) References in the body of the article are written in an abbreviated way that differs from what is used in the Reference list. Specifically, if the reference is a direct quotation, the text must be enclosed in quotation marks and, usually at the end, the author's last name, year and page number are placed in parentheses: "(Taylor, 1994, p. 93)". If it is not a direct quotation, and so is not enclosed in quotation marks, the page number will be omitted: (Taylor, 1994). When the author's name is given in the text he/she will not be included in the parenthesis: "According to Taylor (1994, p. 93), culture ..." When an idea is supported by several authors, they will be separated by semicolons: "(Taylor, 1994; Nussbaum, 2012)".

To quote several works by one author, only the years will be added after the author, with letters added if it is necessary to distinguish between publications from the same year: "(Taylor, 1994, 1996a, 1996b)".

When citing works by 3 or more authors, only the first one is cited followed by "et al".

Textual quotes will be written in-line if they have fewer than 40 words. If the quotation has 40 words or more, it will be placed in a separate paragraph, without quotation marks, indented by 0.5 cm and in the body text style in a typeface one point smaller. Following the quotation, the author, the year and the page are added in parentheses. The material quoted is reproduced textually, including spelling and punctuation.

Other authors' texts will be quoted following the criterion of consulting the originals that are written in those languages and using their official translation when such text has also been

edited in the other language. If this official translation is not available, the quoted text will be offered to the readers translated by the author of the article (noting that the translation belongs to the author of the article), or by the sworn translator hired by the journal.

The use of endnotes will be limited. They must have correlative numbering, using the automatic system in Word and they will be placed after the body of the article and before the References that list everything cited in the text.

8) To highlight a word, italics will be used. Underlining or bold should not be used.

9) The number of lists, diagrams, tables and figures in the text should be limited. These will be called Tables or Figures. In any case, they must be where they should be in the article. In tables, columns should be aligned using tabs (only one tab per column). When quoted in the text (e.g., "as we see in Figure 1 on core subjects"), only the first letter will be capitalized, while at the top of the Table or Figure the whole word will be in small caps, in 12 point capital with Arabic numerals, followed by a point, writing the title in normal text.

The text within the table will be written in the same typeface as the normal text and in 9 point. The source of the table or figure will be placed below it, without a space of separation, stating the Source, colon, surnames, comma and year.

Graphs and tables, in addition to appearing where they should in the article, have to be sent in their original editable format whenever possible. Images should always be sent in high resolution (300 dpi).

10) Equations will be centered, separated from the main text by two lines. They should be referenced in the text, stating the number of the equation; therefore, they will be accompanied by Arabic numerals, aligned to the right and in parentheses in the same line.

11) The article will conclude with a list of the bibliographical references of all the works cited, except for the works cited whose authors include one of the authors of the article. In these cases, these works will be listed in the version with names of the authors, while in the anonymous ones they will not be included in the references, although they will appear in the text, where they will appear as follows: "(Author, 2022, p. 39)". Citation of publications belonging to journals or publishers considered "predatory", i.e., those that lack a rigorous and quality scientific evaluation system (e.g., double-blind peer review) and whose main purpose is not to disseminate knowledge but to obtain an economic profit by charging publication fees to authors. Lists of predatory publishers and journals can be consulted at: https://beallslist.net/

12) Finally, a brief biography of the authors should be included, of a maximum of ten to fifteen lines, which should mention their ORCID and the main aspects of their academic career, current academic situation and the university where they obtained their higher academic degree.

13) Authors of published works that have been carried out with research data including the sex variable are encouraged to report whether the conclusions have taken into account possible differences between sexes.

C.2. In addition to research articles, the **Revista Española de Pedagogía** wishes to keep up to date by publishing, in various formats, other works and relevant information in pedagogical science. For this reason, it publishes reviews of books, current news, brief commentaries on educational problems, readers' comments on articles published in the last year, etc. The reviews, always on recent books from relevant publishers, will be between 1200 and 1700 words. They will be headed by the book's details as follows:

Villardón-Gallego, L. (Coord.) (2015). *Competencias genéricas en educación superior [Generic competences in higher education]*. Narcea. 190 pp.

Commentaries will be of moderate length. The analysis of published articles will be sent, from the journal, to the author of the analysed article, so that he/she can prepare a response.

D. Policy on the use of artificial intelligence (AI) in articles

Authors must follow the AI use policy established by Revista Española de Pedagogía and declare compliance with the following sections before submitting their articles.

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   - Author(s) cannot cite AI as the author or co-author of the submitted articles.
2) Use of AI in the writing process:
   - The authors may only use generative AI or AI-assisted technologies to improve the language and readability of this article.
   - If AI is used, authors must cite it in the References section according to the use of APA standards in force in the journal.
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   - The authors are responsible for reviewing and validating the AI-generated information.
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   - The use of AI-generated images and videos in articles is not permitted.
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   - In the case of non-compliance with the IA policy, the journal may reject (pre-publication), retract (post-publication), or publish an editorial notice on the article.

The acceptance of **this declaration is mandatory** if the authors wish to publish it in the journal.

E. Submissions

Submission of papers is open on a permanent basis. Special deadlines will be established for publicly announced monographic issues.

All papers must be submitted through the journal's web platform by clicking on the following link: Enviar artículo | Submit Article

After creating the user, the system will guide you through a series of pages in which you will be asked to accept the Submission agreement, the journal's policies, the requirements for papers submitted to the journal, and to enter the data related to the authors and the submitted article. Only papers that comply with these policies and journal requirements will be considered for evaluation.

The system accepts Word or RTF files. The system will automatically generate a PDF for you. Images or graphics should be placed in the article in their proper place in the highest possible quality. If the images are not of sufficient quality (300 dpi), they will be requested again from the authors once their article has been accepted for publication. Tables should be placed in the article in the appropriate place and be editable.

The corresponding author will receive an automatic notification confirming receipt of the article. This notification will indicate the link through which you will be able to access your article on the journal's web platform and make any modifications or send new files that may be necessary during all the evaluation and editing process of the article.

F. Submissions evaluation and editorial processing times

The editors will make an initial assessment of the article based on the suitability of the proposals to the editorial criteria of the **REP**. Authors can consult more information on the type of articles accepted by the journal at the following link: Scope. The result of this assessment will be notified within a maximum period of one month. If a positive first evaluation is received, the paper will be peer-reviewed. Authors will receive the result of the second evaluation within approximately three months.

Each article submitted will be subject to the journal's editorial decision process. The journal is under no obligation to publish the article.

The deadline established for the completion of the evaluation process is four months, counting from the notification of receipt of the article. At the end of this period, the author will normally be informed of the final result of the evaluation. Authors can consult more information on the evaluation procedures followed by the journal at the following link: Submissions evaluation and editorial processing times. An author whose article has not been selected may resubmit other papers at a later date.

Accepted articles will begin the editing process (translation, style correction, layout, etc.), to be subsequently included in the corresponding issue, according to the decision of the editorial direction. Once the editorial process has been completed, the preliminary layout of the text will be sent to the authors for final revision and approval. The editing process usually takes a maximum of two months.

The average time between the receipt of an article and its publication is six months.

Publication of articles does not entitle the author to any remuneration.

G. Publication costs

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Once the papers have been published in the **Revista Española de Pedagogía**, authors can contribute to dissemination tasks, both by supporting the ones that the journal itself carries out and by their own initiative.

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To assist in the dissemination of their articles, once approved for publication, authors will be asked to send:

- Two key summary sentences of their article of a maximum of 180 characters for use on social network X.

- A summary of your article of about 90 words for use on Facebook and Linkedin.

- A video of approximately 1 minute in length, in horizontal format, summarizing the main ideas developed in the article for use on our social networks would also be appreciated.

- Our journal is also part of the academic blog Aula Magna 2.0 (http://cuedespyd. hypotheses.org/), where entries on topics of interest for educational research are published periodically, as well as reviews of articles, which contribute to its dissemination. Aula Magna 2.0 publishes an entry dedicated to an article of the **REP** for each published issue, for which the authors will be asked to provide a longer summary, of between 600 and 1500 words, in a language accessible to the general public and a high-resolution photograph.

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- Google Scholar, ORCID, Dimensions, PlumX, etc.

- Scientific social networks.

- Social networks (Facebook, Twitter, LinkedIn, etc.).

- Personal or institutional website, blog, etc.

It is required that all the bibliographic data of the published work be detailed in these publications.

Each author should consider using the most effective means of disseminating their article, obtaining citations and contributing to the advancement of pedagogical knowledge.

The **Revista Española de Pedagogía** was founded in 1943 by the Consejo Superior de Investigaciones Científicas and has been published since issue 259 by the Universidad Internacional de La Rioja. The journal has a research nature and a universal vocation. It was the first journal in Spanish to be indexed in the Education category of the *Social Sciences Citation Index* and the *Journal Citation Reports*.

The **Revista Española de Pedagogía** publishes three issues a year. The authors express the ideas contained in their respective articles under their sole responsibility. A full English version of the articles published from 2017 onwards is available on the journal's website.