Spanish Journal of Pedagogy
year 82, n. 288, May-August 2024
Revista Española de Pedagogía
año 82, n.º 288, mayo-agosto 2024

Table of contents
Sumario

Studies
Estudios

Book reviews

Instructions for authors

ISSN: 0034-9461 (Print), 2174-0909 (Online)
https://revistadepedagogia.org/
Legal deposit: M. 6.020 - 1958
INDUSTRIA GRÁFICA ANZOS, S.L. Fuenlabrada - Madrid

Studies

Shadow education in Latin America: Assembling the jigsaw

Educación en la sombra en Latinoamérica: armando el rompecabezas

Mark BRAY, PhD. Professor. University of Hong Kong (*mbray@hku.hk*).
Alexandre VENTURA, PhD. Professor. University of Aveiro, Portugal (*alexandre.ventura@ua.pt*).

Abstract:

Shadow education is a widely used metaphor for private supplementary tutoring, i.e. instruction in academic subjects on a fee-charging basis outside school hours. The metaphor is used because much tutoring mimics schooling. Thus, as the curriculum changes in the schools, so it changes in the shadows; and as schooling grows, so does the shadow. Initially with particular prominence in East Asia, albeit with deep roots elsewhere, shadow education has expanded worldwide. The phenomenon has been mapped in Africa, Asia, Europe, the Middle East and North America, but has received modest attention in Latin America. This article provides an overview of the phenomenon in the region using available data and stressing the need for further research. It presents global as well as Latin American contextual factors and drivers of demand before turning to data on the scale, nature and suppliers of shadow education. The assembled picture then permits commentary on educational and social impact, and on policy implications.

Keywords: Latin America, private tutoring, regulations, shadow education, social inequalities, supplementary education.

Resumen:

La educación en la sombra es una metáfora ampliamente utilizada para describir las clases de apoyo privadas, es decir, la enseñanza de materias académicas fuera del horario escolar mediante el pago de una tarifa. Y se emplea porque las clases de apoyo imitan, en gran medida, la educación escolar. Así, cuando los planes de estudio cambian en los colegios, también lo hacen en la educación en la sombra, del mismo modo que esta aumenta cuando crece la educación escolar. Con especial

Date of receipt of the original: 2024-02-17.
Date of approval: 2024-03-15.
Please cite this article as follows: Bray, M., & Ventura, A. (2024). Shadow education in Latin America: Assembling the jigsaw [Educación en la sombra en Latinoamérica: armando el rompecabezas]. *Revista Española de Pedagogía, 82* (288), 193-220. https://doi.org/10.22550/2174-0909.4059

preeminencia en sus inicios en Asia Oriental (aunque con raíces profundas en otros lugares), la educación en la sombra se ha extendido por todo el planeta. El fenómeno se ha estudiado en África, Asia, Europa, Oriente Medio y Norteamérica, pero ha recibido poca atención en Latinoamérica. Este artículo ofrece un resumen del fenómeno en la región a partir de los datos disponibles y resalta la necesidad de investigación adicional. Presenta los factores contextuales y las claves de la demanda a nivel global y en Latinoamérica antes de centrarse en la escala, la naturaleza y los proveedores de educación en la sombra. Por último, la imagen formada permite examinar el impacto social y educativo, así como las implicaciones de las políticas.

Palabras clave: Latinoamérica, clases de apoyo privadas, regulaciones, educación en la sombra, desigualdades sociales, enseñanza suplementaria.

1. Introduction

Recent decades have brought global growth of the so-called shadow education system of private supplementary tutoring. The shadow metaphor is widely used in the academic literature, at least in the English-language,[1] on the grounds that much supplementary tutoring mimics regular schooling. Thus, as the curriculum changes in the schools, so it changes in the shadow; and as schooling grows, so does the shadow. The metaphor is not perfect because mimicry is imprecise. So, while much tutoring is remedial and helps students to keep up with the school curriculum, other tutoring is for enrichment and goes beyond the school curriculum. Nevertheless, the metaphor is evocative and fits the purpose of the present paper.

Initially with particular prominence in East Asia (Zhang & Yamato, 2018), albeit also with deep roots in such countries as Egypt, Greece and Mauritius (Bray, 2009), much shadow education has been reported in Africa, Asia, Europe, the Middle East, and North America (Aurini et al., 2013; Bray, 2021a, 2021b, 2023a; Bray & Hajar, 2023; Joshi, 2020; Runte-Geidel, 2015; Ventura et al., 2006). It has been less reported in Latin America, and this paper aims to make the phenomenon more visible in that region.

Recalling the process of preparing the first global study of shadow education (Bray, 1999), the first author of this article described the process as like "assembly of a jigsaw puzzle with most of the pieces missing" (Bray, 2010, p. 3). Since that date, researchers around the world have delivered many more pieces of the puzzle, thereby permitting assembly of a more complete picture. Recognising that Latin America remains the region in which documentation of shadow education is most sparse, within the constraints of a journal article this paper assembles the jigsaw pieces that can be identified. Ideally, it would present details on all 19 countries of the region.[2] That cannot yet be done because of data

scarcity, but some sort of picture can nevertheless be constructed. The picture can be used for comparative analysis both within and across world regions, and can stimulate further clarification of the phenomenon in Latin America.

The paper commences with definitions, methods and the conceptual framework. It then turns to the scale and nature of shadow education in the region as revealed by documents in a range of languages.[3] Next, the paper focuses on the suppliers of shadow education, including not only commercial enterprises but also informal suppliers of various kinds and teachers who offer tutoring alongside their main duties. From this commentary, the paper turns to the educational and social impact of shadow education around the region, and to policy implications. The final section summarises and highlights some specific domains deserving further research.

2. Definitions, methods and conceptual framework

2.1. Definitions

For present purposes, and in line with the general literature (Hajar & Karakus, 2022), shadow education is defined as supplementary tutoring in academic subjects on a fee-charging basis outside school hours. As noted elsewhere (Bray et al., 2015, pp. 4-6), this definition cannot be watertight. First, it depends on the understanding of academic compared with non-academic. Thus, music and religious studies, for example, can be examinable subjects or extra-curricular for more-rounded personal development, and sometimes with blurred boundaries. Also, while fee-charging normally implies a financial payment, remuneration is sometimes made in services, goods and reciprocal relationships. Further confusion may arise from the word *tutoring*, which many people interpret to mean one-to-one or perhaps small groups, but for this paper includes full classes, sometimes with hundreds of students. This tutoring, moreover, may be delivered either with physical presence or online (Ventura, 2008; Ventura & Jang, 2010). Nevertheless, despite potential ambiguities, the definition is adequate for present purposes.

The next question concerns terminologies in Latin America. In Portuguese (as used in Brazil), the main terms for the phenomenon are *cursinhos*, *explicações*, *ensino suplementar* and *reforço escolar*, while in Spanish (as used in the rest of the region), the main terms are *clases particulares*, *refuerzo escolar*, *apoyo escolar*, and *enseñanza suplementaria*. Again, these terms are loose insofar as supplementary education is not necessarily private. Indeed, such countries as Argentina and Brazil have much public supplementary tutoring, though again with blurred boundaries reflecting remunerated and unremunerated voluntary labour (see, e.g., Nasif et al., 2017; Zago, 2008; Zibetti et al., 2012). Imprecision in vocabularies requires care and is another reason why the topic has remained indistinct and hidden.

Finally, the present paper is concerned only with shadow education in primary and secondary schooling. The phenomenon

does exist at pre-primary and post-secondary levels; but it is most evident in primary and secondary education, and the focus on these levels permits greater depth.

2.2. Methods

The starting point for this paper was identification of items in the literature about shadow education in Latin America through bibliographic databases and Google searches in Spanish, Portuguese and English. This process delivered a core body of 62 articles and chapters, from which the authors followed up items in the references of those publications. The authors used their personal networks to enlarge the collection, including with dissertations and unpublished materials, and finally secured about 110 items. They then commenced assembling the jigsaw, employing their knowledge of the global literature for thematic analysis. The first author of this paper has been researching the theme for over 25 years, and his Latin American experience includes interactions with colleagues, particularly in Mexico and Brazil, in connection with the Spanish and Portuguese versions of one of his books (Bray, 2009). He has also held extensive parallel discussions under the UNESCO umbrella in Argentina and Chile. The second author has been researching the theme for almost as long, with particular focus on Brazil alongside Portugal, Canada, Korea and other countries. When they had drafted the article, the authors solicited comments through their academic and professional networks,[4] and secured elaborations and triangulations from this process.

On a final methodological note, Brazil provided the largest number of publications. With 203 million people, this country has over one third of the Latin American population. That fact has implications not only for the number of students receiving shadow education but also the number of researchers investigating it. At the same time, the authors are struck by the non-existence of identified literature even in such countries as Venezuela (population 28.8 million), Guatemala (18.1 million), and Bolivia (12.8 million). This pattern reflects the absence of research rather than an absence of the phenomenon.[5] It underlines the shortage of jigsaw pieces and the need for further attention to the topic.

2.3. Conceptual framework

For reasons of length, this article must restrict itself to an overview rather than following threads to multiple avenues of curriculum, economics, pedagogy, sociology, etc. In this respect it follows the frameworks of predecessor overviews (e.g., Bray, 2021a, 2023a; Bray & Hajar, 2023; Joshi, 2020; Silova, 2010). The conceptual framework is mostly at the macro-level, and the identified policy implications are mainly for governments rather than for entrepreneurs, families, teachers, or tutors.

Among components of such analysis are the drivers of demand for shadow education. A fundamental driver across the globe is social competition (Aurini et al., 2013; Entrich & Lauterbach, 2021). Education, including private tutoring, is recognised as a key instrument for mobility from lower to higher social classes, and for retention of social status among those

already in upper strata. Competition is intensified by geographic mobility within the labour market, and by globalisation which adds international forces to national and sub-national ones.

These patterns are nuanced by the nature of social inequalities. Researchers have shown correlations between shadow education and societies with wide inequalities, and between shadow education and school systems that have high-stakes examinations (Byun et al., 2018; Entrich, 2021). In all systems, shadow education is an instrument on the one hand to avoid being left behind and on the other hand to secure differentiation from the masses and forge ahead. Alongside the private sector, however, are various initiatives by governments and civil society to increase opportunities for the most disadvantaged. One example is the Institutional Improvement Plan in Argentina, which promotes tutoring to strengthen students' academic trajectories (Dirié et al., 2015; Landau, 2016). Another example is the initiative of Chile's Ministry of Education entitled *Plan de Reactivación Educativa*, which enhances basic language-related skills among public primary school students. The design specifically targeted students who had fallen behind during the disruptions caused by Covid-19.[6]

Per capita income is another important contextual variable. Low-income countries generally have under-resourced education systems (see, e.g., Bray, 2021b). Some families then seek shadow education to compensate for inadequacies in public schooling, though other families respond by enrolling their children in private schools. However, the latter group of families may still invest in shadow education, i.e. securing private plus more private provision. This way, wealthy families give their children three catalysts for achievement: strong cultural capital, private schooling, and private tutoring.

Inadequate government investment in schooling also shapes shadow education through another channel. Underpaid teachers commonly view provision of tutoring as an obvious way to supplement their incomes, and supply of tutoring then creates demand. In some settings, teachers provide tutoring to their own students, and are tempted to cut content from their regular classes in order to increase demand for their private lessons (Dawson, 2009; Jayachandran, 2014). Even if teachers do not tutor their own students, they may devote more effort to their private work than to the regular classes, for which they are paid anyway. As tutoring enrolment rates rise, shadow education becomes normalised so that teachers assume that most or all needy students are receiving tutoring.

From these global remarks, the next question concerns the characteristics of Latin American contexts. In many respects, Latin American education systems resemble those of others around the world, with division into grades, terms/vacations, primary/secondary sections, lessons structured by timetables, examinations, and other common features. Indeed, this is so standardised across the globe that it is taken for granted without comment. At the same time, Latin American cultural

and political contexts do distinguish that continent from others in both schooling and shadow education.

A useful starting point is the overview presented by Rivas (2022, p. 1). During the 1990s, he remarked:

> many Latin American countries were still recovering from the traces of military dictatorships. The health of the democracies was still weak…. Latin American countries… [also] received the attention of several international agencies that tried to implement neoliberal reforms in the education field and other public goods. This context contributed to a relatively homogeneous landscape in Latin American education reforms.

However, the opening decades of the 21st century, Rivas added (2022, p. 1), brought more intense and sometimes contradictory agendas:

> Governments of different ideologies followed similar steps towards standardized accountability and, at the same time, diverse strategies promoting educational justice…. The agenda became more complex, and policy trajectories suffered several reconfigurations as governments changed (in some cases radically).

Thus, although the region does not have countries at the bottom of the income scale, it does show significant diversities as well as commonalities. Furthermore, many of these countries have huge income disparities. In Latin America, the top 10% of individuals hold 55% of national income, compared with 36% in Europe (Chancel et al., 2021a, p. 30). According to the country sheets of the *World inequality report 2022* (Chancel et al., 2021b, pp. 3-29), inequalities are particularly evident in Argentina, Brazil, Chile, and Mexico. The unequal societies have school systems that mirror and maintain the inequalities. In many cases these patterns have arisen by default rather than deliberate government policy, but processes associated with neoliberal ideologies have permitted expansion of shadow education as well as private schooling (Domenech & Mora-Ninci, 2009).

Also pertinent are indicators on educational enrolment rates. Among the 19 Latin American countries, officially some pre-primary and all primary schooling is compulsory, and lower-secondary schooling is officially compulsory among 18 of them (D'Alessandre, 2015, pp. 13-16).[7] Further, in 12 of the 19 countries even upper-secondary schooling is officially compulsory.[8] However, variations are evident in enactment of the policies. In parts of Central America, for example, during the mid-2010s half of the boys and girls up to age 17 were not enrolled in secondary school (D'Alessandre, 2015, p. 16). The region as a whole subsequently suffered from economic constraints and then, like the rest of the world, the Covid-19 pandemic (OECD, 2020). UNESCO (2020, p. 16) noted that in the years leading up to 2020, economic growth across the region was practically zero, marking a period of stagnation that contrasted with the strong growth in the first part of the century. Thus, in 2020 Latin America and the Caribbean experienced its worst economic recession since 1900, with a 6.8% drop in

Gross Domestic Product (UNESCO, 2022, p. 16). Again, such economic factors contribute to patterns of shadow education alongside other domains.

Turning to teachers' salaries, Rivas (2022, p. 25) noted wide variations around the region but commonality in salary raises during periods of economic growth. Chile was particularly striking, with an overall rise of 200% in the period 1990-2009 compared with an average of 70% in the rest of the labour market. However, Rivas (2002) added, the improvement was not enough to give prestige to the profession in most countries, especially because of the social issues that teachers were expected to address. Moreover, considerable regional differences may be found within countries, as exemplified by Pinto (2021, p. 285) in Brazil.

Finally, factors relating to out-of-school time for shadow education are shaped by the duration and use of in-school time. In Cambodia, for example, a major reason for high rates of shadow education is that many schools operate on a double-shift system, with each shift having restricted durations (and even single-shift schools have relatively short hours) (Le & Edwards, 2022). This feature means not only that students may desire additional support to compensate for limited instruction during school hours, but also that they have time to receive such additional support even during weekdays. Rivas (2022, p. 24) reported that all the countries reviewed in his book (i.e., Argentina, Brazil, Chile, Colombia, Mexico, and Peru) extended the official school days during the first two decades of the present century, though Chile was the only one to achieve almost universalisation of eight hours a day for schooling.

3. The scale and nature of shadow education

In contrast to schooling, of which multiple facets are statistically well documented throughout the world (see, e.g., UNESCO Institute for Statistics, 2022), very few education authorities collect regular and detailed data on shadow education. Thus, the statistics in Tables 1 and 2 are just snapshots with diverse methodological foundations, coverage and reliability. Nevertheless, they help to construct a picture while again underlining the need for more and better research.

Table 1 presents data from the 2012 national surveys of the Programme for International Student Assessment (PISA) managed by the Organisation for Economic Co-operation and Development (OECD).[9] Students aged 15 were asked whether they received tutoring in two categories. The first category was work with a personal tutor, whether paid or not, and the second category was out-of-school classes organised by a commercial company and paid for by parents. Some students may have been in both categories, while the possibility of fee-free tutoring in the first category blurs the picture for the present paper. Nevertheless, the statistics are instructive. At the top end of enrolment rates are Argentina and Colombia, and at the bottom end is Chile. The high enrolment rates in Argentina

are especially striking in a system that has stressed easy transition from schooling to higher education with the greatest enrolment rate in the region at that level.[10] In contrast, the Colombian picture fits more closely the model found in countries with high-stakes end-of-secondary examinations.[11] Concerning the intensity of study in classes organised by commercial companies, the Peruvian figure at 5.8 hours per week is over twice the Argentinean and Chilean figures at 2.7 hours per week. The majority of reported Latin American enrolment rates were above the global average, though the statistics on intensity were more mixed.

TABLE 1. Shadow education received by 15-year-olds in selected Latin American countries.

	Work with a personal tutor (whether paid or not)		Out-of-school classes organised by a commercial company and paid for by parents	
	Enrolment rate (%)	**Intensity (hours per week)**	**Enrolment rate (%)**	**Intensity (hours per week)**
Argentina	57.1	2.5	45.3	2.7
Chile	29.2	2.4	16.1	2.7
Colombia	51.8	2.4	47.3	3.3
Costa Rica	46.5	2.5	30.4	2.6
Mexico	33.8	3.3	24.5	3.0
Peru	40.4	3.2	36.5	5.8
Uruguay	39.0	3.0	33.0	3.6
Global average (63 countries)	34.8	2.8	28.1	3.4

Source: PISA [2012, as cited in Entrich (2021)].

The statistics in Table 1 have added value insofar as they were collected on a common yardstick across the seven countries. Table 2 complements the table with data from other studies focusing on a range of age groups and with varying samples and methods. The Chilean data highlight the significance of mathematics tutoring compared with science. Across the region and beyond, tutoring in languages (especially English) is also in strong demand since, like mathematics, languages support learning in other subjects (see, e.g., Ventura & Gomes, 2023). The Argentinean study (Cámara & Gertel, 2016, p. 139) also found diversity across subjects, with shadow education enrolment rates of 92.4% among students who subsequently enrolled in medical sciences, compared with 39.2% in economic sciences, 30.9% in

dentistry, and 17.5% in law. Also noteworthy was that the costs for medical students were three times those for economics students, in part because of the longer duration of courses but also because of higher monthly fees.

TABLE 2. Further indicators of shadow education in selected Latin American countries.

Argentina	From a sample of 360 university freshmen admitted to four schools of a national university in 2013, Cámara and Gertel (2016) found that 36.4% had used private supplementary tutoring provided by individuals or private companies to prepare for the university entrance examinations.
Brazil	Mariuci et al. (2012, p. 89) surveyed students in the first four grades of high schooling in southern Brazil. Among them, 28% were receiving private tutoring, and 38% had done so when in primary school. Galvão (2022, p. 55) analysed 2014 national data from 5.4 million candidates for the High School National Examination (Exame Nacional do Ensino Médio, ENEM) who had been asked to fill a questionnaire about supplementary support and other matters. He found that 19% of students had received pre-vestibular (selection examination) support at some stage in their school careers, 17% had received support in foreign languages, 62% in computer science, and 34.2% in other subjects – and presumably some students were in several categories.[12] Castro (2013, pp. 123-124) studied patterns in Porto Alegre. Among her primary school sample, 27% of students in private schools, 23% of students in state schools, and 11% in municipal schools were receiving private tutoring. In the last year of high school, enrolment rates were 36% in private schools, 17% in state schools, and 11% in municipal schools. Datafolha (2022), having surveyed 1323 guardians/parents of 1863 students in three regions in 2022, reported that 24% of students received supplementary tutoring. For 46% of them, the tutoring was fee-charging and for 54% it was fee-free. Tutoring had expanded since the pre-pandemic era.
Chile	Among the eighth-grade students surveyed by the Trends in International Mathematics and Science Study (TIMSS) in 2019, 23% were receiving tutoring in mathematics and 9% were doing so in science.[13]
Colombia	Gómez et al. (2020) examined the impact of test-preparation courses on performance in the national school-leaving examination in 2012. They reported (p. 46) the locations of these courses as follows: 45% in the students' schools taught by the schools' teachers, 26% in their schools taught by external personnel, 9% in specialist institutions, 1% in universities, and 18% in more than one category.

Cuba	Responding in 2021 to an enquiry from UNESCO,[14] the Cuban government reported "significant increase in complementary classes and private activities". The response included a link to a news-agency report (Univision, 2016). That report began by noting that "Cuba says that its school system, public and free, is one of the great achievements of its revolution, a force that promotes social equality and that practically ended illiteracy throughout the island". It then added that "against all expectations, the burgeoning business sector has quietly created something that closely resembles a private education system, in which thousands of children have enrolled in dozens of courses taken after school or at weekends". Another report (Alfonso, 2013) had commented on the boom in private tutoring within months of issue of a regulation by the Ministry of Labor and Social Security permitting such tutoring.
Mexico	Chang (2016), after surveying 40 seventh-grade students in one school, found that 45% of them (especially females) received tutoring. The head of a large tutorial company, CONAMAT, reported that about 2 million students had been attended their courses over three decades (Uribe, 2023). Data from CENEVAL context questionnaires (2012) administered with a test to obtain a high school diploma indicated that 7 out of 10 test takers had enrolled in private tutorial courses.

Concerning structure, while some tutoring is one-to-one, other formats embrace small groups and large classes. Ventura and Gomes (2013, p. 140) highlighted demand for tutoring in Brazil, on one side among low-achieving students who might have to repeat grades if performing inadequately and on another side by high-achieving students seeking to distinguish themselves at watersheds during secondary schooling (see also Galvão, 2020). Many tutors worked with individual students in informal environments such as verandas, back yards, and dining rooms, but others held formal classes each with over 40 students in different shifts. Indeed, Tófoli (2002), also referring to Brazil, mentioned tutorial classes exceeding 100 students that were popular because the tutors had jokey yet serious styles.

Online tutoring has also become increasingly common, accelerated by school closures and social distancing during the Covid-19 pandemic that hit in 2020. A 2018 assessment reported that only 23% of rural households were connected to the internet compared with 67% of urban households (ECLAC, 2020, p. 3). In contrast, 2022 figures suggested that, with overall access of 78%, Latin America had even overtaken China in this domain (Castellanos, 2023).

Also needing recognition are overlaps and interrelationships with public fee-free and subsidised supplementary tutoring.

Chile, for example, has had a scheme sponsored by a non-governmental organisation (NGO) in partnership with the government through which college students have provided tutoring for primary students on a voluntary basis (Cabezas et al., 2021). Recipients of the tutoring were charged fees, and the support was provided during school hours. At a higher level, Argentinean government policy has emphasised easy transition from school to university, but some universities recognise that the students poised to enter their programmes are inadequately prepared and therefore organise fee-free tutoring both before the students formally enter the universities and also alongside the formal programmes as the academic year progresses (Nasif et al., 2017). Some students choose these fee-free programmes while others attend fee-charging programmes (or neither, or both). With slightly different orientation, many students in Brazil attend tutorial classes called *cursinhos populares* designed as a social service for students in lower socio-economic strata who would otherwise be even more disadvantaged (Zago, 2008; Kato, 2015; Lopes, 2015; Groppo et al., 2019). The courses are commonly operated by volunteers, mostly students, and are almost or completely free of charge.

4. Suppliers of shadow education

Three main categories of shadow-education suppliers are considered here. First are companies operating locally, nationally and internationally. Second are informal tutors operating full-time or part-time. And third are serving teachers who offer private tutoring to secure extra incomes.

4.1. Commercial enterprises

To illustrate diversity in provision, Costa et al. (2012) provided specific examples of five tutorial enterprises in Brasilia, capital of Brazil. Table 3 summarises the features of these enterprises, elaborated as follows:

- Centre B1 began as a community venture that later became commercial and continued to award scholarships on merit and to help low income families. It had a franchising model, though all its centres were in Brasilia. It offered support in all high-school subjects. Students' attendance averaged four hours per week, and the centre operated from 7.40 am to 11.00 pm.

- Centre B2 was associated with a specific school and sought to combat enrolment of students in other centres. The services included both pre-set curricula and more flexible courses, together with psycho-pedagogical guidance for various levels; payment was managed through the school. Most students sought the support immediately before their examinations, with particular demand for mathematics and physics. The centre was staffed by teachers from the school, and operated from 8.00 am to 9.00 pm. It was publicised in the school through spoken announcements at the beginning of the academic year, through posters

around the campus, and on the official Facebook page.

– Centre B3 was franchisee of a global company, with procedures following those of the parent enterprise. It opened every working day except Wednesday from 8.00 am to noon and from 3.00 pm to 6.00 pm, and offered courses in Portuguese and mathematics to students of all years including higher education. As this centre had opened recently, only 34 students were enrolled. They received about two hours of tutoring per week for each subject. The centre's team comprised two people plus the director. Advertising was achieved through word-of-mouth and distribution of pamphlets.

– Centre B4 began as a small family operation that had become franchised, with 317 students in the Brasilia region. It operated every day except Sunday, with mornings and evenings during weekdays and the whole day on Saturdays. Nine employees provided individual and group tutoring to elementary and high school students, who usually spent about four hours a week in the centre. The highest enrolment was for mathematics, followed by Portuguese, physics, chemistry, and biology. Students were mostly recruited through word-of-mouth.

– Centre B5 had once belonged to a multinational franchisee, but was currently under its own management and operated every weekday from 8.00 am to 7.00 pm. Its three employees offered support to all years and in all subjects up to high school, plus mathematics in higher education. The 35 to 45 students who attended the centre all year spent two to three hours per week for each modality of support. The majority received help in mathematics, and also in Portuguese, especially for fifth- and sixth-grade. The centre publicised its services by talking with teachers and distributing pamphlets.

The diversity of these centres is striking, and doubtless further diversity could have been identified.[15] The researchers (Costa et al., 2012) also noted diversity in age groups served. For centres B1 and B2, demand was greatest in the third year of high school in preparation for the college-entrance examination (vestibular). However, the director of centre B3 stated that the strongest demand was for children up to the age of eight, and the clients of centre B4 were from early primary to ninth grade with the strongest demand in grades four-to-six, eight and nine. A similar pattern was reported in centre B5, of which the director critiqued shortcomings in literacy levels in public primary schools and focused especially on literacy for students in the fifth and sixth grades.

In a different context, Cámara and Gertel (2016, p. 139) noted that among the surveyed Argentinean students who had prepared for university entrance,

TABLE 3. Features of five tutorial centres in Brasilia.

Centre	Number of students	Levels of teaching	Number of tutors	Franchising
B1	5000	Pré-PAS, concursos [entrance examinations for professions], ensino médio [secondary education], all subjects	90 in all centres	Yes / 7 regional centres
B2	280	Primary, secondary, pré-vestibular [pre-university]	43	No / only 1 centre
B3	34	All levels	3	Yes / international
B4	317	Primary and secondary	9	No
B5	35-45	All year groups in non-higher education, and mathematics in higher education	3	1 centre (already franchised)

Note: PAS = Programa de Avaliação Seriada (serial assessment program). This is an entry system used by some Brazilian higher education institutions. It involves assessments conducted over three years of high school, which contribute to the final grade of applicants. The scores are used to select candidates for undergraduate courses.
Source: Costa et al. (2012, p. 5).

three out of four had taken courses offered by commercial companies. Most students (79%) reported that the companies' pedagogical strategies included a mix of theoretical and practical classes to raise confidence in the examinations. Some interviewees had received individual tutoring, but 59% had received group support.

Concerning individual tutoring, some companies act as brokers rather than direct providers. Thus, in Colombia, for example, a company called Tutores en Casa allows clients to identify tutors in their neighbourhoods, who will provide support across the age range from primary to university levels.[16] A counterpart in Chile is called Superprof.[17] These are

examples of internet-based conduits for the promotion of companies and individuals providing tutoring. Potential clients can undertake comparative analysis across pricing structures, frequencies of sessions, instructional formats, the aesthetic appeal of tutors (with most websites showing photographs of the tutors), and other pertinent features. On the side of companies and individuals offering tutoring, this modality offers exponential access to their potential market, thereby significantly augmenting their business prospects.[18]

Turning to international tutorial operators, among the best known is Kumon. The company was established in Japan in 1958, and in 1974 opened a centre in the USA (Ukai, 1994). Currently it operates through franchises in 60 countries, including 11 in Latin America (Kumon, n.d.).[19] The original curriculum focused only on mathematics, but in the Latin American countries it includes English and, in many centres, either Spanish or Portuguese. A counterpart company is Wizard, founded in Brazil in 1987 and now also operating in 14 countries, including Argentina, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Mexico, Panama, Paraguay, and Peru. Other prominent international enterprises in the region include Sylvan Learning, Tutor Doctor, Mathnasium, ALOHA Mental Arithmetic, and C2 Education.

The above accounts primarily concern in-person tutoring. As mentioned, in recent times internet tutoring has much expanded, and is able not only to reach distant places within countries but also to cross national borders. Research updates will doubtless include focus on this phenomenon in Latin America alongside studies in other regions such as those by Wisniewski et al. (2020).

4.2. Informal providers of tutoring

Among informal providers are diverse sub-categories. At the youthful end of the age spectrum are university students who seek extra pocket money, and at the older end are retirees who want to remain useful to society while still securing some extra earnings. Between these two sub-categories on the age spectrum are other informal workers, some of whom choose tutoring because they have not found other employment.

Nascimento (2007) examined the nature of informal operations in Rio de Janeiro, Brazil, commencing with the advertisements that the tutors *(explicadores)* placed near the doors of their residences. The tutors that she interviewed supported students from both public and private schools and commented on both the differences in the quality of teaching and the implications for tutoring. Private-school students sought tutors to assist with demanding homework for which their parents lacked time and/or ability to help. The tutors similarly perceived private schools to be better organised in the school calendar, test dates, deadlines for handing in assignments, textbooks, and exercises. Public-school pupils, in contrast, sought tutors to compensate for inadequacies in schooling (Nascimento, 2007, pp. 97-98).

Gomes et al. (2010b), employing an adapted version of the questionnaire constructed by Costa et al. (2008), took a sample of 358 students aged 14 to 20 in Brasília, the Federal District of Brazil. The researchers found that over one third of the respondents had received fee-charging tutoring outside their schools. They noted that the academic reinforcement classes were predominantly used by high school students to strengthen their academic backgrounds rather than to address problems stemming from academic failure. These Brazilian researchers also found that participation in reinforcement classes was more common among students from private schools than from public ones.

In the Argentinean context, Cámara and Gertel (2016, p. 136) noted that individual tutors had been increasingly displaced by companies, though individuals remained popular in lower levels of education. Marketplace dynamics could usefully be explored further within the region, together with questions about the qualifications and effectiveness of informal tutors compared with their company-employed counterparts.

4.3. Teachers as tutors

Provision of supplementary tutoring by serving teachers is especially common in low-income parts of Asia and Africa, and also evident in many middle-income and even high-income countries in Europe, the Middle East and elsewhere (Bray, 2021b; Bray & Hajar, 2023; Duong & Silova, 2021). Anecdotal sources also report this phenomenon in Latin America, but it has received even less attention than other forms of provision. Remarking on the phenomenon in Brazil, Ventura and Gomes (2013) highlighted the circumstances in private schools that illegally retain teachers without written contracts and thereby create precarious labour conditions. In some cases, the researchers added, "the tutors are completely invisible, given that they remain in the shadows and can only be located by asking people in the neighbourhood" (p. 140). Perhaps for such reasons, the Brazilian research by Mariuci et al. (2012) did not seem even to consider teachers as a category of tutoring providers. The decision (either deliberately or by default) to omit the category maintains the hidden nature of this phenomenon, which needs focus not only for its social implications but also because of the potential backwash on schooling.

One study that remarked on teachers working as tutors in Chile had some intriguing allusions. Lasekan et al. (2019, p. 58) analysed websites for tutors of English, and found that the greater the years of tutoring experience, the lower the tutoring fees being charged. Implying that many of these tutors were full-time teachers supplementing their incomes, the researchers suggested that teachers who had become more senior in the mainstream would have higher incomes from their schools and be less in need of substantial incomes from tutoring. Again, this pattern deserves further investigation, both in Chile and elsewhere.

5. Educational and social impact

Research on the educational impact of tutoring has diverse and inconsistent

findings (Bray, 2023b, pp. 735-738). Families that invest in tutoring presumably feel that it has a strong probability of improving their children's grades, or at least is worthwhile as an insurance policy when most peers seem to be investing in it. In practice, however, much depends on the quality and format of the tutoring and on the abilities and motivations of the learners. Moreover, tutoring may compete with schooling by making students tired and perhaps bored in school if they have already learned materials through tutoring.

Among items in the global literature is a Chinese study by Guo et al. (2020), which analysed data from a grade 8 nationally representative survey. Overall, the researchers found that tutoring in mathematics and Chinese improved students' test performance, albeit only modestly (p. 338). Tutoring, they added, achieved this impact mainly by enhancing test-taking skills or by helping to accumulate subject-specific knowledge rather than by improving general cognitive skills. Effects were larger for low-performers, girls, and students with wealthier and better-educated parents.

A contrasting study was conducted by Guill et al. (2020) in Germany, using a national dataset for students who had commenced grade 9 and reached grade 11 two years later. Data on tutoring were matched with data on academic achievements in mathematics and German. The analyses "revealed neither global effects of private tutoring nor effects of its instructional quality on students' grades" (Guill et al., 2020, p. 282), though students' satisfaction with their schooling was enhanced by the support dimension of tutoring.

Concerning Latin America, a Colombian study by Gómez et al. (2020) deserves attention. The researchers focused on the contributions of supplementary tutoring to performance in the Saber 11 end-of-secondary-schooling examination, with data from 424,589 students who had filled a questionnaire prior to sitting the examination. Among them, 45% had received preparatory training for the examination in their own schools (in many cases free of charge, but also possibly fee-charging), 26% had received training in their schools from external personnel (more likely fee-charging), 9% had received (fee-charging) training in private tutorial institutions, 1% from university personnel (either fee-charging or fee-free), and 18% in several categories (Gómez et al., 2020, p. 46).

The Colombian dataset permitted analysis by multiple variables, including gender, family income, location, duration of tutoring, and category of institution providing the support. The authors concluded that the tutoring did make a difference, particularly that provided by specialist institutes. The impact was stronger for males, and for students in private schools and higher socio-economic strata. Nevertheless, Gómez et al. added (2020), the overall returns were modest, and enrolling in a preparatory activity was "probably insufficient

to excel if the student does not have a good educational background" (p. 69). In other words, much depended on the abilities of the students to make use of the support, which was significantly shaped by earlier learning. Noting the multitude of variables, the researchers concluded that in general the tutoring exacerbated the already-unequal opportunities for higher education.[20]

Complementing the Colombian research is an evaluation of impact for grade 4 students in 85 schools in the Chilean scheme mentioned above through which an NGO in partnership with the government organised college students to tutor primary students (Cabezas et al., 2021). The scheme was assessed to have some impact on language and mathematics scores, and also on sustained reduction of drop-out rates six years later.

Another study utilised a dataset for the entrance test to the major university in Northeast Brazil (Guimarães & Sampaio, 2015). The dataset included personal characteristics and educational routes, and permitted the researchers to assess the effects of both private and public tutoring. They expressed caution over the possible effects of unobserved variables but stated (p. 50) that both forms of tutoring significantly increased the students' scores. The researchers stressed the importance of this finding for public tutoring that aimed to compensate for the advantages received by wealthy families. Nevertheless, they also found that private tutoring had an effect twice that of public tutoring.

Related, differential rates of shadow education may be noted between private and public schools. Thus Gomes et al. (2010a, p. 63) showed shadow-education enrolment rates of 51.9% in a Brazilian private secondary school compared with 22.0% in a counterpart public school. This finding was echoed by Mariuci et al. (2012, p. 89) with an even wider gap of 86.3% compared with 13.7% in the schools that they investigated. Castro (2013) and Galvão (2022) also highlighted the forces for social reproduction through use of shadow education.

Finally, Llanos (2022) presented data on household expenditures in Mexico. The poorest families were reported to invest 10% of their educational expenditures on supplementary education *(enseñanza adicional)*, while the richest invested nearly 25%. The national average was 13%.

6. Policy implications

Governments around the world have begun to pay more attention to shadow education, but with considerable variation in the seriousness with which it is on policy agendas. They note on the positive side that private supplementary tutoring expands learning and therefore human capital for wider economic and social development. It also provides employment for tutors and support personnel; and when teachers secure supplementary incomes through tutoring,

they may be more willing to stay in the teaching profession. As mentioned, however, shadow education may exacerbate social inequalities and negatively affect schooling.

At one extreme in the policy domain is China, where government attention to shadow education expanded by stages during the 2010s and culminated in a 2021 policy to suppress the tutoring sector (Zhang, 2023, p. 61). This suppression was ostensibly driven by concern about the study burden on students who received tutoring on top of school-administered homework. It was also driven by concern about capitalisation of the education sector and a desire to retain the dominant status of schooling. At the other extreme in the policy domain are *laissez faire* attitudes evident in such countries as Angola (Chionga, 2018, p. 86) and Yemen (Bray & Hajar, 2023, p. 62). Tutorial companies may be regulated as businesses, but beyond that the authorities have paid little attention to such matters as class size, curriculum, prices, or tutors' qualifications.

In Latin America, the *laissez faire* approach seems to dominate. That approach has been remarked upon, for example, in Argentina (Cámara & Gertel, 2016, p. 135) and Chile (Lasekan et al., 2019, p. 49), and is evident from the reported absence of regulations in seven other countries.[21] Venezuela, by contrast, is among countries that have some regulation. As far back as 1998, regulations on private-sector institutions included ones providing supplementary services as well as schooling (Venezuela, 1998, articles 21-22), and approvals were required on such matters as finance, facilities, and staff credentials. Governments elsewhere would be well advised to pay more attention to regulation (not least to reduce the likelihood of shadow education becoming a serious problem) by steering it upstream rather than delaying until it is too late (Zhang, 2023). For example, one specific context in which regulations are desirable has been highlighted by Lasekan et al. (2019, p. 47). Their research was online marketing in Chile by tutors of English, with foci including qualifications, prices and years of experience. The researchers highlighted the potential for tutors to present fraudulent information, which could have broader ramifications for (mis)trust in e-commerce.

Patterns in Cuba are also noteworthy. As remarked by the Univision (2016) report mentioned in Table 2, the Cuban government takes pride in the public system, and permits private schools only for the children of diplomats and foreign businessmen. Yet some teachers have covertly provided private tutoring alongside their public duties, and regulatory provision in 2013 opened the door for legal private tutoring. As reported by Alfonso (2013) and Univision (2016), this was an unanticipated dimension of the 2013 regulations, which had mainly been introduced for language classes, child-care, music, aerobics, etc. Univision described the expansion of the private sector as "against all expectations", and it is especially significant in a

society that retains strong control by the state.

Across the region, a further domain deserving more attention concerns the boundaries between fee-charging and fee-free tutoring provided not only by governments but also by individuals and community bodies. This particularly relates to the *cursinhos populares* in Brazil (Groppo et al., 2019; Kato, 2015; Lopes, 2015; Zago, 2008). It also relates to patterns in Argentina touched upon by Cámara and Gertel (2016), and no doubt in other countries. For focus on shadow education as defined in this paper, clarity is needed first on which forms of support are fee-free and which are fee-charging, and second on the scale of the fees in the latter category.

7. Conclusions

This article has presented a picture of shadow education in Latin America by assembling various jigsaw pieces. The picture is incomplete because many pieces are missing. Even in other world regions much more research is needed to secure reasonably complete pictures, and in Latin America the topic has been particularly under-researched. Neglect of the theme is illustrated by its absence from the two-volumes work (44 chapters, 1225 pages) edited by Jornitz and Parreira (2021) entitled *The education systems of the Americas*; and it is similarly absent from the regional studies of Ornelas (2019) and UNESCO et al. (2022). Yet as shown by this paper, shadow education has a backwash on school systems and has far-reaching social, economic and policy implications.

As noted above, Latin America shares many educational, social and economic features with other world regions, but does have distinctive characteristics. School enrolment rates are relatively high, with 12 of the 19 countries even having compulsory upper-secondary education. In the wider context, Rivas (2022) highlighted the neoliberal reforms introduced across the region during the 1990s which contributed to a relatively homogeneous landscape. The present century, however, has brought diverse reform agendas characterised in many countries by policy swings resulting from leadership changes and economic fluctuations. At the same time, much diversity is evident within individual countries. Brazil has particularly notable diversity, and is distinguished from other countries in the region not only by use of Portuguese as its official language but also in the extent of social inequalities.

Further research could usefully look closely at correlations between shadow education and various contextual factors. A starting point might be the nature of public examinations, and the extent to which they have high stakes, e.g. for admission to universities. Brazil, Chile, Colombia, and Mexico are among countries with high-stakes examinations that pressure students with, in the Brazilian case, additional burdens within the cycles of primary and secondary schooling. As noted above, Argentina has a much more relaxed entry system

for higher education. The commentary on the PISA statistics in Table 1 described them as instructive, but they are also enigmatic insofar as they show Argentina as the highest and Chile as the lowest. One question is whether the statistics can be taken at face value given methodological issues in this domain. In any case the numbers certainly deserve follow-up to discern more clearly the factors shaping demand and supply.[22]

Other dimensions for further investigation include teachers' salaries, which have shown wide variations across the region and within some individual countries. In all six countries studied by Rivas (2022), salaries improved significantly during periods of economic growth, though could not always be maintained. In several countries, reform policies linked revenue for schools, and even for teachers within those schools, to the academic performance of students. Research could usefully analyse not only the extent to which low or high salaries shaped the inclinations of teachers to offer private tutoring, but also whether schools and teachers used tutoring as a mechanism to improve their schools' performance in order to secure greater government funding.

A related question could apply to policies on the duration of school days. Although this variable was mentioned above, no Latin American study has been reported on the implications for shadow education from lengthening or retaining existing durations. Research could usefully explore not only the number of hours for each grade but also how those hours were used. In other settings, students have prioritised external tutoring over schooling (even absenting themselves from schooling because it is perceived as wasting time) since external tutors have had more attractive pedagogical skills and have demonstrated specialist expertise in strategies for external examinations (see, e.g., Bhorkar & Bray, 2018; Moreno, 2022).

Further research could also usefully consider the nature and roles of tutorial enterprises, differentiating for example between ones that are small and locally focused, others that operate nationally through franchises or direct operation, and ones that operate internationally. Their modalities include online as well as in-person tutoring, and some devote much effort to training their staff in order to provide educational quality. Among avenues to follow up could be the contrasts noted by Costa et al. (2012) who, comparing a sample of tutorial enterprises in Lisbon (Portugal) and Brasília (Brazil), noted that while the former generally aimed to support and supplement schooling some of the latter aimed to become alternatives to schooling. Yet alongside them were community operations of various kinds, some operated as NGOs offering *cursinhos populares* for socially disadvantaged students. These observations stress that the shadow sector has much diversity requiring comparison with the relative homogeneity of schooling.

Looking ahead, shadow education is likely to expand in the region. Growth has been a global feature, including even the Nordic countries that have long been respected for the quality of their education systems (Christensen & Zhang, 2021). The fundamental driver is social competition and what Silva and Assis (2019, pp. 474-476) called "domestic support outsourcing" and "transition from meritocracy to parentocracy". Such factors underline the importance of securing more jigsaw pieces to form a set of pictures at sub-national, national and regional levels, and in turn to help devise appropriate policies not only for governments but also for entrepreneurs, families, students, teachers and tutors. And for broader understanding, the set of pictures will be valuable to analysis outside Latin America as well within it.

Notes

[1] The term does not translate easily into some languages, including Spanish and Portuguese, and some literature in those languages retains the English vocabulary. For example, Runte-Geidel (2013, p. 257) referred to the symbiotic relationship "entre la sociedad escolarizada y la existencia misma de la *Shadow Education*", i.e. "between the schooled society and the very existence of Shadow Education". By contrast, the term does translate easily into such languages as Chinese.

[2] These countries are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela.

[3] In most countries of the region, the dominant official language is Spanish; but Brazil's official language is Portuguese. The paper also draws on much literature in English, especially for the global and comparative remarks and also, in some cases, concerning Latin American countries.

[4] These included personnel with expertise in Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, and Venezuela, and across the region from the Inter-American Development Bank and UNESCO.

[5] Internet searches readily identify advertisements from tutors in these countries. For example, here are three from Caracas, Venezuela: https://www.apprentus.com/es/lecciones-privadas/caracas/apoyo-escolar/apoyo-escolar/refuerzo-escolar-tutorias-atencion-psicope?from_landing_page=true; https://www.tusclases.com.ve/profesores/caracas/, and https://servicios.mercadolibre.com.ve/cursos-clases-academicos/clases-particulares-a-domicilio-de.

[6] https://reactivacioneducativa.mineduc.cl/tutorias/

[7] The exception is Nicaragua.

[8] The exceptions are Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Nicaragua, and Panama.

[9] PISA had subsequent iterations in 2015, 2018 and 2022, but the questions in those iterations were less useful from the perspective of this paper.

[10] In 2012, Argentina had a higher-education enrolment rate of 80% compared with 55% in the region (Cámara & Gertel, 2016, p. 136).

[11] For an update on the Colombian model with new evidence on the effectiveness of standardised test preparation programmes, see Posso et al. (2023).

[12.] While presumably most of this support was fee-charging, some may have been fee-free.

[13] Some of this tutoring may have been free of charge, but it may be assumed that most was fee-charging. Source: TIMSS and PIRLS Database, Boston College https://timssandpirls.bc.edu.

[14] https://education-profiles.org/es/america-latina-y-el-caribe/cuba/~actores-no-estatales-en-la-educacion

[15] For example, Sulz and Nogueira (2023) highlighted diversity in the operations of three tutorial centres in Belo Horizonte city, Brazil.

[16] https://www.tutoresencasa.com/, accessed 17 January 2024.

[17] https://www.superprof.cl/, accessed 17 January 2024.

[18] For more examples, see, e.g., Apprentus in Bolivia https://www.apprentus.com/, Educa+Brasil in Brazil https://www.educamaisbrasil.com.br/cursos-online/curso/tutoria-e-reforco-escolar, and Preply in Colombia https://preply.com/en/Medellin/spanish-tutors

[19] The Latin American countries where Kumon currently operates are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Guatemala, Mexico, Panama, Peru, and Uruguay.

[20] Alongside was the SaberEs programme launched in Medellin in 2016. This was a government funded programme implemented through the private sector without charge to students. It assisted students from low socioeconomic backgrounds who were due to sit the Saber 11 examination. Evaluation stated that a reduction of 23% in the socioeconomic achievement gap was attained (Posso et al., 2023).

[21] These countries, as indicated by officials responding to a UNESCO questionnaire, are Colombia, Costa Rica, Ecuador, El Salvador, Mexico, Panama, and Uruguay. The questionnaire was for a database to support UNESCO's *Global Education Monitoring Report* on non-state actors in education (see https://education-profiles.org/themes/~non-state-actors-in-education#).

[22] Among variables to be considered in such research should be the amount of fee-free support in public schools for students lagging behind their peers and/or wishing to stretch to greater heights. The Argentinean picture might perhaps be partly explained by low provision of such support in typical schools.

References

Alfonso, P. (2013, December 30). Private education booms in Cuba. *Martí News*. https://www.martinews.com/a/private-education-booms-in-cuba/30535.html

Aurini, J., Davies, S., & Dierkes, J. (Eds.) (2013). *Out of the shadows: The global intensification of supplementary education*. Emerald.

Bhorkar, S., & Bray, M. (2018). The expansion and roles of private tutoring in India: From supplementation to supplantation. *International Journal of Educational Development, 62*, 148-156. https://doi.org/10.1016/j.ijedudev.2018.03.003

Bray, M. (1999). *The shadow education system: Private tutoring and its implications for planners*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000180205.locale=es

Bray, M. (2009). *Confronting the shadow education system: What government policies for what private tutoring?* UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000185106.locale=es

Bray, M. (2010). Researching shadow education: Methodological challenges and directions. *Asia Pacific Education Review, 11* (1), 3-13. https://doi.org/10.1007/s12564-009-9056-6

Bray, M. (2021a). Shadow education in Europe: Growing prevalence, underlying forces, and policy implications. *ECNU Review of Education, 4* (3), 442-475. https://doi.org/10.1177/2096531119890142

Bray, M. (2021b). *Shadow education in Africa: Private supplementary tutoring and its policy implications*. Comparative Education Research Centre, University of Hong Kong. https://cerc.edu.hku.hk/books/shadow-education-in-africa-private-supplementary-tutoring-and-its-policy-implications/

Bray, M. (2023a). Shadow education in Asia and the Pacific: Features and implications of private supplementary tutoring. In W. O. Lee, P. Brown, A. L. Goodwin, & A. Green (Eds.), *International handbook on education development in Asia-Pacific* (pp. 159-181). Springer.

Bray, M. (2023b). Understanding private supplementary tutoring: Metaphors, diversities and agendas for shadow education research. *Journal for the Study of Education and Development: Infancia y Aprendizaje, 46* (4), 728-773. https://doi.org/10.1080/02103702.2023.2194792

Bray, M., & Hajar, A. (2023). *Shadow education in the Middle East: Private supplementary tutoring and its policy implications*. Routledge.

Bray, M., Kwo, O., & Jokić, B. (2015). Introduction. In M. Bray, O. Kwo, & B. Jokić (Eds.), *Researching private supplementary tutoring: Methodological lessons from diverse contexts* (pp. 3-19). Springer; Comparative Education Research Centre, University of Hong Kong.

Byun, S., Chung, H. J., & Baker, D. P. (2018). Global patterns of the use of shadow education: Student, family, and national influences. *Research in the Sociology of Education, 20*, 71-105. https://doi.org/10.1108/S1479-353920180000020004

Cabezas, V., Cuesta, J. I., & Gallego, F. A. (2021). *Does short-term school tutoring have medium-term effects? Experimental evidence from Chile*. Documento de Trabajo 565. Instituto do Economía, Pontificia Universidad Católica de Chile. https://www.povertyactionlab.org/sites/default/files/research-paper/493.pdf

Cámara, F., & Gertel, H. R. (2016). The shadow education market of a mass higher education institution in Argentina. In M. F. Astiz, & M. Akiba (Eds.), *The global and the local: Diverse perspectives in comparative education* (pp. 133-153). Sense.

Castro, N. S. E. de (2013). *Investigação sobre as formas de preparação para o ingresso no ensino superior: uma educação na sombra ou uma sombra na educação? [Research on the forms of preparation for entry to higher education: An education in the shadow or a shadow in education?]* [Master Dissertation]. Pontifícia Universidade Católica do Rio Grande do Sul. https://tede2.pucrs.br/tede2/handle/tede/3776

Castellanos, D. S. (2023, September 1). LatAm está más conectada que China y estos países gastan más horas en internet [LatAm is more connected than China and these countries spend more hours on the internet]. *Bloomberg Línea*. https://www.bloomberglinea.com/2023/09/01/latam-esta-mas-conectada-que-china-y-estos-paises-gastan-mas-horas-en-internet/

CENEVAL (Centro Nacional de Evaluación para la Educación Superior). (2012). *Analysis of context questionnaires* [unpublished manuscript].

Chancel, L., Piketty, T., Saez, E., & Zucman, G. (Coords.) (2021a). *World inequality report 2022*. World Inequality Lab. https://wir2022.wid.world/www-site/uploads/2023/03/D_FINAL_WIL_RIM_RAPPORT_2303.pdf

Chancel, L., Piketty, T., Saez, E., & Zucman, G. (Coords.) (2021b). *World inequality report 2022: Country sheets*. World Inequality Lab.

Chang, R. O. (2016). *Relación entre el desempeño académico y las horas de estudio invertidas en un colegio de bachilleres [The relationship between academic performance and time spent studying in a high school]* [Doctoral Dissertation]. Instituto Tecnológico de Estudios Superiores de Monterrey. http://hdl.handle.net/11285/629801

Chionga, N. C. B. (2018). *As explicações: seu impacto sobre o (in) sucesso escolar e o alargamento da classe média [Supplementary tutoring: its impact on academic (un)success]* [Master Dissertation]. University of Minho. https://repositorium.sdum.uminho.pt/handle/1822/57791

Christensen, S., & Zhang, W. (2021). Shadow education in the Nordic countries: An emerging phenomenon in comparative perspective. *ECNU Review of Education, 4* (3). https://doi.org/10.1177/20965311211037925

Costa, J. A., Neto-Mendes, A., & Ventura, A. (2008). *Xplica: investigaçã̃o sobre o mercado das explicaçõ̃es [Xplica: research on private tutoring market]*. Universidade de Aveiro.

Costa, J. A., Gouveia, A., & Rodrigues, C. (2012). *Empresas de reforço escolar e rendimento dos alunos: Brasília e Lisboa em análise comparativa [Tutorial companies and student performance: Brasilia and Lisbon in comparative analysis]*. https://www.sbec.fe.unicamp.br/pf-sbec/eventos/eventos-realizados/5o-encontro-internacional-da-SBEC/trab27.pdf

D'Alessandre, V. (2015). Young people in relation to extended compulsory education. In N. López, R. Opertti, & C. Vargas (Eds.), *Youth and changing realities: Rethinking secondary education in Latin America* (pp. 12-36). UNESCO.

Datafolha. (2022). *Educação na perspectiva dos estudantes e suas famílias [Education from the perspective of students and their families]*. Itaú Social, Lemann Foundation, Inter-American Development Bank, Rede Conhecimento Social.

Dawson, W. (2009). The tricks of the teacher: Shadow education and corruption in Cambodia. In S. Heyneman (Ed.), *Buying your way into heaven: Education and corruption in international perspective* (pp. 51-74). Sense.

Dirié, C., Fernández, B., & Landau, M. (2015). *Las tutorías en la educación secundaria en el marco del Plan de Mejora Institucional. Estudio en tres jurisdicciones [Tutoring in secondary education within the framework of the Institutional Improvement Plan. A study in three jurisdictions]*. Ministerio de Educación. https://www.argentina.gob.ar/sites/default/files/tutorias-secundaria-2015-version-digital-24-11.pdf

Domenech, E., & Mora-Ninci, C. (2009). World Bank discourse and policy on education and cultural diversity for Latin America. In D. Hill, & R. Kumar (Eds.), *Global neoliberalism and education and its consequences* (pp. 151-170). Routledge.

Duong, B. H., & Silova, I. (2021). Portraits of teachers in neoliberal times: Projections and reflections generated by shadow education research. *Globalisation, Societies and Education, 19* (5), 696-710. https://doi.org/10.1080/14767724.2021.1878013

ECLAC (Economic Commission for Latin America and the Caribbean). (2020). *Universalizing access to digital technologies to address the consequences of Covid-19*. ECLAC. https://doi.org/10.18356/9789210054713

Entrich, S. (2021). Worldwide shadow education and social inequality: Explaining differences in the socioeconomic gap in access to shadow education across 63 societies. *International Journal of Comparative Sociology, 61* (6), 441-475. https://doi.org/10.1177/0020715220987861

Entrich, S. R., & Lauterbach, W. (2021). Fearful future: Worldwide shadow education epidemic and the reproduction of inequality outside public schooling. In Y. C. Kim, & J. H. Jung (Eds.), *Theorizing shadow education and academic success in East Asia: Understanding the meaning, value, and use of shadow education by East Asian students* (pp. 234-255). Routledge.

Galvão, F. V. (2020). Ensino suplementar no contexto Brasileiro: uma análise baseada nos dados do ENEM [Supplementary education in the Brazilian context: An analysis based on ENEM data]. *Educação & Sociedade, 41*, 1-18. https://doi.org/10.1590/ES.232022

Galvão, F. V. (2022). *Uma análise das práticas de ensino suplementar no contexto brasileiro [An analysis of the practices of supplementary teaching in the Brazilian context]* [Doctoral Dissertation]. University of São Paulo. https://doi.org/10.11606/T.48.2022.tde-17052022-135747

Gomes, C. A., Mariano, F., de Oliveira, A., Barbosa, A., de Sousa, J. H. B., & Friedrich, N. (2010a). Reforço escolar: gastos e desigualdades sociais [Supplementary tutoring: Spending and social inequalities]. *Revista Brasileira de Estudos Pedagógicos, 91* (227), 55-74. http://educa.fcc.org.br/scielo.php?script=sci_abstract&pid=S2176-66812010000100004&lng=es&nrm=iso

Gomes, C. A., Vargas, A. R., Paiva, G. S., Rodrigues, G., Pereira, L. S. C., & Viana R. R. (2010b). Sistema educativo sombra: Recortes no Brasil e em Portugal [Shadow education system: Snippets from Brazil and Portugal]. *Revista Iberoamericana de Educación, 52* (6), 1-14. https://rieoei.org/RIE/article/view/1768/4452

Gómez, S. C., Bernal, G. L., & Herrera, P. (2020). Test preparation and students' performance: The case of the Colombian high school exit exam. *Cuadernos de Economía, 39* (79), 31-72. https://doi.org/10.15446/cuad.econ.v39n79.77106

Groppo, L. A., De Oliveira, A. R. G., & De Oliveira, F. M. (2019). Popular pre-college courses taught by university students: Political-pedagogical practices and teacher training. Revista *Brasileira de Educação, 24*, 1-24. https://doi.org/10.1590/S1413-24782019240031

Guill, K., Lüdtke, O., & Köller, O. (2020). Assessing the instructional quality of private tutoring and its effects on student outcomes: Analyses from the German National Educational Panel Study. *British Journal of Educational Psychology, 90*, 282-300. https://doi.org/10.1111/bjep.12281

Guimarães, J., & Sampaio, B. (2015). Family background and students' achievement on a university entrance exam in Brazil. *Education Economics, 21* (1), 38-59. https://doi.org/10.1080/09645292.2010.545528

Guo, Y., Chen, Q., Zhai, S., & Pei, C. (2020). Does private tutoring improve student learning in China? Evidence from the China Education Panel Survey. *Asia and Pacific Policy Studies, 7* (3), 322-343. https://doi.org/10.1002/app5.310

Hajar, A., & Karakus, M. (2022). A bibliometric mapping of shadow education research: Achievements, limitations, and the future. *Asia Pacific Education Review, 23*, 341-359. https://link.springer.com/article/10.1007/s12564-022-09759-4

Jayachandran, S. (2014). Incentives to teach badly: After-school tutoring in developing countries. *Journal of Development Economics, 108*, 190-205. https://doi.org/10.1016/j.jdeveco.2014.02.008

Jornitz, S., & Parreira, M. (Eds.) (2021). *The education systems of the Americas*. Springer.

Joshi, P. (2020). Private schooling and tutoring at scale in South Asia. In P. M. Sarangapani, & R. Pappu (Eds.), *Handbook of education systems in South Asia* (pp.1127-1146). Springer.

Kato, D. S. (2015). O papel dos cursinhos populares nos acessos e mudanças de perspectivas de seus participantes [The role of popular courses in access and changes of perspectives of its participants]. *Cadernos CIMEAC, 1* (1), 5-24. https://doi.org/10.18554/cimeac.v1i1.1430

Kumon. (n. d.). *Spreading globally*. Retrieved January 14, 2024, from https://kumongroup.com/eng/world/index.html?ID=eng

Landau, M. (2016). *Las tutorías en la educación secundaria: Políticas nacionales, provinciales y prácticas institucionales [Tutoring in secondary education: National, provincial and institutional policies and practices]*. Dirección Nacional de Información y Estadística Educativa. https://www.argentina.gob.ar/sites/default/files/11-landau-tutorias-secundaria-politicas-provinciales-issn.pdf

Lasekan, O., Moraga, A., & Galvez, A. (2019). Online marketing by private English tutors in Chile: A content analysis of a tutor listing website. *International Journal of Learning, Teaching and Educational Research, 18* (12), 46-62. https://doi.org/10.26803/ijlter.18.12.4

Le, H. M., & Edwards, D. B. (2022). When teachers become the external actor: Private tutoring and endogenous privatisation in Cambodia. In C. Lubienski, M. Yemini, & C. Maxwell (Eds.), *The rise of external actors in education: Shifting boundaries globally and locally* (pp. 31-49). Policy Press.

Llanos, A. (2022). *Gasto educativo: desigual e inequitativo [Educational expenditures: Unequal and unfair]*. Centro de Investigación Económica y Presupuestaria, Mexico. https://ciep.mx/wp-content/uploads/2022/11/Gasto-educativo-Desigual-e-inequitativo.pdf

Lopes, L. (2015). *Cursinho popular e ideário liberal: um estudo de caso sobre o pré-vestibular Gauss [Popular course and liberal ideology: A case study of the Gauss pre-college preparatory course]* [Dissertation]. Universidade Federal de Santa Catarina. https://repositorio.ufsc.br/handle/123456789/159789

Mariuci, S., Felicetti, V. L,. & Ferri, M. da S. (2012). Uma sombra na educação Brasileira: do ensino regular ao paralelo [A shadow in Brazilian education: From regular to parallel education]. *Revista Latino Americana de Educação Comparada, 3* (3), 85-96.

Moreno, J. M. (2022). A perfect storm: High-stakes examination and private tutoring in Egypt. *Revista Española de Educación Comparada, 40*, 146-161. https://doi.org/10.5944/reec.40.2022.31510

Nascimento, A. S. do (2007). *Os explicadores: Das sombras ao ensino paralelo [The tutors: From the shadows to parallel teaching]* [Master Dissertation]. Universidade do Estado do Rio de Janeiro. http://www.ppfh.com.br/wp-content/uploads/2014/01/D_andreanascimento-dissert.pdf

Nasif, D. B., Vianco, A., & Gertel, H. R. (2017). Impacto de las tutorías privadas en la transición del nivel secundario al universitario sobre el rendimiento estudiantil [Impact of private tutoring on student performance in the transition from high school to college]. In M. Aguilera-Prado, & A. Farieta-Barrera, A. (Eds.), *Evaluación de la educación superior: una mirada desde Latinoamérica [Higher education assessment: A Latin American perspective]* (pp. 17-63). Editorial Uniagustiniana.

OECD. (2020). *Covid-19 in Latin America and the Caribbean: An overview of government responses to the crisis*. https://read.oecd-ilibrary.org/view/?ref=129_129907-eae84sciov&title=COVID-19-in-Latin-Amercia-and-the-Caribbean_An-overview-of-government-responses-to-the-crisis

Ornelas, C. (Ed.) (2019). *Politics of education in Latin America: Reforms, resistance and persistence*. Brill.

Pinto, J. M. R. (2021). The education system of Brazil: Financing of education in Brazil. In S. Jornitz, & M. Parreira do Amaral (Eds.), *The education systems of the Americas* (pp. 265-289). Springer.

Posso, C., Saravia, E., & Uribe, P. (2023). Acing the test: Educational effects of the *SaberEs* test preparation program in Colombia. *Economics of Education Review, 97*, 1-18. https://doi.org/10.1016/j.econedurev.2023.102459

Rivas, A. (2022). Introductory study: A comparative analysis of educational reforms in Latin America. In A. Rivas (Ed.), *Examining educational reform in Latin America: Comprehensive insights into contemporary reform* (pp. 1-38). Routledge.

Runte-Geidel, A. (2013). La incidencia de las clases particulares en España a través de los datos de PISA [The incidence of private tuition in Spain through the PISA data]. *Revista Española de Educación Comparada, 21*, 249-282. https://doi.org/10.5944/reec.21.2013.7622

Runte-Geidel, A. (2015). La educación a la sombra en países del sur de Europa y sus implicaciones sobre la equidad [Education under the shadow in Southern European countries: Implications for equity]. *Revista Española de Educación Comparada, 25*, 167-182. https://doi.org/10.5944/reec.25.2015.14789

Silova, I. (2010). Private tutoring in Eastern Europe and Central Asia: Policy choices and implications. *Compare, 40* (3), 327-344. https://doi.org/10.1080/03057920903361926

Silva, M. F. de A. da, & Assis, J. H. P. do V. (2019). Expansão do mercado escolar, parentocracia e o Colégio Militar de Campo Grande (CMCG) [Expansion of the educational market, parentocracy, and the Military College of Campo Grande (CMCG)]. *Quaestio: Revista de Estudos em Educação, 21* (2), 459-479. https://doi.org/10.22483/2177-5796.2019v21n2p459-479

Sulz, J. A., & Nogueira, M. (2023). *A escola fora da escola*: o mercado de serviços paraescolares na cidade de Belo Horizonte (MG) [The school outside school: The para-school services market in the city of Belo Horizonte (MG)]. *Revista de Educação e Sociedade, 10* (25), 377-396. https://doi.org/10.55028/pdres.v10i25.18338

Tófoli, D. (2002, August 19). Sedutor no começo, cursinho exige esforços [Seductive at first, the course requires effort]. *Estadão*. https://www.estadao.com.br/educacao/sedutor-no-comeco-cursinho-exige-esforcos/

Ukai, N. (1994). The Kumon approach to teaching and learning. *Journal of Japanese Studies, 20* (1), 87-113. https://doi.org/10.2307/132785

UNESCO. (2020). *Latin America and the Caribbean - Inclusion and education: All means all. Global Education Monitoring Report series*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000374614

UNESCO, ECLAC, & UNICEF (2022). *Education in Latin America and the Caribbean at a crossroads: Regional monitoring report SDG4 - Education 2030*. UNESCO, ECLAC, UNICEF. https://unesdoc.unesco.org/ark:/48223/pf0000382671

UNESCO Institute for Statistics. (2022). *Setting commitments: National SDG4 benchmarks to transform education*. UIS. https://unesdoc.unesco.org/ark:/48223/pf0000382076

Univision. (2016, March 7). La educación privada se cuela por las rendijas de las cooperativas en Cuba [Private education slips through the cracks of cooperatives in Cuba]. *Univision*. https://www.univision.com/noticias/educacion/la-educacion-privada-se-cuela-por-las-rendijas-de-las-cooperativas-en-cuba

Uribe, J. L. (2023, April 7). CONAMAT nació para materializar el aprendizaje de matemáticas y logros académicos: Arturo Santana [CONAMAT was created to materialize mathematics learning and academic achievement: Arturo Santana]. *Macroeconomía*. https://macroeconomia.com.mx/conamat-nacio-para-materializar-el-aprendizaje-de-matematicas-y-logros-academicos-arturo-santana/

Venezuela, Ministry of Education. (1998). *Régimen sobre autorización y funcionamiento de planteles, cátedras y servicios educativos privados [Regulations on authorization and operation of private educational schools and services]*. Pandectas Digital. https://pandectasdigital.blogspot.com/2018/08/regimen-sobre-autorizacion-y.html

Ventura, A. (2008). Explicações através da internet: globalização e offshoring [Online private tutoring: globalization and offshoring]. In J. A. Costa, A. Neto-Mendes, & A. Ventura (Authors), *Xplika: investigação sobre o mercado das explicações [Xplika: research into the tutoring market]* (pp. 69-84). Universidade do Aveiro.

Ventura, A., Neto-Mendes, A., Costa, J., & Azevedo, S. (2006). El fenómeno del apoyo al aprendizaje fuera de la escuela visto a través de un análisis comparado [The private tutoring scenario: Contributions to a comparative analysis]. *Profesorado: Revista de Currículum y Formación del Profesorado, 10* (2), 1-19. https://www.ugr.es/~recfpro/rev102ART2.pdf

Ventura, A., & Jang, S. (2010). Private tutoring through the internet: Globalization and offshoring. *Asia Pacific Education Review, 11* (1), 59-68. https://doi.org/10.1007/s12564-009-9065-5

Ventura, A., & Gomes, C.A. (2013). Supplementary education in Brazil: Diversity and paradoxes. In J. Aurini, S. Davies, & J. Dierkes, J. (Eds.), *Out of the shadows: The global intensification of supplementary education* (pp. 129-151). Emerald.

Ventura, A., & Gomes, C.A. (2023). English private tutoring: The case of Brazil. In K. W. H. Yung, & A. Hajar (Eds.), *International perspectives on English private tutoring: Theories, practices, and policies* (pp. 139-157). Palgrave Macmillan.

Wisniewski, C., Regidor, M.C., Chason, L., Groundwater, E., Kranek, A., Mayne, D., & Middleton, L. (2020). Questioning assumptions about online tutoring: A mixed-method study of face-to-face and synchronous online writing center tutorials. *The Writing Center Journal, 38* (1/2), 261-296. https://www.jstor.org/stable/27031270

Zago, N. (2008). Cursos pré-vestibulares populares: limites e perspectivas [Popular pre-university courses: Limits and perspectives]. *Perspectiva, 26* (1), 149-174. https://doi.org/10.5007/2175-795x.2008v26n1p149

Zibetti, M. L. T., Pansini, F., & Souza, F. L. F. de. (2012). Reforço escolar: Espaço de superação ou manutenção das dificuldades escolares? [Tutoring: Space for overcoming or maintaining learning difficulties?]. *Psicologia Escolar e Educacional, 16* (2), 237-246. https://doi.org/10.1590/S1413-85572012000200006

Zhang, W. (2023). *Taming the wild horse of shadow education: The global expansion of private tutoring and regulatory responses*. Routledge.

Zhang, W., & Yamato, Y. (2018). Shadow education in East Asia: Entrenched but evolving private supplementary tutoring. In K. Kennedy, & J. C. K. Lee (Eds.), *Routledge international handbook on schools and schooling in Asia* (pp. 323-332). Routledge.

Authors' biographies

Mark Bray. UNESCO chair in Comparative Education at the University of Hong Kong. He has been employed by that University since 1986. Between 2006 and 2010, he took leave to work in Paris as director of UNESCO's International Institute for Educational Planning (IIEP); and between 2018 and 2023, he worked at East China Normal University, Shanghai, where he was director of the Centre for International Research in Supplementary Tutoring (CIRIST). Professor Bray wrote the first global study of shadow education, published by UNESCO IIEP in 1999. Since then, he has (co-) authored or (co-)edited 11 books and 80 articles/chapters on the theme. His work has made direct inputs to policy making in multiple countries.

https://orcid.org/0000-0002-5886-1570

Alexandre Ventura. Portuguese scholar, professor and researcher within the Department of Education and Psychology at the University of Aveiro, Portugal. His career features key roles, including Portuguese Deputy Minister of Education (2009-2010), Deputy Chief Inspector of Education in Portugal (2007), and active participation in the Standing International Conference of Inspectorates (SICI). He also served as senior school inspector in Dubai from 2017 to 2020. Dr Ventura is

highly sought after as a speaker, consultant, and researcher, specializing in areas such as shadow education, program evaluation, policy assessment, teacher appraisal, school inspection, and educational administration. His impactful contributions span multiple countries, including the United States, France, Spain, Brazil, Mozambique, Angola, Cyprus, North Macedonia, and the United Arab Emirates.


https://orcid.org/0000-0002-2336-9228

The Kaufman domains of creativity scale: Validation in a Spanish university context

La escala de los dominios de creatividad de Kaufman: validación en un contexto universitario español

Ignacio GONZÁLEZ-LÓPEZ, PhD. Full Professor. Universidad de Córdoba (*ignacio.gonzalez@uco.es*).

M.ª Amor MARTÍN-FERNÁNDEZ, PhD. Associate Professor. Centro de Magisterio Sagrado Corazón, Universidad de Córdoba (*m.martin@magisteriosc.es*).

Paloma del MORAL-MARTÍN. Student. Universidad de Córdoba (*s42momap@uco.es*).

Abstract:

Creativity is understood to be a set of elements that define a creative person, and the Kaufman Domains of Creativity Scale is internationally regarded as being of scientific value for measuring it. This article verifies the applicability of this instrument in a Spanish university context, after having its 50 elements professionally translated into Spanish and conducting an empirical study that establishes its guarantees of reliability and validity in this scenario. Following analytical exploration of this tool's constituent factors, the original five domains (everyday, performance, academic, mechanical/scientific, and artistic) are restructured into eight (everyday, performance, mechanical/scientific, academic, artistic expression, artistic understanding, emotional, and mathematical). As in other international settings, students were found to give statistical validity to basic social skills, while artistic competences, scientific design strategies, and intellectual capacities are constants within the construct of creativity regardless of the population group being studied. Nonetheless, the distinguishing features are in the artistic domain, which has undergone division, giving prominence to artistic expression and understanding of the arts. Also, in the extraction of an emotional component that goes beyond the everyday, and in a purely mathematical domain disaggregated from the mechanical/scientific domain.

Keywords: creativity domains, reliability, validity, factor analysis, Spanish university students.

Date of receipt of the original: 2023-07-26.
Date of approval: 2023-11-29.
Please cite this article as follows: González-López, I., Martín-Fernández, M. A., & Moral-Martín, P. (2024). The Kaufman domains of creativity scale: Validation in a Spanish university context [La escala de los dominios de creatividad de Kaufman: validación en un contexto universitario español]. *Revista Española de Pedagogía, 82* (288), 221-241. https://doi.org/10.22550/2174-0909.4041

Resumen:

Por creatividad se entiende el conjunto de elementos definitorios de la persona creativa. La escala de dominios de creatividad de Kaufman ha adquirido relevancia científica internacional por su capacidad para medirla. Este trabajo garantiza la aplicabilidad de este instrumento en un contexto universitario español, previa traducción profesional a la lengua española de sus 50 elementos y con la puesta en marcha de un estudio empírico que establece sus garantías de fiabilidad y validez en este escenario. Tras la exploración analítica de los factores constitutivos de la herramienta, los cinco dominios originales (cotidiano, rendimiento, académico, mecánico/científico y artístico) se han reestructurado en ocho (cotidiano, rendimiento, mecánico/científico, académico, expresión artística, comprensión artística, emocional y matemático). En consonancia con otros escenarios internacionales, el alumnado participante ha otorgado robustez a las habilidades sociales básicas. Asimismo, se ha observado que las competencias artísticas, las estrategias de diseño científico y las capacidades intelectuales siguen siendo incuestionables dentro del constructo creatividad, con independencia del grupo poblacional con el que se trabaje. Sin embargo, el matiz diferencial reside en el dominio artístico, que ha sufrido una división que otorga relevancia tanto a la expresión artística como a su comprensión. También en la extracción de un componente emocional más allá del cotidiano y en un dominio exclusivamente matemático desagregado del mecánico/científico.

Palabras clave: dominios de la creatividad, fiabilidad, validez, análisis factorial, alumnado universitario español.

1. Introduction

One of the questions that currently inspires the most disagreement and study in the field of research into creativity is whether it is general or specific (Romo et al., 2017; Gibim & Wechsler, 2020). In other words, whether creativity should be seen as a set of common capacities and characteristics that define it, that creative people possess and that are manifested in all of their activities (Corbalán et al. 2003, Corbalán, 2008); or whether these capacities and characteristics are present in particular domains and areas (Baer, 2011; Kaufman & Baer, 2005; Bermejo & Ruiz, 2017), with an individual's level of creativity varying by domain (Kaufman & Baer, 2004; Ivcevic, 2007; Beghetto & Kaufman, 2007). In addition to the complexity of this debate, "the greatest challenge for understanding the generality of the domain versus the specificity of creativity is understanding the concept of domain in itself" (Sternberg, 2009, p. 25). For their part, Plucker and Beghetto (2004), Stemberg (2009), and Kaufman (2012) suggest combining both visions of creativity. The position adopted in this aspect leads to a particular approach to evaluating creativity and its object, as well as the design of instruments for measuring it (Elisondo & Donolo, 2021).

Proposals for evaluating the domains of creativity have a long history. Carson et al. (2005) used the Creative Achievement Questionnaire (CAQ) to measure nine domains grouped into two factors: arts (drama, writing, humour, music, visual arts, and dance) and sciences (invention, scientific discovery, and culinary), later adding architecture. Ivcevic and Mayer (2009) created a Life-Report Questionnaire (LRQ) to evaluate creativity integrally through specific behaviours, which they arranged into three factors or dimensions: creative lifestyle, performing arts, and intellectual creativity. Other instruments for measuring various domains in everyday creativity are the Creative Behavior Inventory (Hocevar, 1979), the Biographical Inventory of Creative Behaviours (Batey, 2007), the Creative Behaviour Scale (Aranguren & Irrazabal, 2012), the theoretical model of creative behaviour as agentic action (CBAA) (Karwowski & Beghetto, 2019), the Inventory of Creative Activities and Achievements (ICAA) (Diedrich et al., 2018), or the Creative Actions Questionnaire (CAC) and its abbreviated version (CAC42), of Elisondo and Donolo (2016 and 2021). This last one is designed to evaluate creative actions in seven domains: literature, plastic arts and crafts, science and technology, performing arts, music, social participation, and daily creativity.

Research into the domains of creativity and their evaluation has centred the studies by Kaufman and his collaborators. The Creativity Scale for Different Domains (CSDD) (Kaufman & Baer, 2004) was designed to measure nine specific domains: science, interpersonal relations, writing, art, interpersonal communication, solving one's own personal problems, mathematics, crafts, and bodily/physical movement, grouped into three factors: empathy/communication, *practical* creativity, and mathematics/sciences. Kaufman and Baer (2005) also proposed the Amusement Park Theoretical Model (APT), whose theoretical structure underpins their later work, bringing together elements from the general domain that they regard as necessary prerequisites for creativity (intelligence and motivation), and specific elements of the domain, organised by thematic areas. Drawing on the APT, Kaufman et al. (2009) developed the Creative Domain Questionnaire (CDQ), comprising 56 domains and 7 factors: artistic-verbal, artistic-visual, entrepreneurial, interpersonal, mathematics/science, performance, and problem solving.

For Kaufman (2012), the key question is which domains to measure. From the specific domain focus and supported by the studies mentioned above, which used self-report questionnaires, he created the Kaufman Domains of Creativity Scale (K-DOCS). This comprises 50 items for evaluating creativity in 5 domains (self/everyday, scholarly, performance (writing and music), mechanical/scientific, and artistic). At the same time, it confirms correlations between these domains and the big five personality traits (openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability).

The everyday domain consists of the ability to solve different problems and situations that occur in everyday life, and the ability to function in one's surroundings. The scholarly domain comprises aspects such as the ability to collect information, process it, and be able to debate and substantiate it. Meanwhile, the performance domain covers the areas of writing and music. In the case of the mechanical/scientific domain, this encompasses skills relating to designing, understanding, building, and operating mechanisms, scientific experiments, and mathematical aspects, which are also the object of previous studies (Kaufman & Baer, 2004). Finally, the artistic domain covers creative faculties relating to drawing, painting, sculpture, and any artistic technique or activity, and it also incorporates the capacity to analyse, understand, and enjoy works of art and the places relating to art (Kaufman, 2012).

Kaufman (2012), among the limitations of the study and of the K-DOCS instrument, mentions the need to replicate it, validate it, and test the coherence of the factor analysis when applying the scale to other cultures. These aspects are developed in later works. He replicates and validates it with Turkish and Polish informants (McKay et al., 2017), demonstrating the reliability and validity for evaluation of creativity in its five domains.

In addition, Awofala and Fatade (2017) tested the validity of the Domains of Creativity Scale in Nigerian pre-service teachers of science, technology, and mathematics in each of the five original domains.

The K-DOCS scale was also translated into Indonesian and adapted to its context (Susanto et al., 2018), in a work with the participation of 70 students from the Muhammadiyah University. The results showed that 54 of the 24 items of the selected instrument were valid. They concluded that all of the valid items that were reordered could be used to identify creativity or creative potential in students.

Faletič and Avsec (2019) tested the validity of the translation of the instrument into Slovenian with positive results. The confirmatory factor analysis they performed on a sample of 319 people showed an adequate fit for the data from the five-factor model originally proposed.

The psychometric properties and structural validity of the adaptation into German of the K-DOCS (Brauer et al., 2022) have recently been tested. The study was performed with a total of 1379 participants and it supported the five-factor structure of the German K-DOCS, in line with the original version and the linguistic adaptations developed.

Kandemir and Kaufman (2019) translated the Kaufman scale into Turkish and performed a study of the validity and reliability of the test. The results are of great interest for the present

study, as the sample is also of university students and, as shown in the results below, because the factor analysis also displayed modifications in the five starting factors, which became nine as a result of the division of four of them: everyday-interpersonal, everyday-intrapersonal, scholarly, interpretation-literary, interpretation-musical, mechanical/scientific, mathematical, artistic-drawing, and artistic-activity.

The translation into Russian and evaluation of the psychometric properties of the scale is the focus the study by Miroshnik et al. (2022), which obtained satisfactory results and reliability for the context of the study. The exploratory and confirmatory factor analyses they performed with a group of 1011 participants indicated that the model with five correlated factors displayed the best fit with the empirical data. All of the factors displayed good internal consistency and moderate test-retest reliability.

Tu et al. (2018) performed a study with a sample of Chinese students on relations between emotional intelligence and creativity in its dimension as a general domain and as a specific domain. They used Kaufman's scale of domains in the latter case, with the result that emotional intelligence is a predictor of creativity.

On this same line of examining the relations between creativity as a general and a specific domain, Huang et al. (2017) confirmed that creativity in a particular domain, specifically scientific/mathematical creativity, is affected by knowledge of this domain and the capacity for divergent thinking.

Finally, Kapoor et al. (2021) carried out a new evaluation of the factor structure of K-DOCS based on data from a very large sample of participants from the USA, the largest sample to date. They concluded that it is valid as a measure of self-reported creativity, both in the five-domain model (Kaufman, 2012), which is used in the present study, and in the nine-domain model (Kandemir & Kaufman, 2020).

The work that concerns us is on the same line as the research works mentioned above.

2. Methodology

The aim of this study is to validate the Kaufman Domains of Creativity Scale (K-DOCS) (Kaufman, 2012) in a Spanish university context, through an exploratory process of empirical validation.

We have chosen a non-experimental research design with a descriptive quantitative methodology, as our aim is to define the characteristics and dimensions of a specific group, measuring a body of data complied relating to the study in question (Hernández-Sampieri & Mendoza, 2018).

Table 1 shows the dimensions of analysis that will provide information to meet the formulated aim.

TABLE 1. Description of the dimensions of analysis.

Dimensions of analysis	Description
Sociodemographic data	This first dimension consists of the characteristics that describe the informant group. These include sex (male or female), age, specialism (early childhood education or primary education), and year (first year, second year, third year, and fourth year).
Everyday domain	This domain refers to the person's capacity to handle different situations and difficulties that can appear in everyday life. It involves possessing and knowing how to apply a series of emotional skills and tools that help people confront their reality in a healthy way, as well as encouraging others to achieve the same.
Scholarly domain	The scholarly domain involves standing out in academic skills such as researching, gathering information, organising it, writing it or expressing it adequately, among others.
Performance domain	The performance domain involves displaying a high level of creativity in aspects relating to writing, music, and theatre.
Mechanical/Scientific domain	The mechanical/scientific domain is characterised by showing a high level of creativity when generating ideas to create structures, scientific experiments, mathematical problems, and computer programs, and also when implementing them effectively.
Artistic domain	This domain includes all of the skills linked to artistic techniques and enjoyment of them. Creative capacities associated with painting, drawing, crafts, as well as the competence to analyse and enjoy works of art are present.

Note: own elaboration based on Kaufman (2012).

The informant group, which was selected through purposive non-probability sampling, comprised 161 students from the Early Childhood Education (37.9%) and Primary Education (62.1%) degrees. Of them, 73.9% were female, and 26.1%, male, with a mean age of 21 (*SD* = 2.715). 47.8% were in the first year of the degree; 16.8%, in the second year; 17.4%, in the third year; and 18.0%. in the fourth year.

The majority studied at the Faculty of Educational Science of the Universidad de Córdoba (46.6%) and in the Centro de Magisterio Sagrado Corazón (42.9%) affiliated to that university. A very small number of students were from other universities, such as the Universidad de Jaén (3.1%), the Centro Universitario Sagrada Familia in Úbeda (1.9%), the Universidad de Granada (1.2%), the Universidad Autónoma de Madrid (1.2%), the Centro

Universitario La Inmaculada (0.6%), the Universidad de Las Palmas de Gran Canaria (0.6%), the Universidad de Sevilla (0.6%), the Universidad Autónoma de Barcelona (0.6%), and the Universidad de Alcalá de Henares (0.6%). The participants agreed to an informed consent protocol that guaranteed the confidentiality of the data that they provided.

The original English version of the scale displays a very acceptable level of reliability, with Cronbach's alpha values greater than .80 in all domains.

The instrument was translated into Spanish by a professional translator (see Annexe 1). It comprises two parts. The first consists of a set of elements that represent the personal and descriptive data of the sample, prepared ad hoc. The second incorporates 50 elements, evaluated on a 5-point scale, for measuring the level of creativity of the respondents, in this case, students from the degrees in early years education and primary education (from 1 = much less creative to 5 = much more creative), classified in the 5 domains that make up the scale (see Table 2).

TABLE 2. Dimensions and indicators from the K-DOCS scale.

Everyday domain (E)	
E1	1. Finding something fun to do when I have no money.
E2	2. Helping other people cope with a difficult situation.
E3	3. Teaching someone how to do something.
E4	4. Maintaining a good balance between my work and my personal life.
E5	5. Understanding how to make myself happy.
E6	6. Being able to work through my personal problems in a healthy way.
E7	7. Thinking of new ways to help people.
E8	8. Choosing the best solution to a problem.
E9	9. Planning a trip or event with friends that meets everyone's needs.
E10	10. Mediating a dispute or argument between two friends.
E11	11. Getting people to feel relaxed and at ease.
Scholarly domain (S)	
S1	12. Writing a non-fiction article for a newspaper, newsletter, or magazine.
S2	13. Writing a letter to the editor.
S3	14. Researching a topic using many different types of sources that may not be readily apparent.
S4	15. Debating a controversial topic from my own perspective.
S5	16. Responding to an issue in a context-appropriate way.
S6	17. Gathering the best possible assortment of articles or papers to support a specific point of view.
S7	18. Arguing a side in a debate that I do not personally agree with.
S8	19. Analysing the themes in a good book.
S9	20. Figuring out how to integrate critiques and suggestions while revising a work.
S10	21. Being able to offer constructive feedback based on my own reading of a paper.
S11	22. Coming up with a new way to think about an old debate.

Performance domain (P)	
P1	23. Writing a poem.
P2	24. Making up lyrics to a funny song.
P3	25. Making up rhymes.
P4	26. Composing an original song.
P5	27. Learning how to play a musical instrument.
P6	28. Shooting a fun video to air on YouTube.
P7	29. Singing in harmony.
P8	30. Spontaneously creating lyrics to a rap song.
P9	31. Playing music in public.
P10	32. Acting in a play.
Mechanical/Scientific domain (MS)	
MS1	33. Carving something out of wood or similar material.
MS2	34. Figuring out how to fix a frozen or buggy computer.
MS3	35. Writing a computer program.
MS4	36. Solving math puzzles.
MS5	37. Taking apart machines and figuring out how they work.
MS6	38. Building something mechanical (like a robot).
MS7	39. Helping to carry out or design a scientific experiment.
MS8	40. Solving an algebraic or geometric proof.
MS9	41. Constructing something out of metal, stone, or similar material.
Artistic domain (A)	
A1	42. Drawing a picture of something I've never actually seen (like an alien).
A2	43. Sketching a person or object.
A3	44. Doodling/Drawing random or geometric designs.
A4	45. Making a scrapbook page out of my photographs.
A5	46. Taking a well-composed photograph using an interesting angle or approach.
A6	47. Making a sculpture or a piece of pottery.
A7	48. Appreciating a beautiful painting.
A8	49. Coming up with my own interpretation of a classic work of art.
A9	50. Enjoying an art museum.

Note: own elaboration based on the translation of Kaufman's K-DOCS scale (2012).

To make sense of the data collected, they were organised, described, and analytically interpreted using version 25 of the Statistical Package for the Social Sciences software program. Statistical validation of the instrument was done by analysing its internal consistency, analysing the capacity for discrimination of the elements, and performing exploratory factor analysis. In addition, after establishing the underlying structure of the construct, this was validated using a structural equations analysis process in the AMOS v. 23.

3. Results

The internal consistency analysis using Cronbach's alpha gave a total value of .959. This result indicates a high correlation and solidity in the responses given, suggesting that the questionnaire is an instrument with high reliability. Similarly, having observed the consistency values of each of the domains shown in Table 3, we can affirm that they are high and that, consequently, each domain has signs of reliability.

TABLE 3. Total values and values by domain for Cronbach's alpha for the K-DOCS scale.

Domain	Cronbach's alpha
Everyday	.926
Scholarly	.919
Performance	.922
Mechanical/Scientific	.908
Artistic	.882
Total	.959

Subsequently, the data from examining the partial values associated with each of the evaluation elements show that, if these elements are removed from the instrument, all of them are consistent and valid units of measurement (alpha values of .959 or less).

Furthermore, the power of discrimination of the elements that make up this tool was estimated in order to measure their capacity to distinguish between the participants with a high level in the range measured and those who have a low level (García et al., 2000). To test this characteristic, the 50 elements of the scale were selected and the total sum was recoded into three groups (low, medium, and high):

1. Low group (lowest value, 33rd percentile): (50, 149).
2. Medium group (33rd percentile, 66th percentile): (150, 170).
3. High group (66th percentile, highest value): (171, 250).

To establish whether there was a statistical difference between the groups that gave a high score and the groups that gave a low score in the chosen elements, we performed the independent samples *t* test (significance level = .05). The results show that 100% of these elements have an admissible level of statistical discrimination, given that the *p* values corresponding to their items were less than .05. As a consequence, these findings indicates that the questionnaire has adequate value for its use.

Subsequently, we have attempted to test the underlying theoretical structure of Kaufman's original instrument (2012) through linear causal relations between the constituent elements of the instrument when it is applied in a Spanish university context. To do so, we used confirmatory factor analysis. The data in Table 4 indicate that the factorial model obtained does not fit the original model.

TABLE 4. Fit measures obtained from the confirmatory factor analysis.

Absolute fit measures		Incremental fit measures			Parsimonious fit measures			
χ^2 *(p)*	RMSEA	CFI	TLI	NFI	PRATIO	PCFI	PNFI	AIC
.000	0.106	0.672	0.657	0.572	.955	.642	.547	3602.356

Note: Criteria stipulated: χ^2 *(p)* >.05; RMSEA >.05; CFI >.90; TLI >.90; NFI >.90; PRATIO, PCFI, and PNFI between 0 and 1; low AIC.

It is for this reason that we have chosen to test the dimensional structure of the instrument in this new instructional context, something that has involved studying the internal structure of the instrument using exploratory factor analysis. After selecting the extraction (principal components) and rotation (varimax) methods and testing the appropriateness of their application (KMO = .861; MSA >.767; Barlett, χ^2 = 6855.416, p = .000), a total of 8 factors were obtained that explain 68.513% of the criterion variance (see Table 5).

TABLE 5. Rotated component matrix.

Evaluation elements	Factors							
	1	2	3	4	5	6	7	8
2. Helping other people cope with a difficult situation (E2).	.809							
7. Thinking of new ways to help people (E7).	.763							
10. Mediating a dispute or argument between two friends (E10).	.752							
11. Getting people to feel relaxed and at ease (E11).	.749							
3. Teaching someone how to do something (E3).	.699							
9. Planning a trip or event with friends that meets everyone's needs (E9).	.687							
8. Choosing the best solution to a problem (E8).	.645							
1. Finding something fun to do when I have no money (E1).	.636							

16. Responding to an issue in a context-appropriate way (S5).	.625		
18. Arguing a side in a debate that I do not personally agree with (S7).	.504		
22. Coming up with a new way to think about an old debate (S11).	.503		
26. Composing an original song (P4).		.792	
30. Spontaneously creating lyrics to a rap song (P8).		.761	
24. Making up lyrics to a funny song (P2).		.751	
31. Playing music in public (P9).		.738	
25. Making up rhymes (P3).		.732	
29. Singing in harmony (P7).		.711	
27. Learning how to play a musical instrument (P5).		.709	
23. Writing a poem (P1).		.684	
28. Shooting a fun video to air on YouTube (P6).		.663	
32. Acting in a play (P10).		.519	
37. Taking apart machines and figuring out how they work (MS5).			.799
35. Writing a computer program (MS3).			.766
38. Building something mechanical (like a robot) (MS6).			.751
33. Carving something out of wood or similar material (MS1).			.706
34. Figuring out how to fix a frozen or buggy computer (MS2).			.691

41. Constructing something out of metal, stone, or similar material (MS9).	.665		
47. Making a sculpture or a piece of pottery (A6).	.535		
19. Analysing the themes in a good book (S8).		.710	
20. Figuring out how to integrate critiques and suggestions while revising a work (S9).		.673	
14. Researching a topic using many different types of sources that may not be readily apparent (S3).		.666	
15. Debating a controversial topic from my own perspective (S4).		.656	
13. Writing a letter to the editor (S2).		.600	
17. Gathering the best possible assortment of articles or papers to support a specific point of view (S6).		.593	
21. Being able to offer constructive feedback based on my own reading of a paper (S10).		.524	
12. Writing a non-fiction article for a newspaper, newsletter, or magazine (S1).		.499	
43. Sketching a person or object (A2).			.830
42. Drawing a picture of something I've never actually seen (like an alien) (A1).			.752
44. Doodling/drawing random or geometric designs (A3).			.738

45. Making a scrapbook page out of my photographs (A4).					.515			
49. Coming up with my own interpretation of a classic work of art (A8).						.763		
50. Enjoying an art museum (A9).						.752		
48. Appreciating a beautiful painting (A7).						.728		
5. Understanding how to make myself happy (E5).							.772	
4. Maintaining a good balance between my work and my personal life (E4).							.756	
6. Being able to work through my personal problems in a healthy way (E6).							.648	
40. Solving an algebraic or geometric proof (MS8).								.773
36. Solving math puzzles (MS4).								.733
39. Helping to carry out or design a scientific experiment (MS7).								.640
Percentage of variance explained	14.068	12.526	9.692	9.630	6.932	5.847	5.254	4.563

These factors guarantee the structural quality of the original tool, although there are distinguishing elements to consider in the context of Spain:

- Factor 1: everyday domain. This first factor, which explains 14.068% of the criterion variance, is a set of basic social abilities relating to the possession of skills for solving and dealing with conflicts or difficult situations and maintaining adequate social skills in the everyday setting. Everything relating to the management of emotions is excluded from the original domain established by Kaufman while aspects

of the scholarly domain relating to reflection and contextualised reasoning are included.

- Factor 2: performance domain. This factor, which contributes 15.526% of the criterion variance, maintains an identical form to the original version of the performance domain and it includes everything relating to skills for music, theatre, drawing, painting, and writing.

- Factor 3: mechanical/scientific domain. This factor, which has the same name as the original one, explains 9.692% of the criterion variance, and expresses creative skills relating to the mechanical and scientific world, specifically constructing, repairing, and creating mechanisms, designing computer programs, etc. However, the three elements that refer to mathematics skills are excluded from it and comprise a new domain, while it includes one element from the Artistic domain relating to modelling and one element from the Scholarly domain relating to thematic analysis.

- Factor 4: academic domain. This factor, with a specific weight of 9.630% of the criterion variance, refers to Kaufman's domain of the same name. It comprises a series of intellectual capacities, among which stand out well-founded enquiry and internalisation of information, the critical analysis competence, handling a range of information sources, and the capacity for expression adapted to various contexts.

- Factor 5: artistic expression domain. The elements in this factor, which contribute 6.932% of the criterion variance, are part of the set of elements of Kaufman's Artistic domain. Nonetheless, in this study, four of them have been grouped into another different factor, and so this component is described as the person's skill for drawing, mapping out drafts and images and being capable of putting them down on paper, canvas, or another material with various artistic techniques and in an original way.

- Factor 6: artistic comprehension domain. This factor, which contributes 5.847% of the criterion variance, is described as people's ability to enjoy art and possession of sufficient knowledge to understand it and connect their emotions to it.

- Factor 7: emotional domain. This factor is original to this work and explains 5.254% of the criterion variance. It consists of elements that were previously part of the everyday domain and refer to the ability to develop adequate emotional intelligence, comprising one's own emotions as well as those of other people.

- Factor 8: mathematical domain. The last factor, which contributes 4.563% of the criterion variance, does not appear in this form in the structure of the K-DOCS scale, but rather is derived from the elements of the mechanical/scientific domain. It comprises the competences relating to the mathematical

field such as solving mathematical problems and puzzles, as well as generating ideas aimed at creating scientific tests and experiments.

4. Discussion and conclusions

According to this work, the Spanish version of the Kaufman Domains of Creativity Scale (K-DOCS) can be used with guarantees of reliability. We felt it was necessary to show the reliability and validity of the questionnaire in the Spanish context. The data obtained demonstrated its suitability for use in the setting of this research, which is in line with studies carried out in other cultural contexts (McKay et al., 2017; Awofala & Fatade, 2017; Susanto et al., 2018; Faletič & Avsec, 2019; Brauer et al., 2022; Kadamir & Kaufman, 2019; Miroshnik et al., 2022).

When empirically exploring the constituent factors of the tool, the five K-DOCS domains (Kaufman, 2012): everyday, performance, scholarly, mechanical/scientific, and artistic, gave rise to eight factors, which we gave the following names: everyday, performance, mechanical/scientific, scholarly, artistic expression, artistic comprehension, emotional, and mathematical.

As can be seen, the first four factors are the same as in the original scale, and so we can deduce that there is still no question about relevance of basic social skills, artistic competences, scientific design strategies, and intellectual capacities within the construct of creativity independently of the population group with which one works.

In contrast, the grouping of the item in the artistic domain established by Kaufman (2012) is split into two different factors in this study: artistic expression and artistic comprehension. This is because people might enjoy and understand artistic works but lack the skills to express themselves artistically (for example, drawing), and vice versa (Gardner, 1994). There is a striking coincidence here with the results of the study with Turkish university students by Kadamir and Kaufman (2019), in which they conclude that there are nine factors, including the division of the artistic domain into artistic and aesthetic skill, and the scientific domain into science and mathematics.

Moreover, the appearance of two new domains (emotional and mathematical) was noted. The emotional factor includes some elements of Kaufman's everyday domain (2012). However, implementing the tool in the context of Spanish universities produces a domain centred expressly on emotional intelligence, in line with Tu et al. (2018), who identified significant links between emotional intelligence and creativity when using self-evaluation questionnaires. They noted that emotional intelligence did not show any relationship with divergent thinking, but it did positively predict the five domains of creativity. According to Xu et al. (2019), both constructs maintain a moderate correlation. Works such as those by Delgado et al. (2019) or Sánchez (2023) reveal the importance of working on students emotional competence as a way of improving their formative, social, and professional profile.

Something similar happens with regards to the new mathematical domain. This last factor consists of some of the elements from the original mechanical/scientific domain. However, in this work, we have evaluated regrouping certain elements into a more specific domain focusing solely on the field of mathematics, as Kadamir and Kaufman (2019) established. On this same line of examining the relations between creativity as a general and a specific domain, Huang et al. (2017) confirmed that creativity in a particular domain, specifically scientific/mathematical creativity, is affected by knowledge of this domain and the capacity for divergent thinking. The existence of a mathematics/science domain that is consistently distinct from other domains of creativity is supported by an integral meta-analysis of empirical studies that examine the domains of creativity (Julmi & Scherm, 2016). The meta-analysis indicates that stable patterns are apparent in all of the studies, which generally correspond with the practical, empathy/communication, and mathematics/science creativity factors that Kaufman and Baer (2004) identify.

It is notable that the data obtained here are limited to university students from the field of education, most of whom are from two specific centres of a Spanish university, and so future studies should include students from other universities in Spain and from different areas of knowledge to establish a comprehensive fit of the tool to the whole of the university population.

Annex

Kaufman Domains of Creativity Scale (K-DOCS)

Instructions: compared to people of approximately your age and life experience, how creative would you rate yourself for each of the following acts? For acts that you have not specifically done, estimate your creative potential based on your performance on similar tasks. Please note the following rating scale: 1 = much less creative, 2 = less creative, 3 = neither more or less creative, 4 = more creative, 5 = much more creative.

1. Finding something fun to do when I have no money.	1	2	3	4	5
2. Helping other people cope with a difficult situation.	1	2	3	4	5
3. Teaching someone how to do something.	1	2	3	4	5
4. Maintaining a good balance between my work and my personal life.	1	2	3	4	5
5. Understanding how to make myself happy.	1	2	3	4	5
6. Being able to work through my personal problems in a healthy way.	1	2	3	4	5

7. Thinking of new ways to help people.	1	2	3	4	5
8. Choosing the best solution to a problem.	1	2	3	4	5
9. Planning a trip or event with friends that meets everyone's needs.	1	2	3	4	5
10. Mediating a dispute or argument between two friends.	1	2	3	4	5
11. Getting people to feel relaxed and at ease.	1	2	3	4	5
12. Writing a non-fiction article for a newspaper, newsletter, or magazine.	1	2	3	4	5
13. Writing a letter to the editor.	1	2	3	4	5
14. Researching a topic using many different types of sources that may not be readily apparent.	1	2	3	4	5
15. Debating a controversial topic from my own perspective.	1	2	3	4	5
16. Responding to an issue in a context-appropriate way.	1	2	3	4	5
17. Gathering the best possible assortment of articles or papers to support a specific point of view.	1	2	3	4	5
18. Arguing a side in a debate that I do not personally agree with.	1	2	3	4	5
19. Analysing the themes in a good book.	1	2	3	4	5
20. Figuring out how to integrate critiques and suggestions while revising a work.	1	2	3	4	5
21. Being able to offer constructive feedback based on my own reading of a paper.	1	2	3	4	5
22. Coming up with a new way to think about an old debate.	1	2	3	4	5
23. Writing a poem.	1	2	3	4	5
24. Making up lyrics to a funny song.	1	2	3	4	5
25. Making up rhymes.	1	2	3	4	5
26. Composing an original song.	1	2	3	4	5
27. Learning how to play a musical instrument.	1	2	3	4	5
28. Shooting a fun video to air on YouTube.	1	2	3	4	5
29. Singing in harmony.	1	2	3	4	5
30. Spontaneously creating lyrics to a rap song.	1	2	3	4	5

31. Playing music in public.	1	2	3	4	5
32. Acting in a play.	1	2	3	4	5
33. Carving something out of wood or similar material.	1	2	3	4	5
34. Figuring out how to fix a frozen or buggy computer.	1	2	3	4	5
35. Writing a computer program.	1	2	3	4	5
36. Solving math puzzles.	1	2	3	4	5
37. Taking apart machines and figuring out how they work.	1	2	3	4	5
38. Building something mechanical (like a robot).	1	2	3	4	5
39. Helping to carry out or design a scientific experiment.	1	2	3	4	5
40. Solving an algebraic or geometric proof.	1	2	3	4	5
41. Constructing something out of metal, stone, or similar material.	1	2	3	4	5
42. Drawing a picture of something I've never actually seen (like an alien).	1	2	3	4	5
43. Sketching a person or object.	1	2	3	4	5
44. Doodling/Drawing random or geometric designs.	1	2	3	4	5
45. Making a scrapbook page out of my photographs.	1	2	3	4	5
46. Taking a well-composed photograph using an interesting angle or approach.	1	2	3	4	5
47. Making a sculpture or a piece of pottery.	1	2	3	4	5
48. Appreciating a beautiful painting.	1	2	3	4	5
49. Coming up with my own interpretation of a classic work of art.	1	2	3	4	5
50. Enjoying an art museum.	1	2	3	4	5

Observations and suggestions:

References

Aranguren, M., & Irrazabal, N. (2012). Diseño de una escala para la evaluación del comportamiento creativo en diferentes dominios [A scale for the evaluation of creativity behavior in different domains: Development and design]. *Ciencias Psicológicas*, *6* (1), 29-41. https://doi.org/10.22235/cp.v6i1.60

Awofala, A. O., & Fatade, A. O. (2017). Validación de una escala sobre dominios de creatividad para futuros profesores de ciencias naturales, tecnología y matemáticas [Validation of the domains of creativity scale for Nigerian preservice science, technology, and mathematics teachers]. *Electronic Journal of Research in Education Psychology*, *13* (35), 131-150. https://doi.org/10.14204/ejrep.35.14057

Baer, J. (2011). Domains of creativity. In M. Runco y S. Pritzker (Eds.), *Encyclopedia of creativity* (pp. 377-382). Elsevier.

Batey, M. (2007). *A psychometric investigation of everyday creativity* [Doctoral Dissertation]. University College.

Beghetto, R. A., & Kaufman, J. C. (2007). Toward a broader conception of creativity: A case for *mini-c* creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *1* (2), 73-79. https://doi.org/10.1037/1931-3896.1.2.73

Bermejo, R., & Ruiz, M. J. (2017). Los desafíos de la investigación sobre la especificidad o generalidad de la creatividad [Challenges of research on the specificity or generality of creativity]. In L. S. Almeida (Coord.), *Criatividade e pensamento crítico*: *conceit, avaliação e desenvolvimento [Creativity and critical thinking: Concept, evaluation and development]* (pp. 75-106). CERPSI.

Brauer, K., Sendatzki, R., Kaufman, J. C., & Proyer, R. T. (2022). Counting the muses in German speakers: Evaluation of the German-language translation of the Kaufman domains of creativity scales (K-DOCS). *Psychological Test Adaptation and Development*, *3* (1), 70-84. https://doi.org/10.1027/2698-1866/a000024

Carson, S., Peterson, J. B., & Higgins, D. M. (2005). Reliability, validity and factor structure of the creative achievement questionnaire. *Creativity Research Journal*, *17* (1), 37-50. https://doi.org/10.1207/s15326934crj1701_4

Corbalán, J. (2008). ¿De qué se habla cuando hablamos de creatividad? [What do we mean when we talk about creativity?]. *Cuadernos de la Facultad de Humanidades y Ciencias Sociales*, *35*, 11-21.

Corbalán, F. J., Martínez, F., Donolo, D. S., Alonso, C., Tejerina, M., & Limiñana, R. M. (2003). *CREA. Inteligencia creativa. Una medida cognitiva de la creatividad [CREA. Creative intelligence. A cognitive measure of creativity]*. TEA Ediciones.

Delgado, B., Martínez, M. C., Rodríguez, J. R., & Escortell, R. (2019). La autoeficacia académica y la inteligencia emocional como factores asociados al éxito académico de los estudiantes universitarios [Academic self-efficacy and emotional intelligence as factors associated with the academic success of university students]. *Gestión de las Personas y Tecnología*, *12* (35), 46-60.

Diedrich, J., Jauk, E., Silvia, P. J., Gredlein, J. M., Neubauer, A. C., & Benedek, M. (2018). Assessment of real-life creativity: The inventory of creative activities and achievements (ICAA). *Psychology of Aesthetics, Creativity, and the Arts*, *12* (3), 304-316. https://doi.org/10.1037/aca0000137

Elisondo, R., & Donolo, D. (2016). Construcción y análisis de las propiedades psicométricas del cuestionario de acciones creativas en población argentina [Construction and analysis of the psychometric properties of the creative actions questionnaire in Argentinean population]. *PSIENCIA. Revista Latinoamericana de Ciencia Psicológica*, *8* (1), 1-21.

Elisondo, R. C., & Donolo, D. S. (2021). Cuestionario de acciones creativas: propiedades psicométricas de la versión abreviada (CAC42) [Creative actions questionnaire: Psychometric properties of the abbreviated version (CAC42)]. *Revista Evaluar*, *21* (3), 81-94. https://doi.org/10.35670/1667-4545.v21.n3.36308

Faletič, L., & Avsec, A. (2019). Validation of the Slovene form of Kaufman domains of creativity scale. *Psiholoska Obzorja*, *28*, 40-52. https://doi.org/10.20419/2019.28.499

García, E., Gil, J., & Rodríguez, G. (2000). *Análisis factorial [Factor analysis]*. La Muralla/Hespérides.

Gardner, H. (1994). *Educación artística y desarrollo humano [Arts education and human development]*. Paidós Ibérica.

Gibim, Q. G., & Wechsler, S. M. (2020). Escala de perfil criativo, construção e estudos psicométricos [Creative profile scale: Test construction and psychometrics studies]. Avaliação Psicológica, *19* (4), 382-389.

Hernández-Sampieri, R., & Mendoza, C. P. (2018). *Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta [Research methodology. Quantitative, qualitative and mixed routes]*. McGraw-Hill.

Hocevar, D. (1979, 16-19 de abril). *The development of the creative behavior inventory (CBI)* [paper]. Annual meeting of the Rocky Mountain Psychological Association, Las Vegas (EE. UU.).

Huang, P.-S., Peng, Sh.-L., Chen, H.-Ch., Tseng, L.-Ch., & Hsu, L.-Ch. (2017). The relative influences of domain knowledge and domain-general divergent thinking on scientific creativity and mathematical creativity. *Thinking Skills and Creativity*, *25*, 1-9. https://doi.org/10.1016/j.tsc.2017.06.001

Ivcevic, Z. (2007). Artistic and everyday creativity: An act-frequency approach. *Journal of Creative Behavior*, *41* (4), 271-290. https://doi.org/10.1002/j.2162-6057.2007.tb01074.x

Ivcevic, Z., & Mayer, J. D. (2009). Mapping dimensions of creativity in the life-space. *Creativity Research Journal*, *21* (2-3), 152-165. https://doi.org/10.1080/10400410902855259

Julmi, C., & Scherm, E. (2016). *Measuring the domain-specificity of creativity*. University of Hagen. https://www.fernuni-hagen.de/wirtschaftswissenschaft/download/beitraege/db-502.pdf

Kandemir, M. A., & Kaufman, J. C. (2020). The Kaufman domains of creativity scale: Turkish validation and relationship to academic major. *Journal of Creative Behavior*, *54* (4), 1002-1012. https://doi.org/10.1002/jocb.428

Kapoor, H., Reiter-Palmon, R., & Kaufman, J..C (2021). Norming the muses: Establishing the psychometric properties of the Kaufman domains of creativity scale. *Revista de Evaluación Psicoeducativa*, *39* (6), 680-693. https://doi.org/10.1177/07342829211008334

Karwowski, M., & Beghetto, R. A. (2019). Creative behavior as agentic action. *Psychology of Aesthetics, Creativity, and the Arts, 13* (4), 402-415. https://doi.org/10.1037/aca0000190

Kaufman, J. C. (2012). Counting the muses: Development of the Kaufman domains of creativity scale (K-DOCS). *Psychology of Aesthetics, Creativity, and the Arts*, *6* (4), 298-308. https://doi.org/10.1037/a0029751

Kaufman, J. C., & Baer, J. (2004). Sure, I'm creative but not in mathematics! Self-reported creativity in diverse domains. *Empirical Studies of the Arts*, *22* (2), 143-155. https://doi.org/10.2190/26HQ-VHE8-GTLN-BJJM

Kaufman, J. C., & Baer, J. (2005). The amusement park theory of creativity. In J. C. Kaufman, & J. Baer (Eds.), *Creativity across domains: Faces of the muse* (pp. 321-328). Erlbaum.

Kaufman, J. C., & Beghetto, R. A. (2009). Beyond big and little: The four C model of creativity. *Review of General Psychology, 13,* 1-12. https://doi.org/10.1037/a0013688

Kaufman, J. C., Cole, J. C., & Baer, J. (2009). The construct of creativity: A structural model for self-reported creativity ratings. *Journal of Creative Behavior*, *43* (2), 119-134. https://doi.org/10.1002/j.2162-6057.2009.tb01310.x

McKay, A. S., Karwowski, M., & Kaufman, J. C. (2017). Measuring the muses: Validating the Kaufman domains of creativity scale (K-DOCS). *Psychology of Aesthetics, Creativity, and the Arts*, *11* (2), 216-230. https://doi.org/10.1037/aca0000074

Miroshnik, K. G., Shcherbakova, O. V., & Kaufman, J. C. (2022). Kaufman domains of creativity scale: Relationship to occupation and measurement invariance across gender. *Creativity Research Journal*, *34* (2), 159-177. https://doi.org/10.1080/10400419.2021.1953823

Plucker, J. A., & Beghetto, R. A. (2004). Why creativity is domain general, why it looks domain specific and why the distinction does not matter. In R. J. Sternberg, E. L. Grigorenko, & J. L. Singer (Eds.), *Creativity. From potential to realization* (pp. 153-168). American Psychological Association.

Romo, M., Sánchez-Ruiz, M. J., & Alfonso-Benlliure, V. (2017). Creatividad y personalidad a través de dominios: una revisión crítica [Creativity and personality across domains: A critical review]. *Anuario de Psicología*, *47* (2), 57-69. https://doi.org/10.1016/j.anpsic.2017.04.003

Sánchez, L., Escalante, S., Martínez, A., & Zurita-Ortega, F. (2023). Inteligencia emocional en el perfil formativo y psicosocial de los estudiantes universitarios: una revisión sistemática [Emotional intelligence in the formative and psychosocial profile of university students: a systematic review]. *Educatio Siglo XXI*, *41* (2), 147-164. https://doi.org/10.6018/educatio.515181

Sternberg, R. J. (2009). Domain-generality versus domain-specificity of creativity. In P. Meusburger, J. Funke, & E. Wunder (Eds.), *Milieus of creativity* (pp. 25-38). Springer.

Susanto, E., Novitasari, Y., Rakhmat, C., Hidayat, A., & Wibowo, S. B. (2018). Rash model analysis of Kaufman domains of creativity scale (K-DOCS) to Indonesian students. *Journal of Physics: conference series*, *1114* (1), 012027. https://ui.adsabs.harvard.edu/link_gateway/2018JPhCS1114a2027S/doi:10.1088/1742-6596/1114/1/012027

Tu, C., Guo, J., Hatcher, R. C., & Kaufman, J. C. (2020). The relationship between emotional intelligence and domain-specific and domain-general creativity. *The Journal of Creative Behavior*, *54* (2), 337-349. https://doi.org/10.1002/jocb.369

Xu, X., Liu, W., & Pang, W. (2019). Are emotionally intelligent people more creative? A meta-analysis of the emotional intelligence-creativity link. *Sustainability*, *11* (21), 6123. https://doi.org/10.3390/su11216123

Authors' biographies

Ignacio González-López. Professor in the Department of Research Methods and Diagnosis in Education at the Universidad de Córdoba (Spain). Director of the research group SEJ049 «Educational evaluation and innovation», within the Plan Andaluz de Investigación (Andalusian Research Plan). He has coordinated several research and teaching innovation projects related to educational measurement and evaluation, as well as training in competences, as a result of which many publications have been published.

https://orcid.org/0000-0002-9114-4370

María Amor Martín-Fernández. Associate professor of Language and Literature Didactics at the Centro de Magisterio Sagrado Corazón, attached to the Universidad de Córdoba (Spain). She has published several works related to creativity, literary education, communicative competence and teaching innovation. She is a member of the research group SEJ049 «Educational evaluation and innovation», within the Plan Andaluz de Investigación (Andalusian Research Plan).

https://orcid.org/0000-0002-5744-6287

Paloma del Moral-Martín. Graduate in Early Childhood Education from the Universidad de Córdoba (España). Master's degree in Supervision, Evaluation and Management of Educational Centres and Programmes and master's degree in Neuropedagogy, Creativity and Management of Capacity and Talent from the Universidad de Córdoba.

https://orcid.org/0000-0001-5776-2653

Playing it right: Empirical validation of the Gamertype scale for game-based learning in higher education

Jugar correctamente: validación empírica de la escala Gamertype para el aprendizaje basado en juegos en la educación superior

Joel-Manuel PRIETO-ANDREU, PhD. Associate Professor. Universidad Internacional de La Rioja (*joelmanuel.prieto@unir.net*).

Pablo MORENO-GER, PhD. Professor. Universidad Internacional de La Rioja (*pablo.moreno@unir.net*).

Abstract:

The growing interest in applying gamified designs in higher education is challenged by mixed results in terms of student acceptance. Different players are attracted to games for different reasons and game design elements, and a better understanding of how each learner will connect to different game mechanics provides valuable input for game design and evaluation. In this paper, we present and validate a scale to measure the affinity of each player with different game elements. First, a theoretical review was carried out on three profile classifications and six motivational theoretical models, proposing a taxonomy for twelve player profiles based on three axes: relational, competence and motivational. Then, a pilot test was carried out with 54 subjects, analysing content and comprehension validity through the judgment of six experts and construct validity through an exploratory factorial analysis. Subsequently, with a sample of 1010 subjects, a confirmatory factor analysis was performed. The scale was made up of 30 items, with a Cronbach's alpha of 0.822; three main components were obtained: dominators, interactors and trackers. The results show the validity of the scale, with high levels of confidence. It provides an understanding of the player's profile in a playful context, their motivational orientation and their affinity with the specific game design. This can be used to improve the design of gamified experiences in higher education.

Date of reception of the original: 2023-10-17.
Date of approval: 2023-12-14.
Please cite this article as follows: Prieto-Andreu, J.-M., & Moreno-Ger, P. (2024). Playing it right: Empirical validation of the Gamertype scale for game-based learning in higher education [Jugar correctamente: validación empírica de la escala Gamertype para el aprendizaje basado en juegos en la educación superior]. *Revista Española de Pedagogía, 82* (288), 243-270. https://doi.org/10.22550/2174-0909.4056

Keywords: scale, gamification, profile, player, validation, motivation, game-based learning, games, design, education, confirmatory analysis, exploratory analysis, factor analysis.

Resumen:

El interés creciente por la aplicación de diseños gamificados en la educación superior se ve cuestionado por un nivel de aceptación desigual de los alumnos. Cada jugador siente atracción por el juego por distintos motivos y por ítems de diseño diferentes. Por ello, comprender mejor la conexión de cada alumno con las distintas mecánicas del juego resulta de gran valor para su diseño y evaluación. En este artículo, se presenta y valida una escala para medir la afinidad de cada jugador con los distintos ítems del juego. En primer lugar, se llevó a cabo una revisión teórica de tres clasificaciones de perfiles y seis modelos motivacionales teóricos. Como resultado, se propuso una taxonomía de doce perfiles de jugador basada en tres ejes: relacional, competencial y motivacional. A continuación, se realizó una prueba piloto con 54 sujetos en la que se analizó, por un lado, la validez del contenido y la comprensión mediante la valoración de seis expertos y, por otro, la validez de los constructos mediante un análisis factorial exploratorio. Posteriormente, se efectuó un análisis factorial confirmatorio con una muestra de 1010 sujetos. La escala se compuso de 30 ítems, con un alfa de Cronbach de 0.822; se obtuvieron tres componentes principales: dominadores, interactuadores y rastreadores. Los resultados muestran la validez de la escala, con altos niveles de confianza. Permite conocer el perfil del jugador en un contexto lúdico, su orientación motivacional y su afinidad con el diseño de juego específico. Esta información puede utilizarse para mejorar el diseño de experiencias gamificadas en la educación superior.

Palabras clave: escala, gamificación, perfil, jugador, validación, motivación, aprendizaje basado en juegos, juegos, diseño, educación, análisis confirmatorio, análisis exploratorio, análisis factorial.

1. Introduction

Different players are drawn to different reasons and game elements, and a better understanding of how each learner will connect with different game mechanics is a valuable input for game design and evaluation. As indicated in a review by Prieto (2022), studies have combined gamification with other alternatives such as game-based learning (GBL). On the one hand, gamification is the practice of using game design elements, game mechanics and game thinking in non-game activities to motivate participants. On the other hand, GBL is being used to encourage students to participate in learning while playing and to make the leaning process more interesting by adding an element of fun (Al-Azawi et al., 2016).

GBL and gamified educational proposals have been widely studied and are capable of modifying human behaviour (Krath et al., 2021).

In a systematic review, Johnson et al. (2016) determined that 59% of the gamified

experiences analysed had positive effects on behaviours related to health and well-being, while 41% of the effects were mixed. However, these data suggest that we cannot always predict the impact of these experiences on all players, with different students reacting differently to the same games. This problem is relevant, given that these learning experiences are typically costly to design and implement. As a result, a number of questions emerge: Are we wasting efforts on GBL experiences that are not well accepted by students? Why are some players deeply affected by these experiences while others do not feel the same? Can we design games that are more widely accepted by all types of players? How can we help students feel more fulfilled and comfortable with their own decisions in a gaming environment?

For these reasons, this study aims to validate a scale that allows gamified proposals to be adapted the characteristics of the players. It also gathers the experiences of different studies that have identified or categorised different player profiles or theorised about different profiles based on various personality models and player types (Bartle, 1996; Ferro et al., 2013; Fullerton, 2008; Hamari & Tuunanen, 2014; Marczewski, 2015; Nacke et al., 2013; Schuurman et al., 2008; Vahlo et al., 2017; Yee, 2015). In this section, we delve deeper into these existing studies and propose a specific instrument to measure and catalogue student/player profiles. Then, we conduct a two-stage experiment to validate the instrument, conducting a first pilot study to assess and improve the instrument and then validating the results in a wider study.

1.1. Theoretical framework

In particular, the twelve dimensions (grouped into six player motivation profile)s by Yee (2015) are empirically supported, although they lack a standardised assessment tool. The seven BrainHex archetypes, which denote different player motivations (Nacke et al., 2013), obtained low reliability. In turn, Hamari & Tuunanen (2014) suggested five dimensions related to game motivations, although their use in a non-game field, such as the educational field, is limited. In another relevant approach, Ferro et al. (2013) determined five categories of players according to the prioritised elements of the game (dominant, objectivist, inquisitive, creative and humanistic), although their work was theoretical and lacks empirical validation. The studies by Vahlo et al. (2017) and Schuurman et al. (2008) categorised the different motivations of video-game players by conducting a pilot study, while Fullerton (2008) classified players based on the satisfaction of the participants.

Most of these studies were not based on experimental data and were aimed exclusively at categorising video-game players. Among all of them, those considered as references are the Bartle test (Bartle, 1996) and the Tondello test (Tondello et al., 2019) based on the work of Marczewski (2015).

On the one hand, Bartle's taxonomy (1996) is based on character theory, establishing a classification of four video-game players based on two axes: on the relationship axis, whether players prefer to relate to other players (socialisers and killers) or to the game world (explorers and achievers), and, on the competition axis, whether they

prefer action (killers and winners) or interaction (socialisers and explorers). The new model proposed by Bartle divides the four original types of players according to whether they are of the implicit type (they act without thinking) or the explicit type (they act with prior planning). This division gives rise to eight types of players (Bartle, 2005): socialisers ("explicit networker" and "implicit friend"), assassins ("explicit politician" and "implicit griefer"), winners ("explicit planner" and "implicit opportunist") and explorers ("explicit scientist" and "implicit hacker"). Bartle's taxonomy is very orientated towards video games, so it is not appropriate to use this model in an educational environment. However, the types of players identified in this model can be adapted and found in environments other than video games. Following Bartle (2005), the four profiles emerging from the orientation of their axes are considered as the suits of a standard deck of cards. Interaction with the game world consists of finding out everything that is possible about its dynamics (the explorers would be like spades, digging for information); action towards the world consists of finding out everything you can about its mechanics (the winners would be like diamonds, always looking for treasure); interaction with other players prioritises conversation contexts and communication facilities (socialisers would be hearts, empathising with other players); and action towards other players prioritises manipulating, annoying and confronting others or, on rare occasions, helping them (the assassins would be clubs, they hit others with them for a purpose).

On the other hand, Marczewski's (2015) model is much more orientated towards gamification systems, establishing a somewhat different classification based on six types of players: philanthropists, socialisers, free spirits, achievers, gamers and disruptors. This ranking is more related to the ultimate goal of each profile rather than how they relate to other players or the game. Tondello et al. (2019) developed and validated a standard scale of 24 items to qualify an individual according to each of the six types of users proposed by Marczewski. They have continued their research with the aim of improving some of the psychometric problems identified in the profiles.

1.2. Designing the Gamertype scale

Based on these experiences, we aim to construct a specific scale to classify students according to their gaming preferences and playing styles. As the validated scale is focused on an educational environment, both the students' own motivations and the type of player they most resemble have been taken into account for the proper design and interpretation of the scale.

To create the profiles, we combined the classification of six profiles by Tondello et al. (2019) with Bartle's taxonomy (1996), composed of four profiles based on their relationship and competence axes. Additionally, a third motivational axis has been added to those proposed by Bartle: intrinsic motivation with an enjoyable goal of self-realisation versus extrinsic motivation with a task-orientated goal of obtaining rewards, following the postulates of Ryan and Deci (2000).

A model is presented with twelve profiles (named from profile A to profile L). These profiles arise from three axes

(relational, competence and motivational) and from the three main components to emerge from the exploratory analysis carried out to validate the scale in this study: dominators, trackers and interactors (Figure 1). Self-determination theory (SDT) (Deci & Ryan, 1985) highlights the importance of integrating 3 human psychological needs for a task to be intrinsically enjoyable: competence (dominating component), autonomy (tracking component) and relationship (interacting component). However, each of the main components focuses on one of the three psychological needs, stressing the importance of having self-motivation, obtaining a balanced score between the three components for the adequate development and mental health of the person, as indicated by Ryan et al. (2016).

The three main components seen in Figure 1 have been related to the suits and figures of Spanish playing cards. The dominators are kings (anxious to achieve their goals and have an impact on others), the interactors are jacks (they prefer group-work with fairness and cooperation, using the club to give a warning to their teammates) and the trackers are knights (eager to explore, get rewards and have an impact on the elaborate gamified system, with the priority of collecting coins and cups).

The aim of this study is to validate a scale that analyses the player's profile in a GBL context in higher education. Once the taxonomy has been specified, the essential terms for the measurement of results are proposed in the methodology.

FIGURE 1. Gamertype taxonomy.

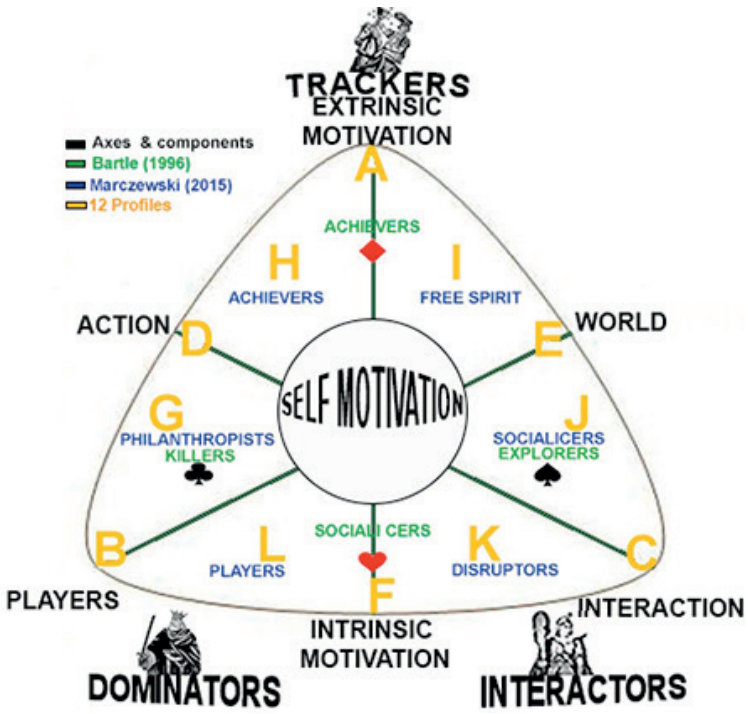


FIGURE 2. Characteristics of the three main components according to theoretical motivational models and empirical theories on types of players.

2. Methodology

This research project is based on a description of the construction and validation process of a scale developed ad hoc to understand different player profiles in a gamified context. The aim is to analyse the construct validity and examine the reliability of the scale. It is a methodological research project based on the survey technique to implement the validated scale (Espinoza & Toscano, 2015).

Firstly, the existing literature on taxonomies and classification models for player profiles was reviewed. Secondly, a bank of possible questions formulated in 39 elements classified in 3 constructs was created, resulting in an initial version that provided an understanding of different player profiles in a game context.

Then, the initial 39-item scale was discussed with a group of six social science experts. Once the degree of adequacy and relevance of each item had been analysed, the items that best analysed the contents in each of the constructs were selected. Any items that three or more experts raised doubts about in relation to the design of the scale were eliminated, resulting in 33 items.

This 33-item scale was used in a pilot test with 54 subjects to analyse the validity of comprehension, eliminating items after analysing the high response frequency, resulting in a more refined version of the scale made up of 30 items.

The construct validity of this scale was analysed through an exploratory factor analysis (EFA) on the pilot sample. This was then tested more widely, performing a confirmatory factor analysis (CFA) with a sample of 1010 subjects, giving rise to the final version of the scale. This final version consisted of 30 items, with all the items related to the total score of the test.

2.1. Participants

The expert consultation phase was performed with six experts from the field of social sciences. They all held the title of doctor and had a professional background of more than seven years on average, as well as an extensive knowledge about the scientific method. Reputation and availability were also taken into account. They were emailed a dossier explaining each of the constructs to be evaluated, together with a cover letter, requesting the degree of formulation, adequacy and relevance of each item. The items that best analysed the contents of each construct were selected, eliminating those that the experts deemed unsuitable.

For the pilot test, a sample of 54 Spanish postgraduate students on a master's degree in Educational Technology and Digital Competences was form through non-probabilistic sampling. This was an intentional and convenience-based sampling due to accessibility to the sample. The second sample was composed of 1010 Spanish subjects (94.6% men and 5.4% women), 10.8% at 20-25 years old, 27.4% at 26-30 years old, 31.8% at 31-35 years old, 16.4% at 36-40 years old and 13.6% over 40 years old. For the second sample, non-probabilistic sampling was used in the form of a snowball, promoting the form on social networks and video-games forums. The respondents agreed to participate in the scale online through the Google Forms platform, using a virtual sample on social networks and in Spanish video-game forums, under the inclusion criterion that they were university students. The participants were informed of the anonymity of their participation and that in no case would any of the collected data be transferred or provided to third parties or companies, being protected according to current legislation (Organic Law 3/2018) and the Declaration of Helsinki (2013) on research with human beings.

2.2. Measures

The player profile scale, or Gamertype (Appendix 1), has been designed and validated in its original Spanish version. The scale consists of 30 items with a Likert-type scale with answers ranging between 1 ("Totally disagree") and 4 ("Totally agree"). The aim of the scale is to qualify a subject's tendency towards each of the twelve player profiles that emerge from its three main components: dominator (items 5, 7, 9, 10, 12, 15, 18, 21, 24 and 26), tracker (items 2, 3, 8, 13,

16, 17, 19, 20, 22 and 27) and interactor (items 1, 4, 6, 11, 14, 23, 25, 28, 29 and 30, with items 4, 11 and 25 being inverted to control bias in response style). To create a graphic representation of the gamertype, a somatochart has been used and modified, a tool used by nutritionists working in the sports branch of nutrition. The region in which the x and y coordinate point sits denotes a range of different meanings (Martínez-Sanz et al., 2011). To find the point and the corresponding profile, the following equation is used: Axis x = Interactor - Dominator / Axis y = 2 × Tracker - (Interactor + Dominator). Automatic measurement at www.joelprieto.eu.

2.3. Data analysis

For the statistical analysis of the scale's psychometric properties, the SPSS statistical program, version 25.0, and the AMOS program were used, considering statistical analysis with a significance level of $p < 0.05$.

To assess construct validity, an EFA was performed by principal components and varimax orthogonal rotation, using the Kaiser-Meyer-Olkin (KMO) sample adequacy index and the Bartlett method.

Subsequently, a CFA was performed to check if the previous theoretical factorial structure resulting in the EFA was adjusted to the data through hypothesis contrasts. Following the guidelines of Merenda (2007) for instrument validation, a CFA with the maximum likelihood extraction method was used to provide estimates of the parameters that the observed correlation matrix had most likely produced. On the other hand, for the evaluation of the fit of the model, the following indices were used: root mean square error of approximation (RMSEA), the comparative fit index (CFI), the Tucker-Lewis index (TLI) and the normed fit index (NFI).

3. Results

3.1. Content validity and comprehension

Content validation was carried out by six experts, indicating the degree of precision in the formulation, relevance and suitability of each item in terms of its definition and wording (1 = "Not at all suitable/relevant"; 5 = "Totally suitable/relevant"). Once the feedback from the experts was received, certain items in the 39-item Q-initial were amended or removed. Assuming that the three variables (formulation, suitability and relevance) had an equal weighting in the validation of the content of the scale, the assessments generated the following measures of central tendency: x = 4.6, that is, between quite suitable and relevant (4) and totally suitable and relevant (5); with $S(x)$ = 0.5452, Me = 4 (fairly suitable and relevant) and Md = 4 (fairly suitable and relevant). It is evident that at least 92% of the assessments were in the categories of quite and totally suitable and relevant. On the other hand, at least 50% (f = 3) of them suggested the removal of six items and amendment of four items in the initial version of the scale. In terms of the validity of comprehension, a pilot study was carried out in

which the 54 subjects' degree of understanding was assessed. This resulted in the decision to remove items 9, 27 and 32 because they presented the same response in more than 90% of the answers (high response rate).

Regarding the validity of comprehension, in the pilot study, the initial scale consisting of 33 items was presented to the 54 subjects to assess their degree of understanding. Subsequently, the pre-scale consisting of 30 items (removing the three items from the initial scale) was presented to the 1010 participants. A Cronbach's alpha coefficient of 0.822 was obtained for the entire 30-item scale, assuming unidimensionality, noting that all the items were strongly related to the total test score (see Table 1).

TABLE 1. Total test score and its item/test correlation with the 30 items of the final scale.

Item	Scale mean if removed	Scale variance if removed	Total item correlation corrected	Cronbach's alpha if removed
1	77.0743	103.026	.328	.817
2	77.1782	103.175	.360	.816
3	76.9931	112.582	-.197	.837
4	77.7455	110.733	-.114	.831
5	77.1673	100.839	.496	.811
6	77.0802	100.716	.501	.811
7	76.9693	100.613	.397	.814
8	76.9941	104.254	.281	.818
9	77.8693	97.571	.556	.807
10	77.1782	97.138	.598	.806
11	77.9723	108.308	.026	.827
12	78.3079	104.106	.273	.819
13	77.2317	102.519	.331	.817
14	77.3505	104.117	.255	.820
15	77.6990	98.466	.528	.809
16	76.9703	103.355	.364	.816
17	76.9347	101.334	.463	.812

18	78.2178	105.045	.185	.822
19	76.7327	105.050	.241	.820
20	76.7465	103.018	.409	.815
21	77.6040	100.499	.450	.812
22	76.7168	107.057	.131	.823
23	77.5673	101.144	.455	.812
24	77.9842	97.375	.600	.806
25	77.4139	112.604	-.215	.835
26	78.2020	101.927	.346	.816
27	77.5040	98.151	.514	.809
28	77.1139	99.669	.535	.809
29	77.0317	99.714	.494	.810
30	76.7941	103.301	.351	.816

On the one hand, item/test correlations were established for each dimension, with all items having a Cronbach's alpha coefficient of over 0.700, as in the test, in which unidimensionality was assumed. A Cronbach's alpha of 0.731 was obtained for the *dominator* (D) component, 0.714 for the *tracker* (T) component, and 0.730 for the *interactor* (I) component. On the other hand, the method of the two halves was applied (first 15 items + last 15 items), obtaining appropriate scores: a value of 0.716 in the first and a value of 0.723 in the second, with a Spearman-Brown coefficient of 0.854.

3.2. Construct validity

First, an EFA was performed using varimax orthogonal rotation principal component extraction. The Kaiser-Meyer-Oldin (KMO) sample adequacy index reached a value of 0.863 and the Bartlett sphericity test was 12302.118 (df = 435, p = 0.000), which indicates the adequacy of the data. The Kolmogorov-Smirnov normality test was performed, obtaining adequate values in all cases (p >0.05). On the other hand, following the abscissa axis of the sedimentation graph and taking into account the drop contrast criterion, two models were selected, a three-factor model and another twelve-factor model, since the rest of the variance factors tend to stabilise. Likewise, using Kaiser's rule, the eigenvalues greater than 1 also turned out to be twelve. Once the main components have been analysed, after the varimax rotation, including the 30 items that make up the scale, the convergence in three factors explained 56.26% of the variance, and the convergence in 12 factors explained 74.59% of the variance, as seen in Table 2.

TABLE 2. Total explained variance of the scale and goodness-of-fit test for both models.

Factors	Initial eigenvalues			Sums of the squared loadings of the rotation		
	Total	% variance	% variance acummulated	Total	% variance	% variance acummulated
3 factor model						
1	6.784	22.615	22.615	5.164	17.213	17.213
2	3.648	20.158	40.773	4.985	16.616	39.829
3	2.849	13.496	56.269	3.132	10.441	56.269
12 factor model						
1	6.784	22.615	22.615	4.792	15.974	15.974
2	3.648	12.158	34.773	4.188	13.960	29.934
3	2.849	9.496	44.269	1.962	6.540	36.474
4	1.766	5.885	50.155	1.786	5.953	42.427
5	1.155	3.852	54.006	1.622	5.407	47.834
6	1.082	3.606	57.613	1.458	4.861	52.695
7	1.029	3.428	61.041	1.261	4.202	56.897
8	1.001	3.336	64.377	1.190	3.968	60.865
9	.817	2.725	67.102	1.134	3.780	64.645
10	.804	2.682	69.784	1.095	3.651	68.297
11	.759	2.529	72.313	1.057	3.523	71.819
12	.684	2.280	74.593	1.002	2.773	74.593

Following the variance percentages that explain each factor, in the three-factor model, the first factor explains 22.61% of the variance in the collected information, the second factor 20.15%, and the third factor 13.49%. The analysis detects the three and twelve latent factors that were indicated by the literature and that explain 56.26% and 74.59% of the common variance, respectively, describing the goodness of fit of these structures of three and twelve factors calculated through two hypothesis tests with an χ^2 distribution. On the other hand, for the interpretation of the factors, we started from the initial matrix of rotated components. As seen in Table 2, these components determined different factor saturations for the selection of the items included in each of the three- and twelve-factor models. To interpret the extracted factors, Table 3 presents the rotated component matrix with the varimax rotation method with Kaiser normalisation, with the factorial saturations that express the magnitude of the correlation between the item and the factors, ordered by size. Small coefficients, with a low absolute value of 0.25, have been supressed.

TABLE 3. Variables of each factor in the matrix of three and twelve rotated components.

Matrix of 3 componets					Matrix of 12 components												
Items	**1**	**2**	**3**	**C**	**Items**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**C**
GT23	.773			62%	GT23	.688									.698			74%
GT28	.758	.274		66%	GT29	.679									.682			73%
GT1	.752			58%	GT28	.772	.247	.201										74%
GT25	-.731		.275	61%	GT30	.753												75%
GT6	.729	.208		48%	GT6	.710					.301							74%
GT29	.718			56%	GT1	.512								.518				70%
GT14	.694			56%	GT25	-.509							.322		.289			73%
GT30	.692			59%	GT14	.299										.501		74%
GT5	.435	.437		52%	GT24		.828											78%
GT4	-.402			42%	GT15		.792											72%
GT2	.353		.347	42%	GT9		.776											69%
GT24		.774		64%	GT27		.630					634						70%
GT9		.761		60%	GT26		.392			-.314							.492	74%
GT26		.742		57%	GT10	.293	.388			-.259	.425							69%
GT10		.700		61%	GT13			.830										78%
GT27		.579	.679	51%	GT17			.719								.352		73%
GT15		.578		55%	GT20			.501				.459		.567				71%
GT7		.554		45%	GT18				.742	-.331								75%
GT21		.538		54%	GT11				.739	.252								73%
GT3		-.536	.542	51%	GT12		.292		.705									76%
GT12		.411		40%	GT3		-.296			.740								71%
GT18		.392		41%	GT19			.345		.724					.285			70%
GT17			.708	55%	GT7		.304			-	.763							82%

GT20			.674	59%	GT5	.323	.347				.659						81%
GT22			.623	55%	GT8							.908					88%
GT19			.619	53%	GT22					.271			.811				82%
GT13			.592	45%	GT2									.862			87%
GT16		.342	.481	49%	GT4										.883		88%
GT8			.410	42%	GT16											.844	89%
GT11	-.349		.342	41%	GT21		.552									.594	79%

Note: The items of the final questionnaire apper order by correlation size between item/factor. C=communalities (principal components analysis).

Regarding the communalities, the twelve-factor model can fully reproduce the variability of all the items in appropriate proportions in each case, with an average of 76%. On the other hand, in the three-factor model, the average is 53%. Considering the similarity of the items that correlate with each factor, Table 5 shows that the items with the highest correlation with factor 1 (interactor) are, in descending order, items 23, 28, 1, 25, 6, 29 , 14, 30, 4 and 11, with a factor loading between 0.402 and 0.773. The items with the highest correlation with factor 2 (dominator) are items 24, 9, 26, 10, 15, 7, 21, 5, 12 and 18, with a factor loading between 0.411 and 0.774. And the items with the highest correlation with factor 3 (tracker) are 17, 20, 22, 19, 13, 27, 3, 16, 8 and 2, with a factor loading between 0.347 and 0.708. As for the saturations of the 12-factor model, they are between 0.100 and 0.908. Therefore, it is interpreted that the items that have been extracted for each factor have acceptable saturations and that both the three-factor model and the twelve-factor model can be constituted as three and twelve one-dimensional scales that represent more than 74% of the variance. The denomination of the resulting twelve factors has been determined based on their constituting elements. These twelve factors are:

- Factor 1 (items 6, 28 and 30): E. The tracker and interactor components are similar, and the dominator component is smaller. Orientated towards the world of the game. This group has been called *seekers*. They are thrill seekers trying new experiences, they love the aesthetics and narrative of both the system and the mechanics, dynamics and aesthetics (MDA) approach and they enjoy trying new things.

- Factor 2 (items 9, 15 and 24): B. The dominator component is dominant, while the interactor and tracker components are similar. Player orientated. This group has been called *raptors*. They want their actions to have an

impact on the other players, getting very involved in achieving goals and feeling frustrated if they don't receive social recognition.

- Factor 3 (items 13 and 17): H. The tracker component is dominant, and the dominator component is greater than the interactor component. Orientated towards relating to action and extrinsic motivation. This group has been called *achievers*, as in Marczewski and Bartle's theory. They are mastery-driven, independent, competitive and success-focused. They seek to learn new things and improve through self-improvement challenges, climbing and unlocking levels or gaining status within the community or team.

- Factor 4 (items 11, 12 and 18): G. The dominator component is dominant, and the tracker component is greater than the interactor component. Orientated towards interaction with other players and action. This group has been called *vehement*, following Marczewski's classification. They are motivated by purpose and meaning.

- Factor 5 (items 3 and 19): D. The tracker and dominator components are similar, and the interactor component is smaller. Action orientated. This group has been called *tenacious*. They look for novelty and originality both in the system and in the MDA approach, getting very involved in missions, quests and challenges. They may feel too self-absorbed with use of the MDA approach.

- Factor 6 (items 5, 7 and 10): F. The dominator and interactor components are similar, and the tracker component is smaller. Orientated towards interacting with other players and interaction. This group has been called *explorers*, they seek to interact with other players to share ideas and/or experiences, enjoying teamwork and interacting with other players and not so much the game itself.

- Factor 7 (items 8 and 27): A. The tracker component is dominant, while the interactor and dominator components are similar. Orientated towards relating to the world of the game and the action. This group has been called *victors*. They want their actions in the game world to have an impact, getting very involved in the MDA approach and feeling disappointed if their efforts are ignored.

- Factor 8 (items 22 and 25): I: the tracker component is dominant, and the interactor component is greater than the dominator component. Orientated towards relating to the world and orientated towards extrinsic motivation. This group has been called *conquerors* and is also referred to as *free spirit* by Marczewski. They are motivated by autonomy and have a preference for creating and exploring.

- Factor 9 (items 1, 2 and 20): J. The interactor component is dominant, and the tracker component is greater than the dominator component. Orientated towards relating to the game world and

interaction. This group has been called *socialisers*, following Marczewski's classification. They are motivated by relationships, improvement and continuous learning, preferring to interact with others and create social connections.

- Factor 10 (items 4, 23 and 29): C. The interactor component is dominant, while the dominator and tracker components are similar. Interaction orientated. This group has been called *colleagues*. They seek to interact and have fun with other players, getting involved in social networks.

- Factor 11 (items 14 and 16): K. The interactor component is dominant, and the dominator component is greater than the tracker component. Orientated towards relating to interaction and orientated towards intrinsic motivation. This group has been called *disruptors*, following Marczewski's classification. They are motivated by change and generally want to disrupt the game system, either directly or through other users to force positive or negative change.

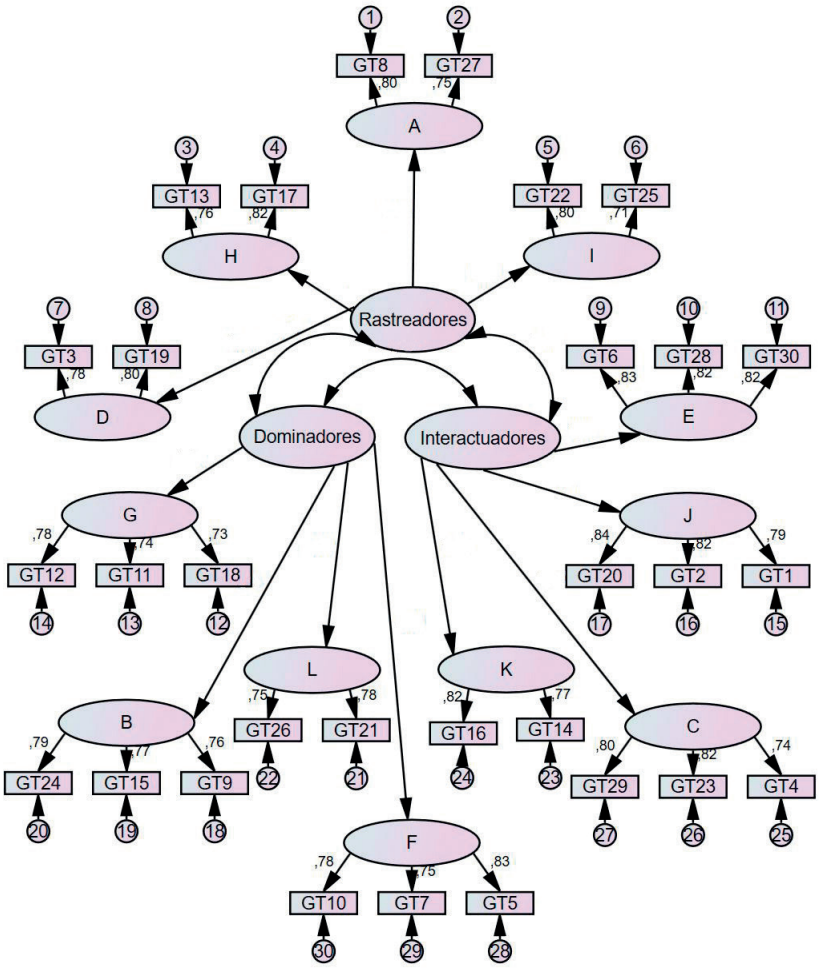
- Factor 12 (items 21 and 26): L. The dominator component is dominant, and the interactor component is greater than the tracker component. Orientated towards relating to other players and orientated towards intrinsic motivation. This group has been called *players*, following Marczewski's classification. They are not motivated by rewards, and they are motivated by making themselves known.

Following the EFA, a CFA was carried out with a sample of 1010 subjects in order to understand the resulting factorial structure in the EFA and to check if said previous theoretical structure fitted the data through hypothesis contrasts. It was verified that the matrix was not affected by the common variance bias through Harman's single factor test. However, two models were tested to check the factorial validity of the scale. In the first model, the factorial structure of the model with three factors was analysed, introducing the 30 items on the scale as reagents (10 items in each factor), showing factorial structure regression weights of between 0.36 and 0.68. In the second model, the factorial structure of a model with three main components was analysed, with twelve latent factors, grouping the 30 items into twelve second-order factors, with regression weights ranging between 0.30 and 0.91.

After the results of the maximum likelihood method and the eigenvalue criterion >1, the significance associated with χ^2 (218.273) being 0 for the three-factor model and χ^2 (222.969) for the twelve-factor model, the RMSEA was used to assess the fit of the model. The model is thought to have a good fit if the RMSEA is less than 0.06 (Hu & Bentler, 1999), being 0.043 for the twelve-factor model and 0.057 for the three-factor model. On the other hand, χ^2/gl was used, considering values of less than 5 as acceptable, with values of 0 in both models. The CFI, TLI and NFI indices considered by Hu and Bentler (1999), with acceptable values being greater than 0.90, were 0.75, 0.83 and 0.92 in the three-factor

model, and 0.97, 0.95 and 0.92 in the twelve-factor model, being considered acceptable. Figure 3 shows the factorial structure of the model with three first-order principal components and twelve second-order latent factors.

FIGURE 3. Factorial structure of the model with twelve latent factors and three main components.



3.3. Convergent validity

To analyse the convergent validity, Table 4 shows that bilateral bivariate correlations were established between the three-factor and twelve-factor models of the Q-final and their items through the Kendall correlation coefficient. The correlation between items/factor was 0.259 and 0.679 in the three-factor model, with an average of 0.569, and between 0.594 and 0.898 in the twelve-factor model, with an average of 0.746.

Table 5 shows the correlations and significance levels between the twelve profiles and between the twelve profiles and the three main components.

TABLE 4. Correlations between the factors of the final scale and its items in both models.

Model	Factors	Items of each factor									
3 factors	Dominator	it5: 0.327	it7: 0.460	it9: 0.643	it10: 0.518	it12: 0.400	it15: 0.565	it18: 0,372	it21: 0,469	it24: 0,679	it26: 0,582
	Tracker	it2: 0.281	it3: -0.103	it8: 0.348	it13: 0.452	it16: 0.405	it17: 0.413	it19: 0,336	it20: 0,347	it22: 0,259	it27: 0,529
	Interactor	it1: 0.476	it4: -0.489	it6: 0.522	it11: 0.568	it14: 0.491	it123: 0.618	it25: -0,407	it28: 0,588	it29: 0,624	it30 0,553
12 factors	A	it8: 0.594		it27: 0.758							
	B	it9: 0.776		it15: 0.712		it24: 0.777					
	C	it4: 0.610		it23: 0.708		it29: 0.710					
	D	it3: 0.787		it19: 0.673							
	E	it6: 0.703		it8: 0.793		it30: 0.721					
	F	it5: 0.659		it7: 0.706		it10: 0.704					
	G	it11: 0.613		it12: 0.639		it18: 0.696					
	H	it13: 0.898		it17: 0.736							
	I	it22: 0.613		it25: 0.769							
	J	it1: 0.663		it2: 0.668		it20: 0.534					
	K	it14: 0.705		it16: 0.560							
	L	it21: 0.753		it26: 0.724							

Note: it (item).

Revista Española de Pedagogía
year 82, n. 288, May-August 2024, 243-270

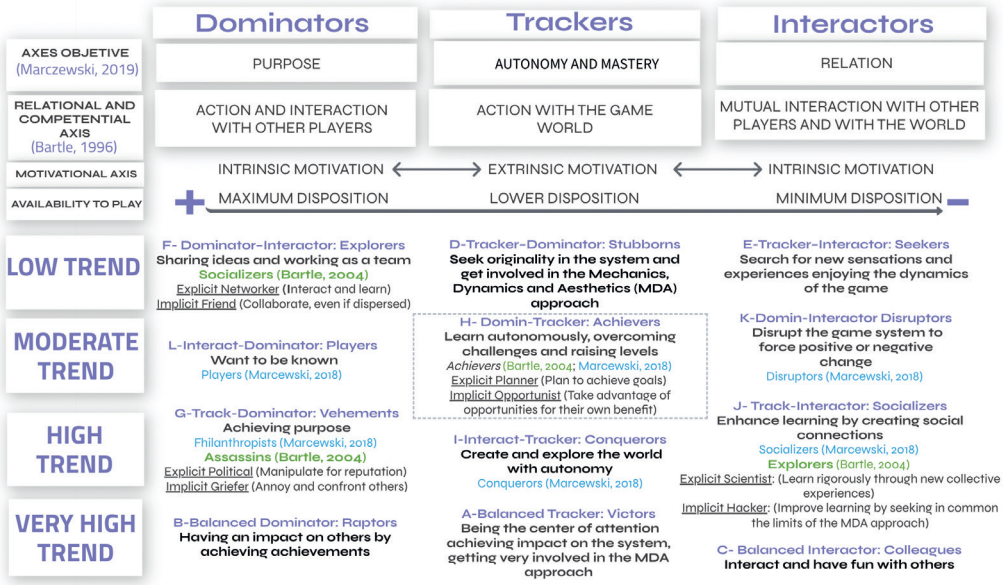
TABLE 5. Correlations between the twelve latent factors with each other and with the three main components.

	E	B	H	G	D	F	A	I	J	C	K	L
E		.229**	.137**	-.014	-.043	.222**	.137**	-.125**	**.390****	**.453****	**.271****	.171**
B	.229**		.154**	**.463****	-.167**	**.482****	.455**	-.121**	.152**	.197**	.188**	**.532****
H	.137**	.154**		.099**	**.183****	.166**	**.520****	**.181****	.179**	.062*	.131**	.110**
G	-.014	**.463****	.099**		-.142**	**.396****	.092**	.094**	.060*	.060*	.048	**.355****
D	-.043	-.167**	**.183****	-.142**		-.168**	**-.471****	**.189****	.035	.000	.032	-.168**
F	.222**	**.482****	.166**	**.396****	-.168**		.376**	-.165**	.226**	.225**	.195**	**.411****
A	.137**	.455**	**.520****	.092**	**-.471****	.376**		**-.457****	.191**	.116**	.145**	.325**
I	-.125**	-.121**	**.181****	.094**	**.189****	-.165**	**-.457****		-.130**	-.180**	-.179**	-.094**
J	**.390****	.152**	.179**	.060*	.035	.226**	.191**	-.130**		**.280****	**.272****	.062*
C	**.453****	.197**	.062*	.060*	.000	.225**	.116**	-.180**	**.280****		**.267****	.135**
K	**.271****	.188**	.131**	.048	.032	.195**	.145**	-.179**	**.272****	**.267****		.094**
L	.171**	**.532****	.110**	**.355****	-.168**	**.411****	.325**	-.094**	.062*	.135**	.094**	
DOM	.258**	**.747****	.126**	**.324****	-.223**	**.538****	.312**	-.124**	.188**	.261**	.182**	**.644****
RAS	.129**	.200**	**.490****	.104**	**.255****	.220**	**.574****	**.242****	.232**	.135**	.211**	.239**
INT	**.677****	.148**	.260**	.073**	.157**	.224**	.118**	-.207**	**.487****	**.546****	**.417****	.101**

Note: *p <.05; **p <.01; DOM = dominators; TRA = trackers; INT = interactors.

Figure 4 shows the theoretical objectives of the twelve profiles, following their classification according to the three main components (dominator, tracker and interactor), associating each of the main components with the four profiles that are most popular. In Figure 4, these twelve profiles are linked to the four profiles devised by Bartle (1996) and the six profiles devised by Marczewski (2015), which are explained in Figure 2, among other profiles and theories related to motivation.

FIGURE 4. Theoretical objectives of the twelve player profiles.



To determine the order of the profiles in each main component, the axes of the model were taken into account, with the lowest scores being those located furthest from the axes. The highest scores were the profiles located closest to the axes, being the profiles with the greatest tendency towards each principal component: B (balanced dominator), A (balanced tracker), and C (balanced interactor).

4. Discussion

The taxonomy presented in this paper is based on both Marczewski's (2016) 6 Hexad profiles model and Bartle's (1996) four profiles and two axes, since they are more suitable for personalising playful systems. In the validated Marczewski scale, there are nine items below .600 that weaken the fit in four of the six scales: free spirit, achiever, player, and disruptor. Although the calculated RMSEA = .069 (90% CI = [.061, .077]) is just above the recommended cut-off for a well-fitting model (.06), 37.5% of the scale items are below .600 and therefore goodness of fit is not confirmed as the threshold in this study is 100% above .700. Starting from the taxonomy created in this study, the main differences between the resulting profiles are highlighted in comparison with Marczewki's Hexad model (2016).

In Marczewski's Hexad model, the profiles H-achievers, I-free spirits and J-socialisers are intrinsically motivated. In the proposed taxonomy, the profiles L-players, K-disruptors and F-explorers would be intrinsically motivated, with the explorers being the most intrinsically motivated with their goals of sharing ideas, working as a team, interacting and learning. They would also coincide, being intrinsically motivated, although to a lesser degree, with the J-socialisers and the G-vehements. On the other hand, following Huta and Waterman (2014), having a purpose facilitates internalisation, motivation and personal satisfaction. In Marczewski's model (2015), the intrinsically motivated *philanthropist* profile is proposed with the purpose of helping others without expecting any reward. The author points out that philanthropists and socialisers are motivated by interactions, although he admits that he is unable to discriminate between these two types of users. In the theoretical background of the present taxonomy, this profile is recognised as *vehement* due to its orientation towards action and towards the players and due to the coincidence of its axes with the profiles proposed by Bartle (1996). The purpose of vehements is not to help but to manipulate in search of reputation or to annoy and confront others, in line with the "explicit politician" profile and the "implicit griefer" profile, respectively, as proposed by Bartle (1996).

In Marczewski's Hexad model (2016), the profiles L-players, K-disruptors and G-philanthropists or vehement are extrinsically motivated. In the present taxonomy, the profiles A-winners, H-winners, and I-free spirit are extrinsically motivated. Following Marczewski (2016), it is agreed that the H-achievers are motivated by achievement and the achievement of goals; it is the H-achievers, not the L-players, who focus on extrinsic rewards. Regarding the disruptors, Marczewski (2016) orientates them towards extrinsic motivation, although, as the author himself indicates, this orientation is indicated by observing said behaviour in online games, not deriving from the SDT model and lacking empirical validity. In the present taxonomy, K-disruptors are orientated towards interaction and intrinsic motivation, with the goal of disrupting the gaming system for fun to force either positive or negative change being considered intrinsic. On the other hand, and in agreement with Marczewski (2015), the I-free spirits are motivated by autonomy and creativity, remaining within the limits of the system without wanting to change it, while the K-disruptors seek to expand beyond the limits of the system. Along with their desire to change the system, the K-disruptors and G-vehements could have cyberbullying or trolling tendencies, hindering the experience of other players with negative attitudes towards a player from the same or a different team.

Naturally, players could cross over from one profile to another, moving between them at different cut-off points depending on their state of mind or strategy in the current game. This highlights that the motivations to interact with game systems are not fix throughout the game. An individual's life and life events vary

over time. When classifying the types of players, it is very important to take into account gaming behaviours, motivation to play and lifestyles, since significant events in the lives of players could also make them fluctuate between different profiles. It is suggested that most players have a main component that they prioritise over the rest: dominator, interactor or tracker, changing only deliberately or subconsciously to allow them to advance through the game. Following Mora et al. (2017), the application of gamification in higher education can be challenging, due to some unwanted effects caused by the lack of proven design methodologies that have been detected. Choosing the most suitable formal process for gamification design and the correct profile has become a key requirement for success.

Determining the profile corresponding to each member of a work team in a gamified context can be quite useful in practice, since the interrelationships that can be established between the different profiles are subtle if a balanced work team is established. However, when the dominance of one of the three main components is a priority in the majority of the subjects in the same team, discrepancies could arise. If the majority have a high score in the tracking component, it will add depth and interest to the spectacular nature of the game world, with their priority being to accumulate rewards if they misdirect their motivation. If the elevated component is the interactor, communication will be prioritised, generating a social network in which the objective of the game can be dissipated. And if the elevated component is the dominator, emphasis would be placed on gaining achievements by social recognition. This could become complex if all the group members were egomaniacs to a certain degree, since this component usually parasitises both the trackers and the interactors to achieve their goals of social recognition.

5. Conclusions

The creation of this taxonomy and the standardised and validated scale to determine the twelve types of players according to the three main components and the three proposed axes is a promising approach with real potential application in the customisation of gamified systems. As in a review by Sezgin (2020), it is recognised that the typologies of players identified in this study may not be extrapolated to all environments or cultural contexts, as in the studies carried out by other authors who have tried to categorise different types of players. For this reason, use of the gamertype (scale of types of players) in samples from different geographical areas is recommended.

Empirical studies have shown that a user's personality traits can predict their level of enjoyment if different mechanics or dynamics, such as leaderboards, rankings, scoring systems, etc., are used or not used in the design of gamified proposals (Jia et al., 2016; Tondello et al., 2016). Having a validated instrument allows instructional designers to gain a better understanding of the nature of a

specific student population. It can also lead the design of gamified experiences towards more effective proposals that resonate better with heterogeneous student populations or that may even be adapted to cater for different profiles. Regarding gender, a study by Zahedi et al. (2021) suggested that gamification is a gender-neutral learning engagement strategy that improves female students' performance as much as male students. Regardless of improved performance, most women did not actively enjoy or were not motivated by the virtual points or leaderboard. As a future line of research, the motivational differences and the profiles of both genders could be observed and analysed.

Additionally, as another future line of research, it is proposed to cross the results of the Gamertype scale with the big five scales (to evaluate the way a person acts and all aspects related to personality: extraversion, cordiality, conscientiousness, emotional instability, neuroticism and openness to experience), MBTI (to assess an individual's personality type using 4 sets of opposite pairs: extrovert/introvert, sensing/intuitive, rational/emotional and qualifying/perceiving) and MSLQ (to assess motivational orientation and use of different learning strategies by students in a given activity). On the other hand, the scales that could be used to determine the motivations of a user belong to a theory known as *self-determination theory* (STD), the most pertinent being the basic psychological need satisfaction scale. This scale provides a general understanding of the basic motivations of a user with respect to the three different needs on which the three main components of the scale are based (competence, autonomy and relationships). Another relevant scale is the intrinsic motivation inventory (IMI), which is used to measure levels of user interest/enjoyment, competence, effort, value/utility while using the gamified system. Lastly, additional validation work on the gamertype scale in other languages would be interesting. Regarding the limitations of the validation of the scale, the intra- or inter-rater reliability was not calculated through the Kappa index, nor was temporal stability analysed.

Regarding the practical applicability of the scale, the scale could have practical applicability in other educational stages following the 3 main profiles, in primary or secondary education. The dominators could be students who seek to excel in subjects, the interactors could be those who enjoy group projects and the trackers could be students motivated by exploration and obtaining educational rewards.

The Gamertype scale could also be used in other populations outside of the educational context, in online games, professional settings, sports competitions or healthcare settings. In online games, dominators can enjoy competitive challenges and lead teams. A design that includes strategic battles or missions that emphasise conquest and achievement might appeal to this group. In turn, interactors would enjoy cooperative games in which they work as a team to achieve common goals. The

design could encourage communication and collaboration, rewarding mutual help and equity. It could also carry over into work situations where collaboration and interaction are crucial. In the professional corporate environment, where exploration and reward motivate employees to participate in development activities, in gamified games, trackers may enjoy exploring virtual simulations to obtain rewards. Designing a system where exploration and resource accumulation are essential could appeal to this population. In sports competitions, dominators would be those players who constantly seek to improve their technical skills and strategies to beat their opponents. The tournament design could focus on intense challenges, where victory is achieved through skill and leadership on the field. Interactors could be players who enjoy collaboration and group tactics. The game design could promote effective communication between team members, encouraging joint decision making and rewarding fair, cooperative play. In turn, the design aimed at trackers could pursue an experience that includes interactive activities such as searching for information about players, accumulating points or collecting virtual prizes. Finally, in a medical setting, dominators could be doctors looking to excel in their field, interactors could be nurses who value collaboration and trackers could be researchers looking to discover new solutions. By adapting these profiles and components to different contexts, more engaging and motivating experiences can be designed for a wide variety of audiences.

In short, the development of GBL experiences for higher education is a challenging process that requires significant investment. Having a better understanding of how players relate to games is important to ensure that these experiences are successful, and having a validated instrument to understand player profiles is a positive step in this direction.

Appendix 1.

Gamertype scale

The scale measures your player profile in a learning environment in the form of a game. Put a cross ("X") on the number that best reflects your response on the scale provided below. There are no right or wrong answers, just express your opinion about the statements.

Totally Disagree 1	Disagree 2	Agree 3	Totally Agree 4

1. I like to interact, share ideas and learn as a team.	1	2	3	4
2. I love innovative games with scoring systems that cause surprise or uncertainty.	1	2	3	4

3. I consider that looking for new sensations in a game and enjoying its narrative and aesthetics is better than competing.	1	2	3	4
4. I am usually distracted when I collaborate with people in a game.	4	3	2	1
5. I consider scoring systems a good way to improve content learning.	1	2	3	4
6. I enjoy the collective experiences that are presented in the game world.	1	2	3	4
7. I like that you can see the ratings of other players on the leaderboards at the end of the game.	1	2	3	4
8. I only like to learn autonomously if I can solve problems that allow me to level up.	1	2	3	4
9. I usually make an effort in the game to win points and medals with the aim of making myself known.	1	2	3	4
10. I consider it important to improve my skills by winning in a competitive game that brings me rewards.	1	2	3	4
11. I consider myself a rebel, and I don't like to follow the rules of the game.	4	3	2	1
12. I like games that allow me to manipulate others in order to enhance my social reputation.	1	2	3	4
13. I usually plan for myself to achieve goals in the game.	1	2	3	4
14. I consider that to learn it is better to work in a team than alone.	1	2	3	4
15. I think that the use of badges, virtual medals or points in a game can help improve my reputation.	1	2	3	4
16. I usually make the most of the opportunities that arise in a game for my own benefit.	1	2	3	4
17. I like to improve my learning by looking for the limits of the game.	1	2	3	4
18. I prefer games where I can face others with the aim of disturbing.	1	2	3	4
19. Levelling up by exploring the game world is a good way to motivate myself to learn.	1	2	3	4
20. I like to overcome difficulties and master difficult tasks.	1	2	3	4
21. I enjoy interacting on discussion forums in a virtual training environment where my achievements can be seen.	1	2	3	4
22. I usually follow my own path, and I often let myself be guided by curiosity.	1	2	3	4
23. I prefer to improve my learning by creating social connections during the game.	1	2	3	4

24. I like to have an impact on others by making myself known through my achievements during the game.	1	2	3	4
25. Being independent is more important to me than working as a team.	4	3	2	1
26. I like that rankings and classification tables are used because I like to be the centre of attention.	1	2	3	4
27. Recovering the effort invested through points, prizes or badges is important to me.	1	2	3	4
28. It makes me happy to be part of a team and to be able to guide others in the game.	1	2	3	4
29. I enjoy group interaction through chat or other means of communication in real time.	1	2	3	4
30. I enjoy sharing my knowledge with others.	1	2	3	4

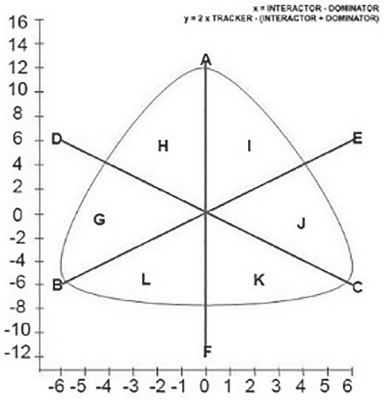
Value	Dominators	Trackers	Interactors
Low trend: **1.75-3** (summation between 10 and 17.5)	F (explorers)	D (tenacious)	E (seekers)
Moderate trend: **3.1-4.4** (summation between 17.6 and 25)	L (players)	H (achievers)	K (disruptors)
High trend: **4.5-7** (summation between 25.1and 32.5)	G (vehements)	I (conquerors)	J (socialisers)
Very high trend: **+5.7** (summation between 32.6 and 40)	B (raptors)	A (victors)	C (colleagues)

Dominator = 7 x (summation of items 5, 7, 9, 10, 12, 15, 18, 21, 24, 26) / 40
Tracker= 7 x (summation of items 2, 3, 8, 13, 16, 17, 19, 20, 22, 27) / 40
Interactor = 7 x (summation of items 1, 4, 6, 11, 14, 23, 25, 28, 29, 30) / 40

Axis x: Interactor – Dominator

Axis y: 2 x Tracker – (Interactor + Dominator)

Automatic measurement at www.joelprieto.eu



References

Al-Azawi, R., Al-Faliti, F., & Al-Blushi, M. (2016). Educational gamification vs. game based learning: Comparative study. *International Journal of Innovation, Management and Technology*, *7* (4), 132-136. https://doi.org/10.18178/ijimt.2016.7.4.659

Bartle, R. (1996). Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of MUD Research*, *1* (1), 19.

Bartle, R. (2005). Virtual worlds: Why people play. *Massively Multiplayer Game Development*, *2* (1), 3-18.

Chou, Y. K. (2014, September 22). *Octalysis: Complete gamification framework*. LinkedIn. https://www.linkedin.com/pulse/20140922202253-5757314-octalysis-complete-gamification-framework/

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior.* Springer. https://doi.org/10.1007/978-1-4899-2271-7

Espinoza, E. E., & Toscano, D. T. (2015). *Metodología de investigación educativa y técnica [Educational research methodology and technique].* UTMach.

Ferro, L. S., Walz, S. P., & Greuter, S. (2013). Towards personalised, gamified systems: An investigation into game design, personality and player typologies. In Association for Computing Machinery (Ed.), *IE 2013. Proceedings of the 9th Australasian Conference on Interactive Entertainment: Matters of Life and Death*. AMC. https://doi.org/10.1145/2513002.2513024

Fullerton, T. (2008). *Game design workshop. A playcentric approach to creating innovative games*. CRC Press. http://dx.doi.org/10.1201/b13172-10

Hamari, J., & Tuunanen, J. (2014). Player types: a meta-synthesis. *Transactions of the Digital Games Research Association, 1* (2), 29-53. http://dx.doi.org/10.26503/todigra.v1i2.13

Hu, L., & Bentler, P.M. (1999). Cutoff for fit indexes in covariance structure: Conventional versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6* (1), 1-55. http://dx.doi.org/10.1080/10705519909540118

Huta, V., & Waterman, A. S. (2014). Eudaimonia and its distinction from hedonia: Developing a classification and terminology for understanding conceptual and operational definitions. *Journal of Happiness Studies*, *15* (6), 1425-1456. http://dx.doi.org/10.1007/s10902-013-9485-0

Jia, Y., Xu, B., Karanam, Y., & Voida, S. (2016). Personality-targeted gamification: a survey study on personality traits and motivational affordances. In Association for Computing Machinery (Ed.), *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (pp. 2001-2013). ACM. https://doi.org/10.1145/2858036.2858515

Johnson, D., Deterding, S., Kuhn, K.-A., Staneva, A., Stoyanov, S., & Hides, L. (2016). Gamification for health and wellbeing: A systematic review of the literature. *Internet Interventions*, *6*, 89-106. https://doi.org/10.1016/j.invent.2016.10.002

Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education.* John Wiley & Sons.

Krath, J., Schürmann, L., & Von Korflesch, H. F. (2021). Revealing the theoretical basis of gamification: A systematic review and analysis of theory in research on gamification, serious games and game-based learning. *Computers in Human Behavior*, *125*, 106963. https://doi.org/10.1016/j.chb.2021.106963

Marczewski, A. (2015). *Gamification*: *Even ninja monkeys like to play. Unicorn edition*. Gamified UK.

Martínez-Sanz, J. M., Urdampilleta, A., Guerrero, J., & Barrios, V. (2011). El somatotipo-morfología en los deportistas. ¿Cómo se calcula? ¿Cuáles son las referencias internacionales para comparar con nuestros deportistas? [The somatotype-morphology in athletes: How is it calculated? What are the international references for comparison with our athletes?]. *Lecturas: Educación Física y Deportes*, *16* (159), 4. https://cutt.ly/YXpnpkz

Mora, A., Riera, D., González, C., & Arnedo-Moreno, J. (2017). Gamification: A systematic review of design frameworks. *Journal of Computing in Higher Education*, *29* (3), 516-548. http://dx.doi.org/10.1007/s12528-017-9150-4

Nacke, L. E., Bateman, C., & Mandryk, R. L. (2013). BrainHex: A neurobiological gamer typology survey. *Entertainment Computing*, *5* (1), 55-62. https://doi.org/10.1016/j.entcom.2013.06.002

Prieto, J. M. (2022). Revisión sistemática sobre la evaluación de propuestas de gamificación en siete disciplinas educativas [Sistematic review about evaluation of gamification in seven educational disciplines]. *Teoría de la Educación. Revista Interuniversitaria*, *34* (1), 189-214. https://doi.org/10.14201/teri.27153

Ryan, R. M., & Deci, E. L., & Vansteenkiste, M. (2016). Autonomy and autonomy disturbances in self-development and psychopathology: Research on motivation, attachment, and clinical process. In D. Cicchetti (Ed.), *Developmental psychopathology: Theory and method* (pp. 385-438). John Wiley & Sons. https://doi.org/10.1002/9781119125556.devpsy109

Ryan, R., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55* (1), 68-78. https://doi.org/10.1037/0003-066X.55.1.68

Schuurman, D., De Moor, K., De Marez, L., & Van Looy, J. (2008). Fanboys, competers, escapists and time-killers: A typology based on gamers' motivations for playing video games. In Association for Computing Machinery (Ed.), *Proceedings of the 3rd International Conference on Digital Interactive Media in Entertainment and Arts* (pp. 46-50). ACM. https://doi.org/10.1145/1413634.1413647

Sezgin, S. (2020). Digital player typologies in gamification and game-based learning approaches: A meta-synthesis. *Bartın University Journal of Faculty of Education*, *9* (1), 49-68. https://doi.org/10.14686/buefad.610524

Tondello, G. F., Wehbe, R. R., Diamond, L., Busch, M., Marczewski, A., & Nacke, L. E. (2016). The gamification user types Hexad scale. In Association for Computing Machinery (Ed.), *Proceedings of the 2016 Annual Symposium On Computer-Human Interaction in Play* (pp. 229-243). ACM. http://dx.doi.org/10.1145/2967934.2968082

Tondello, G. F., Mora, A., Marczewski, A., & Nacke, L. E. (2019). Empirical validation of the gamification user types Hexad scale in English and Spanish. *International Journal of Human-Computer Studies*, *127*, 95-111. https://doi.org/10.1016/j.ijhcs.2018.10.002

Vahlo, J., Kaakinen, J. K., Holm, S. K., & Koponen, A. (2017). Digital game dynamics preferences and player types. *Journal of Computer-Mediated Communication*, *22* (2), 88-103. https://doi.org/10.1111/jcc4.12181

Valderrama, B. (2018). La rueda de motivos: hacia una tabla periódica de la motivación humana [The wheel of motives: Toward a periodic table of human motivation]. *Papeles del Psicólogo*, *39* (1), 60-70. https://doi.org/10.23923/pap.psicol2018.2855

Yee, N. (2015). *Gamer motivation model: Overview and descriptions*. Quantic Foundry. http://quanticfoundry.com/2015/12/15/handy-reference

Yee, N., Ducheneaut, N., & Nelson, L. (2012). Online gaming motivations scale: Development and validation. In Association for Computing Machinery (Ed.), *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 2803-2806). ACM. https://doi.org/10.1145/2207676.2208681

Zahedi, L., Batten, J., Ross, M., Potvin, G., Damas, S., Clarke, P., & Davis, D. (2021). Gamification in education: A mixed-methods study of gender on computer science students' academic performance and identity development. *Journal of Computing in Higher Education, 33* (2), 441-474. https://doi.org/10.1007/s12528-021-09271-5

Authors' biographies

Joel-Manuel Prieto-Andreu. PhD in Physical Activity and Sport Science s(cum laude and international doctorate) from the University of Murcia. He is an Associate Professor, focusing on sport psychology and gamification in education. He has collaborated in 4 research groups; he has presented 5 teaching innovation projects and 3 research projects, in two of which he has

been principal investigator. He has been a speaker at more than 30 international and national conferences. He has published 4 books, 11 chapters and more than 45 articles in peer-reviewed scientific journals. He is an associate editor and reviewer for several scientific journals.

https://orcid.org/0000-0002-2981-0782

Pablo Moreno-Ger. PhD in Computer Engineering from the Universidad Complutense de Madrid and Associate Professor at the International University of La Rioja (UNIR). He is currently the vice rector of Research at UNIR. Previously, he had been director of the School of Engineering and Technology at UNIR and deputy academic director of the same school. He was also a lecturer at the Universidad Complutense de Madrid, where he was also vice-dean of Innovation. His research interests focus on the use of technology in education and, in particular, in higher education. He is the author of more than 200 publications in international journals and conferences.

https://orcid.org/0000-0003-4817-8150

CoDiLe: An instrument for evaluating the Spanish-language disciplinary knowledge of pre-service teachers

CoDiLe: un instrumento para evaluar el conocimiento disciplinar de lengua española de los maestros en formación

María-Teresa MUEDRA-PERIS. Doctoral Student. Universidad de Valencia (*muepe@alumni.uv.es*).
Manuel MONFORT-PAÑEGO, PhD. Associate Professor. Universidad de Valencia (*manuel.monfort@uv.es*).
Ángela GÓMEZ-LÓPEZ, PhD. Associate Professor. Universidad de Valencia (*angela.gomez@uv.es*).
Eva MORÓN-OLIVARES, PhD. Associate Professor. Universidad de Valencia (*eva.moron@uv.es*).

Abstract:

In recent decades, various research works have focussed on assessing teachers' pedagogic knowledge, especially in science and mathematics. However, few works in the field of language have designed and validated tools for this purpose. The present work aims to progress in this line of research by designing and validating a questionnaire to assess the Spanish-language disciplinary knowledge of pre-service teachers. Spanish students from the degree in Primary School Education and Master's in Secondary Education as well as experts in didactics of language and in validating questionnaires participated. To analyse its content validity, we used the Delphi method and, to study consistency, we performed a psychometric analysis using the test–retest reliability method. The instrument was found to be consistent and valid. The results were below what was expected and revealed that the sample showed a clear shortcoming in disciplinary content in Spanish language. These data seem to be in line with those obtained in other areas. Consequently, CoDiLe can contribute to defining and remedying these possible deficiencies by providing consistent data to teacher trainers to guide their practice more effectively.

Keywords: measurement instrument, level of knowledge, Spanish language, teacher training.

Date of receipt of the original: 2023-07-20.
Date of approval: 2023-10-25.
Please cite this article as follows: Muedra-Peris, M. T., Monfort-Pañeco, M., Gómez-López, Á., & Morón-Olivares, E. (2024). CoDiLe: An instrument for evaluating the Spanish-language disciplinary knowledge of pre-service teachers [CoDiLe: un instrumento para evaluar el conocimiento disciplinar de lengua española de los maestros en formación]. *Revista Española de Pedagogía, 82* (288), 271-290. https://doi.org/10.22550/2174-0909.4037

Resumen:

En las últimas décadas, diversas investigaciones se han centrado en evaluar el conocimiento didáctico del profesorado, en especial en ciencias y en matemáticas. Sin embargo, en el área de lengua, pocos trabajos han diseñado y validado herramientas con este fin. El presente trabajo pretende avanzar en esta línea de investigación con el diseño y la validación de un cuestionario para evaluar el conocimiento disciplinar de lengua española de los maestros en formación. Participaron estudiantes españoles de grado de Magisterio y de máster de Formación del Profesorado de Secundaria, así como expertos en didáctica de la lengua y en validación de cuestionarios. Para el análisis de la validez de contenido, se utilizó el método Delphi y, para el estudio de la consistencia, se aplicó un análisis psicométrico a través del método de fiabilidad test-retest. El instrumento se mostró consistente y válido. Los resultados estuvieron por debajo de lo esperado y desvelaron que la muestra presentaba un claro déficit en contenido disciplinar en lengua española. Estos datos parecen estar en línea con los obtenidos para otras áreas. Por tanto, CoDiLe puede contribuir a definir y subsanar estas posibles deficiencias mediante la aportación de datos consistentes a los formadores de maestros que permitan una orientación más efectiva de sus prácticas.

Palabras clave: instrumento de medida, nivel de conocimientos, lengua española, formación de profesores.

1. Introduction

Assessing a country's educational needs involves considering all of the factors that make up its education system, such as teacher training. This is a complex research topic and is one of the key areas for action to improve the education system; nonetheless, there is no consensus on what factors promote teaching quality and how to incorporate them into initial training (Harris & Sass, 2011): some studies have focussed on professional learning (Opfer & Pedder, 2011), cognition (Borg, 2003), or personal knowledge (Pajares, 1992).

One of the authors who has made the biggest contributions to research on teacher training is Shulman (1987), who proposed a new integrating concept, the *pedagogical content knowledge* (PCK): the combination of content and pedagogy in the comprehension of how certain topics are organised, represented, and adapted to the interests and skills of the students, and how they are presented when they are taught.

This new concept has been a catalyst for significant research works that in recent decades have revealed the difference between *content knowledge* (CK) and its teaching (PCK) (Bucat, 2005). Although the relationship between CK and PCK is not clearly defined in the literature, it does seem to be clear that CK is at the centre of the development of teachers' professional competences (Kleichkman et al., 2013).

In Shulman's model, CK is the first aspect that must be taken into account to study the teaching of disciplines. Research

shows that an in-depth CK improves explanations, favours use of resources, and influences students' comprehension and their academic success (Chetty et al., 2011); therefore, it is essential to define what level of knowledge future teachers have in order to act to improve their initial and ongoing training (Kleickmann et al., 2013). Knowing the content of the subject you are going to deliver is a prerequisite for being able to teach it (Friedrichsen et al., 2009). In fact, in some pieces of research, teachers' CK was significant in explaining improvements in students' results (Gess-Newsome et al., 2019).

In recent decades, various research works have focussed on evaluating teachers' CK, especially in the area of science and mathematics. Godino et al. (2016) assessed teachers' knowledge of visualisation of three-dimensional objects in 241 primary teaching students. To design their questionnaire, they used previous research works, the curriculum, and textbooks that are widely used nationally. Although the questions were taken from primary school books, the results showed that 62% of the students did not answer the proposed tasks optimally.

Spain's Ministry of Education, Culture, and Sport (2012) participated in an international study on initial training in mathematics of primary school teachers that used a questionnaire based on the TEDS-M study by Tattoo et al. (2012), which evaluated both their didactic and disciplinary knowledge. To design the questions, previous research and the legal frameworks of the participating countries were used. The final questionnaire had 74 questions in multiple-choice or open-answer format. The mean scores obtained by future teachers from Spain were below the international mean for both mathematical and didactic knowledge, although they did score slightly higher in the latter type.

Vásquez and Alsina (2015) validated a questionnaire with open-ended questions to assess didactic-mathematical knowledge for teaching probability. As the knowledge base, they used previous research, curricular guidelines, and textbooks. Both the pilot application of the instrument and its replication obtained medium-low scores in all categories.

Verdugo et al. (2019) analysed the didactic-disciplinary knowledge of science of pre-service teachers; to do so, they created a questionnaire with 30 multiple-choice items based on Spain's national curriculum and Spanish textbooks. The instrument displayed a command of scientific content with room for improvement and the presence of some significant conceptual errors.

As for CK in language, few works have designed and validated tools to evaluate this; most of them focus on the knowledge needed for teaching how to read. Binks-Cantrell et al. (2012) and Washburn et al. (2016) validated an instrument for evaluating teachers' knowledge of the basic constructs of language that are involved in teaching reading. A total of 279 pre-service teachers participated. The questionnaire included 38 items aimed at content knowledge. The results displayed a lack

of knowledge, in particular of morphology and phonology.

The present work seeks to make progress on this line of research: its aim is to design and validate an instrument that makes it possible to evaluate pre-service teachers' content knowledge in Spanish language. As far as we are aware, there are no instruments that enable us to evaluate the disciplinary knowledge that teachers, specifically pre-service ones, must have to deliver Spanish language. The need for this instrument is relevant for research in the field of education for two reasons: because language is disciplinary content and because it is, at the same time, a vehicle for the other types of learning. This need justifies the aim of this work, as creating instruments that make it possible to evaluate the teachers' knowledge of the subjects on the curriculum has a direct effect on teacher training programmes.

2. Methodology

2.1. Study design

To analyse Spanish-language CK of pre-service teachers, we designed and validated a questionnaire using the Delphi method (Andrés et al., 2019) in four stages:

- Stage 1. Evidence collection. Literature search. Selecting evidence indicators.
- Stage 2. Development of version I. Drawing up items. Evaluation by experts.
- Stage 3. Development of version II. Pilot test. Evaluation by students.
- Stage 4. Development of the final version. First pass (construct validity). Second pass (reliability).

To study the reliability of the questionnaire, we used a test-retest process and psychometric analysis.

2.2. Participants

During steps 2 and 3 (content validity), two groups of participants were used to evaluate the content and comprehensibility of the initial test. The first group comprised six independent experts: three from philology and didactics of language, one from PCK, and two from instruments and research designs (one of them also an expert in PCK). The experts were selected in accordance with the following criteria: they had to be outside the study, have a doctorate, be university teachers, and have high-quality publications on didactics of language or PCK, research methods, or validating questionnaires. In parallel, two external subjects who were not related to the content or the selection criteria participated as evaluators.

The second group comprised a natural group of 53 university students (aged 19-23) of both sexes from the second year of the bachelor's degree in Primary Education at a Spanish university. They completed the test online and ten were subsequently selected to be interviewed. They were asked to evaluate the content and comprehensibility of the initial test. The results of the tests were used to make a

preliminary estimate of the functioning of the questionnaire.

For stage 4, the sample of participants was 256 students of both sexes (aged 18-25) from the degree programmes in Primary/Early Childhood Education (years 1, 2, and 4) at a Spanish university. A natural group of 20 students (aged 23-35) from the master's in Secondary Education (Spanish Language and its Literature specialism) also participated. This group had more specialised disciplinary knowledge and was used to ascertain whether the instrument discriminated between different levels of knowledge. Of the initial sample, 190 students (152 women and 38 men) completed both passes of the questionnaire.

2.3. Procedure

In stage 1, we used various sources to design the questionnaire. We performed a search for specialist literature on Spanish-language disciplinary knowledge and on the use of questionnaires for evaluating it in the teaching of Spanish as a first and second language.

In stage 2, this analysis was used as a basis for generating a bank of questions and a first version of the questionnaire was agreed on. This was sent through a virtual platform to six independent experts and to two external subjects for its evaluation.

In stage 3, the resulting instrument was tested on a group of 53 students to make a first estimate of its functioning and of the pertinence of the questions. To do so, an online platform was used during a class session. The time was limited to 40 minutes. After this, we interviewed 10 students to complete the information obtained.

Some questions were reformulated or replaced following the suggestions of the two groups. The new version was again sent to two experts: one in questionnaires and research methods, and the other in didactics of Spanish language, and their proposals were also incorporated into the questionnaire.

Finally, during stage 4, the definitive questionnaire was administered to the study sample in two passes: we used the data from the first pass to evaluate the construct validity, and used these data and the data from the second pass to study the reliability. Four experimental conditions were used to counterbalance the order of the questions in the first and second pass. A control question to check attention was included in position 21 (around half way through the question) in the four conditions.

The questionnaires were administered through the Moodle web platform. Participation was voluntary. The instructions were written at the start of the questionnaire and were read aloud by one of the researchers. Any doubts were answered and the time was limited to 40 minutes. The second pass was done after four weeks.

2.4. Data analysis

We used the Delphi model (Mokkink et al., 2010) to study the content validity. In stage 1, the initial questions were developed starting from the categories validated by Muedra (2020): morphology, phonetics,

phonology and spelling, lexical-semantic level, syntax, text typology, oral and written expression processes/pragmatics, oral and written comprehension processes, literary resources.

To define them, we used the most recent bridge document of the autonomous region in which the study was performed, aimed at facilitating classroom planning (CEFIRE, 2015). The researchers extracted knowledge indicators and classified them independently within each category. A knowledge indicator is defined as a unit of knowledge expressed in a way that is specific and objective and, where applicable, is translatable to a behaviour that can be evaluated (Alfaro-Carvajal et al., 2022): for example, the indicator "Nouns. Classes: proper and common, individual and collective, concrete and abstract" was classified in the "morphology" category. In competence-based curricula, the selection of indicators seeks to facilitate the subsequent development of the instruments and means for evaluating the proposed competences.

To evaluate the functioning of these categories and of their indicators, activities from two collections of primary-school Spanish-language textbooks were classified. We observed that these categories included all of the indicators, and so they were used as a reference for defining the questions on the questionnaire.

In stage 2, we designed a bank of 142 questions, with a mean of 15 questions per category. We decided to create a multiple-choice questionnaire with four answer options, in line with studies that consider that distractors are functional if there are between three and five options (Downing, 2006; Haladyna, 2004; Haladyna & Downing, 1993). So, following the line of these studies, each question had one correct answer, another clearly incorrect one, and two that were incorrect but which aimed to induce mistakes. To prepare the questions, we chose activities from textbooks from four collections used widely throughout Spain and from specialist literature on didactics of language (Prado, 2004; Mendoza, 2003).

The researchers selected 40 questions from this initial bank considering the criteria of representativeness and presence in the curriculum. The resulting distribution of questions by category in the questionnaire was as follows: morphology (items 1, 2, 3, 4); phonetics, phonology, and spelling (items 5, 6, 7, 8); syntax (items 9, 10, 11, 12); linguistic and sociocultural variety (items 13, 14); lexical-semantic level (items 15, 16, 17, 18); literary resources (items 19, 20, 22, 23); text typology (items 24, 25, 26, 27); oral and written expression processes/pragmatics (items 28, 29, 30, 31, 32, 33, 34, 35, 36, 37); oral and written comprehension processes (items 38, 39, 40, 41). A control question to check attention was also included (item 21). Examples of possible questions and answers for each category can be found in the appendix. The scores for each item were 0 (incorrect option) and 1 (correct option); the scores for each item and for the questionnaire as a whole were obtained by calculating the mean value of the items involved.

In stage 3, this questionnaire was administered to a sample of 53 second-year

students. They were asked about the intelligibility and the difficulty of the questions and answers, as well as of the control question. With the data from this sample, an analysis of the discriminatory capacity of the items and their difficulty was performed (Hurtado, 2018).

In stage 4, with the modified 40-question questionnaire, a first pass with the study sample was done to evaluate the construct validity and a second pass to check its reliability. Both studies were done using the scores from the items, the mean of the items from the final categories, and the total mean for the items by year (Table 1). All of the mean scores calculated in the study were normally distributed.

With the resulting items, we carried out a construct validity study using factor analysis in steps according to the figures for Cronbach's alpha (Taber, 2018), eliminating and averaging the items that the model indicated. For the analysis of construct validity, the average values of the variables collected in the first pass were used, grouped according to the results of the model. This analysis was also applied to the groupings of students by year to evaluate the suitability of the groupings for these variables.

To study reliability, we carried out a psychometric analysis of the variables taken at two different times (T1 and T2) using the test–retest method. We calculated the difference between the scores and the standard deviation of the difference; we applied the intraclass correlation coefficient (ICC) (Shrout & Fleiss, 1979) to the average values of each topic at the different times (T1 and T2) with the confidence intervals (95%), as well as the standard error of measurement, the repeatability coefficient, and the minimum detectable change (Beckerman et al., 2001; Bland & Altman, 1986). The ICC values were evaluated in line with the indications of previous studies (Landis & Koch, 1977).

We used the Bland–Altman plot to study the measurement error (Bland & Altman, 1996). To examine the mean error of the difference, we calculated the limits of agreement (95%) and their confidence intervals (Bland & Altman, 2010). To establish whether the error values between the passes were significant, we used *t* test for one sample on the differences in the T1 and T2 averages.

We calculated the development of the measurement error in relation to the average T1 and T2 values using a regression analysis (Bland & Altman, 1986). The floor/ceiling effect of the scores was calculated by comparing the percentages of participants with first and last quartile values for the scores from the first pass. If more than 15% of the study population was in one of these quartiles, the floor or ceiling effect was deemed to be present in the use of this tool (Terwee et al., 2007).

In order to rule out the possibility of an effect of the sex variable on the study subjects' scores, we applied a repeated means analysis of variance to the T1 and T2 scores with the analysis of the gender factor in time (T1–T2).

The difficulty of the questionnaire and of the items was calculated using the percentage scores of the sample compared to the total value. This value was also analysed by years.

To study the sample's knowledge of language, we calculated the means and deviations of all of the subjects by year, for each category and for the total scores. We used a one-factor ANOVA (year) to analyse the effect of the different years on the scores for the categories and the total score. Finally, we used the Bonferroni test for the post hoc contrasts.

3. Results

3.1. Content validity

Following stage 1's consultation of the specialist literature, the bridge document, and the categories established by Muedra (2020), in STAGE 2, a total of 142 questions were drawn up, of which 40 were sent to the experts after screening.

These experts unanimously determined that no essential content was missing and they stated that the questionnaire did evaluate the basic knowledge that a primary-school teacher should possess. They made suggestions regarding the wording of some items to reduce ambiguity or adjust the level of difficulty. Specifically, they proposed to increase the level of difficulty of some incorrect answers.

As a result, we modified 18 items. To ensure the comprehensibility and pertinence of the changes, two experts were asked to evaluate the questionnaire again. Four items were modified relating to the wording and level of difficulty of the answers.

As for the data deriving from the pilot test (stage 3), the students explained that the questionnaire in general seemed precise and intelligible to them. They did not identify the control question as such because they thought it was part of the content; as a result, we replaced it.

3.2. Construct validity and reliability

In stage 4, the analysis of the discriminatory capacity of the 40 items from the study sample, 24 had a low index of discrimination (<.125), 14 presented a very low index of difficulty (>93% correct answers), and 2 a very high index of difficulty (<10% correct answers). We eliminated the items that fulfilled both conditions (low capacity for discrimination and very high/low difficulty). This eliminated 10, leaving a questionnaire with 30 questions.

The factor analysis by steps in the study of the scale as a single factor pointed out the lack of consistency of these 30 items. The model indicated which items reduced the internal consistency and had to be eliminated. We grouped the remaining items into three categories: the MORF_LEX_SINT category comprised 3 items from Morphology, 3 from the lexical-semantic level, and 3 from syntax; the FFO_RECLIT category comprised 3 items from phonetics and phonology and 3 from literary resources; and the TT_PROEX_PRO-

COM category comprised 3 items from text typology, 6 from oral and written expression processes, and 4 from oral and written comprehension processes. With the averages of these 28 items grouped into three categories, the instrument achieved good internal consistency (Cronbach's alpha = .74).

The figure for consistency by gender was .71 (male) and .76 (female). The study by groups indicated an index of .75 for first year students, .75 for second year students, .67 for fourth year students, and .65 for master's students.

The mean values of the scores for both moments had a value slightly greater than the median of the scale (Table 1). The scores improved in T2 in general.

The mean error for the total scores was very small (.03), and the SEM (.04) displayed a low measurement error, with slightly higher values than the differences of means and lower than the SD of the difference. This happened in the same way in the groupings of the items. The RC also behaved well, giving values equal to or lower than two times the SD of the difference. The MDC indicated very limited sensitivity values for the instrument and showed real changes in the use of the instrument from values of 0.12 points in the total score.

TABLE 1. Test–retest values for the scores of the questionnaire (n = 190).

	M T1 (±SD)	M T2 (±DS)	M T1_T2 (±DS)	Dif. M T2 - T1 (±DS)	R	ICC (CI.95%)	RC	SEM	MDC
Total	.64(.12)	.67(.13)	.66(.12)	.03(.10)**	.69**	.81 (.75-.86)	.20	.04	.12
MORF_ LEX_SINT	.66(.17)	.68(.18)	.67(.16)	.02(.17)	.52*	.68 (.58-.76)	.34	.10	.27
FF_ RECLIT	.63(.23)	.67(.21)	.65(.19)	.03(.21)*	.52*	.68 (.58-.76)	.42	.12	.34
TT_PRO-EX_PRO-COM	.64(.16)	.67(.16)	.65(.14)	.03(.15)*	.53*	.69 (.59-.77)	.30	.09	.24

Note: M = mean, T1 = time 1, T2 = time 2, SD = standard deviation, R = coefficient of correlation, ICC = intraclass correlation coefficient, CI = Confidence Interval, RC = repeatability coefficient, SEM = standard error of measurement, MDC = minimum detectable change; significant difference: *p <.05; **p <.01.

The strong intraclass correlation coefficients for the total test–retest scores (Table 1) indicated excellent reliability of the measures over time. However, significant differences were observed between the measurements from the two passes in the total scores and in two of the three groups of items.

Figures 1 and 2 show the absolute and relative values of the differences of the scores by their mean values. The mean value of the differences was .03 (SD .10) (Figure 1), equivalent to a percentage of error of 3.68% (Figure 2), which does not exceed the 5% acceptable probability of error. The regression analysis showed that the differences between the test and retest did not change as the means of the scores of the two times changed ($F_{(1,189)}$ = .2; p = .656; beta = .03). This indicated that the differences between the T1 and T2 scores did not vary in the different levels of knowledge of the sample.

The mean time that the sample took to answer the questionnaire was 14.67 minutes (SD 4.06).

No floor/ceiling effect was observed in the average scores obtained by the participants in the use of this questionnaire. No subject had average scores below .34 or above .89. However, 23% of subjects scored in the last quartile.

This study of the measurement error was also applied to the sample grouped by gender and year. We observed that the year groups with measurement error below 5% were the fourth year (0.8%) and master's (2.04%), while the percentage error for first years was 5.89%, and for second years, 7.54%.

FIGURE 1. Bland-Altman plot of absolute values of the scores.

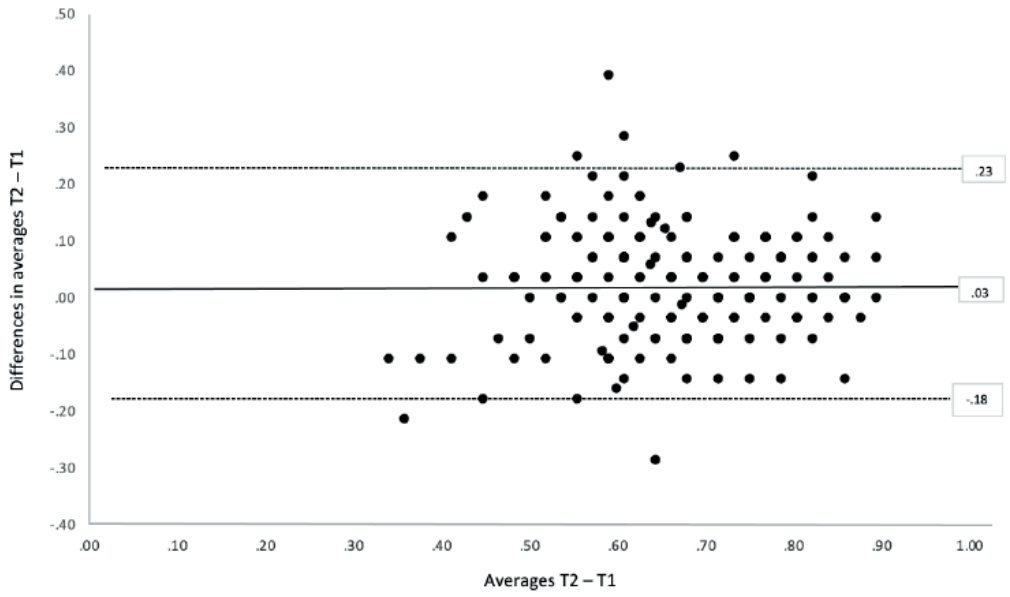
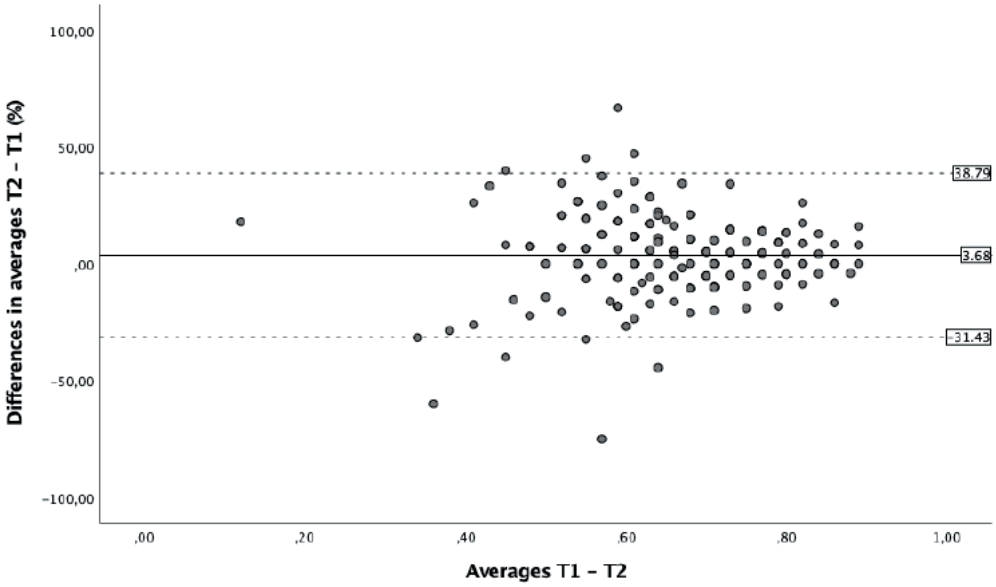


FIGURE 2. Bland-Altman plot of relative values of the scores.



With regards to gender, the results indicated a percentage error of 4.58% in men and 5.98% in women.

The repeated measures ANOVA indicated that gender did not influence the changes that occurred over time between the two measures ($F_{(1,126)}$ = 2.80, p = 598).

The level of difficulty of the questionnaire for the study sample was medium. 17.86% did not pass the test, 50% had a score of between 5 and 7, and 32.14% exceeded the score of 7. These percentages varied between the different groups. The largest percentage of students who did not pass the test was in the fourth-year group (24.14%). The group with the highest percentage of students in the highest levels of scores (>7) was the master's group (60%).

3.3. Level of Spanish-language knowledge of pre-service teachers

Table 1 shows that the average level of knowledge was 0.64 points, which indicates that the sample studied achieved a medium score for knowledge in both the total score and in the different categories. Table 2 shows the results for the sample separated by year.

The study of frequencies of correct and incorrect answers shows that 12.6% of respondents failed the test (<5), 49.8% scored between 5 and 7, and 37.2% achieved a good score (>7).

As for the analysis of the effect of the different years, the results indicate that the scores were only different for the years variable in the total mean ($F_{(3,189)}$ = 3.408; p = .019; eta squared = .045) and for the category FF_RECLIT ($F_{(3,189)}$ = 2.902;

p = .036; eta squared = .052). The post hoc analysis indicated that there were differences in the total score between first-year and master's (diff. -.092; p = .022) and fourth-year and master's (diff. -.094; p = .017), and, for the FF_RECLIT category, between fourth-year and master's (diff. -.17; p = .022).

TABLE 2. Average total scores and scores by categories separated by year.

Category	Year	*N*	Mean	*SD*
MORF_LEX_SINT_01	First	65	0.658	0.169
	Second	40	0.671	0.180
	Fourth	65	0.634	0.165
	Master's	20	0.743	0.191
FF_RECLIT_01	First	65	0.633	0.213
	Second	40	0.625	0.238
	Fourth	65	0.595	0.228
	Master's	20	0.762	0.199
TT_PROEX_PROCOM_01	First	65	0.615	0.169
	Second	40	0.652	0.154
	Fourth	65	0.645	0.152
	Master's	20	0.694	0.134
Total_01	First	65	0.632	0.128
	Second	40	0.652	0.132
	Fourth	65	0.630	0.114
	Master's	20	0.724	0.104

Note: SD = standard deviation.

4. Discussion

The aim of this work was to design and validate an instrument to make possible the evaluation of Spanish-language CK of pre-service teachers. In line with research in other disciplines (Verdugo et al., 2019; Vásquez & Alsina, 2015; Godino et al., 2016), it started by considering specialist literature, the regulatory framework, and textbooks to generate a bank of questions, which is then subjected to a process of content and construct validation.

The Delphi method was used to guarantee high levels of validity; to avoid its potential drawbacks, we scrupulously complied with its characteristics, the implementation of its stages, and the selection of experts (Cabero & Infante, 2014) as well as its use in the target population. The Delphi method is especially useful when designing and validating an instrument if there are no instruments that fit the needs of the research (Andrés et al., 2019). Although there are some instruments that measure the knowledge that primary teachers should have for teaching students how to read in the English-speaking world (Washburn et al., 2016; Binks-Cantrell et al., 2012), the present study contributes the first instrument that makes it possible to measure Spanish-language CK of future teachers. The resulting questionnaire, comprising 28 questions and a control question, is shown to be valid and reliable for this purpose.

Both the experts and the users were unanimous with regards to the pertinence and validity of the instrument's content, and we implemented the changes relating to the formulation of questions and answers that they suggested. The pass with the pilot group also served to carry out a first discriminant analysis.

As for construct validity, after the process of elimination and grouping of items, the instrument achieved good internal consistency, both overall and for different genders and years, with lower consistency in higher years. This indicates robust functioning of the questionnaire independently of gender and year.

The analysis of the reliability of the measurements was backed by the mean values of the scores in the test–retest, the strong association between the measurements at the different moments, and the narrow margin of the measurement error. We observed that the average values improved significantly in the retest in the FF_RECLIT and TT_PROEX_PROCOM groups (groups in which they were found to more unstable), but the regression analysis showed that the differences observed between the scores did not vary as the average values increased. Therefore, we can state that there was no distorting effect in the process between measurements owing to learning.

From a methodological perspective, these results support the claims of Bland and Altman (1996): reliability studies with analysis of correlation of items at different moments provide insufficient information about their stability over time. Studies of reliability require in-depth consideration of the analysis of the measurement error, through analysis of relative and absolute reliability to confirm the effect of time on the use of the instrument (Vaz et al., 2013). On the one hand, we know that the precision of the instrument in the measurement of knowledge cannot present measurement indexes comparable to the study of more objective variables, as is habitual in the use of tools that evaluate complex concepts such as the ones tackled in this study. Nonetheless, as the regression analysis indicates, it does maintain its level of precision independently of the students' level of knowledge. We should add to this result regarding the reliability of

the tool that the average measurement error is very low (0.03), and is equivalent to an acceptable error. In other words, there is a non-significant percentage of probability of different measurements (3.68%). The probability of a significant difference between the measures did not reach 5%.

To the good measurement error results, we must add the good psychometric behaviour of the scale, especially in the total values (Table 1). Independently of the groupings of the items into three categories, the scale has been evaluated as a single-factor scale that refers in general to the knowledge of Spanish language of the pre-service teachers. The variability of the measurement of the instrument (SEM = 0.04) was similar to the relative measurement error (0.03). The absolute measurement error or RC indicated that variations in the mean greater than 0.20 points correspond to measures with a value that will exceed the theoretical absolute error of the instrument and could be considered to be true variations. Also that changes in the scores on the questionnaire equal to or greater than the MDC value (0.12) could be regarded as real changes in students' knowledge.

Although the reliability of the questionnaire is good, the data extracted from its use must be interpreted with caution as the instrument was found to be less reliable in time in the analysis of the subgroup of women and in the groups with the least experience (first and second year). In this sense, the study has analysed in depth the behaviour of the measurement error by sex and by the different levels of training of the students, and the test worked better in the fourth-year and master's groups as well as in the male group. These groups had particular situations that could justify these results. On the one hand, 80% of the sample were female, which might explain the greater dispersal of scores between the results of the test and retest and consequent greater measurement error. On the other, the differences between the groups with the most and least experience could be because students from higher years had a more consolidated level of knowledge, independently of whether this was greater or lesser.

In the usability study, the questionnaire showed itself to be user-friendly and useful for teacher training: the average completion time was around 15 minutes and it was not difficult to understand.

The results regarding the level of knowledge were that 12.6% failed (<5), 49.8% scored between 5 and 7, and 37.2% achieved a good score (>7). From a mathematical perspective, the distribution of the scores could be said to be an acceptable mean level of knowledge (6-7 points) with a mean score of .64 and 87% of students passing the test. However, we must recall that the test was designed using questions on basic knowledge, from primary-school books. Therefore, we would not expect almost 50% of the sample to score between 5 and 7, even though it is true that similar shortcomings have been highlighted in studies of other areas (Verdugo et al., 2019; Vásquez & Alsina, 2015; Depaepe et al., 2013). This study highlights that the

sample has a clear deficiency in disciplinary content in Spanish language.

It is also worrying that almost 13% of these future professionals do not pass the test. Teachers' CK is closely related to students' learning, and so fulfilling the requirement to know content in order to be able to teach it (Friedrichsen et al., 2009) is a responsibility for the people who train the Primary Teaching students and for the public institutions involved.

Moreover, the fourth-year students getting the lowest scores was unexpected. Although the general tendency is for knowledge to increases in higher years, the significance levels indicate that the evolution of the knowledge is not significant; this could be because disciplinary subjects are primarily taught in the first two years and are replaced in the last two years by the specifically didactic ones. The difference with master's students are to be expected, given that these students have broader disciplinary training.

Regarding the limitations of this work, we should note that it has not been possible to analyse convergent or criterion validity as there are no comparable instruments. We consider the study sample in the validation process to be adequate; however, other samples with different cultural characteristics should also be used.

5. Conclusions

Following the content and reliability analysis, we can state that the instrument presented here is valid and reliable for measuring pre-service teachers' Spanish-language CK.

At first glance, the first data seem to indicate that students have an acceptable knowledge of language; however, if we recall that the questionnaire seeks to measure minimum required knowledge, it is striking that half of the sample does not obtain more than what would be equivalent to a high pass/good grade.

The next phase of this research will involve administering this instrument to large samples of the population to establish whether this is simply because of the size of the sample or instead reveals a worrying reality about the training of primary-school teachers, a hypothesis that seems to be backed by research in other areas. Instruments like this one can help define and remedy these possible defects by providing the people who train teachers with consistent data to guide their practices more effectively.

Appendix. Examples of questions from the final questionnaire

The correct answer is shown in italics.

MORF_03. State which of these sentences does NOT include a verb in the subjunctive:

a) Maybe Teresa and Silvia will arrive late to the game. [Quizá Teresa y Silvia lleguen tarde al partido.]

b) Hopefully, it will rain more this spring. [Ojalá que llueva más esta primavera.]

c) If you were more interested, you would find studying easier. [Si tuvieras más interés, estudiar te resultaría más fácil.]

d) *Felipe will take part in the race on Sunday with his father. [Felipe participará en la carrera el domingo con su padre.]*

FFO_05. From the point of view of spelling, which of these sentences is correct?

a) *Tell me what is happening to you today. [Dime qué te pasa hoy.]*

b) I don't know where Paquita lives. [No sé donde vive Paquita.]

c) I have forgotten when I have an appointment with the doctor. [He olvidado cuando tengo cita con el médico.]

d) I don't know when it stopped hurting. [No sé en que momento dejó de dolerme.]

LEX_17. Choose the option in which all of the words are derived:

a) *Imperial, combative, volcanic, mountainous. [Imperial, combativo, volcánico, montañoso.]*

b) Combative, volcanic, love, lemon. [Combativo, volcánico, amor, limón.]

c) Volcanic, mountainous, table, heart. [Volcánico, montañoso, mesa, corazón.]

d) Love, lemon, table, heart. [Amor, limón, mesa, corazón.]

RECLIT_20. Choose the statement that is correct:

a) A sonnet has an assonant rhyme. [Un soneto tiene rima asonante.]

b) *A sonnet has 14 lines. [Un soneto tiene 14 versos.]*

c) A sonnet can be high or low art. [Un soneto puede ser de arte mayor o menor.]

d) A sonnet can have an unlimited number of stanzas. [Un soneto puede tener un número ilimitado de estrofas.]

TT_26. Identify the option that only contains oral genres:

a) *Dialogue, debate, press conference, and seminar. [El diálogo, el debate, la rueda de prensa y el coloquio.]*

b) Interview, presentation, recipe book, and news story. [La entrevista, la exposición, el recetario y la noticia.]

c) Personal diary, biography, travel book, and description. [El diario personal, la biografía, el libro de viajes y la descripción]

d) Dialogue, debate, personal diary, and seminar. [El diálogo, el debate, el diario personal y el coloquio.]

PROEX_31. Which of these statements does NOT correspond to planning writing:

a) Brainstorming. [Hacer una lluvia de ideas.]

b) *Correcting spelling. [Corregir la ortografía.]*

c) Looking for model texts. [Búsqueda de modelos.]

d) Outlining. [Hacer un esquema.]

References

Alfaro-Carvajal, C., Flores-Martínez, P., & Valverde-Soto, G. (2022). Conocimiento de profesores de matemáticas en formación inicial sobre la demostración: Aspectos lógico-matemáticos en la evaluación de argumentos [Knowledge of mathematics teachers in initial training regarding mathematical proofs: Logic-mathematical aspects in the evaluation of arguments]. *Uniciencia*, *36* (1), 140-165. https://doi.org/10.15359/ru.36-1.9

Andrés, I., Muñoz, M., Ruíz, G., Gil, B., Andrés, M., & Almaraz. A. (2019). Validación de un cuestionario sobre actitudes y práctica de actividad física y otros hábitos saludables mediante el método Delphi [Validation of a questionnaire on attitudes and practice of physical activity and other healthy habits through the Delphi method]. *Revista Española de Salud Pública*, *93*.

Beckerman, H., Roebroeck, M. E., Lankhorst, G. J., Becher, J. G., Bezemer, P. D., & Verbeek, A. (2001). Smallest real difference, a link between reproducibility and responsiveness. *Quality of Life Research, 10* (7), 571-578. https://doi.org/10.1023/A:1013138911638

Binks-Cantrell, E., Joshi, R. M., & Washburn, E. K. (2012). Validation of an instrument for assessing teacher knowledge of basic language constructs of literacy. *Annals of dyslexia*, *62*, 153-171. https://doi.org/10.1007/s11881-012-0070-8

Bland, J. M., & Altman, D. (1986). Statistical methods for assessing agreement between two methods of clinical measurement. *The Lancet, 327* (8476), 307-310. https://doi.org/10.1016/S0140-6736(86)90837-8

Bland, J. M., & Altman, D. G. (1996). Statistics notes: Measurement error. *Bmj, 312* (7047), 41-42. https://doi.org/10.1136/bmj.312.7047.1654

Bland, J. M., & Altman, D. G. (2010). Statistical methods for assessing agreement between two methods of clinical measurement. *International journal of nursing studies*, *47* (8), 931-936. https://doi.org/10.1016/j.ijnurstu.2009.10.001

Borg, S. (2003). Teacher cognition in grammar teaching: A literature review. *Language awareness*, *12* (2), 96-108. https://doi.org/10.1080/09658410308667069

Bucat, R. (2005). Implications of chemistry education research for teaching practice: Pedagogical content knowledge as a way forward. *Chemistry Education International*, *6* (1), 1-2.

Cabero, J., & Infante, A. (2014). Empleo del método Delphi y su empleo en la investigación en Comunicación y Educación [Using the Delphi method and its use in communication research and education]. *EDUTEC Revista Electrónica de Investigación Educativa*, (48), 1-16. https://doi.org/10.21556/edutec.2014.48.187

CEFIRE. (2015). *Documento puente. Lengua española. Comunitat Valenciana.* https://drive.google.com/file/d/1UnWPGNgG_v7-UnzX42B-P746IHFC-HytD/view?usp=sharing

Chetty, R., Friedman, J. N., & Rockoff, J. E. (2011). *The long-term impacts of teachers: Teacher value-added and student outcomes in adulthood*. National Bureau of Economic Research. https://doi.org/10.3386/w17699

Depaepe, F., Verschaffel, L., & Kelchtermans, G. (2013). Pedagogical content knowledge: A systematic review of the way in which the concept has pervaded mathematics educational research. *Teaching and teacher education*, *34*, 12-25. https://doi.org/10.1016/j.tate.2013.03.001

Downing, S. M. (2006). Selected-response item formats in test development. In S. M. Downing, & T. M. Haladyna (Eds.), *Handbook of test development* (pp. 287-302). Taylor & Francis. https://doi.org/10.4324/9780203874776

Friedrichsen, P. J., Abell, S. K., Pareja, E. M., Brown, P. L., Lankford, D. M., & Volkmann, M. J. (2009). Does teaching experience matter? Examining biology teachers' prior knowledge for teaching in an alternative certification program. *Journal of Research in Science Teaching*, *46* (4), 357-383. https://doi.org/10.1002/tea.20283

Gess-Newsome, J., Taylor, J. A., Carlson, J., Gardner, A. L., Wilson, C. D., & Stuhlsatz, M. A. (2019). Teacher pedagogical content knowledge, practice, and student achievement. *International Journal of Science Education*, *41* (7), 944-963. https://doi.org/10.1080/09500693.2016.1265158

Godino, J. D., Gonzato, M., Contreras, Á., Estepa, A., & Díaz-Batanero, C. (2016). Evaluación de conocimientos didáctico-matemáticos sobre visualización de objetos tridimensionales en futuros profesores de educación primaria [Assessing didactic-mathematical knowledge of prospective primary school teachers on visualization of three-dimensional objects]. *Journal of Research in Mathematics Education*, *5* (3), 235-262. https://doi.org/10.17583/redimat.2016.1984

Haladyna. (2004). *Developing and validating multiple-choice test items*. Routledge. https://doi.org/10.4324/9780203825945

Haladyna, T. M., & Downing, S. M. (1993). How many options is enough for a multiple-choice test item? *Educational and Psychological Measurement*, *53* (4), 999-1010. https://doi.org/10.1177/0013164493053004013

Harris, D. N., & Sass, T. R. (2011). Teacher training, teacher quality and student achievement. *Journal of public economics*, *95* (7-8), 798-812. https://doi.org/10.1016/j.jpubeco.2010.11.009

Hurtado, L. L. (2018). Relación entre los índices de dificultad y discriminación [Relationship between the difficulty and discrimination indices]. *Revista digital de investigación en docencia universitaria*, *12* (1), 273-300. http://dx.doi.org/10.19083/ridu.12.614

Kleichkmann, T., Richter, D., Kunter, M., Elsner, J., Besser, M., Krauss, S., & Baumert, J. (2013). Teachers' content knowledge and pedagogical content knowledge: The role of structural differences in teacher education. *Journal of teacher education*, *64* (1), 90-106. https://doi.org/10.1177/0022487112460398

Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33,* (1), 159-174. https://doi.org/10.2307/2529310

Mendoza, A. (2003). *Didáctica de la lengua y la literatura para educación primaria [Didactics of language and literature for primary education].* Pearson Educación.

Ministerio de Educación, Cultura y Deporte. (2012). *TEDS-M. Informe español. Estudio internacional sobre la formación inicial en matemáticas de los maestros [TEDS-M. Spanish report. International study on initial teacher training in mathematics].* https://www.educacionyfp.gob.es/dctm/inee/internacional/tedsmlinea.pdf?documentId=0901e72b8143866e

Mokkink, L. B., Terwee, C. B., Patrick, D. L., Alonso, J., Stratford, P. W., Knol, D. L., & De Vet, H. C. (2010). The COSMIN checklist for assessing the methodological quality of studies on measurement properties of health status measurement instruments: an international Delphi study. *Quality of life research*, *19*, 539-549. https://doi.org/10.1007/s11136-010-9606-8

Muedra, M.ª T. (2020). *Análisis de la competencia oral en los libros de texto de lengua española de educación primaria [Analysis of oral competence in Spanish language textbooks for primary education]* [Master Thesis]. Universitat de València.

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of educational research*, *81* (3), 376-407. https://doi.org/10.3102/0034654311413609

Pajares, M. F. (1992). Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of educational research*, *62* (3), 307-332. https://doi.org/10.3102/00346543062003307

Prado, J. (2004). *Didáctica de la lengua y la literatura para educar en el siglo XXI [Didactics of language and literature for education in the 21st century].* La Muralla.

Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin, 86* (2), 420. https://doi.org/10.1037/0033-2909.86.2.420

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard educational review*, *57* (1), 1-23. https://doi.org/10.17763/haer.57.1.j463w79r56455411

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in science education*, 48(6), 1273-1296. https://doi.org/10.1007/s11165-016-9602-2

Tattoo, M. T., Peck, R., Schwille, J., Bankov, K., Senk, S. L., Rodriguez, M., & Rowley, G. (2012). *Policy, practice, and readiness to teach primary and secondary mathematics in 17 countries: Findings from the IEA Teacher education and development study in mathematics (TEDS-M)*. IEA. https://www.iea.nl/publications/study-reports/international-reports-iea-studies/policy-practice-and-readiness-teach

Terwee, C. B., Bot, S. D., De Boer, M. R., Van der Windt, Daniëlle A.W.M., Knol, D. L., Dekker, J., & De Vet, H. C. (2007). Quality criteria were proposed for measurement properties of health status questionnaires. *Journal of Clinical Epidemiology, 60* (1), 34-42. https://doi.org/10.1016/j.jclinepi.2006.03.012

Vásquez, C., & Alsina, A. (2015). Conocimiento didáctico-matemático del profesorado de educación primaria sobre probabilidad: diseño, construcción y validación de un instrumento de evaluación [Primary school teachers' didactic-mathematical knowledge when teaching probability: development and validation of an evaluation instrument]. *Bolema: Boletim de Educação Matemática*, *29* (52), 681-703. https://doi.org/10.1590/1980-4415v29n52a13

Vaz, S., Falkmer, T., Passmore, A. E., Parsons, R., & Andreou, P. (2013). The case for using the repeatability coefficient when calculating test-retest reliability. *PloS One*, *8* (9), e73990. https://doi.org/10.1371/journal.pone.0073990

Verdugo, J. J., Solaz, J. J., & Sanjosé, V. (2019). Evaluación del conocimiento científico en maestros en formación inicial: el caso de la Comunidad Valenciana [Assessment of pre-service teachers' science knowledge: the case of Valencian Community in Spain]. *Revista de Educación,* (383), 133-162. https://doi.org/10.4438/1988-592X-RE-2019-383-404

Washburn, E. K., Binks-Cantrell, E. S., Joshi, R. M., Martin-Chang, S., & Arrow, A. (2016). Preservice teacher knowledge of basic language constructs in Canada, England, New Zealand, and the USA. *Annals of dyslexia*, *66*, 7-26. https://doi.org/10.1007/s11881-015-0115-x

Authors' biographies

María Teresa Muedra-Pedris. Student on the Specific Didactics Doctoral Programme at the Universidad de Valencia. She is a member, along with the other authors, of the «Pedagogical content knowledge: foundations of teachers' didactic analysis and action» research group (CDC-GIUV2016-280).

https://orcid.org/0000-0002-0592-4857

Manuel Monfort-Pañego. Associate Professor in the Department of Physical, Artistic, and Music Education Teaching of the Universidad de Valencia. Doctor of Physical Education from the Universidad de Valencia. His research interests focus on primary-school teacher training, principally the development and validation of measurement instruments to assess students' knowledge and habits in relation to physical education. He is a member, along with the other authors, of the «Pedagogical content knowledge: foundations of teachers' didactic analysis and action» research group (CDC-GIUV2016-280).

https://orcid.org/0000-0002-3181-2170

Ángela Gómez-López. Associate Professor in the Department of Language and Literature Teaching of the Universidad de Valencia. Doctor of Specific Didactics from the Universidad de Valencia. Her research interests focus on primary-school teacher training: learning and teaching of foreign languages, reading comprehension and control of comprehension (metacognition) in L2 and didactic analysis of school content in first and second languages. She is a member, along with the other authors, of the «Ped-

agogical content knowledge: foundations of teachers' didactic analysis and action» research group (CDC-GIUV2016-280).

https://orcid.org/0000-0001-7527-5007

Eva Morón-Olivares. Associate Professor in the Department of Language and Literature Teaching of the Universidad de Valencia. Doctor of Hispanic Philology from the Universidad de Granada. Her research interests centre on training primary-school teachers, especially for teaching literature and the didactic analysis of school content in first and second languages. She is a member, along with the other authors, of the «Pedagogical content knowledge: foundations of teachers' didactic analysis and action» research group (CDC-GIUV2016-280).

https://orcid.org/0000-0003-2180-2857

Emotional management in teachers, an analysis from experience

El manejo emocional en maestros, un análisis desde la experiencia

MEd. Leidy-Tatiana PORRAS-CRUZ. Lecturer at the Universidad Pedagógica y Tecnológica de Colombia; Teacher at the Institución Educativa Técnica Pedro José Sarmiento (*leidytatiana.porras@uptc.edu.co*).

Rafael-Enrique BUITRAGO-BONILLA, PhD. Associate Professor and Director of the Graduate School of the Faculty of Education Sciences. Universidad Pedagógica y Tecnológica de Colombia (*rafael.buitrago@uptc.edu.co*).

Abstract:

This research article analyses the emotional management of 46 teachers in the department of Boyacá (Colombia) according to their level of professional teaching experience, from the theoretical perspective of Mayer and Salovey's emotional skills. It uses a descriptive-comparative process with different perspectives across three stages: quantitative, qualitative and mixed. It also utilizes the MSCEIT emotional intelligence questionnaire, a semi-structured interview, and an observational analysis. The results show competent development of teachers' emotional skills, but with statistically significant differences in emotional management by experience. The teachers also mention in their narratives that the emotional management that occurs in school interactions and in the educational process has two facets: difficulties and positive emotional management. Similarly, the gestures that are part of non-verbal emotional communication that supports this skill are established. Therefore, it is concluded that emotional management as a skill decreases as experience increases, given that emotional experiences in the classroom generate stress, emotional exhaustion, and even leaving the profession.

Keywords: teacher, school, experience, pedagogy, emotional intelligence, emotional management, emotional development, teaching, knowledge, skill, training.

Date of receipt of the original: 2023-10-24.
Date of approval: 2023-12-26.
Please cite this article as follows: Porras-Cruz, L.-T., & Buitrago-Bonilla, R.-E. (2024). Emotional management in teachers, an analysis from experience [El manejo emocional en maestros, un análisis desde la experiencia]. *Revista Española de Pedagogía, 82* (288), 291-309. https://doi.org/10.22550/2174-0909.4043

Resumen:

Este artículo de investigación analiza el manejo emocional según la experiencia profesional docente de 46 maestros del departamento de Boyacá (Colombia), desde la perspectiva teórica de las habilidades emocionales de Mayer y Salovey. Para ello, se ha utilizado un proceso descriptivo-comparativo que integra distintas perspectivas en tres momentos: cuantitativo, cualitativo y mixto. También se ha hecho uso del cuestionario de inteligencia emocional MSCEIT, una entrevista semiestructurada y un análisis observacional. Los resultados demuestran que existe un desarrollo competente de las habilidades emocionales de los maestros, pero se encuentran diferencias estadísticamente significativas con respecto al manejo emocional en función de la experiencia. Además, los participantes mencionan en sus narrativas que el manejo emocional que ocurre en las interacciones escolares y en el proceso educativo tiene dos facetas: las dificultades y el manejo emocional positivo. De igual manera, se establecen los gestos que intervienen en la comunicación emocional no verbal que sustenta esta habilidad. De todo ello, se concluye que, con el aumento de la experiencia, disminuye la habilidad para el manejo emocional, dado que las experiencias emocionales en las aulas generan estrés, agotamiento emocional e, incluso, abandono de la profesión.

Palabras clave: maestro, escuela, experiencia, pedagogía, inteligencia emocional, manejo emocional, desarrollo emocional, enseñanza, saber, habilidad, formación.

1. Perspectives on emotional intelligence and emotional skills in school

Interest in understanding teachers' emotional skills and their influence on the attitudes, teaching, professional identity and learning has grown in the educational context (Aragundi & Coronel, 2023; Saunders, 2013). In the case of Colombia, while there has been an increase in the number of research works considering socio-emotional skills, including those of teachers, the number of studies is still small (Buitrago, 2012). For its part, Colombia's government has put in place a number of actions intended to contribute to the knowledge and handling of socio-emotional skills in the classroom, such as a digital platform created by the Intersectoral Commission for Integral Attention to Early Childhood (CIPI) and the implementation of initiatives to address citizenship competences. Nonetheless, the actions by the government maintain the bias of the international economic control bodies (Herrera & Buitrago, 2019).

Emotional intelligence (EI) is the ability to reflect on emotions and use emotional knowledge to improve and direct one's thought with the aim of solving problems and adapting to one's environment, including four skills: (a) perceiving, evaluating, and expressing emotions; (b) generating feelings to facilitate thinking; (c) understanding emotions; and (d) regulating emotions, as well as strengthening teams and human relations (Mayer et al., 2004).

EI is related to health, subjective well-being, academic performance, and job performance (Castro-Paniagua et al., 2023). Consequently, emotional skills and EI facilitate pedagogical and educational processes, as well as relating to students, contributing to the improvement of teachers' well-being (Kotsou et al., 2019). Following this perspective, classrooms become locations where sensitivity, expression, and communication between teachers and students permeate attention and EI is associated positively with the creation of an emotional and supportive atmosphere (Kobai & Murakami, 2021; Olivares-Fong et al., 2021). In this way, teachers through their leadership shape the classroom atmosphere with gestures and bodily expression, through the hybridisation of pedagogical and academic components that generate empathy, understanding of teaching, and epistemological positions in their teaching practice (Salavera et al., 2020; Schoeps et al., 2019).

In this sense, the emotional experiences that occur in teachers' professional, social, personal, and environmental settings influence their mental state, self-regulation, and responses to stimuli. Therefore, emotional management is fundamental in teaching practice and is conceived of as the capacity to manage the intensity and duration of emotions, becoming a fundamental skill that generates resilience and flexibility in the face of the experiences, many of them adverse, that occur in teaching, and allowing personal and academic success (Gross, 1998). From a neurobiological perspective, this skill activates the amygdala and the frontal lobes, specifically the prefrontal cortex, to contribute to processes of recognition of emotional memory (Goldsmith & Davidson, 2004).

In view of the above, EI is of vital importance for teachers as it enables them to reduce negative emotions and to influence their pedagogical practice and empathetic communication. It also entails an adaptive response that allows a state of emotional equilibrium without repressing emotions and triggering health problems (Darder et al., 2012). However, a lack of emotional regulation skills has been one of the principal reasons for which teachers display burnout and stress and leave the profession (Akın et al., 2014). The truth is that this is the most complex and difficult to achieve of the EI skills as it includes the disposition to reflect on positive and negative emotions and use them assertively (Albrecht & Marty, 2020).

As a consequence, the main aim of this research is to analyse the emotional management skills of pre-service and in-service teachers in the department of Boyacá (Colombia), from their teaching practice, to boost pedagogical reflection and contribute new findings to the field of the study of emotions and EI, in teachers and in school settings.

2. Emotional management, a pedagogical challenge

As the French educationalist Philippe Meirieu has shown throughout his work, pedagogy encompasses education, learning, teaching, and the school. Therefore,

pedagogy is the relationship between emotions and thought based on the experiences generated relating to knowledge, educational practices, and feelings. Consequently, pedagogy allows people to grow and gives them the opportunity to shape their liberty and happiness.

That said, teaching is a highly emotive and stressful job, and it is very demanding because of the wide-ranging roles that teachers perform and the learning ecosystem. As a result, teachers have a heavy workload and are continuously pressured by time, student number, limited resources, excess workload, negative working environments, the multiple requirements of management, targets and indicators, a lack of interest by students, and relations with colleagues, resulting in stress and burnout with a negative effect on self-esteem, emotional intelligence, and resilience (Koschmieder & Neubauer, 2021; Lavy & Eshet, 2018; Pluskota & Zdziarski, 2022).

According to research by Fathi and Derakhshan (2019), the prediction of the level of stress in relation to self-efficacy and emotional regulation trends is 14.2%, making it one of the largest risks that affect the health and well-being of teachers (Hernández-Amorós & Urrea-Solano, 2017). As a result, Heydarnejad et al. (2017) affirm that teachers must have a high capacity to regulate their emotional states, particularly in school contexts, to promote positive nuances in the dynamic of teaching and learning, developing their emotional skills and those of their students, which respond to professional, personal, pedagogical, and emotional challenges (Mora et al., 2022).

As a consequence, emotional management is not only part of educational processes, but it also affects pedagogical perspectives and is also a tool for protecting against burnout, tension, stress, anxiety, and anguish (Benevene et al., 2020; D'Adamo & Lozada, 2019). For this reason, it is a pedagogical challenge that requires the creation of a system of emotional regulation with the aim of teachers managing their emotions and making use of their emotional skills through strategies that permit self-consciousness and the management of human relations through cooperation (Ellison & Mays-Woods, 2019; Pincay-Aguilar et al., 2018), links, thought, knowledge, and the school.

3. Method

3.1. Design

This study comprised a non-experimental design with a descriptive-comparative method based on a mixed focus (Guevara et al., 2020). This starts from a quantitative perspective with analysis of the different variables of the Spanish version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). It then adopted a qualitative perspective (Álvarez-Gayou, 2003), with the use of a semi-structured interview. Finally, an ad hoc instrument (field work) was used, which is of particular value in the observational methodology for analysing participants' emotional non-verbal communication; consequently, this strategy is explanatory sequential

(Creamer & Reeping, 2020; Creswell & Garrett, 2008).

Using the observational methodology, the situation was described objectively on the basis of obtaining valid data and relating them to the proposed objectives, integrating a procedural criterion aimed at direct, visual, digital, and auditory collection of data about the facts and, a substantive criterion that allowed the generation of responses to various aims, integrating the qualitative and quantitative aspects (Anguera, 2020).

3.2. Sample

Non-probabilistic convenience sampling was used, giving a sample of 46 teachers from the department of Boyacá (Colombia), comprising 37 women and 9 men aged between 18 and 67 years with between 1 and 30 years of teaching experience. This was accepted as the transversal axis of emotional management in teachers and was conceptualised through knowledge and the sense of experience in educational practice (Ortega, 2021). Accordingly, the following ranges of teaching experience were established: pre-service experience; initial experience (from 1 to 5 years), searching experience (from 6 to 10 years), propositive experience (from 11 to 20 years), and reflective experience (with 21 or more years). Eight teachers with the highest and lowest emotional-intelligence level scores in the first phase were selected for the second and third phases.

3.3. Tools

The three tools used in the study were: MSCEIT version 2.0, which evaluates EI from four specific skills: (1) perception of emotions, (2) use of emotions, (3) understanding emotions, and (4) managing emotions (Mayer et al., 2004). MSCEIT also proposes five levels ranging from *needs improvement* to *expert*. Regarding its reliability, a Cronbach's alpha coefficient of .89 was achieved in this study.

Secondly, an interview protocol based on the emotional skills category and the emotional management subcategory was used. The credibility of the protocol was based on an exhaustive theoretical review to establish the units of analysis and reduce substantiation and analysis biases. The expert judgement technique was also used, with the participation of 8 researchers from the field of education, six Colombians and two Spaniards. In addition, to ensure impartiality in the analysis, all data were treated with the same relevance. Finally, achieving an appropriation of the experiences provided by the teachers was emphasised, to achieve an adequate relationship with reality. The dependence centred on the quality of the data based on the implementation of principles of caution and coherence. Cross-checking and an external audit were also used.

Finally, the field work format was based on non-verbal emotional communication from the emotional kinesia category. Colour coding was also carried out, taking into account the classification of basic emotions proposed by Ekman (2017), establishing the predominant emotion in the responses to the 21 interview questions, and taking into account that many be haviours were simultaneous.

3.4. Procedure

3.4.1. Data collection

When carrying out this research, we had the backing of the Universidad de Boyacá and of the Institución Educativa Técnica Francisco José de Caldas in the municipality of Socotá (Boyacá), institutions linked to the research. The participating teachers signed the applicable informed consent forms, voluntarily agreeing to participate in the study. The data were collected in two different moments. First, the MSCEIT was administered on the Google Meet platform. After this, interviews were carried out with each participant and were recorded for subsequent analysis. It is important to note that the teachers who participated in the second and third phase were identified on the basis of the quantitative analyses.

3.4.2. Data analysis

The MSCEIT scores for the participating teachers were calculated using the TEA Corrige platform. After this, the quantitative analysis used the SPSS for Windows (version 26.0) computer program, making use of descriptive statistics, frequency analysis, and analysis of variance. The qualitative data were analysed using the Atlas Ti for Windows (version 7) computer program in three levels, in accordance with the approaches of Corbin and Strauss (2002): open, axial, and selective coding. Finally, we used descriptive statistics and frequency analysis for the observational analysis.

4. Results

The results of the MSCEIT test, especially for the emotional management in relation to experience variable, show a reduction in this skill as experience of teaching practice increased (Table 1 and Figure 1).

The analysis of variance by experience (Table 2) showed significant differences in emotional management ($F_{(1.45)} = 5.08$, $p < .01$, $\text{eta}^2 = .332$).

The Bonferroni test showed that initial experience displayed differences with pre-service experience ($t = 41.82$, $p < .01$), propositive experience ($t = 40.2$, $p < .01$), and reflective experience ($t = 42.33$, $p < .01$).

TABLE 1. Emotional management in relation to experience.

Emotional skill	Experience	Mean	Standard dev.
Emotional management	pre-service experience	89.17	10.07
	Initial experience	131	.
	Searching experience	102.75	9.74
	Propositive experience	90.78	10.78
	Reflective experience	88.67	11.86

FIGURE 1. Emotional management and experience.

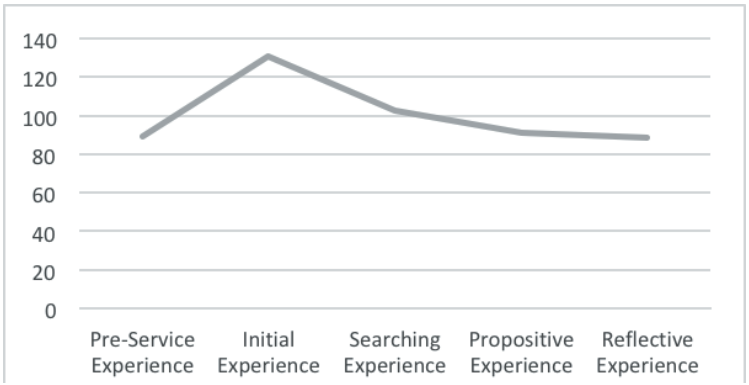


TABLE 2. Analysis of variance of emotional management by experience.

Emotional skill	*F*	*p*	*eta*^{2}
Emotional management	5.08	.002**	0.332

**p <.01

Furthermore, Table 3 presents the frequency analysis of emotional management by experience and the respective chi-squared test. The levels of development of emotional management are shown here, with a competent level of emotional management being found in teachers.

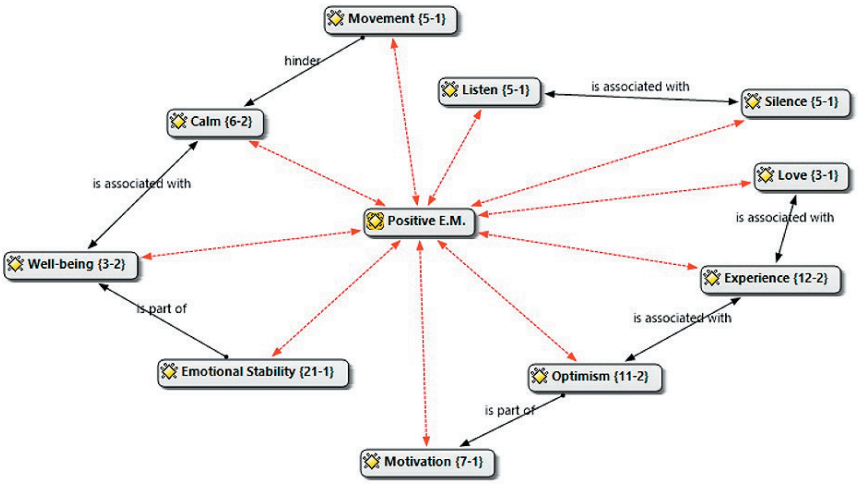
Figure 2 shows teachers' perspectives of positive emotional management derived from analysis of their comments in the interview, which in this case referred to the personal processes that they experienced and which facilitated their perception and use of emotions.

TABLE 3. Frequencies of emotional management and chi-squared test by experience.

Experience	**Needs improvement**	**Aspect to develop**	**Competent**	**Highly competent**	**Expert**	**Chi**^{2}
Pre-service experience	1 4.30%	10 43.50%	11 47.80%	1 4.30%	0 0.00%	53.17***
Initial experience	0 0.00%	0 0.00%	0 0.00%	0 0.00%	1 100.00%	
Searching experience	0 0.00%	0 0.00%	3 75.00%	1 25.00%	0 0.00%	
Propositive experience	0 0.00%	4 44.40%	4 44.40%	1 11.10%	0 0.00%	
Reflective experience	1	3	5	0	0	

***p <.001

FIGURE 2. Positive emotional management.



In this dimension, teachers emphasise strategies that permit positive emotional management, emphasising listening: "When they are very happy, I let them express themselves and speak so they can tell their classmates what makes them happy, and you listen to the things they like" (P4). Also, silence: "I think that it is the best friend you can have as a teacher, so that with this silence you can think very well about what you should do" (P2). Furthermore, motivation: "When they have low spirits like that, you try to reanimate them, take them into the yard, play a game with them, or you talk to them to see what's happening with them" (P6). Therefore, one "important aspect is that, to have good learning, this has to go from the motivation we have as teachers and we transmit to the students, for there to be a good teaching and learning process, we all need to be motivated" (P1).

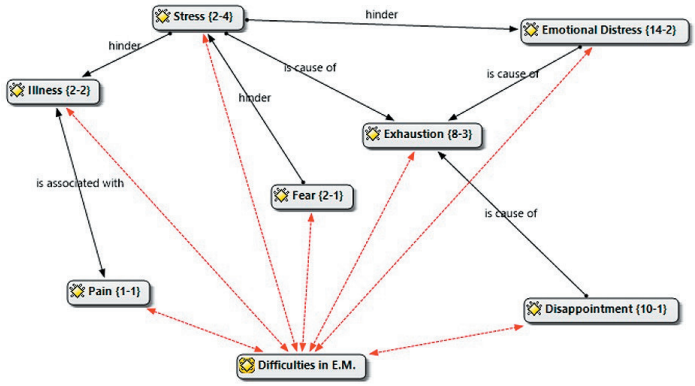
In the same direction, they highlight emotional stability: "You need a cool head" (P2). Therefore, "I try to make them feel good, I hope that it is useful for their development, that if we are sad we can change the situation, that if we are happy we can stay that way, the same when there are conflicts with classmates" (P4). In this regard, another participant notes: "there is a moment when you breathe because you are getting in a bad mood, you repeat yourself three or four times and they don't pay attention and they ask the same question again, then you have to control yourself and be okay" (P5).

Similarly, they mentioned well-being: "The most important thing is to work from ourselves, because if we are good and happy, we will be able to give the best to the students" (P1). Likewise, calmness: "Calm myself down a bit and then when you feel alright and that feeling is a bit more under control, do the activities, wait a bit, calm myself down" (P2); "When I am happy, calm, I can concentrate more on doing what I like" (P5). There is also movement: "I like to make them dynamic, play games with them in the yard or at breaktime do a game,

anything" (P6). "Now what I do is going out for a walk, when I feel that I can't give any more, when I was with them, dancing… but sometimes I did do it thinking about myself, in how I felt, that I needed it" (P1).

Regarding difficulties with emotional management, the teachers specify that there are situations that they experience that impede appropriate management, as Figure 3 shows.

FIGURA 3. Dificultades de manejo emocional.



Emotional distress is dominant in what teachers have mentioned. In this regard, they point out that "so much complaining, sometimes you feel like your head is going to burst" (P1) and that "sometimes their bad mood also puts you in a bad mood and that time is already wasted… you don't know what to do" (P3). With regards to stress (which is often associated with excess workload),

> the management say that you have to do this, send the guides, then this causes you anxiety, when they oblige you to submit them on certain days, the stress is enormous. […] Really preparing guides, sending them out, and marking them involves a lot of stress, also, there are parents who have no respect and call you 9 or 10 times, or at 11 at night, Saturdays, Sundays, then they drive you to the edge, because they do not understand that you are a human being and that you also need to rest. (P6)

Burnout was also identified, because "you feel bad, because you give more than 100% so that they learn and if it does not happen, then I feel like that" (P6). "The truth is that, it is an exhausting job, our workload has tripled, and I think that especially women, we are housewives, teachers and mothers, and so it is a really strenuous job, 24 hours in a day aren't enough" (P2).

Finally, disenchantment: "The thing is, it is so difficult, as you feel very bad, you get frustrated, as though you are doing things and there are no results" (P4). "Ohh, that's when you feel like you've wasted your time" (P7). "I think, I'm not sure, I feel disenchantment, a terrible sadness because you dream of many things, you long for lots of things, with the work you are doing, then when it is

not achieved, what you most feel is sadness" (P2).

Complementing this, Table 4, again from a quantitative perspective, shows the frequency analysis of basic emotions by experience, where a larger percentage is found for happiness and a lower one for surprise.

Furthermore, the frequencies of the different types of gestures by experience are proposed (see Table 5).

TABLE 4. Frequency analysis of basic emotions by experience.

Experience	Basic emotions					Chi²
	Happiness	Sadness	Anger	Fear	Surprise	
Initial experience	57	19	6	1	1	3.694
	67.9%	22.6%	7.1%	1.2%	1.2%	
Reflective experience	57	18	3	5	1	
	67.9%	21.4%	3.6%	6.0%	1.2%	

TABLE 5. Frequencies and chi-squared test for gestures by experience.

Gestures	Gender	Unexpressive	Neutral	Very expressive	Chi²
Regulatory	Initial experience	1	55	28	.110
		1.2%	65.5%	33.3%	
	Reflective experience	1	57	26	
		1.2%	67.9%	31.0%	
Illustrative	Initial experience	0	48	36	5.599
		0.0%	57.1%	42.9%	
	Reflective experience	3	56	25	
		3.6%	66.7%	29.8%	
Adaptive	Initial experience	15	57	12	1.650
		17.9%	67.9%	14.3%	
	Reflective experience	14	63	7	
		16.7%	75.0%	8.3%	
Signs of affection	Initial experience	18	48	18	.328
		21.4%	57.1%	21.4%	
	Reflective experience	18	45	21	
		21.4%	53.6%	25.0%	

To conclude, the observational analysis of participants' non-verbal emotional expressions during the interview showed, in 168 records, that the most frequently expressed emotion was happiness, in 67.90% of them, followed by sadness in 22% while the one with the lowest presence was surprise in 1.20%. Most of the expressions had a medium intensity (low, medium, strong) and a normal articulation (tense, normal, fluid). Finally, when considering the different types of gesture when speaking of emotional management, the ones displayed most often were found to be touching the head as an adaptive gesture, moving the body with the rhythm of verbal language as a regulatory gesture, and smiling as a sign of affection gesture (see Figures 4, 5, and 6).

FIGURE 4. Adaptive gestures.

FIGURE 5. Regulatory gestures.

FIGURE 6. Signs of affection gestures.

5. Discussion and conclusions

This study identifies important elements relating to teachers' emotional skills from analysis of emotional management, which shows that teachers with initial experience have high performance, compared with other levels of experience. In this sense, as Zabalza and Zabalza (2012) note, in the early years of teaching, the task is hard and requires absolute dedication to establish oneself in the profession and not increase the stress of responsibility, aspects that lead teachers to develop their emotional skills quickly, given that all of the emotional management strategies come into play, including those that are interwoven with their training and sensitivity.

Emotional management is also found to have an impact on well-being, job satisfaction, and teacher efficacy, and so experience contributes to the construction of professional identity, becoming a challenge insofar as it predicts their participation and results (González-Calvo & Arias-Carballal, 2017; Nichols et al., 2017).

The results showed that the lowest emotional management scores were obtained by teachers with reflective experience and were associated with the idea of leaving the profession. This indicates that the teachers with lowest emotional skills often leave teaching, something corroborated by data from the research by Extremera et al. (2020) with teachers from Spain, although other studies mention that there are individual differences (Klassen & Chiu, 2011).

This is because of the underlying challenges of emotional management in teaching such as: stress, illness, tiredness, fear, pain, disenchantment, and emotional distress. Because of this, Fathi and Derakhshan (2019) suggest that these aspects explain emotional burnout, and so emotional management will have an impact on teachers' work and help prevent these difficulties by increasing positive emotions and fostering the resolution of educational challenges. From a psychopedagogical perspective then strategies must be put in place in schools to develop emotional knowledge and skills, taking into account the fact that a lack of them affects learning, and so they must be present in teacher training to achieve an adequate, enriching, and gratifying professional performance (Buitrago-Bonilla & Cárdenas-Soler, 2017).

Teachers with propositive experience described greater difficulty concentrating, reporting loss of energy and lack of sleep. A quarter of them displayed depressive symptoms (Casacchia et al., 2021) because the work-related pressure that teachers face is a source of stress owing to their limited resources for dealing with it (Hopman et al., 2018). The fact is that the significant differences became evident between initial experience on the one hand and formative, propositive, and reflexive on the other in relation to emotional management. This suggests a positive relationship between emotional intelligence and professional experience.

From an interpretative emphasis, the teachers' accounts stress the emotional regulation strategies they use, which centre on responses, an aspect confirmed by the research of Jimeno and López (2019), aspects closer to emotional coping (Augusto-Landa et al., 2011). In addition to this, there are intervention programmes with favourable outcomes that include, for example, mindfulness as a strategy to facilitate emotional regulation in teachers, as they acquire awareness of their emotions and of the impact of them on their teaching practice.

However, teachers who have searching experience turned out to have more critical perceptions of pedagogical and emotional processes (Birol et al., 2009). These perceptions were related to higher emotional intelligence scores, which were also characterised by mentioning better human relations, being happier and having greater personal and workplace well-being, something confirmed by the meta-analysis by Sánchez-Álvarez et al. (2016). EI is positively related to professional resources as they have more strategies to modulate unwanted emotions and reactions (Miao et al., 2017).

That said, factors that hinder the lack of classroom management and facilitate negative relations that generate stress and fatigue in teachers are also mentioned. Because of this, attention must be paid to the body of the educator, in particular facial emotional expressions, which provide information about the teacher's identity, emotional state and behaviour (Todorov et al., 2015), and

significantly affect the quality of teaching practice and the relationships established in the classroom.

In relation to positive emotional management, its benefits stand out in relation to personal, physical, psychological, and social life and it is conceived of as an important challenge that involves many benefits (Jennings et al., 2017). In this sense, strategies such as distraction make it possible to disconnect negative emotions, functioning as a filter that blocks information and modulates responses to intense stimuli (Sheppes et al., 2014). In the same way, regulatory gestures and signs of affection, communicate security, affection, and closeness to the other (Porras, et al., 2020). With regard to the self-concepts of the teacher, three emotions stand out: enjoyment, anxiety, and anger (Frenzel et al., 2009).

5.1. Pedagogical-emotional implications

The classroom is an emotionally supportive setting for teachers and students (Braun et al., 2020; Rinner et al., 2022). However, as their teaching experience increases, teachers' emotional management falls because school dynamics permeate pedagogical and emotional processes in classrooms and the emotional leadership role that the teacher fulfils and the emotional contagion in their students affect their performance (Donker et al., 2021; Lazarides et al., 2018). It is vital to recognise that each teacher's emotional discourse reveals the concept of pedagogy and makes it possible to understand and involve their students in the narrative of emotional experiences (Garner et al., 2019), something that fosters improvements in socio-emotional development and the creation of an emotionally supportive environment (Hoffmann et al., 2020; Vandenbroucke et al., 2018). Longitudinal studies relate these to teachers' enthusiasm and students' enjoyment of the educational process (Frenzel et al., 2018).

Therefore, school provides experiences and possibilities for emotional development and enables teachers to consider in greater depth how these relate to thinking (Buitrago, 2022), an essential aspect of pedagogy since, as Pulido (2018) notes, pedagogy refers to thinking and to production. Also, to contribute to a resilient society, to teachers' well-being, and to human development, curricula must be permeated with theories and practices referring to the development of socio-emotional knowledge and skills, as teaching and learning are both, to a great extent, based on emotional experiences, as are well-being and teacher performance (Burić & Kim, 2020).

In addition to this, emotions and the skill of emotional regulation in the virtual contexts that resulted from the Covid-19 pandemic have limited emotional expression, causing stress, boredom, and disengagement (Zhao, 2021) that result in dejection, discouragement, and finally in teachers leaving the profession, which in the first five years of teaching reaches a level of almost 50% (Gray et al., 2019). As a result, the management of negative and positive emotions results in strategies

for emotional regulation and for greater well-being (Lavy & Eshet, 2018) and, in relation to students, dialogue on emotions is a strategy for emotional co-regulation in the teacher–student relationship, establishing a safe base in the attachment relationship (Spilt et al., 2021). Finally, there is a need for emotional and pedagogical training that responds to the everyday challenges of teaching and the interpersonal relations created in the classroom.

6. Limitations

The main limitation of this study is its sample, which was shaped by the conditions of confinement resulting from the Covid-19 pandemic, which prevented face-to-face work and the use of a larger sample.

Funding

This research in the emotions and education line by the Cacaenta research group was funded by the Vice-Rectorate for Research and Extension of the Universidad Pedagógica y Tecnológica de Colombia.

References

Akın, U., Aydın, İ., Erdoğan, Ç., & Demirkasımoğlu, N. (2014). Emotional labor and burnout among Turkish primary school teachers. *The Australian Educational Researcher*, *41* (2), 155-169. https://doi.org/10.1007/s13384-013-0138-4

Albrecht, S. L., & Marty, A. (2020). Personality, self-efficacy and job resources and their associations with employee engagement, affective commitment and turnover intentions. *The International Journal of Human Resource Management*, *31* (5), 657-681. https://doi.org/10.1080/09585192.2017.1362660

Álvarez-Gayou, J. L. (2003). *Cómo hacer investigación cualitativa. Fundamentos y metodología [How to do qualitative research. Fundamentals and methodology].* Paidós

Anguera, M. T., Blanco-Villaseñor, A., Losada, J. L., & Sánchez-Algarra, P. (2020). Integración de elementos cualitativos y cuantitativos en metodología observacional [Integration of qualitative and quantitative elements in observational methodology]. *Ámbitos. Revista Internacional de Comunicación,* (49), 49-70. https://doi.org/10.12795/Ambitos.2020.i49.04

Aragundi, T. J., & Coronel, M. A. (2023). Socio-emotional skills of the teacher of the educational unit 3 de Mayo during the Covid-19 pandemic. *Estudios del Desarrollo Social-Cuba y America Latina*, *11* (3), 35-48.

Augusto-Landa, J. M., López-Zafra, E., & Pulido-Martos, M. (2011). Inteligencia emocional percibida y estrategias de afrontamiento al estrés en profesores de enseñanza primaria: propuesta de un modelo explicativo con ecuaciones estructurales (SEM) [Perceived emotional intelligence and stress coping strategies in primary school teachers: Proposal for an explanatory model with structural equation modelling (SEM)]. *Revista de psicología social*, *26* (3), 413-425. https://doi.org/10.1174/021347411797361310

Benevene, P., De Stasio, S., & Fiorilli, C. (2020). Well-being of school teachers in their work environment. *Frontiers in Psychology*, *11*, e1239. https://doi.org/10.3389/fpsyg.2020.01239

Birol, C., Atamtürk, H., Silman, F., Atamtürk, A. N., & Şensoy, Ş. (2009). A comparative analysis of teachers' perceptions of emotional intelligence and performance management in the secondary schools of the TRNC. *Procedia-Social and Behavioral Sciences*, *1* (1), 2600-2605. https://doi.org/10.1016/j.sbspro.2009.01.459

Braun, S. S., Schonert-Reichl, K. A., & Roeser, R. W. (2020). Effects of teachers' emotion regulation, burnout, and life satisfaction on student well-being. *Revista de psicología del desarrollo aplicada*, *69*, 101151. https://doi.org/10.1016/j.appdev.2020.101151

Buitrago, R. E. (2012). *Contexto escolar e inteligencia emocional en instituciones educativas públicas del ámbito rural y urbano del departamento de Boyacá (Colombia) [School context and emotional intelligence in public educational institutions in rural and urban areas of the department of Boyacá (Colombia)]* [Doctoral Dissertation]. Universidad de Granada. http://hdl.handle.net/10481/23259

Buitrago, R. E. (2022). Intranquilidad por algunos aspectos de la educación en Colombia [Unrest over some aspects of education in Colombia] [Editorial]. *Praxis & Saber*, *13* (35), e16212. https://doi.org/10.19053/22160159.v13.n35.2022.16212

Buitrago-Bonilla, R. E., & Cárdenas-Soler, R. N. (2017). Emociones e identidad profesional docente: relaciones e incidencia [Emotions and teachers' professional identity: Relations and incidence]. *Praxis & Saber*, *8* (17), 225-247. https://doi.org/10.19053/22160159.v8.n17.2018.7208

Burić, I., & Kim, L. E. (2020). Teacher self-efficacy, instructional quality, and student motivational beliefs: An analysis using multilevel structural equation modeling.. *Learning and Instruction*, *66*, e101302. https://doi.org/10.1016/j.learninstruc.2019.101302

Casacchia, M., Cifone, M. G., Giusti, L., Fabiani, L., Gatto, R., Lancia, L., Cinque, B., Petrucci, C., Giannoni, M., Ippoliti, R., Frattaroli, A., Macchiarelli, G., & Roncone, R. (2021). Distance education during Covid 19: An Italian survey on the university teachers' perspectives and their emotional conditions. *BMC medical education*, *21* (1), 1-17. https://doi.org/10.1186/s12909-021-02780-y

Castro-Paniagua, W., Chávez-Epiquén, A., & Arévalo-Quijano, J. C. (2023). Inteligencia emocional: asociación con las emociones negativas y desempeño laboral en personal docente universitario [Emotional intelligence: Association with negative emotions and job performance in university teachers]. *Revista Electrónica Educare*, *27* (1), 1-17. https://doi.org/10.15359/ree.27-1.14391

Corbin, J., & Strauss, A. (2002). *Bases de la investigación cualitativa, técnicas y procedimientos para desarrollar la teoría fundamentada*. Editorial Universidad de Antioquia.

Creamer, E. G., & Reeping, D. (2020). Advancing mixed methods in psychological research. *Methods in Psychology*, *3*, 100035. https://doi.org/10.1016/j.metip.2020.100035

Creswell, J. W., & Garrett, A. L. (2008). The *movement* of mixed methods research and the role of educators. *South African Journal of Education*, *28* (3), 321-333. https://doi.org/10.15700/saje.v28n3a176

D'Adamo, P., & Lozada, M. (2019). Una intervención centrada en prácticas de atención plena *(mindfulness)* promueve la regulación emocional y la reducción del estrés en profesores [An intervention based in mindfulness practices promotes emotion regulation and stress reduction in teachers]. *Ansiedad y Estrés*, *25* (2), 66-71. https://doi.org/10.1016/j.anyes.2019.10.002

Darder, P., de Pagès, E., Franco, J. J., Gay, E.-I., Gimeno, X., González, M. P., Hernández, M., López, N., Morón, M., Notó, F., Oliver, D., Ramírez, A., Reñé, A., Romero, E., Santos, M. Á., Trabal, A., Valls, C., Belandia, R., Canelles, J., & Carpena, A. (2012). *La salud física y emocional del profesorado. Reflexiones y recursos [The physical and emotional health of teachers. Reflections and resources]*. Graó.

Donker, M. H., van Vemde, L., Hessen, DJ, van Gog, T., & Mainhard, T. (2021). Observational, student, and teacher perspectives on interpersonal teacher behavior: Shared and unique associations with teacher and student emotions. *Aprendizaje e Instrucción*, *73*, e101414. https://doi.org/10.1016/j.learninstruc.2020.101414

Ekman, P. (2017). *El rostro de las emociones [The face of emotions]*. RBA Libros.

Ellison, D., & Mays-Woods, A. (2019). In the face of adversity: four physical educator's experiences of resilience in high-poverty schools. *Physical Education and SportPedagogy*, *24* (1), 59-72. https://doi.org/10.1080/17408989.2018.1536201

Extremera, N., Mérida-López, S., & Sánchez-Álvarez, N. (2020). Inteligencia emocional: avances teóricos y aplicados tras 30 años de recorrido científico [Emotional intelligence: Theoretical and applied advances after 30 years of scientific research]. *Know and Share Psychology*, *1* (4). https://doi.org/10.25115/kasp.v1i4.4395

Fathi, J., & Derakhshan, A. (2019). Teacher self-efficacy and emotional regulation as predictors of teaching stress: An investigation of Iranian English language teachers. *Teaching English Language*, *13* (2), 117-143. https://doi.org/10.22132/tel.2019.95883

Frenzel A., Goetz T., Lüdtke O., Pekrun R., & Sutton, R. (2009). Emotional transmission in the classroom: Exploring the relationship between teacher and student enjoyment. *Journal of educational psychology*, *101* (3), 705-716.

Frenzel, A. C., Becker-Kurz, B., Pekrun, R., Goetz, T., & Lüdtke, O. (2018). Emotion transmission in the classroom revisited: A reciprocal effects model of teacher and student enjoyment. *Journal of Educational Psychology*, *110* (5), 628-639. https://doi.org/10.1037/edu0000228

Garner, P. W., Bolt, E., & Roth, A. N. (2019). Emotion-focused curricula models and expressions of and talk about emotions between teachers and young children. *Journal of Research in Childhood Education*, *33* (2), 180-193. https://doi.org/10.1080/02568543.2019.1577772

Goldsmith, H. H., & Davidson, R. J. (2004). Disambiguating the components of emotion regulation. *Child development*, *75* (2), 361-365. https://doi.org/10.1111/j.1467-8624.2004.00678.x

González-Calvo, G., & Arias-Carballal, M. (2017). A teacher's personal-emotional identity and its reflection upon the development of his professional identity. *The Qualitative Report*, *22* (6), 1693-1709. https://doi.org/10.46743/2160-3715/2017.2875

Gray, C., Wright, P., & Pascoe, R. (2019). "They made me feel like a teacher rather than a praccie": Sinking or swimming in pre-service drama education. *Asia-Pacific Journal of Teacher Education*, *47* (2), 193-207. https://doi.org/10.1080/1359866X.2018.1504279

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*, 271-299. https://doi.org/10.1037/1089-2680.2.3.271

Guevara, G. P., Verdesoto, A. E., & Castro, N. E. (2020). Metodologías de investigación educativa (descriptivas, experimentales, participativas, & de investigación-acción) [Educational research methodologies (descriptive, experimental, participatory, and action research)]. *Recimundo*, *4* (3), 163-173. https://recimundo.com/index.php/es/article/view/860

Hernández-Amorós, M. J., & Urrea-Solano, M. E. (2017). Working with emo-tions in the classroom: Future teachers' attitudes and education. *Procedia- Social and Behavioral Sciences*, *237* (2), 511–519. http://dx.doi.org/10.1016/j.sbspro.2017.02.100

Herrera, L., & Buitrago, R. E. (2019). Emociones en la educación en Colombia, algunas reflexiones [Emotions in education in Colombia, some reflections] [Editorial]. *Praxis & Saber*, *24* (10), 9-22. https://doi.org/10.19053/22160159.v10.n24.2019.10035

Heydarnejad, T., Hosseini Fatemi, A., & Ghonsooly, B. (2017). An exploration of EFL teachers' teaching styles and emotions. *Journal of Applied Linguistics and Language Research*, *4* (2), 26-46. https://www.jallr.com/index.php/JALLR/article/view/502

Hoffmann, J. D., Brackett, M. A., Bailey, C. S., & Willner, C. J. (2020). Teaching emotion regulation in schools: Translating research into practice with the RULER approach to social and emotional learning. *Emotion, 20* (1), 105-109. https://doi.org/10.1037/emo0000649

Hopman, J. A. B., Tick, N. T., Van der Ende, J., Wubbels, T., Verhulst, F. C., Maras, A., Breeman, L. D., & Van Lier, P. A. C. (2018). Special education teachers' relationships with students and self-efficacy moderate associations between classroom-level disruptive behaviors and emotional exhaustion. *Teaching and Teacher Education*, *75*, 21-30. http://dx.doi.org/10.1016/j.tate.2018.06.004

Jennings, P., Brown, J. L., Frank, J. L., Doyle, S., Oh, Y., Davis, R., Rasheed, D., DeWeese, A., De Mauro, A., Cham, H., & Greenberg, M. (2017). Impacts of the CARE for teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Educational Psychology*, *109*, 1010-1028. https://doi.org/10.1037/edu0000187

Klassen, R. M., & Chiu, M. M. (2011). The occupational commitment and intention to quit of practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology*, *36* (2), 114-129. https://doi.org/10.1016/j.cedpsych.2011.01.002

Kobai, R., & Murakami, H. (2021). Effects of interactions between facial expressions and self-focused attention on emotion. *PLoS ONE*, *16* (12), e0261666. https://doi.org/10.1371/journal.pone.0261666

Koschmieder, C., & Neubauer, A. C. (2021). Measuring emotion regulation for preservice teacher selection: A theory-driven development of a situational judgment test. *Personality and Individual Differences*, *168*, e110363. https://doi.org/10.1016/j.paid.2020.110363

Kotsou, I., Mikolajczak, M., Heeren, A., Grégoire, J., & Leys, C. (2019). Improving emotional intelligence: A systematic review of existing work and future challenges. *Emotion Review*, *11* (2), 151-165. https://doi.org/10.1177/1754073917735902

Lavy, S., & Eshet, R. (2018). Spiral effects of teachers' emotions and emotion regulation strategies: Evidence from a daily diary study. *Teaching and Teacher Education*, *73*, 151–161. http://dx.doi.org/10.1016/j.tate.2018.04.001

Lazarides, R., Gaspard, H., & Dicke, A. L. (2019). Dynamics of classroom motivation: Teacher enthusiasm and the development of math interest and teacher support. *Learning and Instruction*, *60*, 126-137. https://doi.org/10.1016/j.learninstruc.2018.01.012

Mayer, J., Salovey, P., & Caruso, D. (2004). Emotional intelligence: Theory, findings, and implications. *Psychological Science*, *9* (5), 331-339

Miao, C., Humphrey, R., & Qian, S. (2017). A meta-analysis of emotional intelligence and work attitudes. *Journal of Occupational and Organizational Psychology*, *90* (2), 177-202. https://doi.org/10.1111/joop.12167

Mora, N., Martínez-Otero Pérez, V., Santander, S., & Gaeta, M. L. (2022). Inteligencia emocional en la formación del profesorado de educación infantil y primaria [Emotional intelligence in the training of pre-school and primary education teachers]. *Perspectiva Educacional*, *61* (1), 53-77. http://dx.doi.org/10.4151/07189729-vol.61-iss.1-art.1234

Nichols, S. L., Schutz, P. A., Rodgers, K., & Bilica, K. (2017). Early career teachers' emotion and emerging teacher identities. *Teachers and Teaching*, *23* (4), 406-421. https://doi.org/10.1080/13540602.2016.1211099

Olivares-Fong, L.C., Nieto-López, G., Velázquez-Vitórica, K. I., & López-Guerrero, A. (2021). Síndrome de *burnout*. La multiplicidad de roles y su impacto en la labor docente [Burnout syndrome. Role multiplicity and their impacton teaching]. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, *24* (3), 203-219. https://revistas.um.es/reifop/article/view/525231

Ortega, P. (2021). Educación, valores y experiencia [Education, values and experience]. *Revista Boletín Redipe*, *10* (2), 28-37. https://doi.org/10.36260/rbr.v10i2.1192

Pascual, A., & Conejero, S. (2019). Regulación emocional y afrontamiento: Aproximación conceptual y estrategias [Emotional regulation and coping: Conceptual approach and strategies]. *Revista Mexicana de Psicología*, *36* (1), 74-83.

Pincay-Aguilar, I., Candelario-Suarez, G., & Castro-Guevara, J. (2018). Inteligencia emocional en el desempeño docente [Emotional intelligence in teaching performance]. *Psicología Unemi*, *2* (2), 32-40. https://doi.org/10.29076/issn.2602-8379vol2iss2.2018pp32-40p

Pluskota, M., & Zdziarski, K. (2022). Mental resilience and professional burnout among teachers. *Journal of Education, Health and Sport*, *12* (3), 249-267. https://doi.org/10.12775/JEHS.2022.12.03.021

Porras, L. T., Buitrago, R. E., & Gutiérrez, A. M. (2020). Comunicación emocional no verbal en la infancia, análisis en el aula desde la metodología observacional [Non-verbal emotional communication in childhood, classroom analysis using observational methodology]. *Know and Share Psychology*, *1* (4), 211-228. http://dx.doi.org/10.25115/kasp.v1i4.4343

Pulido, O. (2018). ¡Hay que defender la escuela! [The school must be defended!] [Editorial]. *Praxis & Saber, 9* (20), 9-14. https://doi.org/10.19053/22160159.v9.n20.2018.8426

Rinner, M. T., Haller, E., Meyer, A. H., & Gloster, A. T. (2022). Is giving receiving? The influence of autonomy on the association between prosocial behavior and well-being. *Journal of Contextual Behavioral Science*, *24*, 120-125. https://doi.org/10.1016/j.jcbs.2022.03.011

Salavera, C., Usán, P., Teruel, P., & Antoñanzas, J. L. (2020). Eudaimonic well-being in adolescents: The role of trait emotional intelligence and personality. *Sustainability*, *12* (7), e2742. https://doi.org/10.3390/su12072742

Sánchez-Álvarez, N., Extremera, N., & Fernández-Berrocal, P. (2016). The relation between emotional intelligence and subjective well-being: A meta-analytic investigation. *The Journal of Positive Psychology*, *11* (3), 276-285. https://doi.org/10.1080/17439760.2015.1058968

Saunders, R. (2013). The role of teacher emotions in change: Experiences, patterns and implications for professional development. *Journal of Educational Change*, *14* (3), 303-333. https://doi.org/10.1007/s10833-012-9195-0

Schoeps, K., Tamarit, A., de la Barrera, U., & Barrón, R. G. (2019). Effects of emotional skills training to prevent burnout syndrome in schoolteachers. *Ansiedad y Estrés*, *25* (1), 7-13. https://doi.org/10.1016/j.anyes.2019.01.002

Sheppes, G., Scheibe, S., Suri, G., Radu, P., Blechert, J., & Gross, J. J. (2014). Emotion regulation choice: A conceptual framework and supporting evidence. *Journal of Experimental Psychology General*, *143* (1), 163. https://doi.org/10.1037/a0030831

Spilt, J. L., Bosmans, G., & Verschueren, K. (2021). Teachers as co-regulators of children's emotions: A descriptive study of teacher-child emotion dialogues in special education. *Research in Developmental Disabilities*, *112*, e103894. https://doi.org/10.1016/j.ridd.2021.103894

Todorov, A., Olivola, C. Y., Dotsch, R., & Mende-Siedlecki, P. (2015). Social attributions from faces: Determinants, consequences, accuracy, and functional significance. *Annual Review of Psychology*, *66*, 519-545. https://doi.org/10.1146/annurev-psych-113011-143831

Vandenbroucke, L., Spilt, J., Verschueren, K., Piccinin, C., & Baeyens, D. (2018). The classroom as a developmental context for cognitive development: A meta-analysis on the importance of teacher–student interactions for children's executive functions. *Review of Educational Research*, *88* (1), 125-164. https://doi.org/10.3102/0034654317743200

Zabalza, M. A., & Zabalza, M. A. (2012). *Profesores y profesión docente. Entre el "ser" y el "estar" [Teachers and the teaching profession. Between "being" and "being"]*. Narcea.

Zhao, H. (2021). Positive emotion regulations among English as a foreign language teachers during COVID-19. *Frontiers in psychology*, *12*, e807541. https://doi.org/10.3389/fpsyg.2021.807541

Authors' biographies

Leidy-Tatiana Porras-Cruz. Master's in Education from the Universidad Pedagógica y Tecnológica de Colombia. Teacher in early childhood education, and lecturer at the Universidad Pedagógica y Tecnológica de Colombia.

https://orcid.org/0000-0002-5860-9842

Rafael-Enrique Buitrago-Bonilla. Doctor in Music Education: A Multidisciplinary Perspective from the Universidad de Granada. Associate professor at the

Universidad Pedagógica y Tecnológica de Colombia. Director of the Postgraduate School at the Faculty of Educational Sciences. Academic coordinator of the doctorate in Pedagogy and Didactics and coordinator of the Cacaenta research group.

https://orcid.org/0000-0001-7553-6473

Self-regulation of learning in Chilean primary school students: Validation of an instrument and differences by sex and grade

Autorregulación del aprendizaje en estudiantes chilenos de educación primaria: validación de un instrumento y diferencias por sexo y grado

Fabiola SÁEZ-DELGADO, PhD. Assistant Professor. CIEDE-UCSC Education and Development Research Centre. Universidad Católica de la Santísima Concepción, Chile (*fsaez@ucsc.cl*).

Javier MELLA-NORAMBUENA, PhD. Part-time Professor. Universidad Técnica Federico Santa María, Chile (*javier.mellan@usm.cl*).

Marcela BIZAMA, PhD. Associate Professor. CIEDE-UCSC Education and Development Research Centre. Universidad Católica de la Santísima Concepción, Chile (mbizama@ucsc.cl).

Joan GATICA. Doctoral student in Education. Universidad Católica de la Santísima Concepción, Chile (*jgatica@doctoradoedu.ucsc.cl*).

Abstract:

Self-regulated learning has been widely praised as a key competence for initiating and maintaining lifelong learning. However, despite its recognised value, the literature shows that it is still insufficiently rooted in schools and that students do not develop it automatically. The aim of this study was to validate an instrument for measuring self-regulation of learning in primary school students and to analyse differences in students' self-regulation of learning processes by sex and grade. The method was developed from a positivist paradigm and a quantitative approach. The sample consisted of 514 students from third to eighth grade of primary school in Chile. The results showed that the instrument has an acceptable structure [$\chi^2/df = 3.55$, $p < 0.001$; CFI = 0.974; TLI = 0.972; AGFI = 0.973; SRMR = 0.079; RMSEA = 0.071]. It consists of 56 items and 7 related factors, with Cronbach's alpha values over .7 and AVE index over .5 in all cases, which is acceptable. Significant differences were detected in the *self-regulation of study and learning* and *self-efficacy for disposition to study* variables, where women displayed higher levels than men. Also, in the *strategies for*

Date of receipt of the original: 2023-10-01.
Date of approval: 2023-12-26.
Please cite this article as follows: Sáez-Delgado, F., Mella-Norambuena, J., Bizama, M., & Gatica. J. (2024). Self-regulation of learning in Chilean primary school students: Validation of an instrument and differences by sex and grade [Autorregulación del aprendizaje en estudiantes chilenos de educación primaria: validación de un instrumento y diferencias por sexo y grado]. *Revista Española de Pedagogía, 82* (288), 311-333. https://doi.org/10.22550/2174-0909.4057

disposition to study and *self-efficacy for disposition to study* variables, at the seventh and fourth grade levels, with the latter having higher levels. The discussion presents the potential practical implications, possibilities for research directed at timely intervention, and the impact on the quality of school education. It is concluded that girls have better self-regulation than boys, that self-regulation levels are suboptimal, and that self-regulation does not increase during the primary school years without intentional training.

Keywords: self-regulation of learning, primary education, public schools, quantitative approach.

Resumen:

El aprendizaje autorregulado ha sido muy elogiado como competencia clave para iniciar y mantener el aprendizaje permanente. Sin embargo, a pesar de su reconocido valor, la literatura ha evidenciado que aún no está arraigado lo suficiente en las escuelas y que no se desarrolla de forma automática en el estudiantado. El objetivo de este estudio fue validar un instrumento para medir la autorregulación del aprendizaje en estudiantes de educación primaria y analizar diferencias en los procesos de autorregulación del aprendizaje en el estudiantado según el sexo y el grado. El método se desarrolló desde un paradigma positivista y un enfoque cuantitativo. La muestra estuvo compuesta por 514 estudiantes de tercero a octavo grado de educación primaria en Chile. Los resultados mostraron que el instrumento tiene una estructura aceptable [χ^2/gl = 3.55, p <0.001; CFI = 0.974; TLI = 0.972; AGFI = 0.973; SRMR = 0.079; RMSEA = 0.071], constituida por 56 ítems y 7 factores relacionados. En todos los casos, se obtuvieron valores de alfa de Cronbach sobre .7 y un índice AVE sobre .5, que es lo aceptable. Se detectaron diferencias significativas en las variables *autoevaluación del estudio y aprendizaje* y *autoeficacia para la disposición al estudio*, donde las mujeres presentaron mayor nivel que los hombres. También en las variables *estrategias de disposición al estudio* y *autoeficacia para la disposición al estudio*, en los niveles de séptimo y cuarto grado, a favor de estos últimos. La discusión presenta las posibles implicaciones prácticas, la investigación orientada a la intervención oportuna y el impacto en la calidad de la educación escolar. Se concluye que las mujeres son más autorreguladas que los hombres, que los niveles de autorregulación son subóptimos y que, si esta no se entrena de manera intencional, no aumenta durante los cursos de la educación primaria.

Palabras clave: autorregulación del aprendizaje, educación primaria, escuelas públicas, enfoque cuantitativo.

1. Introduction

1.1. The importance of self-regulation of learning in education

The new requirements relating to key competences of students in this knowledge-based society have resulted in a large amount of research into how to make learning more effective. Self-regulation of learning (SRL) is a solid research construct, given that it has been developed to meet these demands (Anthonysamy et al., 2020; Oates, 2019).

According to Winne (2005), the first article to use the SRL construct was a study published by Mlott *et al.* in 1976. This term largely emerged from a sociocognitive perspective (Hadwin & Oshige, 2011; Zimmerman, 2013). Research into SRL intensified from the mid-1980s, especially in the educational context, and it acquired great prominence in the 1990s. The importance of conceptualising SRL was based on the opportunity to comprehend human thought, behaviour, and emotions in a focus that integrates different constructs gaining strength in its evolution (Weinstein, 1996). The path of its development even overtook other constructs that were the subject of research, such as metacognition, which had little fertilisation given that the majority of the SRL models that were starting to be proposed incorporated it (Dinsmore et al., 2008). In fact, it had already been observed that SRL consisted of a series of interrelated cognitive, affective, and motivational processes (Boekaerts, 1999; Pintrich, 2004; Niemivirta, 2006).

Students who can self-regulate have the necessary skills to learn effectively both in school and later on in life (Rivers et al., 2022). Consequently, SRL has been widely praised as the key competence for starting and maintaining lifelong learning (Taranto y Buchanan, 2020). Its introduction has been accompanied by a change of paradigm in research into learning and instruction, resulting in a focus on each student as an active participant in the process of learning.

1.2. Theoretical models and conceptualisation of SRL

SRL is recognised in specialist literature as a complex multidimensional construct and an extraordinary umbrella covering a large number of variables that influence learning from a global and holistic focus. The concept of SRL has been formulated as a synthesis of research into how learning functions (centred on cognitive and motivational processes of students) and research on how teaching functions (centred on interactions between students and teachers in a social setting). As a result, different proposals for theoretical models have emerged over time to explain this construct. Some theoretical reviews have analysed the available models (see, for example: Panadero, 2017; Puustinen & Pulkkinen, 200; Ribeiro & Boruchovitch, 2018), where at least nine models have been identified that integrate (meta) cognitive, motivational, and affective components, although the preponderance of these components varies in each of them. For example, some models emphasise cognitive aspects (Borkowski et al., 2000; Efklides, 2011; Hadwin et al., 2011; Winne & Hadwin, 1998; Zimmerman, 2000); some, motivational aspects (Perels et al., 2005; Pintrich, 2000; Schunk, 2001); and others, emotional ones (Boekaerts, 1991).

Although there are different SRL models, a variety of terminologies, and overlapping concepts, they do all agree that it is a dynamic process that functions in different phases (Puustinen y Pulkkinen, 2001). Specifically, analyses of the conceptual similarities of these models have made it possible to organise and demarcate the self-regulation processes in three phases: the pre-action

phase (disposition or planning); the action phase (performance or execution); and the post-action phase (self-evaluation or self-reflection) (Panadero, 2017; Puustinen y Pulkkinen, 2001). The planning phase involves processes such as task analysis, setting objectives where students incorporate contextual information, self-knowledge, and deployment of motivational beliefs (processes prior to the act of learning). Based on the obtained results, the performance phase then underlines self-regulation actions, such as supervising the achievement of the study and learning objectives that are set (processes during the act of learning). Finally, the self-evaluation phase is where reflection on the action takes place and the outcome of the learning activity is evaluated (processes after the act of learning) (Zimmerman, 2016). Given that SRL is defined as cyclical, the results of the self-evaluation phase can be used to adjust later processes of planning with new contributions; that is to say, new inputs when facing a new academic challenge (De Smul et al., 2019). For this reason, it should be noted that SRL involves planning, follow-up, and monitoring of one's own learning to make it more effective. The theory of SRL is built on the idea that monitoring learning falls to each student, who regulates his or her actions to achieve a given objective, such as, for example, accomplishing a task (Dignath y Veenman, 2021).

1.3. Empirical evidence on SRL

The importance of SRL has been shown by favourable educational results in primary education, where use of self-regulation strategies by students is associated with solid learning and effective academic performance. In contrast, students who are not able to self-regulate their learning, effort, and precision display suboptimal academic results and learning (Molenaar et al., 2019).

Literature has also underlined the relevance of SRL for motivation. For example, a study of 480 students in the fourth grade of primary education in Spain found from their results that SRL, with dimensions comprising planning, self-testing, and effort, displayed significant relations (p <.001) with intrinsic motivation (r = .39, r = .38, and r = .43 respectively) (Rodríguez-González et al., 2021). Another study involving 523 Hong Kong fourth-grade primary school students showed that all of the motivation variables (interest, self-efficacy, and growth mentality) were related to the use of SRL strategies (planning, self-control and acting on feedback) (.47 ≤ r ≤ .82, p < .001) (Bai & Guo, 2019).

The findings of studies that included motivation, self-regulation, and performance in primary education confirm direct and significant relationships. For example, a study of 238 ninth-grade students from the Sultanate of Oman showed the existence of statistically significant and positive relationships between SRL and intrinsic motivation (r = .57, p <0.05.), as well as between SRL and academic performance in mathematics (r = .58, p <0.05) (El-Adl

& Alkharusi, 2020). Another research with fourth-grade students in Hong Kong found positive relations between all of the motivational beliefs (growth mentality, self-efficacy, and intrinsic value), the three types of SRL strategies (supervision, regulation of effort, and setting and planning objectives), and scores in English exams ($.26 \leq r \leq .74$, $p < .01$) (Bai & Wang, 2023). Similarly, a study of 80 sixth- and seventh-grade students found that their perceived experience in the transition from primary to secondary school was significantly correlated with their SRL (Uka & Uka, 2020). That is to say, the way in which students experience a particular transition affects their motivation and academic performance.

On the basis of empirical studies, systematic reviews, and meta-analyses, it can be confirmed that SRL is associated with learning behaviour, performance, motivation, interpersonal behaviour, mental health, and a healthy adult life (Dent y Koenka, 2016; Dignath et al., 2008; Donker et al., 2014; Ergen y Kanadli, 2017; Öz, 2021; Robson et al., 2020; Theobald, 2021; Xu et al., 2022). The researches include students from all age groups and all types of contexts, which suggests that all pupils should have the opportunity to learn to self-regulate their own learning.

Given the above, attention is increasingly focussed on how to promote SRL at early ages. Its benefits for students are undeniable and they associate with notable or successful academic trajectories in all disciplinary or content areas, as confirmed by recent systematic reviews and meta-analyses. For example, findings from a systematic review of 36 studies of school-aged students supported the efficacy of the SRL interventions to increase academic performance in mathematics (Wang & Sperling, 2020). Another meta-analysis of 30 studies confirmed that SRL training programmes for primary school students have an effect on performance (Dignath et al., 2008).

However, the literature has also identified difficulties with promoting SRL in this educational stage. These include ones associated with how likely teachers are to respond to the diverse characteristics of their students, which can obscure the true SRL requirements, restricting opportunities for growth (Peeters et al., 2016). Also, the little time teachers explicitly dedicate to teaching SRL strategies, something that could be attributed to their beliefs or knowledge of their promotion (Dignath & Büttner, 2018). The challenges of promoting SRL in students with a low socioeconomic level or who are of migrant backgrounds has also been noted (Vandevelde et al., 2017). In addition, some authors have noted the importance of the theoretical background on which interventions for promoting SRL are based, as well as the type of instruction strategy, given that differing effects have been found when comparing different school levels, for example, in secondary education (Dignath & Büttner, 2008).

1.4. The present study and research objectives

The value of SRL is beyond doubt and both educational theory and practice agree that it is a key competence for lifelong learning that students must acquire from their early schooling (Dignath y Veenman, 2021). However, various studies have found that it is insufficiently rooted in schools and that teachers only rarely promote it among their students (Heirweg et al., 2022). The literature has also shown that students differ in their capacity for self-regulation, and that it does not develop automatically in them (De Smul et al., 2019). In fact, some students do not acquire a command of learning activities or use them independently.

Systematic literature reviews reveal that studies into SRL are mainly concentrated in Europe with very few in Latin America (Hernández y Camargo, 2017; López-Angulo et al., 2020). In addition, another systematic review of the literature, in this case about the instruments available for measuring SRL in students at different educational levels (Leon-Ron et al., 2020), found a lack of valid instruments for primary education. In the 40 studies analysed, 31 instruments were identified. However, only one was for primary education students. Moreover, it was in English and consisted of 75 items, which made it difficult for primary school students to complete due to its length. Although there may be other instruments for measuring SRL in primary education, the review by León-Ron et al. (2020) notes that they are few.

On the basis of the above information, this study set out three specific objectives: (1) to confirm the dimensional structure and reliability of an instrument for measuring SRL in primary education students in Chile, (2) to analyse differences in SRL processes by sex and (3) to analyse differences in the SRL processes by grade.

2. Method

The study was carried out with a positivist paradigm and a quantitative focus. An instrumental design was used for objective 1 of this study, while for objectives 2 and 3 a correlational descriptive cross-sectional design was used (Ato et al., 2013).

2.1. Participants

The sample comprised 514 students from grades three to eight of primary education in the Biobío region of Chile (see Table 1). Non-probability convenience sampling was used, as schools were invited to take part in the research. Three exclusion criteria were used: (a) repeating students (ones who are taking a grade for the second time); (b) first and second grade students, as they are still learning to read and write and so might have difficulties understanding items; and (c) students from the school integration system with a diagnosis of any special educational need linked to the components of cognitive and/or emotional development. The mean age was 11.92 (SD = 1.76). In relation to biological sex at birth, 272 (52.9%) students identified as male, 227 (44.2%) identified as female, and 15 (2.9%) students pre-

ferred not to say. With regards to the commune (area of a city) in which the school where they study is located, 238 students (46.3%) attend school in the commune of Concepción, 248 (48.2%) attend school in the commune of San Pedro de la Paz, and 28 (5.5%) attend school in the commune of Chiguayante.

TABLE 1. Descriptive statistics of the participants.

Level	Male	Female	Rather not say	Age (*SD*)
3rd Grade	24	20	0	8.73 (1.26)
4th Grade	11	17	1	9.86 (0.58)
5th Grade	57	43	5	10.84 (0.7)
6th Grade	73	50	4	11.93 (0.75)
7th Grade	46	35	4	12.65 (1.1)
8th Grade	61	62	1	13.93 (0.64)

Note: *SD* = standard deviation.

2.2. Instrument for measuring SRL

To measure the students' SRL, the self-regulation of learning phases instrument in secondary education (SRL-PI-S), by Sáez-Delgado et al. (2021), was selected. It had been developed on the basis of Zimmerman's theoretical model, which regards SRL as a three-phase cyclical process (forethought, performance, and self-reflection) (Zimmerman y Schunk, 2001). Its original design was applied to 438 Ecuadorian secondary school students, in a research programme with an instrumental design that included a review of specialist literature, validation by experts, with a Kappa coefficient of .92, and cognitive interviews (Sáez-Delgado et al., 2021). The tool consisted of seven independent Likert-type scales: (1) disposition to study strategies (DSS), comprising seven items; (2) execution scale (EXE), with seventeen items; (3) seeking help scale (SH), with three items; (4) self-reflection of study scale (SRE), with fourteen items; (5) self-efficacy for disposition to study scale (SEF), comprising seven items; (6) internal causal attribution scale (IA), comprising three items; and finally; (7) external causal attribution (EA), comprising five items. The scales are answered on a 7-point Likert-type answer scale, where 1 is «Never» and 7 is «Always». The confirmatory factor structure for secondary students displayed adequate indexes of fit in accordance with what is stated in the literature [RMSEA ≤.07; CFI and TLI >0.92, and SRMR <0.08]. The internal consistency is adequate given that Cronbach's alpha

was greater than 0.6 in all cases. The interpretation uses a focus of grouping the SRL level determined by the frequency of use of self-regulation strategies, in addition to the Likert-type answer scale from 1 to 7 points. Thus, the following three categories were specified: (a) students with optimal SRL levels (6-7 points); (b) students with suboptimal SRL levels (3-5 points); (c) students with insufficient SRL levels (1-2 points). In the present study, as part of its first objective, the SRLPI-S was adapted to give the SRLPI-P (self-regulation of learning phases instrument in primary education), which is a new version for measuring SRL for use in primary education in Chile. In so doing, we followed the international recommendations and standards for cultural adaptation and test validation. Finally, questions were included for administering the instrument that made it possible to obtain information about participants' sociodemographic variables (grade, sex, age).

2.3. Data collection procedure

Ethical principles for the conduct of research involving human subjects were followed. The fathers, mothers or legal guardians of each study participant signed an informed consent form, while the students, who were minors, signed an informed consent form. Both documents were approved by the Ethics and Bioethics Committee of the Universidad Católica de la Santísima Concepción (UCSC).

First, the cognitive interviews process was applied to a total de twelve students (seven girls and five boys) from five public schools in the Biobío region, with the objective of identifying possible problems understanding the instructions, wording of the items, and/or the instrument's answer format. There were no major observations and/or changes, as the students identified no difficulties in answering the instrument. They reported that the items were drafted in a simple, fluid, and direct way, and so understanding them did not cause any problems. Changes were only applied to those aspects where three or more students agreed.

2.4. Procedures for obtaining and analysing data

The first part of the analysis considered descriptive statistics of the sample. A confirmatory factor analysis was then performed to test the structure of the original scale and analyses were performed to evaluate differences by sex and educational level (year). All of them were done using the R software program (version 4.2.2).

For the confirmatory factor analysis, each scale was initially evaluated according to the structure proposed in the original study. Finally, three nested models were evaluated to test the general structure of the scale: (1) a structure with seven first-order factors; (2) a structure with seven correlated first-order factors; and (3) a hierarchical structure with one second-order factor and seven first-order factors. The ULS estimator was used, which is appropriate for ordinal measures such as Likert-type scales. The models were evaluated using chi-squared (χ^2), normed χ^2 (χ^2/df), CFI, TLI, AGFI, RMSEA, SRMR, and AVE.

The criteria used to evaluate the model were as follows: (1) χ^2/df between 2.0 and 5.0 (Hooper et al., 2008); (2) CFI and TLI greater than 0.9 is considered to be an acceptable fit and greater than .95 is a good fit; (3) RMSEA less than .05 is a good fit, between .05 and .08 is an acceptable fit, and greater than .08 is regarded as a poor fit; (4) SRMR less than 0.08 is regarded as an acceptable fit and less than 0.06 a good fit (Hu y Bentler, 1999); (5) AGFI, where a value close to 1 would indicate a perfect fit, while the minimum limit that is usually accepted is 0.8 (Bentler y Bonett, 1980).

To analyse reliability, we used Cronbach's alpha for each construct, where a value greater than 0.7 had to be obtained. Cronbach's alpha was also used if the item was eliminated from the model. As a complement for the analysis of convergent validity, the AVE (average variance extracted) index was used, where a value of .5 is considered acceptable (Fornell y Larcker, 1981).

To evaluate differences between the study variables by sex and grade, first the assumptions of normality and homoscedasticity were tested using the Kolmogorov–Smirnov test with the Lilliefors modification and the Levene test, respectively. The assumption of independence was fulfilled for the design of the study. To evaluate differences, we carried out Student's *t* tests or one-way ANOVA in the event that the necessary assumptions for the application of parametric tests were fulfilled. In cases where the assumptions were not fulfilled, the robust Yuen test or the trimmed means ANOVA were used as applicable.

3. Results

3.1. Objective 1 results

For the confirmatory factor analysis, we evaluated three nested models that consider the seven scales proposed in the original study: first, a unidimensional model (M1), then a hierarchical model with a general second-order factor with seven related factors (M2), and, finally, the model with seven related factors (M3).

When considering the χ^2/df criterion, model M3 displays $\chi^2/df = 3.55$, which is regarded as an acceptable fit. In contrast, the M1 and M2 models present values close to 6, which is outside the range established as acceptable. For the CFI and TLI indicators, the 3 models present good fit as they all have values greater than .95. Nonetheless, the M3 model has the highest values: 0.974 and 0.972, respectively. In the case of the SRMR and RMSEA indicators, only the M3 model presents acceptable values as both are lower than .8 (Table 2).

Table 3 shows the Cronbach's alpha values for each construct, Cronbach's alpha if the item is eliminated for each item in the model, and the AVE index. All of the constructs present Cronbach's alpha values of around .7, which is recommended. With regard to the possible variation when eliminating one item per construct, no items generate large variations. Finally, when evaluating the AVE index, all of the constructs are around .5, which is acceptable.

TABLE 2. Indicators of fit of the models.

Modelo	χ^2	χ^2/gl	CFI	TLI	AGFI	SRMR	RMSEA
M1: unidimensional	χ^2 (1128)= 6374.84, p <0.001	5.65	0.953	0.952	0.958	0.101	0.095
M2: jerárquico	χ^2 (1107)= 6563.30, p <0.001	5.92	0.952	0.949	0.956	0.102	0.098
M3: siete factores relacionados	χ^2 (1210)= 4301.52, p <0.001	3.55	0.974	0.972	0.973	0.079	0.071

Note: χ^2 = chi–square test; χ^2/df = chi-square divided by degrees of freedom; CFI = comparative fit index; TLI = Tucker Lewis index; AGFI = adjusted goodness of fit index; SRMR = standardised root mean-square; RMSEA = root mean square error of approximation; M = model.

TABLE 3. Indicators of reliability (α) and convergent validity (AVE) of the instrument.

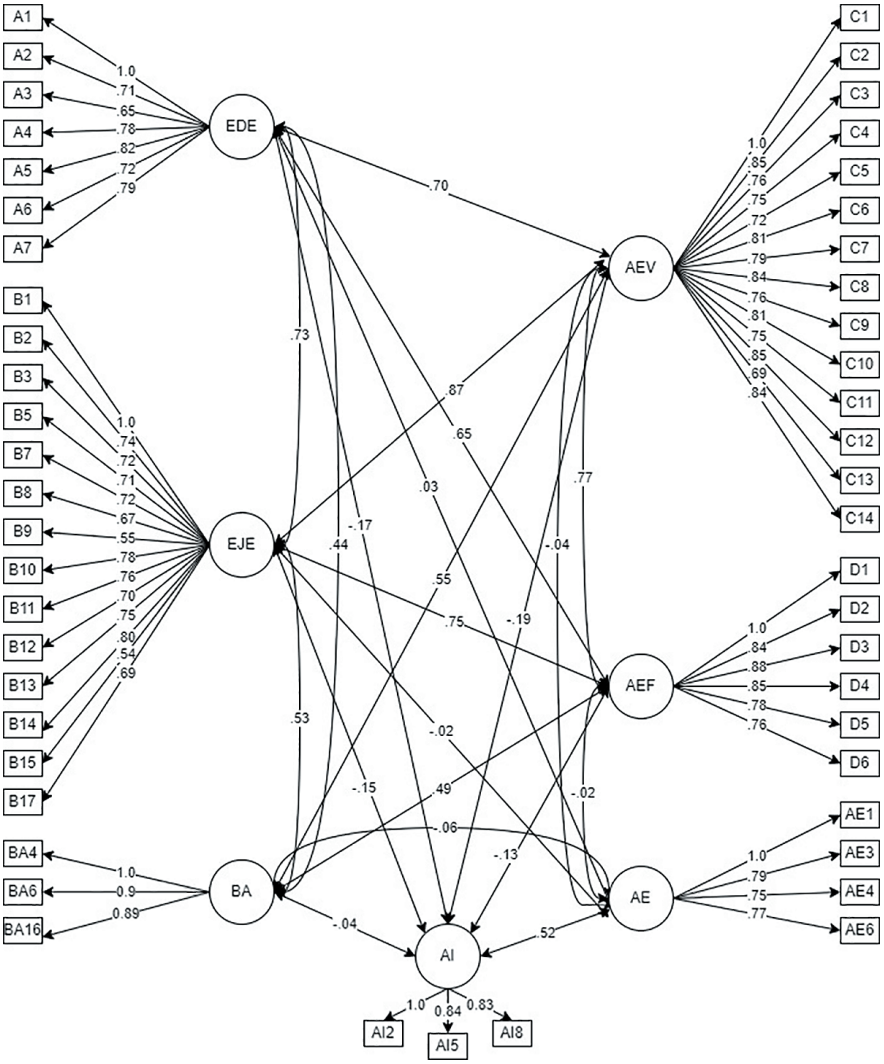
CIM	α	α*	AVE
Disposition to study scale (DSS)			
A1		.8	
A2		.8	
A3		.82	
A4	.82	.78	.62
A5		.78	
A6		.81	
A7		.8	
Execution scale (EXE)			
B1		.91	
B2		.9	
B3		.9	
B5		.91	
B7		.9	
B8		.91	
B9	.91	.91	.53
B10		.9	
B11		.9	
B12		.9	
B13		.9	
B14		.9	
B15		.91	
B17		.91	
Self-efficacy scale (SEF)			
D1		.88	
D2		.88	
D3		.88	
D4	.9	.88	.73
D5		.89	
D6		.89	
D7		.89	

CIM	α	A*	AVE
Self-reflection of study scale (SRE)			
C1		.94	
C2		.94	
C3		.94	
C4		.94	
C5		.94	
C6		.94	
C7	.95	.94	.65
C8		.94	
C9		.94	
C10		.94	
C11		.94	
C12		.94	
C13		.95	
C14		.94	
External causal attribution (EA)			
AE1		.82	
AE3		.81	
AE4	.84	.8	.69
AE6		.79	
AE7		.81	
Internal causal attribution (IA)			
AI2		.77	
AI5	.81	.71	.79
AI8		.76	
Seeking help scale (SH)			
BA4		.65	
BA6	.77	.66	.87
BA16		.76	

Note: CIM = coding of each item in the model; α = Cronbach's alpha; α* = Cronbach's alpha if the item is eliminated; AVE = average variance extracted.

Finally, Figure 1, shows that only the execution scale (EXE) has factor loadings of less than .6, corresponding to items B9 and B15. In all of the other scales, the loadings of the items are greater than .6. Regarding the correlations between the scales, the strongest correlations are between DSS, EXE, SRE, and SEF, with values of between .65 and .87, On the other hand, the weakest correlations are between the EA-SEF and EA-EXE scales, both with a value of -.02. The final version of the instrument can be downloaded from the supplementary material at the following link: https://figshare.com/s/42f3643b1116e1c899f2

FIGURE 1. Confirmatory factor analysis model.



3.2. Objective 2 results

The sample for comparison by sex comprised 499 students, as the 15 students who preferred not to state their sex were eliminated from it. The mean declared age was 11.91 (*SD* = 1.76). Regarding study level, 44 (8.8%) were in the third grade; 28 (5.6%), in the fourth grade; 100 (20.0%), in the fifth grade, 123 (24.6%), in the sixth grade; 81 (16.2%) in the seventh grade, and 123 (24.6%), in the eighth grade.

Table 4 presents the descriptive analysis of the data, which show that in no cases do the averages for the different SRL scales reach 6 points. The highest average is in the seeking help (SH) scale, where an average of 5.03 (*SD* = 1.66) can be seen for boys, while for girls the average is 5.13 (*SD* = 1.67). According to the interpretation of the instrument, this indicates suboptimal SRL levels in both male and female primary education students.

In contrast, only the *disposition to study strategies* (DSS) variable complied with the assumptions of normality and homoscedasticity required for the parametric test. In all other cases, the two assumptions reviewed were not fulfilled, and so the robust Yuen trimmed means test was applied.

TABLE 4. Comparison of study variables by sex.

	Male (*n* = 272)		**Female (*n* = 227)**				
Age	11.93 (*SD* = 1.71)		11.88 (*SD* = 1.82)				
	M (*SD*)	K–S Lilliefors	M (*SD*)	K-S Prueba de Lilliefors	Levene test	T-test/Yuen	ES
DSS	3.86 (1.50)	D = .039	4.05 (1.55)	D = .057	F (1,497) = 0.98	T (476.2) = -1.39	N/A
EXE	4.30 (1.38)	D = .047	4.48 (1.54)	D = .068*	F (1,497) = 6.09*	$T^{(r)}$ (244.7) = 1.72	N/A
SH	5.03 (1.66)	D = .117***	5.13 (1.67)	D = .131***	F (1,497) = 0.20	$T^{(r)}$ (292.6) = 0.95	N/A
SRE	4.32 (1.46)	D = .049	4.58 (1.58)	D = .077**	F (1,497) = 4.00*	$T^{(r)}$ (266.5) = 2.14*	0.15
SEF	4.37 (1.57)	D = .050	4.72 (1.71)	D = .091***	F (1,497) = 2.92	$T^{(r)}$ (274.1) = 2.72**	0.19
EA	2.69 (1.61)	D = .148***	2.77 (1.66)	D = .143***	F (1,497) = 0.24	$T^{(r)}$ (288) = 0.45	N/A
IA	3.67 (1.76)	D = .064**	3.72 (1.98)	D = .105***	F (1,497) = 7.18**	$T^{(r)}$ (254.4) = 0.12	N/A

Note: T(r) = Yuen test; N/A = not applicable; *M* = mean; *SD* = standard deviation; ES = effect size.

In relation to the differences for the study variables by sex, significant differences were detected in the *self-reflection of study* (SRE) variable (Yuen T (266.5) = 2.14, p = 0.03, ES =.15), where girls (M = 4.58, SD = 1.58) presented a higher level than boys (M = 4.32, SD = 1.46). Significant differences were also found for the *self-efficacy for disposition to study* variable (SEF) (Yuen T (274.1) = 2.72, p = 0.007, ES = .19), where girls (M = 4.72, SD = 1.71) displayed a higher level than men (M = 4.37, SD = 1.57).

3.3. Objective 3 results

To evaluate differences between the study variables by grade, we first tested compliance with the assumptions for the parametric one-way ANOVA test. The results of the Kolmogorov–Smirnov normality test with the Lilliefors modification were significant for the *seeking help* (SH) and *external causal attribution* (EA) variables (p <.001). So, for these two cases, it was not possible to assume normality in the distribution of their data. In all other cases, the test was not significant. Next, the assumption of homoscedasticity was evaluated using the Levene test, where for all of the variables the result was not significant (p >0.5) and so the homoscedasticity of the data in the groups can be assumed.

The parametric ANOVA test was used for variables that complied with the assumptions of normality and homoscedasticity, and in cases where neither assumption was fulfilled, the robust ANOVA repeated means test was performed.

The ANOVA test was significant for the *disposition to study strategies* (DSS) variable ($F_{(5, 508)}$ = 3.41, p <0.01, η^2 = 0.03). The post hoc Tukey comparison test was then performed, and identified a significant difference (p <0.01) for DSS among the levels of fourth grade (M = 4.6, SD = 1.48) and seventh grade (M = 3.48, SD = 1.53). There was also a significant difference for the *self-efficacy for disposition to study* (SEF) variable ($F_{(5, 508)}$ = 2.34, p <0.05, η^2 = 0.02). Next, the Tukey post hoc comparison test was performed, which identified a significant difference (p <0.05) for SEF among the levels of fourth (M = 5.10, SD = 1.48) and seventh grade (M = 4.11, SD = 1.78). The ANOVA test did not detect significant differences by grade in the EXE, SRE, and IA variables (see Table 5). Similarly, neither the ANOVA trimmed means test applied to the SH and EA variables detect any significant differences by grade.

Finally, it is important to note that the descriptive analysis of the data shows that the means of the different SRL scales in the different grades are lower than 6 points, with the highest mean (5.45) in the *seeking help* (SH) scale (SD = 1.36). According to the interpretation of the instrument, this indicates suboptimal SRL levels in primary students, regardless of grade.

4. Discussion

The findings relating to the first objective of this study made it possible to confirm the dimensional structure of

Revista Española de Pedagogía
year 82, n. 288, May-August 2024, 311-333

TABLE 5. Comparison of study variables by grade (year).

Variable	3rd grade (n = 44)	4th grade (n = 29)	5th grade (n = 105)	6th grade (n = 127)	7th grade (n = 85)	8th grade (n = 124)	ANOVA/ANOVA trimmed means	η^2
DSS	4.24(1.50)	**4.67(1.48)**	3.98(1.6)	4.02(1.39)	**3.48(1.53)**	3.89(1.52)	F(5,508)= 3.41**	0.03
EXE	4.62(1.37)	4.87(1.35)	4.44(1.55)	4.42(1.29)	4.00(1.62)	4.35(1.42)	F(5,508)= 2.13	N/A
SH	5.42(1.43)	5.45(1.36)	5.16(1.76)	4.98(1.6)	4.88(1.81)	4.99(1.62)	$F^{(r)}$ (5,98.7)= 0.93	N/A
SRE	4.70(1.43)	4.77(1.62)	4.43(1.59)	4.53(1.45)	4.09(1.62)	4.39(1.44)	F(5,508)= 1.54	N/A
SEF	4.88(1.4)	**5.10(1.48)**	4.61(1.75)	4.54(1.52)	**4.11(1.78)**	4.47(1.64)	F(5,508)= 2.34*	0.02
EA	2.74(1.84)	2.75(1.81)	2.74(1.62)	2.94(1.71)	2.67(1.64)	2.62(1.51)	$F^{(r)}$ (5,96.7)= 0.36	N/A
IA	3.45(1.86)	3.59(2.18)	3.56(1.88)	3.77(1.74)	3.68(1.7)	3.92(2.02)	F(5,508)= 0.67	N/A

Note: η^2 = generalised eta (effect size); $F^{(r)}$: ANOVA trimmed means.

the self-regulation of learning phases instrument in primary education (SRL-PI-P). The results showed that it has an acceptable structure consisting of seven related factors with acceptable Cronbach's alpha and AVE index values in all cases. The scale consisted of 53 items, which makes using it with primary education students more practical. Balancing theoretical and practical questions when measuring SRL is still a challenge, especially in the case of large-scale studies with primary education students (Vandevelde et al., 2013). In this sense, the present study makes a valid and reliable study available for use with school children.

Regarding the findings relating to the second objective of this study, significant differences were confirmed in the SRE and SEF variable, where girls had higher averages. This is consistent with previous studies that have found that women have better self-regulation than men. For example, one study in a sample of 2027 fifth- and sixth-grade students from 44 primary schools (107 classes) in Belgium (50.4% male, 49.6% female) analysed the relationship between the SRL profile of students and their sex, finding that girls reported a more self-regulated profile (Heirweg et al., 2019). Another study in 283 secondary school students from Croatia found greater self-efficacy for self-regulated learning in girls (Putarek y Pavlin-Bernardić, 2019). Also in secondary education, a study of 403 students from ninth to twelfth grade in Chile revealed a significant effect of sex in the disposition to study phase of the SRL process in favour of girls (Sáez-Delgado et al., 2023). Another research also explored how much different SRL strategies varied by sex in 198 university students, finding that women more frequently used rehearsal, organisation, metacognition, and time, elaboration, and effort management skills (Bidjerano, 2005). Consequently, it can be argued that, at different educational levels (primary, secondary, and university), evidence has been found for female students using self-regulation learning strategies more than their male classmates.

In the case of the findings relating to the third objective of this study, there was evidence for significant differences in the DSS and SEF variables between the seventh grade and fourth grade levels, with the fourth grade displaying more frequent use of self-regulation strategies than students from higher years. Previous studies have shown similar findings; in some cases, SRL has stayed at the same level but in no case has it been found to increase as students progress to higher grades (years). For example, the results of a study evaluating differences by grade in secondary education, with the participation of 403 Chilean students, found no significant differences for any phases in the SRL process (Sáez-Delgado et al., 2023). Therefore, it is possible to conclude, on the basis of the results of this study and earlier research, that primary students' SRL does not spontaneously improve simply because they move from one academic

grade to the next. Although there seems to be a stagnation and even a drop-off in some SRL processes, it is important to consider the developmental perspective when analysing this result, that is to say, that as the students move on to the next term or to a higher year group (as they get older), they acquire a greater capacity to evaluate their real competence in place of a disproportionate view of their competence, unlike when they are younger (Guo, 2020). Furthermore, another possible explanation could be provided by cognitive social theory (Bandura, 1999), which insists that students can be influenced in their responses by their social surroundings (learning environment or school environment).

To interpret adequately the results of the present study, some limitations must be taken into account. Firstly, as the specialised literature suggests, it is important to consider the "limitations of generalisability", in other words, the results cannot be generalised to groups not represented in the study (Simons et al., 2017). This study focussed on public primary schools in the Biobío region of Chile, and so these results cannot be generalised to other educational levels, to private schools, or to other regions of Chile. A second limitation is the instruments used, which are of the self-report type, and so the responses could suffer from social-desirability bias (Solé-Ferre et al., 2019). Also relating to the limitations of the instrument, we should note possible gender biases, that is to say, measurement invariance, which determines the possible existence of invariance between the trait scores of the groups to determine whether these are comparable and have the same meaning; in in other words, whether the measurement evaluates the same trait in the same way in all groups (Reise et al., 1993). Therefore, taking this into account, until it is established that a measurement evaluates the same feature in two different groups, comparisons between them in the measurement are of uncertain significance (Putnick & Bornstein, 2016; Schmitt & Kuljanin, 2008). A third limitation relates to the sampling technique used in this study (non-probability convenience sampling), as the literature classifies this as a subjective sampling method, which has limited external validity. So, it suffers from sampling biases given that the participants in the sample are chosen according to their proximity to the researcher (Nielsen et al., 2017; Obilor, 2023). A fourth factor that could be seen as a limitation is the fact that the original instrument was applied to secondary education students and, in this study, it was adapted for use with primary education students. Although the lowest grades (first and second) were excluded to ensure sufficient reading skills and although validation tests were performed to identify possible difficulties with understanding the items, future studies should consider the specific characteristics of children of this educational level when attempting to administer the instrument. As a complex construct (SRL) is being measured, the students' stage and their level of development of reading skills must be taken into account, as these could lead

to difficulties in comprehension of the items (Borghi, 2020).

Future studies can minimise the limitations noted above. Firstly, they could consider a larger sample. It would also be desirable for studies to obtain data from sources other than self-report type instruments, such as observational methods, to give a more specific perspective on the self-regulation processes of the students. In addition, the findings of this study reflect a need to promote self-regulation to ensure its development, as without efforts to promote it, it remains the same and does not change over students' academic trajectories. As the results of a meta-analysis of SRL training programmes in primary education show, these efforts have proven to be effective (Dignath et al., 2008). The recommendations for educational interventions identified in the literature provide a framework for how to promote SRL directly through teaching strategies and indirectly by creating a learning environment that enables students to regulate their learning (Dignath & Veenman, 2021). Teachers have a central role on this point given that, in their professional practice, they can implement direct and indirect strategies to foster students' SRL skills by applying effective teaching methods and directing them towards techniques that improve their regulatory processes (Uka y Uka, 2020). In fact, teachers currently face the challenge of teaching students not only the essence of the disciplinary content of the different subjects, but also the process of learning itself. And so teaching students to use learning strategies effectively has become a popular instructional practice in primary schools that can be fulfilled by implementing SRL (De Smul et al., 2019). Consequently, it would be of interest for future studies to focus on training primary school teachers in practices for promoting SRL and on the variables that underlie the practices that promote SRL, identifying beliefs, knowledge, and skills that are closely related to teachers' implementation of self-regulatory learning (Sáez-Delgado et al., 2022).

Acknowledgements

We would like to thank the FONDECYT Research Initiation project 2020 Nº11201054, with the title: "The reciprocal relationship between teacher self-regulation and student self-regulation of learning and academic performance. An explanatory model in secondary education", by the principal investigator Dr Fabiola Sáez-Delgado.

References

Anthonysamy, L., Koo, A.-C., & Hew, S. (2020). Self-regulated learning strategies and non-academic outcomes in higher education blended learning environments: A one decade review. *Education and Information Technologies*, *25*, 3677-3704. https://doi.org/10.1007/s10639-020-10134-2

Ato, M., López, J., & Benavente, A. (2013). Un sistema de clasificación de los diseños de investigación en psicología [A classification system for research designs in psychology]. *Anales de Psicologia*, *29* (3), 1038-1059. https://doi.org/10.6018/analesps.29.3.178511

Bai, B., & Guo, W. (2019). Motivation and self-regulated strategy use: Relationships to primary school students' English writing in Hong Kong. *Language Teaching Research*, *25* (3), 378-399. https://doi.org/10.1177/1362168819859921

Bai, B., & Wang, J. (2023). The role of growth mindset, self-efficacy and intrinsic value in self-regulated learning and English language learning achievements. *Language Teaching Research*, *27* (1), 207-228. https://doi.org/10.1177/1362168820933190

Bandura, A. (1999). Social cognitive theory: An agentic Albert Bandura. *Asian Journal of Social Psychology*, *2*, 21-41. https://doi.org/10.1111/1467-839X.00024

Bentler, P., & Bonett, D. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88* (3), 588-606. https://doi.org/10.1037/0033-2909.88.3.588

Bidjerano, T. (2005). Gender differences in self-regulated learning. *Annual Meeting of the Northeastern Educational Research Association*, *36* (1), 1-8.

Boekaerts, M. (1991). Subjective competence, appraisals and self-assessment. *Learning and Instruction*, *1*, 1-17. https://doi.org/10.1016/0959-4752(91)90016-2

Boekaerts, M. (1999). Self-regulated learning: Where we are today. *International Journal of Educational Research*, *31*, 445-457. https://doi.org/10.1016/S0883-0355(99)00014-2

Borghi, A. (2020). A future of words: Language and the challenge of abstract concepts. *Journal of Cognition, 3* (1). https://doi.org/10.5334/joc.134

Borkowski, J., Chan, L., & Muthukrishna, N. (2000). A process-oriented model of metacog- nition: links between motivation and executive functioning. In G. Schraw, & J. Impara (Eds.), *Issues in the measurement of metacognition*. Buros Institute of Mental Measurements, University of Nebraska.

De Smul, M., Heirweg, S., Devos, G., & Van Keer, H. (2019). School and teacher determinants underlying teachers' implementation of self-regulated learning in primary education. *Research Papers in Education*, *34* (6), 701-724. https://doi.org/10.1080/02671522.2018.1536888

Dent, A., & Koenka, A. (2016). The relation between self-regulated learning and academic achievement across childhood and adolescence: A meta-analysis. *Educational Psychology Review*, *28* (3), 425-474. https://doi.org/10.1007/s10648-015-9320-8

Dignath, C., & Büttner, G. (2008). Components of fostering self-regulated learning among students. A meta-analysis on intervention studies at primary and secondary school level. *Metacognition and Learning*, *13*, 127-157. https://doi.org/10.1007/s11409-018-9181-x

Dignath, C., & Büttner, G. (2018). Teachers' direct and indirect promotion of self-regulated learning in primary and secondary school mathematics classes–insights from video-based classroom observations and teacher interviews. *Metacognition and Learning, 13*, 127-157. https://doi.org/10.1007/s11409-018-9181-x

Dignath, C., Buettner, G., & Langfeldt, H.-P. (2008). How can primary school students learn self-regulated learning strategies most effectively? A meta-analysis on self-regulation training programmes. *Educational Research Review*, *3* (2), 101-129. https://doi.org/10.1016/j.edurev.2008.02.003

Dignath, C., & Veenman, M. (2021). The role of direct strategy instruction and indirect activation of self-regulated learning: Evidence from classroom observation studies. *Educational Psychology Review*, *33* (2), 489-533. https://doi.org/10.1007/s10648-020-09534-0

Dinsmore, D., Alexander, P., & Loughlin, S. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review*, *20*, 391-409. https://doi.org/10.1007/s10648-008-9083-6

Donker, A., de Boer, H., Kostons, D., Dignath, C., & van der Werf, M. (2014). Effectiveness of learning strategy instruction on academic performance: A meta-analysis. *Educational Research Review*, *11* (1), 1-26. https://doi.org/10.1016/j.edurev.2013.11.002

Efklides, A. (2011). Interactions of metacognition with motivation and affect in self-regulated learning: The MASRL model. *Educational Psychology*, *46*, 6-25. https://doi.org/10.1080/00461520.2011.538645

El-Adl, A., & Alkharusi, H. (2020). Relationships between self-regulated learning strategies, learning motivation and mathematics achievement. *Cypriot Journal of Educational Science*, *15* (1), 104-111. https://doi.org/10.18844/cjes.v15i1.4461

Ergen, B., & Kanadli, S. (2017). The effect of self-regulated learning strategies on academic achievement: A meta-analysis study. *Eurasian Journal of Educational Research*, *17* (69), 55-74. https://dergipark.org.tr/en/pub/ejer/issue/42462/511430

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18* (1), 39-50. https://doi.org/10.1177/002224378101800104

Guo, W. (2020). Grade-level differences in teacher feedback and students' self-regulated learning. *Frontiers in Psychology*, *11*, 1-17. https://doi.org/10.3389/fpsyg.2020.00783

Hadwin, A., & Oshige, M. (2011). Self-regulation, coregulation, and socially shared regulation: Exploring perspectives of social in self-regulated learning theory. *Teachers College Record*, *113* (2), 240-264. https://doi.org/10.1177/016146811111300204

Hadwin, A., Järvelä, S., & Miller, M. (2011). Self-regulated, co-regulated, and socially shared regulation of learning. In B. Zimmerman, & D. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 65-84). Routledge.

Heirweg, S., De Smul, M., Devos, G., & Van Keer, H. (2019). Profiling upper primary school students' self-regulated learning through self-report questionnaires and think-aloud protocol analysis. *Learning and Individual Differences*, *70* (1), 155-168. https://doi.org/10.1016/j.lindif.2019.02.001

Heirweg, S., De Smul, M., Merchie, E., Devos, G., & Van Keer, H. (2022). The long road from teacher professional development to student improvement: A school-wide professionalization on self-regulated learning in primary education. *Research Papers in Education*, *37* (6), 929-953. https://doi.org/10.1080/02671522.2021.1905703

Hernández, A., & Camargo, Á. (2017). Autorregulación del aprendizaje en la educación superior en Iberoamérica: una revisión sistemática [Self-regulated learning in higher education in Latin-America: A systematic review]. *Revista Latinoamericana de Psicología*, *49* (2), 146-160. https://doi.org/10.1016/j.rlp.2017.01.001

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit structural equation modelling. *Electronic Journal of Business Research Methods*, *6* (1), 53-60. https://academic-publishing.org/index.php/ejbrm/article/view/1224

Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6* (1), 1-55. https://doi.org/10.1080/10705519909540118

León-Ron, V., Sáez-Delgado, F., Mella-Norambuena, J., Posso-Yépez, M., Ramos, C., & Lobos, K. (2020). Revisión sistemática sobre instrumentos de autorregulación del aprendizaje diseñados para estudiantes [Systematic review of learning self-regulation instruments designed for students]. *Revista Espacios, 41* (11), 29-53. https://revistaespacios.com/a20v41n11/a20v41n11p29.pdf

López-Angulo, Y., Sáez-Delgado, F., Arias-Roa, N., & Díaz-Mujica, A. (2020). Revisión sistemática sobre instrumentos de autorregulación del aprendizaje en estudiantes de educación secundaria [Systematic review of self-regulated learning instruments in secondary education students]. *Información Tecnológica*, *31* (4), 85-98. https://doi.org/10.4067/s0718-07642020000400085

Molenaar, I., Horvers, A., & Baker, R. (2019). What can moment-by-moment learning curves tell about students' self-regulated learning? *Learning and Instruction*, *72*, 101206. https://doi.org/10.1016/j.learninstruc.2019.05.003

Nielsen, M., Haun, D., Kärtner, J., & Legare, C. (2017). The persistent sampling bias in developmental psychology: A call to action. *Journal of Experimental Child Psychology*, *162*, 31-38. https://doi.org/10.1016/j.jecp.2017.04.017

Niemivirta, M. (2006). Assessing motivation and self-regulation in learning within a predictive design: Incorporating systematic elements of change. *Educational Psychology Review*, *18*, 255-259. https://doi.org/10.1007/s10648-006-9020-5

Oates, S. (2019). The importance of autonomous, self-regulated learning in primary initial teacher training. *Frontiers in Education*, *4*, 102. https://doi.org/10.3389/feduc.2019.00102

Obilor, E. (2023). Convenience and purposive sampling techniques: Are they the same? *International Journal of Innovative Social y Science Education Research*, *11* (1), 1-7.

Öz, E. (2021). The effect self-regulated learning on students' academic achievement: A meta-analysis. *International Online Journal of Educational Sciences*, *13* (5), 1409-1429. https://iojes.net/?mod=makale_tr_ozet&makale_id=49642

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, *8*, 422. https://doi.org/10.3389/fpsyg.2017.00422

Peeters, J., De Backer, F., Kindekens, A., Triquet, K., & Lombaerts, K. (2016). Teacher differences in promoting students' self-regulated learning: Exploring the role of student characteristics. *Learning and Individual Differences*, *52*, 88-96. https://doi.org/10.1016/j.lindif.2016.10.014

Perels, F., Gurtler, T., & Schmitz, B. (2005). Training of self-regulatory and problem-solving competence. *Learning and Instruction*, *15* (2), 123-139. https://doi.org/10.1016/j.learninstruc.2005.04.010

Pintrich, P. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 452-502). Academic Press.

Pintrich, P. (2004). A conceptual framework for assessing motivation and self-regulated learning in college students. *Educational Psychology Review*, *16* (4), 385-407. https://doi.org/10.1007/s10648-004-0006-x

Putarek, V., & Pavlin-Bernardić, N. (2019). The role of self-efficacy for self-regulated learning, achievement goals, and engagement in academic cheating. *European Journal of Psychology of Education*, *35* (3), 647-671. https://doi.org/10.1007/s10212-019-00443-7

Putnick, D., & Bornstein, M. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, *41*, 71-90. https://doi.org/10.1016/j.dr.2016.06.004

Puustinen, M., & Pulkkinen, L. (2001). Models of self-regulated learning: a review. *Scandinavian Journal of Educational Research*, *45*(3), 269–286. https://doi.org/10.1080/00313830120074206

Reise, S., Widaman, K., & Pugh, R. (1993). Confirmatory factor analysis and item response theory: Two approaches for exploring measurement invariance. *Psychological Bulletin*, *114* (3), 552. https://doi.org/10.1037/0033-2909.114.3.552

Ribeiro, D., & Boruchovitch, E. (2018). Self-regulation of learning: Key concepts and theoretical models. *Psicologia da Educação*, (46), 71-80.

Rivers, D., Nakamura, M., & Vallance, M. (2022). Online self-regulated learning and achievement in the era of change. *Journal of Educational Computing Research*, *60* (1), 104-131. https://doi.org/10.1177/07356331211025108

Robson, D., Allen, M., & Howard, S. (2020). Self-regulation in childhood as a predictor of future outcomes: A meta-analytic review. *Psychological Bulletin*, *146* (4), 324-354. https://doi.org/10.1037/bul0000227

Rodríguez-González, P., Cecchini, J., Méndez-Giménez, A., & Sánchez-Martínez, B. (2021). Intrinsic motivation, emotional intelligence and self-regulated learning: A multilevel analysis. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, *21* (82), 235-252. http://cdeporte.rediris.es/revista/revista82/artmotivacion1200.htm

Sáez-Delgado, F., Mella-Norambuena, J., López-Angulo, Y., & León-Ron, V. (2021). Scales to measure self-regulated learning phases in secondary school students. *Informacion Tecnologica*, *32* (2), 41-50. https://doi.org/10.4067/S0718-07642021000200041

Sáez-Delgado, F., López-Angulo, Y., Mella-Norambuena, J., Baeza-Sepúlveda, C., Contreras-Saavedra, C., & Lozano-Peña, G. (2022). Teacher self-regulation and its relationship with student self-regulation in secondary education. *Sustainability (Switzerland)*, *14* (24), 16863. https://doi.org/10.3390/su142416863

Sáez-Delgado, F., Mella-Norambuena, J., López-Angulo, Y., Sáez, &., & León-Ron, V. (2023). Invariant and suboptimal trajectories of self-regulated learning during secondary school: implications focused on quality in higher education. *Frontiers in Psychology*, *14*, 1235846. https://doi.org/10.3389/fpsyg.2023.1235846

Schmitt, N., & Kuljanin, G. (2008). Measurement invariance: Review of practice and implications. *Human Resource Management Review, 18* (4), 210-222. https://doi.org/10.1016/j.hrmr.2008.03.003

Schunk, D. (2001). *Self-regulation through goal setting*. ERIC Counseling and Student Services Clearinghouse. https://eric.ed.gov/?id=ED462671

Simons, D., Shoda, Y., & Lindsay, S. (2017). Constraints on generality (COG): A proposed addition to all empirical papers. *Perspectives on Psychological Science*, *12* (6), 1123-1128. https://doi.org/10.1177/1745691617708630

Solé-Ferre, N., Mumbardó-Adam, C., Company-Romero, R., Balmaña-Gelpí, N., & Corbella-Santom, S. (2019). Instrumentos de evaluación de la autorregulación en población infanto-juvenil: una revisión sistemática [Instruments to assess self-regulation in children and adolescents: A systematic review]. *Revista de Psicología Clínica Con Niños y Adolescentes*, *6* (2), 36-43. https://doi.org/10.21134/rpcna.2019.06.2.5

Taranto, D., & Buchanan, M. (2020). Sustaining lifelong learning: A self-regulated learning (SRL) approach. *Discourse and Communication for Sustainable Education*, *11* (1), 5-15. https://doi.org/10.2478/dcse-2020-0002

Theobald, M. (2021). Self-regulated learning training programs enhance university students' academic performance, self-regulated learning strategies, and motivation: A meta-analysis. *Contemporary Educational Psychology*, *66*, 101976. https://doi.org/10.1016/j.cedpsych.2021.101976

Uka, A., & Uka, A. (2020). The effect of students' experience with the transition from primary to secondary school on self-regulated learning and motivation. *Sustainability*, *12* (20), 8519. https://doi.org/10.3390/su12208519

Vandevelde, S., Van Keer, H., & Rosseel, Y. (2013). Measuring the complexity of upper primary school children's self-regulated learning: A multi-component approach. *Contemporary Educational Psychology*, *38* (4), 407-425. https://doi.org/10.1016/j.cedpsych.2013.09.002

Vandevelde, S., Van Keer, H., & Merchie, E. (2017). The challenge of promoting self-regulated learning among primary school children with a low socio-economic and immigrant background. *The Journal of Educational Research*, *110* (2), 113-139. https://doi.org/10.1080/00220671.2014.999363

Wang, Y., & Sperling, R. (2020). Characteristics of effective self-regulated learning interventions in mathematics classrooms: A systematic review. *Frontiers in Education*, *5*, 58. https://doi.org/10.3389/feduc.2020.00058

Weinstein, C. (1996). Self-regulation: A commentary on directions for future research. *Learning and Individual Differences, 8* (3), 269-274. https://doi.org/10.1016/S1041-6080(96)90018-7

Winne, P. (2005). A perspective on state-of-the-art research on self-regulated learning. *Instructional Science*, *33*, 559-565. https://doi.org/10.1007/s11251-005-1280-9

Winne, P., & Hadwin, A. (1998). Studying as self-regulated engagement in learning. In D. Hacker, J. Dunlosky, & A. Graesser (Eds.), *Metacognition in educational theory and practice* (pp. 277-304). Erlbaum.

Xu, Z., Zhao, Y., Zhang, B., Liew, J., & Kogut, A. (2022). A meta-analysis of the efficacy of self-regulated learning interventions on academic achievement in online and blended environments in K-12 and higher education. *Behaviour and Information Technology*, *42* (16), 2911-2931. https://doi.org/10.1080/0144929X.2022.2151935

Zimmerman, B. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. Pintrich, & M. Zeidne (Eds.), *Handbook of self-regulation* (pp. 13-39). Academic Press. https://doi.org/10.1016/b978-012109890-2/50031-7

Zimmerman, B. (2013). From cognitive model ing to self-regulation: A social cognitive career path. *Educational Psychology*, *48* (3), 135-147. https://doi.org/10.1080/00461520.2013.794676

Zimmerman, B. (2016). Becoming a self-regulated learner : An overview. *Theory Intro Practice*, *41* (2), 64-70. https://doi.org/10.1207/s15430421tip4102_2

Zimmerman, B., & Schunk, D. (2001). *Self-regulated learning and academic achievement: Theoretical perspectives*. Routledge.

Authors' biographies

Fabiola Sáez-Delgado. Assistant professor in the Faculty of Education. Head of the Master's in Educational Science programme at the UCSC. Degree in Education, Master's in Education, and Doctorate in Psychology from the Universidad de Concepción, Chile. Her lines of research are cognitive-motivational variables in teaching and learning processes, mental health variables in educational communities, and socioemotional competences. She has specialised in systematic reviews of literature, psychometry, and analysis of predictive and explanatory models in education. Member of the "Society, education, and psychology" international research group (GISEP) and leader of the "Cognition, emotion, and disruptive technologies in education" research and innovation line. In the last five years, she has published more than 50 academic articles in high-impact journals and has led externally funded national and international projects.

https://orcid.org/0000-0002-7993-5356

Javier Mella-Norambuena. Part-time professor in the Department of Sciences of the Universidad Técnica Federico Santa María, Chile. Degree in Education and Master's in Health Psychology from the Universidad de Concepción, Chile. Doctoral candidate on the Education Doctorate programme at the Universidad Católica de la Santísima Concepción, Chile. His lines of research are cognitive-motivational variables in processes of teaching and learning and mental health variables in educational communities. He has specialised in systematic reviews of literature, research methodology, and quantitative data analysis using the SPSS, RStudio, and Python software programs. Member of the "society, education, and psychology" international research group (GISEP).

https://orcid.org/0000-0002-4288-142X

Marcela Bizama. Associate professor in the Faculty of Education of the Universidad Católica de la Santísima Concepción, Chile (UCSC). Qualified Teacher from the Universidad de Chile and Doctor in Education from the Universidad de Concepción (Stockholm University agreement). Her lines of research are cognition, learning, and development. She has specialised in the study of cognitive variables such as fluid intelligence, executive functions relating to attention and memory, creativity, and reading comprehension of various text types in different developmental stages. She has participated in various research projects, with national and international funding, and has numerous publications in a variety of indexed journals.

https://orcid.org/0000-0003-3515-4504

Joan Gatica. Candidate for a Doctorate in Education at the Universidad Católica de la Santísima Concepción, Chile. Master's in Management, Leadership, and Educational Policy from the Universidad de Concepción (Chile), and Master's in Quality School Management and Administration from the Universidad del Desarrollo (Chile). He researches

the impact of learning and playing chess and other board games on the acquisition and development of critical thinking, self-regulation of learning and metacognition. Head of primary and secondary schools for 16 years. School management advisor in schools and colleges in various regions of Chile. Promoter of projects to include chess in classrooms in Chilean schools.

 https://orcid.org/0009-0002-9312-4012;

Peer feedback in teacher professional development: A systematic review

El feedback *entre iguales y el desarrollo profesional docente: revisión sistemática*

Begoña DE LA IGLESIA, PhD. Associate Professor. Universidad de las Islas Baleares (*bego.delaiglesia@uib.es*).
Dolors FORTEZA, PhD. Associate Professor. Universidad de las Islas Baleares (*dolorsforteza@uib.es*).
Laura DUMA. Researcher. Universidad de las Islas Baleares (*laura.duma@uib.es*).

Abstract:

The potential of professional collaboration as a mechanism for teacher professional development (TPD) lies in the feedback opportunities it offers. Although feedback itself has been extensively researched, most studies focus on the teacher-student relationship. In this sense, literature reviews have paid scant attention to teacher-teacher feedback in a symmetrical relationship and its impact on TPD. Consequently, 30 peer-reviewed empirical articles were selected from 2012 to 2022 in accordance with the PRISMA protocol. The process consisted of three phases: document search and evaluation using the VOSViewer tool; selection and filtering of documents according to the defined criteria, and document analysis. The results show that all research on teacher-teacher feedback concludes that it improves learning, the relationship between teaching partners and school climate. The main difficulty identified relates to teachers' lack of skills in providing quality feedback. Few articles analysed the impact of feedback on teaching and learning methodologies(although all highlighted positive benefits) and even fewer studies analysed its impact on TPD. In turn, recommendations for improving research and practice in schools are proposed.

Keywords: teacher professional development, peer feedback, systematic review, teacher agency, basic education.

Resumen:

El potencial de la colaboración profesional como mecanismo de desarrollo profesional docente (DPD) radica en las oportunidades de retroalimentación que ofrece. El *feedback* ha

Date of receipt of the original: 2023-04-09.
Date of approval: 2023-10-16.
Please cite this article as follows: De la Iglesia, B., Forteza, D., & Duma, L. (2024). Peer feedback in teacher professional development: A systematicreview [El *feedback* entre iguales y el desarrollo profesional docente: revisión sistemática]. *Revista Española de Pedagogía, 82* (288), 335-358. https://doi.org/10.22550/10.22550/2174-0909.4044

sido ampliamente investigado, pero la mayoría de los estudios se centran en la retroacción que se da en la relación profesor-alumno. En cambio, no se ha encontrado suficiente revisión de la literatura respecto a la retroalimentación profesor-profesor desde una relación simétrica ni se ha analizado su impacto en el DPD. Con base en el protocolo PRISMA, se seleccionaron 30 artículos empíricos revisados por pares de entre los años 2012 y 2022. En concreto, el proceso siguió tres fases: búsqueda de documentos y evaluación mediante la herramienta VOSViewer; selección y filtrado de los documentos bajo criterios definidos, y análisis de los documentos. Los resultados muestran beneficios y dificultades a nivel docente y organizativo. Entre los primeros, destaca que el *feedback* favorece el aprendizaje del alumnado, la relación entre las parejas docentes y el clima de centro. La principal dificultad identificada se refiere a la falta de competencia del profesorado para ofrecer una retroalimentación de calidad. Pocos artículos analizaron el impacto del *feedback* en las metodologías de enseñanza y aprendizaje, a pesar de que todos mostraron sus ventajas, y menos aún examinaron su impacto en el DPD. Para finalizar, se sugieren algunas recomendaciones para mejorar la investigación y sus prácticas.

Palabras clave: desarrollo profesional, *feedback* entre iguales, revisión sistemática, agencia docente, educación básica.

1. Introduction

There is ample empirical evidence to confirm that teachers who exchange ideas and teaching practices in a coordinated manner state that they have very high levels of job satisfaction, self-efficacy and better relations with their students (OECD, 2014), elements that make an effective contribution to improving the atmosphere at school. In this context, Lizasoain et al. (2015) show the significant relation that exists between the quantity and quality of feedback among teachers and the way in which they develop innovative and active teaching practices centred on the student learning process. Similarly, Krichesky and Murillo (2018) have suggested that one of the collaborative practices that generates most learning among teachers is joint problem-solving, "since the practices that are shared, or knowledge that is built, generate a body of information that serves as learning input for the teaching staff" (p. 149). In the same line, Hattie and Timperley (2007, as cited in Wisniewski et al., 2020) show the power of feedback in impacting the learning process.

From the concept of feedback, defined as the "process through which learners make sense of information from various sources and use it to enhance their work or learning strategies" (Carless & Boud, 2018. p. 3), numerous classifications emerge. In terms of its evolution, it is defined as *remedial* (Zimmerman, 2008), *self-regulated* (Nicol & Macfarnale-Dick, 2006) and *dialogue-based*. This last term is the one adopted by Askew and Lodge

(2000). From a "co-constructivist" view of feedback, they describe how it can be constructed from loops of dialogue and information exchanged between colleagues.

The contributions of the numerous studies that we reviewed lead us, on the one hand, to link feedback to self-regulation processes (García-Jiménez, 2015; Garello & Rinaudo, 2013; Rodríguez-Gómez et al., 2013; Sanmartí, 2010); and, on the other, to review the beliefs and perceptions on feedback of those who have provided it (Adcroft, 2011; Doan, 2013; McLean et al., 2014; Yang & Carless, 2013). Specifically, studies analysing the repercussions of feedback among peers (Carless & Boud, 2018; Charteris & Smardon, 2016; Huber, 2013; Van Gennip et al., 2010) agree that feedback should have the following characteristics: it should be bi-directional and dialogic, insofar as it requires co-responsibility and consensus. It should be cyclical, creating learning circles which "oblige" the use of feedback in future tasks, and this means necessarily involving self-regulation processes to facilitate so-called feedforward (García-Sanpedro, 2012). Finally, it should be adaptable and personalised, meaning that it could be constructed from prior conceptions presented by the teaching staff (Pinya et al., 2020).

A review of the specialised literature shows that feedback has been thoroughly researched but that most of that research is centred on teacher-pupil relations and not enough work has been found on teacher-to-teacher feedback or analysing its impact on teacher professional development (TPD).

In turn, TPD is defined as a process of growth in teaching practice. It allows developments in actions and understanding, and it goes beyond personal variables and competences to also consider those that become institutional improvements (Chapman et al., 2015; Escudero et al., 2017; Esteve et al., 2011; Silva-Peña, 2007; Shortland, 2010; Todd, 2017). The main benefits offered by research into TPD reveal that the acquisition of a few personal competences is not enough for the practice of teaching, but rather the fact of positioning oneself on the path to a new professionalisation that takes into account both the emerging needs of the students and those of the centre itself, of which they form part (Alam et al., 2020; Bolívar, 2014; Duran, 2019).

This study aims to carry out a systematic review of the literature to examine the empirical evidence of the benefits of feedback among peers for both TPD and institutional development from a symmetrical relationship, since it is understood that learning is rooted in a sociocultural theory of learning (Vygotsky & Cole, 1978) and is defined as the construction of knowledge and skills through interactions among participants of similar status and experience, with none of them acting as "experts" for the others (Topping, 2005).

Focusing on the figure of the teacher and on the analysis of their professional

development, the data collected in the TALIS 2018 report shows that 80% of teachers from OECD countries considered that the continuing training they received which has had the greatest influence on their work is that based on peer collaboration. TALIS, therefore, proposes offering more collaboration-based training to teachers (OECD, 2019).

It is noteworthy that in the last decade the number of studies on peer feedback has increased, while there is growing interest in analysing its effectiveness (Cravens & Hunter, 2021; O'Leary, 2020; Ridge & Lavigne, 2020).

Two systematic reviews relating peer feedback to TPD have been identified in the existing literature (Johnston et al. 2022; Ridge & Lavigne, 2020). In the first study, based in Australia, 19 academic articles focussing on peer teaching evaluation carried out from observation and feedback were reviewed. These projects were categorised into three central domains: organisational level, programme level and individual level, and produced significant findings in terms of improvements in teaching and student learning outcomes at all three levels. The second systematic review explored the role of peer observation and feedback as a vehicle for going beyond evaluation and returning to focus on improvement in teaching practice. This systematic review of the existing literature (n = 38 documents, 92% of articles peer reviewed) indicates that peer observation and feedback is a promising practice for improving instruction but that it lacks sufficient evidence. It encourages policy to promote innovation and research into this practice so that models of peer observation and feedback can be effective strategies for removing the most significant educational barriers. Although most of the previous studies have documented the benefits of peer feedback for TPD, these systematic bibliographical reviews have analysed practices from different models and different educational levels without reviewing the effectiveness of the dialogic feedback model, in which there is a differential condition of reciprocity of roles and symmetry among participants. In that sense, there is currently a lack of clear research-based evidence of the benefits of peer feedback in TPD.

Taking this shortfall into account, the research questions and objective of this study are the following:

1. What are the characteristics of dialogue-based peer feedback research? Map and analyse the characteristics of empirical studies found in the research considering a) the publication context: year, place and educational level; b) the intervention: pair or group; feedback tools; phases and cycles; c) the research project: research design, participants, instruments and research types; evidence offered by the study.

2. How does peer feedback influence teacher and institutional professional development according to the research findings? Analyse evidence of the pros and cons of peer feedback at the teaching and organisational levels.

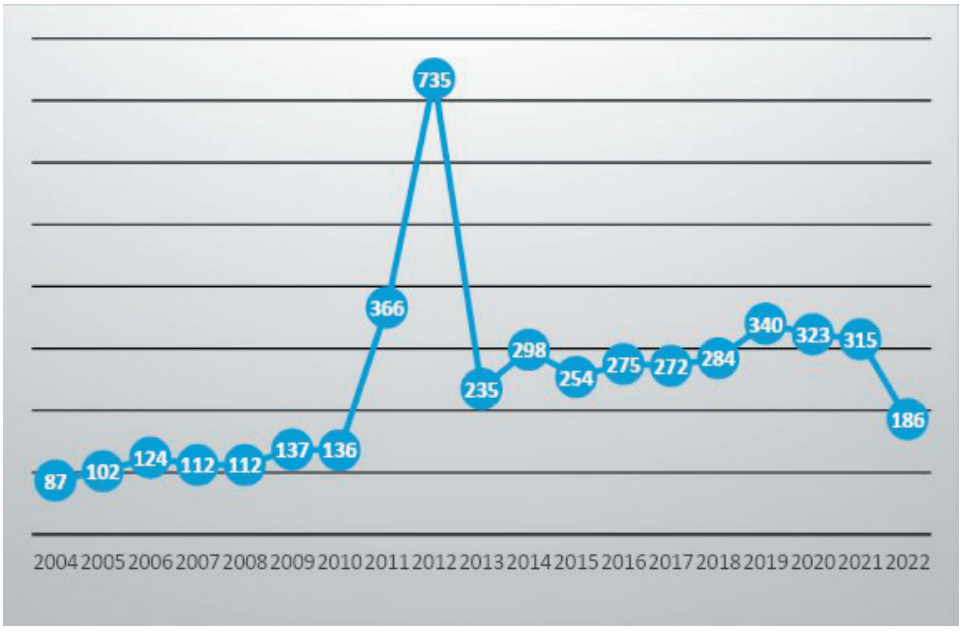
2. Method

To respond to the planned objectives, the research was carried out from an original systematic review of the literature, following the PRISMA protocol (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which ensures the collection of all the recommended information and the replication of the process (Page et al., 2021). It also promotes the quality of the study by offering a checklist and a flow chart to facilitate the systematisation (Moher et al., 2009).

Specifically, there were three phases: (1) document search and evaluation using the VOSViewer tool, (2) selection and filtering of the documents using the defined criteria, and (3) analysis of the documents (Littell et al., 2008; Petticrew & Roberts, 2006).

With the aim of achieving the most up-to-date information, the review period is defined from 2012, the year which saw a large increase in the number of publications, to 2022 (Figure 1).

FIGURA 1. Result of feedback and TPD studies in the WOS database by year of publication.



Source: WOS (2022).

To identify and analyse the documents focussing on peer feedback and teacher professional development an initial search of seven specific data bases was carried out: Scopus, Web of Science (WOS), Dialnet Plus and the EbscoHost platform (including ERIC, APA PsycArticles, APA PsychInfo and Teacher Reference Centre), mainly using the following key words: *feedback* and *professional development* (ERIC Thesaurus).

TABLE 1. Search equations.

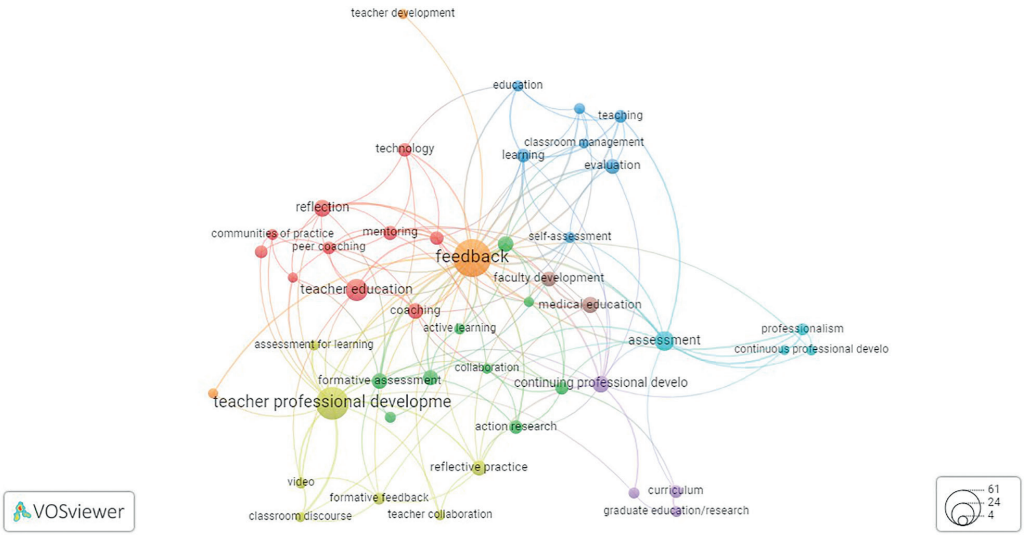
Data bases	Search equation	Documents
WOS	TS=((“feedback” OR “peer feedback” OR “peer coaching” OR “peer-to-peer feedback” OR “feedback observation teach*” OR “dialogic* feedback” OR “feedback system”)) AND TS=(“education*” OR “teach*” OR “school”) AND TS= ((“professional development” OR “teacher agency”))	2522
Scopus	TITLE-ABS-KEY((“feedback” OR “peer feedback” OR “peer coaching” OR “peer-to-peer feedback” OR “feedback observation teach*” OR “dialogic* feedback” OR “feedback system”)) AND TITLE-ABS-KEY (“education*” OR “teach*” OR “school”) AND TITLE-ABS-KEY ((“professional development” OR “teacher agency”))	2453
ERIC	((“feedback” OR “peer feedback” OR “peer coaching” OR “peer-to-peer feedback” OR “feedback observation teach*” OR “dialogic* feedback” OR “feedback system”)) AND (“education*” OR “teach*” OR “school”) AND ((“professional development” OR “teacher agency”))	2394
APA PsychInfo	((“feedback” OR “peer feedback” OR “peer coaching” OR “peer-to-peer feedback” OR “feedback observation teach*” OR “dialogic* feedback” OR “feedback system”)) AND (“education*” OR “teach*” OR “school”) AND ((“professional development” OR “teacher agency”))	1764
Teacher Reference Center	((“feedback” OR “peer feedback” OR “peer coaching” OR “peer-to-peer feedback” OR “feedback observation teach*” OR “dialogic* feedback” OR “feedback system”)) AND (“education*” OR “teach*” OR “school”) AND ((“professional development” OR “teacher agency”))	348
Dialnet Plus	(“feedback” OR “peer feedback” OR “dialogic* feedback”) AND (teach*) AND (“professional development”)	91
APA PsycArticles	((“feedback” OR “peer feedback” OR “peer coaching” OR “peer-to-peer feedback” OR “feedback observation teach*” OR “dialogic* feedback” OR “feedback system”)) AND (“education*” OR “teach*” OR “school”) AND ((“professional development” OR “teacher agency”))	33

A bibliometric analysis of the Scopus and WOS results was carried out using the VOSViewer to consolidate the significance of the relation between the search equations and the objective of the study.

As an example, the Scopus case is presented, showing that the results are significant, since the key words *peer feedback* and *teacher professional development* are those that obtain the greatest scope (71 and 27, respectively) and number of hits (71 and 53, respectively), accounting for more than most of the other key words.

This process allowed us to evaluate whether the initial search was significant and was followed by phase to evaluate the characteristics of the documents. Inclusion criteria were the following: studies evaluated by blind peer review; studies whose analysis is focussed on peer feedback, with symmetrical roles; studies linked to teacher professional development; studies published between 2012 and 2022, and those centred on the basic education stage. Other criteria for inclusion were based on language, with 93.33% of articles written in English, and document type, restricting the selection only to articles published in specialised journals. Meanwhile, the exclusion criteria were the following: duplication of documents or content of the study when non-symmetrical feedback was identified, exclusion by educational level (higher education or university level), exclusion by area of research and type of methodology used (Figure 3). Finally, a total of 30 documents were included (Table 2).

FIGURE 2. Relation between peer feedback and teacher professional development in Scopus.



Source: VOSViewer (2022).

TABLE 2. Documents selected.

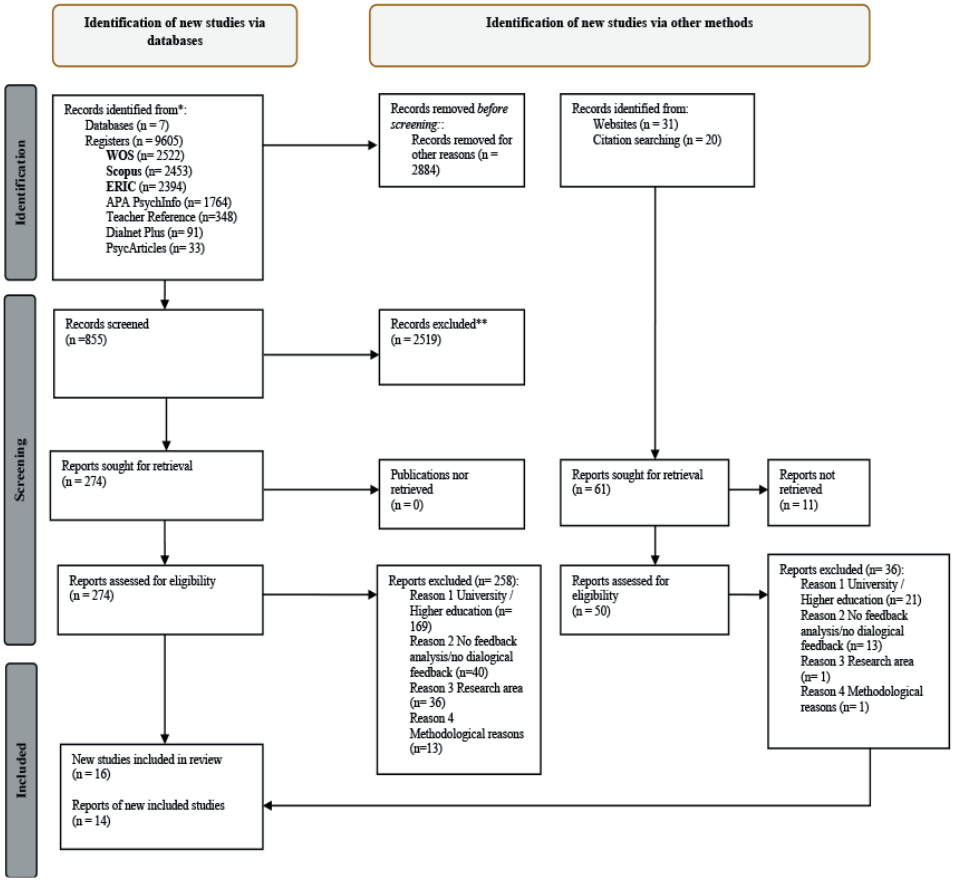
Authors	Year	Title	Type*
Alam, Aamir & Shahzad	2020	Continuous professional development of secondary school teachers through peer observation: Implications for policy and practice	Art.
Ben-Peretz, Gottlieb, & Gideon	2018	Coaching between experts - Opportunities for teachers' professional development	Art.
Butler & Yeum	2016	Dialogic competence of primary school English teachers in online peer coaching: A case study in South Korea	Art.
Charteris & Smardon	2013	Second look - second think: A fresh look at vídeo to support dialogic feedback in peer coaching	Art.
Charteris & Smardon	2014	Dialogic peer coaching as teacher leadership for professional inquiry	Art.
Charteris & Smardon	2015	Teacher agency and dialogic feedback: Using classroom data for practitioner inquiry	Art.
Charteris & Smardon	2016	Professional learning as *diffractive* practice: Rhizomatic peer coaching	Art.
Cravens & Hunter	2021	Assessing the impact of collaborative inquiry on teacher performance and effectiveness	Art.
Duran, Corcelles & Miquel	2020	La observación entre iguales como mecanismo de desarrollo profesional docente: la percepción de los participantes de la Xarxa de Competències Bàsiques [Peer observation as a teacher professional development mechanism: The perception of participants in Xarxa de Competències Bàsiques]	Art.
Huber	2013	Multiple learning approaches in the professional development of school leaders: Theoretical perspectives and empirical findings on self-assessment and feedback	Art.

Ivarsson	2019	What's in it for me? Peer observation of teaching: Experiences from a primary school in Sweden	Art.
Jao	2013	Peer coaching as a model for professional development in the elementary mathematics context: Challenges, needs and rewards	Art.
Johnston, Baik & Chester	2022	Peer review of teaching in Australian higher education: A systematic review	Rew.
Kunemund, Kennedy, Carlisle, VanUitert & McDonald	2022	A multimedia option for delivering feedback and professional development to teachers	Art.
Limbere, Munakata, Klein & Taylor	2022	Exploring the tensions science teachers navigate as they enact their visions for science teaching: What their feedback can tell us	Art.
Mouraz, Pinto, & Torres	2022	Effects of a model for multidisciplinary peer observation of teaching in teacher professional development and in nurturing a reflective school	Art.
Murphy, Weinhardt & Wyness	2021	Who teaches the teachers? A RCT of peer-to-peer observation and feedback in 181 schools	Art.
O'Leary	2012	Exploring the role of lesson observation in the English education system: a review of methods, models and meanings	Rew. Bib.
Parr & Hawe	2017	Facilitating real-time observation of, and peer discussion and feedback about, practice in writing classrooms	Art.
Perry, Davie & Brady	2020	Using vídeo clubs to develop teachers' thinking and practice in oral feedback and dialogic teaching	Art.

Ridge & Lavigne	2020	Improving instructional practice through peer observation and feedback: A review of the literature	Rew.
Rosselló & De la Iglesia	2021	El *feedback* entre iguales y su incidencia en el desarrollo profesional docente [Peer feedback and its impact on professional teaching development]	Art.
Singh & Mueller	2021	Taking a nuanced view of the role of teacher feedback in the elementary classroom	Art.
Smith & Lynch	2014	Improving teaching through coaching, mentoring and feedback: A review of literature	Rew. Bib.
Thurlings, Vermeulen, Kreijns, Bastiaens & Stijnen	2012	Investigating feedback on practice among teachers: Coherence of observed and perceived feedback	Art.
Torres, Lopes, Valente & Mouraz	2017	What catches the eye in class observation? Observers' perspectives in a multidisciplinary peer observation of teaching program	Art.
Van den Bergh, Ros & Beijaard	2014	Improving teacher feedback during active learning: Effects of a professional development program	Art.
Van der Lans, Van de Grift, Van Veen & Fokkens-Bruinsma	2016	Once is not enough: Establishing reliability criteria for feedback and evaluation decisions based on classroom observations	Art.
Voerman, Meijer, Korthagen & Simons	2015	Promoting effective teacher-feedback: From theory to practice through a multiple component trajectory for professional development	Art.
Wylie & Lyon	2020	Developing a formative assessment protocol to support professional growth	Art.

*Type: Art. = article; Rew. = systematic review; Rew. Bib. = bibliographic review.

FIGURE 3. PRISMA 2020_flow chart.



With regard to content analysis, the first phase consisted of a round table in which each member of the team carried out two in-depth readings of the 30 documents included in the study. This was done with the aim of identifying correlated dimensions and being able to obtain a map associated with the initial results derived from the cluster shown on the VOSViewer, thus creating a document that would simplify the analysis. In the second phase, an initial scheme was drawn up with the categories to be used to group and classify the content. To do this, inductive criteria (Mejía, 2011) and open coding (Strauss & Corbin, 1998) were used. Triangulation was also carried out in successive phases to repeatedly include, modify and eliminate different categories for the analysis.

3. Results

The results are set out in two sections taking into account the initial questions and the objectives of the study. The first section contains the analysis of the results obtained for studies that analyse the characteristics of peer feedback. In the second section the analysis of the results for research analysing the relations between peer feedback and teacher professional development is presented.

3.1. What are the characteristics of the research centred on feedback between teachers?

3.1.1. Publication context: year, place and educational level

The 30 articles reviewed were published in the last 10 years, from 2012 to 2022, as established in the inclusion criteria. In the last three years, there have been more publications (43.33%, *n* = 13), with 2020 being the most assiduous (16.67%, *n* = 5). More than one third of the research was carried out in Europe (43.33%, *n* = 13); 7 studies (23.33%), in North America; 7 (23.33%), in Oceania, and 3 (9.99%), in Asia. In terms of educational level, 18 (59.99%) studies pertained to primary education; 2 (6.66%), to secondary education, and 10 (33.33%) did not specify or were studies based on a multiple / mixed model of levels in basic education.

3.1.2. Characteristics of the intervention

In 43.33% of articles the way in which pairs of teachers give mutual feedback was analysed (Ben-Peretz et al., 2018; Charteris & Smardon, 2013; Duran et. al., 2020; Ivarsson, 2019; Jao, 2013; Mouraz et. al., 2022; Parr & Hawe, 2017; Rosselló & De la Iglesia, 2021; Thurlings et. al., 2012; Torres et. al., 2017; Van der Lans et. al., 2016; Voerman et. al., 2015; Wylie & Lyon, 2020). These studies opted for symmetrical feedback without role inequality. Even in the study by Ben-Peretz et al. (2018), which analysed the exchanges among expert teachers, a high level of competence of both teachers was assured.

Feedback offered to the group was examined in 90% of the articles, of which 9.99% (*n* = 2) was between teachers and students (Singh & Mueller, 2021; Van den Bergh et al. 2014), and 23.33% (*n* = 7), between groups of three or more teachers. Only 6.66% (*n* = 2) of the articles did not specify the type of feedback (Cravens & Hunter, 2021; Murphy et. al., 2021).

As appears in the literature, feedback training is considered key to ensure it is of sufficient quality (Butler & Yeum, 2016; O'Leary, 2020; Wylie & Lyon, 2020). In 36.66% (*n* = 11) of the articles the fact that specific feedback training was offered to participants was underlined, and one (Singh & Mueller, 2021) noted that the teachers had already received training on how to give feedback. Also, in 23.33% (*n* = 7), teachers had received training in some content or skills related to the observation and feedback process (Charteris & Smardon, 2015; Charteris & Smardon, 2016; Duran et al., 2020; Huber, 2013; Mouraz et al., 2022; Singh & Mueller, 2021; Wylie & Lyon, 2020) and 10 studies (33.33%) reported that the participants had had no previous training (Alam et al., 2020; Ben-Peretz et al., 2018; Butler & Yeum, 2016; Charteris & Smardon, 2013; Cravens & Hunter, 2021; Ivarsson, 2019; Jao, 2013; Limbere et al., 2022; Wylie & Lyon, 2020;). Of these latter cases, two (Butler & Yeum, 2016; Wylie & Lyon, 2020) specifically mentioned the need for training of participants.

In 83.33% (*n* = 25) of the studies analysed at least one instrument was used for the observation or feedback phase. Among

these, in 7 articles (23.33%), the observers chose their own focus of interest; in 13 (43.33%), the focus was previously established by the researchers; in five articles (16.66%), it was not specified.

Finally, of the 30 articles analysed, 33.33% (n = 10) used a specific protocol or a guide to orientate participants in the process of observing and giving feedback on teaching practice. A total of 12 (40%) completed the stages of the process: a meeting prior to the observation, an observation session and a feedback session (O'Leary, 2020). In five studies (16.66%) the stages of the process were either missing or not specified.

As regards the number of observation and feedback cycles (one cycle being defined as the completion of the three-stage process), the results showed that 30% (n = 9) of the studies analysed had completed between one and three cycles; 13.33% (n = 4) carried out between four and six observation cycles, while 9.99% (n = 3), carried out seven or more cycles (Limbere et. al., 2022; Parr & Hawe, 2017; Van den Bergh et. al., 2014). Also, nine of the studies (30%) did not specify whether they carried out more cycles, but they did assure that at least one took place.

3.1.3. Research study: design, participants, data collection instruments and types of research evidence

In terms of the research design, 43.33% (n = 13) of the studies used a mixed method; 40% (n = 12), qualitative design, and just one of the studies (3.33%), an exclusively quantitative method. Moreover, two articles (6.66%) were systematic reviews and two (6.66%) were bibliographical reviews.

On analysing the sample, the results showed that more than half the articles (53.33%, n = 16) are made up of studies of fewer than 50 teachers, while the rest included between 50 and 100 (6.66%; n = 2) or over 100 teachers as participants (23.33%; n = 7).

Regarding the data collection instruments, most of the studies used vídeo recordings (40%; n = 12), questionnaires (36.33%; n = 11), interviews (33.33%; n = 10), evidence of teaching practices such as written observation reports or feedback reports (23.33%; n = 7) or, to a lesser extent, audio recording for analysing teacher meetings (9.99%; n = 3). One study used focus groups (3.33%; n = 1) and, in six of the studies, data was collected on student achievements (20%; n = 6).

Regarding the type of research evidence obtained, most (79.99%; n = 24) focused on an analysis of feedback quality and 60.66% (n = 20) were based on teacher perceptions. Only four studies (13.33%) included a specific analysis of student performance.

3.2. What evidence does the research offer after analysing peer feedback and TPD?

3.2.1. Pros and cons on the teaching level

The 26 studies selected that analysed evaluations of teachers with respect to

feedback (86.66%) agree that teachers perceive advantages for their professional development.

Charteris & Smardon (2013) stated that feedback helps to improve teacher participation, stimulates careful and exhaustive analysis of the data, and facilitates the identification of the next steps in their professional learning. These authors introduced the concept *teaching agency* in the three relational dimensions (Emirbayer & Mische, 1998): iterative, projective and practical-evaluative, reporting that feedback can offer space for manoeuvre, for improving decision-making with a view to improving student learning outcomes and their own practice, from a process of profound and continuous learning.

The study by Perry et al. (2020) reported that 80% of participants informed that the focus on formative feedback was relevant to their professional development needs. Mouraz et al. (2022) add that it permitted improvement in teaching, but also in the scientific dimension. Adhering to this idea, Charteris & Smardon (2014) stated that it can also strengthen teaching leadership and professional inquiry-based practices.

Furthermore, Ben-Peretz et al. (2018) highlighted that sharing practices means that experienced teachers have the chance not only to improve intellectually but also to reawaken their own passion for what they do, which in turn leads them to a continuing desire for improvement which boosts professional development.

All the studies selected agreed on a positive assessment of shared pedagogical debate focused on the analysis of practice. Jao (2013) reported that during situations of giving and receiving feedback each teacher saw that they were doing something more than simply sharing their observations, given that they were able to work together to enrich each other's practices. There was a reciprocal investment in their growth since each teacher brought new ideas and suggestions for improvement.

Most of the studies reviewed affirmed that one of the most significant benefits of feedback among teachers lies, indirectly, in an increase in self-esteem, proximity and recognition among peers (Mouraz et al., 2022). Since it empowers the teachers, this factor facilitates the introduction of new strategies and practices based on comparison and reflection rather than imposition or the desire to make innovations without empirical backing. Torres et al. (2017) added that peer feedback results in greater openness, trust and readiness to experience new strategies and styles, offering learning opportunities for better teaching. In that sense, and as an example of benefits centred on the evaluative dimension, Wylie & Lyon (2020) highlighted that the process of giving and receiving feedback gives teacher a better understanding of formative evaluation and can lead to positive changes in their practice. Along the same lines, the study by Parr & Hawe (2017), with seven observation cycles, identified a significant change in the type of feedback given by teachers since it sets out from initial general comments and goes on to more specific comments with pieces of evidence

at the end. More than half the teachers perceived that that their comments influence the practice of future shared sessions.

Despite the multiple benefits presented, the review of the literature also flagged up some problems and resistance at the teaching level for carrying out quality peer feedback.

Of the 30 studies analysed, half included concerns by teachers on sharing peer observation and feedback. Their fear of being judged and of there being repercussions on their professional career is recurrent (Alam et al., 2020). This is the result of the evaluative culture of the observation and feedback process that continues to impregnate most of the practices analysed in the review studies selected (Johnston et al., 2022; Smith & Lynch, 2014; O'Leary, 2012; Ridge & Lavigne, 2020). According to Charteris and Smardon (2015), it is important to remember that these practices are ecological and emerging. As such, they cannot be invented or imposed through the rational technical interpretations of educational agendas for improvement if they are to have a real impact on teaching practices.

Another repeated fear is that of offending the observee with honest messages that do not give a positive evaluation of the practices observed, even when those messages are backed up by evidence. Some studies stated that teachers indicated they would like to be better at transmitting those negative messages and would like to receive training in that respect (Ben-Peretz et al., 2018; Ivarsson, 2019; Parr & Hawe, 2017), and that the protocols and instruments used in the process should facilitate that training (Duran et al., 2020; Jao, 2013; Mouraz et al., 2022; Thurlings et al., 2012; Torres et al. 2017; Wylie & Lyon, 2020).

As a consequence of the fear of offending, many of the studies stated that general, friendly-type feedback was the most common and concluded that it takes place without focusing on any specific area for improvement. Thurlings et al. (2012) inferred that information that is not specifically directed at an objective or at one person, that is vague, undetailed and too positive, or too negative is the type of feedback that does not result in teaching improvement. However, studies such as that of Singh & Mueller (2021) concluded that all feedback brings benefits, even when it is not considered effective in the literature.

3.2.2. Pros and cons on the organisational level

The studies analysed saw the contributions at the level of the centre as being positive. Specifically, the results of the study by Duran et al. (2020) showed that 93% of teachers considered that observation, followed by feedback, allow the creation of feelings of empathy, personal and mutual confidence among teachers, greater motivation for sharing ideas with colleagues and learning from other teachers, motivation to prepare materials and sessions collaboratively and to identify common needs for improvement to be able to implement future actions for better professional development.

In turn, Mouraz et al. (2022) suggested that collaborative work and a general increase in teaching collaboration offered by peer observation and feedback led to pedagogical improvement but also enrichment of the scientific dimension. Charteris & Smardon (2014) added that there is an increase in leadership capacities in line with exchanges of dialogic feedback. In the same sense, Huber (2013) stated that feedback in the form of self-evaluation contributes to supporting the career planning processes of possible candidates for leadership positions.

Despite these positive perceptions of collegiality among peers, some difficulties were identified on the organisational level. On the one hand, the studies described the problem of reserving the required time in a formal setting that allows the analysis of practices and peer feedback to be carried out (Ben-Peretz et al., 2018; Jao, 2013; Ivarsson, 2019; Rosselló & De la Iglesia, 2021). On the other, Cravens & Hunter (2021) described the added difficulty of the dissuasive effect of the results over time, a variable to be considered when making decisions to maintain said practices sustainedly.

4. Discussion and conclusions

This systematic review of the literature has contributed to enriching the current state of knowledge based on the evidence of feedback among teachers, centred exclusively on the collaborative and symmetrical model, among teachers with similar levels of experience, at the stage of basic education.

The review of the 30 articles selected has shown a growing interest in relation to this subject over the last decade, mainly in English-speaking countries, although it is also generalised internationally, with a predominant focus on the secondary and higher stages of education. However, it is still uncommon to find the analysis of feedback using a collaborative model, implemented by colleagues, with shared learning among teachers and a non-judgemental focus to promote professional development (O'Leary & Savage, 2020).

Using mainly mixed methods and qualitative designs, and a variety of data collection instruments, the studies analysed are principally centred on teacher perceptions and offer a greater understanding of them. Despite this, studies using information from observations, audios or videos, and which enable analysis of how teachers exchange feedback to improve their teaching practices are still scant. For that reason, any future research should focus on offering more empirical evidence of the impact of feedback on teaching practice to complement the current knowledge.

On the other hand, most studies use and recommend the use of an instrument to guide the practices of observation and/or feedback and to carry out more than three cycles of observation which helps to sustain practices over time so that their impact is not dissuasive. They also suggest establishing a focus for observation which should be specified in the session prior to the observation and the feedback

to achieve more in-depth analysis of specific dimensions and to outline proposals for the improvement of practices (O'Leary, 2020).

The need for training to enable teachers to give and receive better quality feedback must also be reiterated. The few studies that do not give information about this training recognise how much it is needed (Butler & Yeum, 2016; Wylie & Lyon, 2020). Based on these contributions, it is considered that these training programmes need to be rethought and focused on TPD. A detailed understanding of TPD and the conditions under which higher success rates are achieved bring us to the concept *teacher agency* (TA) that has emerged in the English-speaking world, understood as the capacity of teachers to purposefully and constructively manage their professional growth and contribute to the growth of their peers to be able to generate professional learning communities (Duran et al., 2020; Pancosofar & Petroff, 2013; Pietarinen et al., 2016; Pyhältö et al., 2015; Stoll, 2015). From this perspective of collaboration, several authors analyse TA using the mechanisms of observation and feedback (Charteris & Smardon, 2015; Dos Santos, 2016; O'Mahony & Schwartz, 2018). The results obtained show that, on the one hand, dialogic feedback offers teachers a space for taking decisions to improve student learning outcomes (Rapanta et al., 2021). And, on the other, that TA can be seen in the relational positioning during peer feedback sessions and on establishing links between the cultural, structural and material elements of the learning contexts.

However, the teachers participating also reported problems. They recognise the difficulty of offering and receiving critical comments to and from colleagues without having had prior training. The articles that analysed feedback agree that it is descriptive and general rather than specific and aimed at a particular objective or elements to be improved. In terms of the professional distance among teachers, which can facilitate feedback or make it more difficult, the studies did not produce any conclusive results. This suggests that, beyond symmetry among the two members of the pair, it is the desire to learn from and with others that is really significant. Sustained practice seems to offset this problem. Studies involving multiple observation cycles show how the participants learn to improve the quality of the feedback.

It would therefore seem that to overcome any complacency which would turn feedback into a conservative instrument which is not useful for improving educational practices, we need to ensure that participants are able to offer quality feedback, set aside and programme feedback sessions with adequate time and structure and offer support and tools such as conversation guides or the use of video clips (Thurlings et al., 2012).

On the organisational level, the main difficulty involves time limitations and institutional support. Collaborative

teaching practices, also understood as professional development activities, must be recognised within the teachers' working hours. If not, it is difficult to move from an individual conception of teaching to one of collaboration (Hargreaves & O'Connor, 2018; Darling-Hammond et al., 2017).

Accepting that this systematic review is not centred on the analysis of teacher-student feedback, since that would not be symmetrical, when teachers are asked about peer feedback, they say that it has a positive effect on the students (Parr & Hawe, 2017). However, in the few studies that analyse student tests the results are not very conclusive. Future research could be based on the identification of changes in specific aspects of student performance that are known to correlate with their learning.

Although this review offers a broader understanding of peer feedback as a TPD tool, some limitations should be highlighted. First, the analysis presented concentrates only on basic education. Second, the studies reviewed present results that must be interpreted with some caution because the participants in the studies selected tended to be teachers who were willing to take part in this kind of collaborative teaching practice.

In the light of the data analysed, it can be concluded that this review bridges part of the existing gap in the scientific literature on the benefits of peer feedback. It can be seen that improvements in teaching practice can be obtained from a collaborative and symmetrical approach, and through dialogue-based feedback. It is therefore hoped that this systematic review will be useful for researchers, since it facilitates a more profound exploration of this approach, and also one for educational leaders to support, since a culture of collaboration between teachers leads to greater effectiveness in schools and in teacher professional development.

Funding

This publication is part of the R&D project PID2020-113719RB-I00, funded by MCIN/AEI/10.13039/501100011033/.

References

The references marked with an asterisk indicate that the article was included in the systematic review.

Adcroft, A. (2011). The mythology of feedback. *Higher Education Research and Development*, *30* (4), 405-419. https://doi.org/10.1080/07294360.2010.526096

*Alam, J., & Aamir, S. M., & Shahzad, S. (2020). Continuous professional development of secondary school teachers through peer observation: Implications for policy and practice. *Research Journal of Social Sciences and Economics Review*, *1* (1), 56-75. https://doi.org/10.36902/rjsser-vol1-iss1-2020(56-75)

Askew, S., & Lodge, C. (2000). Gifts, ping-pong and loops-linking feedback and learning. In S. Askew (Ed.), *Feedback for learning* (pp. 1-18). Routledge.

*Ben-Peretz, M., Gottlieb, E., & Gideon, I. (2018). Coaching between experts - Opportunities for teachers' professional development. *Teacher Development*, *22* (3), 303-313. http://dx.doi.org/ºº10.1080/13664530.2018.1438310

Bolívar, A. (2014). La autoevaluación en la construcción de capacidades de mejora de la escuela como comunidad de aprendizaje profesional [Self-evaluation in building school improvement capacities as a professional learning community]. *Revista Portuguesa De Investigação Educacional*, (14), 9-40. https://doi.org/10.34632/investigacaoeducacional.2014.3398

*Butler, &. G., & Yeum, K. (2016). Dialogic competence of primary school English teachers in online peer coaching: A case study in South Korea. *Journal of Asia TEFL*, *13* (2), 72-89. https://doi.org/10.18823/asiatefl.2016.13.2.1.72

Carless, D., & Boud, D. (2018). The development of student feedback literacy: Enabling uptake of feedback. *Assessment & Evaluation in Higher Education*, *43* (8), 1315-1325. https://doi.org/10.1080/02602938.2018.1463354

Chapman, C., Muijs, D., Reynolds, D., Sammons, P., & Teddlie, C. (Eds.). (2016). *The Routledge international handbook of educational effectiveness and improvement*. Routledge.

*Charteris, J., & Smardon, D. (2013). Second look - second think: A freshlook vídeo to support dialogic feedback in peer coaching. *Professional Development in Education*, *39* (2), 168-185. https://doi.org/10.1080/19415257.2012.753931

*Charteris, J., & Smardon, D. (2014). Dialogic peer coaching as teacher leadership for professional inquiry. *International Journal of Mentoring and Coaching in Education*, *3* (2), 108-124. https://doi.org/10.1108/IJMCE-03-2013-0022

*Charteris, J., & Smardon, D. (2015). Teacher agency and dialogic feedback: Using classroom data for practitioner enquiry. *Teaching and Teacher Education*, *50*, 114-123. https://doi.org/10.1016/j.tate.2015.05.006

*Charteris, J., & Smardon, D. (2016). Professional learning as *diffractive* practice: Rhizomatic peer coaching. *Reflective Practice*, *17* (5), 544-556. https://doi.org/10.1080/14623943.2016.1184632

Cravens, X. C., & Hunter, S. B. (2021). Assessing the impact of collaborative inquiry on teacher performance and effectiveness. *School Effectiveness and School Improvement*, *32* (4), 564-606. https://doi.org/10.1080/09243453.2021.1923532

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Learning Policy Institute. https://doi.org/10.54300/122.311

De la Iglesia, B. & Rosselló, M. R. (2018). Aplicación del sistema internacional de observación y *feedback* docente (ISTOF-II) en un contexto educativo no anglosajón [Application of IST-OF-II System in no-Anglo-Saxon educational context]. *REICE: Revista Electrónica Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, *16* (1), 89-104. https://doi.org/10.15366/reice2018.16.1.006

Doan, L. (2013). Is feedback a waste of time? The students' perspective. *Journal of Perspectives in Applied Academic Practice*, *1* (2), 3-10. https://doi.org/10.14297/jpaap.v1i2.69

Dos Santos, M. (2016). Calidad y satisfacción: el caso de la Universidad de Jaén [Quality and satisfaction: The case of the University of Jaén]. *Revista de la Educación Superior*, *45* (178), 79-95. https://doi.org/10.1016/j.resu.2016.02.005

Duran, D. (2019). Aprendizaje docente entre iguales: maestros y escuelas que aprenden unos de otros [Peer-to-peer teacher learning: Teachers and schools learning from each other]. *Àmbits de Psicopedagogia i Orientació*, (50), 47-58. https://doi.org/10.32093/ambits.v0i50.1219

*Duran, D., Miquel, E., & Corcelles, M. (2020). La observación entre iguales como mecanismo de desarrollo profesional docente: la percepción de los participantes de la Xarxa de Competències Bàsiques [Peer observation as a teacher professional development mechanism: The perception of participants in Xarxa de Competències Bàsiques]. *Àmbits de Psicopedagogia i Orientació*, (53), 48-59. https://doi.org/10.32093/ambits.vi53.2636

Emirbayer, M., & Mische, A. (1998). What is agency? *American Journal of Sociology, 103* (4), 962-1023. https://doi.org/10.1086/231294

Escudero, J. M., Cutanda, M. T., & Trillo, F. (2017). Aprendizaje docente y desarrollo profesional del profesorado [Teacher learning and teacher professional development]. *Profesorado: Revista de currículum y formación del profesorado, 21*(3), 83-102. https://recyt.fecyt.es/index.php/profesorado/article/view/59790

Esteve, O., Alsina, Á., y Melief, K. (Coords.). (2011). *Creando mi profesión: una propuesta para el desarrollo profesional del profesorado [Creating my profession: An approach to teacher professional development]*. Octaedro.

García-Jiménez, E. (2015). La evaluación del aprendizaje: de la retroalimentación a la autorregulación. El papel de las tecnologías [Assessment of learning: From feedback to self-regulation. The role of technology]. *RELIEVE - Revista Electrónica de Investigación y Evaluación Educativa*, *21* (2). https://doi.org/10.7203/relieve.21.2.7546

García-Sanpedro, M. J. (2012). *Feedback* y *feedforward*: estrategias de mejora para la evaluación continua [Feedback and feedforward: Improvement strategies for continuous evaluation]. En *Jornada d'innovació docent UPC: presentació de resultats dels projectes de millora de la docència [UPC teaching innovation day: presentation of the results of teaching improvement projects]* (351-359). RIMA; UPC-ICE. https://upcommons.upc.edu/bitstream/handle/2099/12773/18-GRAPA-4-MJGarciaSanPedro-351-359.pdf

Garello, M. V., & Rinaudo, M. C. (2013). Autorregulación del aprendizaje, *feedback* y transferencia de conocimiento. Investigación de diseño con estudiantes universitarios [Self-regulation of learning, feedback and knowledge transfer. Design research with university students]. *REDIE, Revista Electrónica de Investigación Educativa*, *15* (2), 131-147. https://redie.uabc.mx/redie/article/view/451

Hargreaves, A., & O'Connor, M. T. (2018). *Collaborative professionalism: When teaching together means learning for all*. CorwinPress.

Hattie, J., & Timperley, H. (2007). El poder de la retroalimentación [The power of feedback]. *Review Educational Research*, *77* (1), 81-112. https://doi.org/10.3102/003465430298487

*Huber, S. G. (2013). Multiple learning approaches in the professional development of school leaders: Theoretical perspectives and empirical findings on self-assessment and feedback. *Educational Management Administration and Leadership*, *41* (4), 527-540. https://doi.org/10.1177/1741143213485469

*Ivarsson, L. (2019). What's in it for me? Peer observation of teaching: Experiences from a primary school in Sweden. *International Journal of Learning, Teaching and Educational Research*, *18* (3), 128-141. https://doi.org/10.26803/ijlter.18.3.7

*Jao, L. (2013). Peer coaching as a model for professional development in the elementary mathematics context: Challenges, needs and rewards. *Policy Futures in Education*, *11* (3), 290-298. https://doi.org/10.2304/pfie.2013.11.3.290

*Johnston, A. L., Baik, C., & Chester, A. (2022). Peer review of teaching in Australian higher education: A systematic review. *Higher Education Research and Development*, *41* (2), 390-404. https://doi.org/10.1080/07294360.2020.1845124

Krichesky, G. J., & Murillo, F. J. (2018). La colaboración docente como factor de aprendizaje y promotor de mejora. Un estudio de casos [Teacher collaboration as a factor for learning and school improvement. A case study]. *Educación XX1*, *21* (1), 135-155. https://doi.org/10.5944/educxx1.20181

*Kunemund, R. L., Kennedy, M. J., Carlisle, L. M., VanUitert, V. J., & McDonald, S. D. (2022). A multimedia option for delivering feedback and professional development to teachers. *Journal of Special Education Technology*, *37* (2), 336-346. https://doi.org/10.1177/01626434211004121

*Limbere, A. M., Munakata, M., Klein, E. J., & Taylor, M. (2022). Exploring the tensions science teachers navigate as they enact their visions for science teaching: what their feedback can tell us. *International Journal of Science Education*, *44* (12), 1897-1915. https://doi.org/10.1080/09500693.2022.2105413

Littell, J. H., Corcoran, J., & Pillai, V. (2008). *Systematic reviews and meta-analysis*. Oxford UniversityPress.

Lizasoain, L., Tourón, J., & Sobrino, Á. (2015). La evaluación del profesorado español y el impacto del *feedback* en las prácticas docentes. Análisis de TALIS 2013 [Teacher evaluation in Spain and the impact of feedback on teaching practices. Analysis of TALIS 2013]. **Revista Española de Pedagogía**, *73* (262), 465-481. https://doi.org/10.22550/2174-0909.2639

Mclean, A., Bond, C., & Nicholson, H. (2014). An anatomy of feedback: A phenomenographic investigation of undergraduate students' conceptions of feedback. *Studies in Higher Education*, *40* (5), 921-932. https://doi.org/10.1080/03075079.2013.855718

Mejía, M. R. (2011). *Educación(es) en la(s) globalización(es): entre el pensamiento único y la nueva crítica [Education(s) in globalization(s): Between uniform thinking and the new critique]*. Universidad de Ciencias y Humanidades, Fondo Editorial. https://repositorio.uch.edu.pe/handle/20.500.12872/38

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., Altman, D., Antes, G., & Tugwell, P. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement (Chinese edition). *Journal of Chinese Integrative Medicine*, *7* (9), 889-896. https://doi.org/10.1136/bmj.b2535

*Mouraz, A., Pinto, D., & Torres, C. A. (2022). Effects of a model for multidisciplinary peer observation of teaching in teacher professional development and in nurturing a reflective school. *Reflective Practice*, *24* (1), 45-48. https://doi.org/10.1080/14623943.2022.2130225

*Murphy, R., Weinhardt, F., & Wyness, G. (2021). Who teaches the teachers? A RCT of peer-to-peer observation and feedback in 181 schools. *Economics of Education Review*, *82*, 102091. https://doi.org/10.1016/j.econedurev.2021.102091

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, *31* (2), 199-218. https://doi.org/10.1080/03075070600572090

*O'Leary, M. (2012). Exploring the role of lesson observation in the English education system: A review of methods, models and meanings. *Professional Development in Education*, *38* (5), 791-810. https://doi.org/10.1080/19415257.2012.693119

O'Leary, M. (2020). *Classroom Observation. A guide to effective observation of teaching and learning* (2.nd ed.). Routledge.

O'Leary, M., & Savage, S. (2020). Breathing new life into the observation of teaching and learning in higher education: Moving from the performative to the informative. *Professional Development in Education*, *46* (1), 145-159. https://doi.org/10.1080/19415257.2019.1633386

OECD. (2014). *Education at a glance*. OECD Publishing. https://doi.org/10.1787/19991487

OECD. (2019). *TALIS 2018 results (volume I): Teachers and school leaders as lifelong learners*. OECD Publishing. https://doi.org/10.1787/23129638

O'Mahony, C., & Schwartz, B. (2018). Peer observation consortium creation and implementation. *Center for English Language Education Journal*, (26), 37-52.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Moher, D. (2021). Declaración PRISMA 2020: una guía actualizada para la publicación de revisiones sistemáticas [The PRISMA 2020 statement: An updated guideline for reporting systematic reviews]. *Revista Española de Cardiología*, *74* (9), 790-799. https://doi.org/10.1016/j.recesp.2021.06.016

Pancsofar, N., & Petroff, J. G. (2013). Professional development experiences in co-teaching: Associations with teacher confidence, interests, and attitudes. *Teacher Education and Special Education*, *36* (2), 83-96. https://doi.org/10.1177/0888406412474996

*Parr, J. M., & Hawe, E. (2017). Facilitating real-time observation of, and peer discussion and feedback about, practice in writing classrooms. *Professional development in education*, *43* (5), 709-728. https://doi.org/10.1080/19415257.2016.1241818

*Perry, T., Davies, P., & Brady, J. (2020). Using vídeo clubs to develop teachers' thinking and practice in oral feedback and dialogic teaching. *Cambridge Journal of Education*, *50* (5), 615-637. https://doi.org/10.1080/0305764X.2020.1752619

Petticrew, M., & Roberts, H. (2006). *Systematic reviews in the social sciences: A practical guide*. John Wiley y Sons.

Pietarinen, J., Pyhältö, K., & Soini, T. (2016). Teacher's professional agency - A relational approach to teacher learning. *Learning: Research and Practice*, *2* (2), 112-129. https://doi.org/10.1080/23735082.2016.1181196

Pinya, C., De la Iglesia, B., Verger, S., & Rosselló, M. R. (2020). Diseño, aplicación y valoración del *feedback* formativo para la tutorización del TFG [Design, application, and assessment of formative feedback in final degree project]. *Magister: revista de formación del profesorado e investigación educativa*, *32* (1), 1-8. https://doi.org/10.17811/msg.32.1.2020.1-8

Pyhältö, K., Pietarinen, J., & Soini, T. (2015). Teachers' professional agency and learning - From adaption to active modification in the teacher community. *Teachers and Teaching*, *21* (7), 811-830. https://doi.org/10.1080/13540602.2014.995483

Rapanta, C., Garcia-Mila, M., Remesal, A., & Gonçalves, C. (2021). The challenge of inclusive dialogic teaching in public secondary school. *Comunicar*, *29* (67), 21-31. https://doi.org/10.3916/C66-2021-02

*Ridge, B. L., & Lavigne, A. L. (2020). Improving instructional practice through peer observation and feedback: A review of the literature. *Education Policy Analysis Archives*, *28* (61), 1-32. https://doi.org/10.14507/epaa.28.5023

Rodríguez, G., Ibarra, M. S., & García-Jiménez, E. (2013). Autoevaluación, evaluación entre iguales y coevaluación: conceptualización y práctica en las universidades españolas [Self-assessment, peer assessment, and co-assessment: Conceptualization and practice in Spanish universities]. *Revista de Investigación en Educación, 11* (2), 198-210. https://revistas.uvigo.es/index.php/reined/article/view/1958

*Rosselló, M. R., & De la Iglesia, B. (2021). Peer feedback and its impact on professional teaching development. *Revista Complutense de Educación*, *32* (3), 371-382. https://doi.org/10.5209/rced.70173

Sanmartí, N. (2010). *Avaluar per aprendre. L'avaluació per millorar els aprenentatges de l'alumnat en el marc del currículum per competències [Assess to learn. Assessment to improve student learning within the framework of the competency-based curriculum].* Generalitat de Catalunya.

Shortland, S. (2010). Feedback within peer observation: Continuing professional development and unexpected consequences. *Innovations in Education and Teaching International*, *47* (3), 295-304. https://doi.org/10.1080/14703297.2010.498181

Silva-Peña, I. (2007). *Condiciones y contextos en torno al desarrollo profesional docente producido a través de la investigación-acción [Conditions and contexts around teacher professional development produced through action research]* [Doctoral Thesis]. Pontificia Universidad Católica de Chile.

*Singh, K., & Mueller, J. (2021). Taking a nuanced view of the role of teacher feedback in the elementary classroom. *Teachers and Teaching: Theory and Practice*, *27* (1-4), 95-115. https://doi.org/10.1080/13540602.2021.1933415

*Smith, R., & Lynch, D., (2014). Improving teaching through coaching, mentoring and feedback: A review of literature. *MIER Journal of Educational Studies*, *4* (2), 136-166. https://mierjs.in/index.php/mjestp/article/view/1467

Stoll, L. (2015). Using evidence, learning and the role of professional learning communities. In C. Brown (Ed.), *Leading evidence use in schools* (pp. 54-65). IOE Press.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage Publications.

*Thurlings, M., Vermeulen, M., Bastiaens, T., & Stijnen, S. (2012). Investigating feedback on practice among teachers: Coherence of observed and perceived feedback. *Mentoring and Tutoring: Partnership in Learning*, *20* (4), 473-490. https://doi.org/10.1080/13611267.2012.725981

Todd, M. A. (2017). Peer observation as a tool for professional development. *Culminating Projects in English, 84*. https://repository.stcloudstate.edu/engl_etds/84/

Topping, K. J. (2005). Trends in peer learning. *Educational psychology*, *25* (6), 631-645. https://doi.org/10.1080/01443410500345172

*Torres, A. C., Lopes, A., Valente, J. M. S., & Mouraz, A. (2017). What catches the eye in class observation? Observers' perspectives in a multidisciplinary peer observation of teaching program. *Teaching in Higher Education*, *22* (7), 822-838. https://doi.org/10.1080/13562517.2017.1301907

*Van den Bergh, L., Ros, A., & Beijaard, D. (2014). Improving teacher feedback during active learning: Effects of a professional development program. *American Educational Research Journal*, *51* (4), 772-809. https://doi.org/10.3102/0002831214531322

*Van der Lans, R. M., Van de Grift, W. J. C. M., Van Veen, K., & Fokkens-Bruinsma, M. (2016). Once is not enough: Establishing reliability criteria for feedback and evaluation decisions based on classroom observations. *Studies in Educational Evaluation*, *50*, 88-95. https://doi.org/10.1016/j.stueduc.2016.08.001

Van Gennip, N., Gijbels, D., Segers, M., & Tillema, H. (2010). Reactions to 360° feedback: The role of trust and trust-related variables. *International Journal of Human Resources Development and Management*, *10* (4), 362-379. https://doi.org/10.1504/IJHRDM.2010.036088

*Voerman, L., Meijer, P. C., Korthagen, F., & Simons, R. J. (2015). Promoting effective teacher-feedback: From theory to practice through a multiple component trajectory for professional development. *Teachers and Teaching: Theory and Practice*, *21* (8), 990-1009. https://doi.org/10.1080/13540602.2015.1005868

Vygotsky, L. S., y Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard University press.

Wisniewski, B., Zierer, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.03087

*Wylie, E. C., & Lyon, C. J. (2020). Developing a formative assessment protocol to support professional growth. *Educational Assessment*, *25* (4), 314-330. https://doi.org/10.1080/10627197.2020.1766956

Yang, M., & Carless, D. (2013). The feedback triangle and the enhancement of dialogic feedback processes. *Teaching in Higher Education*, *18* (3), 285-297. https://doi.org/10.1080/13562517.2012.719154

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, *45* (1), 166-183. https://doi.org/10.3102/0002831207312909

Authors' biographies

Begoña De la Iglesia. PhD in Education and Senior Lecturer/Associate Professor in the Department of Applied Pedagogy and Educational Psychology at the Universiad de las Islas Baleares (PAPE). She is a member of GREID, the Inclusive Education and Diversity research group; author of numerous publications (articles and book chapters), and has spoken at over a hundred seminars, symposia and conferences, both national and international. Her teaching and research career has focused on the needs of students with learning difficulties from an inclusive perspective, as well as on teacher training processes. She is currently joint PI for research into observation and feedback for professional development (R&D project PID2020-113719RB-I00, funded by MCIN/AEI/10.13039/501100011033/).

https://orcid.org/0000-0001-5065-9071

Dolors Forteza. PhD in Psychopedagogy and Se-nior Lecturer/Associate Professor in the area of School Teaching and Organisation. Her broad teaching and research career has focussed on the needs of students in situations of vulnerability from the perspective of inclusion, in the quality of life-and-disability relationship, in teacher training and in peer feedback for teacher professional development. She is a member of the working team for the R&D project PID2020-113719RB-I00, funded by MCIN/AEI/10.13039/501100011033/.Sheisamember of GREID, the Inclusive Education and Diversity research group; author of numerous publications (articles and book chapters), and has spoken at over a hundred seminars, symposia and conferences, both national and international. She is a

member of the Spanish Pedagogical Society and Chair of the Inclusive Education and Universities Network (RUEI).

https://orcid.org/0000-0002-2053-9770

Laura Duma. Graduate in Pedagogy from the Universidad de las Islas Baleares and Master's Degree in Human Resources Management. Psychological and Pedagogical Intervention, and Master's Degree in Occupational Risk (Occupational Risk Prevention) from the same university. She is currently contracted as a member of the research staff at the UIB and forms part of the working team for the R&D project PID2020-113719RB-I00, funded by MCIN/AEI/10.13039/501100011033/.

https://orcid.org/0000-0002-0182-5413

Formation of teacher expectations: Previous student performance and teacher characteristics as explanatory factors

Formación de expectativas docentes: rendimiento previo del estudiante y características del profesor como factores explicativos

Carmen A. BARRIGA, PhD. Postdoctoral Researcher, Millennium Nucleus for the Science of Learning; Assistant Professor, Universidad San Sebastián, Chile (*carmen.espinoza@uss.cl*).

Cristina RODRÍGUEZ, PhD. Substitute Director, Millennium Nucleus for the Science of Learning; Universidad de Talca, Chile (crodri@ull.edu.es).

Roberto A. FERREIRA, PhD. Director, Millennium Nucleus for the Science of Learning; Associate Professor, Universidad de Talca, Chile (*roberto.ferreira@utalca.cl*).

Marcos H. CÁRDENAS-MANCILLA, PhD. Young Researcher, Millennium Nucleus for the Science of Learning; Researcher, Interdisciplinary Program for Experimental Research in Communication and Cognition (PIIECC), Universidad de Santiago de Chile (*marcos.cardenas.m@usach.cl*).

Abstract:

Although the effect of teacher expectations on students' academic performance has been verified, few studies have focused on establishing which factors affect the formation of these expectations, especially ones that consider previous student performance and the professional experience of the teacher as explanatory factors. The aim of this study was to examine the effect of these factors on the formation of teacher expectations. The sample comprised 21 teachers from 11 schools, with low, medium, and high experience levels, as well as 363 first-year primary-school students from Chile (ages 6-7), whose academic performance was measured at the start of the school year. Teacher expectations were measured part-way through the school year. A mixed ANOVA analysis made it possible to assess whether teacher expectation varies depending on previous

Date of receipt of the original: 2023-04-09.
Date of approval: 2023-10-23.
Please cite this article as follows: Barriga, C. A., Rodríguez, C., Ferreira, R. A., & Cárdenas-Mancilla, M. H. (2024). Formation of teacher expectations: Prior achievement and teacher characteristics as explanatory factors [Formación de expectativas docentes: rendimiento previo del estudiante y características del profesor como factores explicativos]. *Revista Española de Pedagogía, 82* (288), 359-375. https://doi.org/10.22550/2174-0909.4042

performance and teacher experience. The results indicated that previous performance and teacher experience both have a significant effect on how expectations form. However, the effect of experience varies depending on the different dimensions of the expectations.

Keywords: teacher expectations, teacher experience, previous performance, teacher characteristics.

Resumen:

Si bien se ha confirmado el efecto de las expectativas docentes en el rendimiento académico de los estudiantes, son escasos los estudios centrados en constatar qué variables afectan a la formación de dichas expectativas, en especial aquellos que consideran el rendimiento previo del estudiante y la experiencia laboral del profesor como factores explicativos. El objetivo de esta investigación fue examinar el efecto de ambos elementos en la formación de la expectativa del docente. La muestra consistió en 21 profesores de 11 colegios, con experiencia baja, media y alta. A ellos se sumaron 363 alumnos de primer año básico (6-7 años), cuyo rendimiento académico se midió al inicio del año escolar. Las expectativas docentes se midieron a mediados del año escolar. Un análisis ANOVA de efectos mixtos permitió evaluar si la expectativa docente varía en función del rendimiento previo y de la experiencia docente. Los resultados indicaron que existe un efecto significativo tanto del rendimiento previo como de la experiencia docente en la formación de las expectativas. Sin embargo, el efecto de la experiencia varía de acuerdo con las distintas dimensiones de las expectativas.

Palabras clave: expectativas docentes, experiencia docente, rendimiento previo, características del profesor.

1. Introduction

In recent decades, research has consistently shown that teacher expectations are an important element that affects students' learning outcomes (Friedrich et al., 2015; Gershenson et al., 2015; Li et al., 2023; Lorenz 2018; Meissel et al., 2017; Rubie-Davies & Rosenthal, 2016; Schenke et al, 2017; Timmermans et al., 2021; Tobisch & Dresel, 2017; Wang et al., 2019; Wang et al., 2021; Westphal et al., 2016). Teacher expectations seem to develop in response to certain characteristics of the students and of the teachers themselves (Ross, 1998). More specifically, expectations are thought to be influenced by students' previous performance, among other factors (Agirdag et al., 2013; Friedrich et al., 2015; Kuklinski & Weinstein, 2001; Rubie-Davies et al., 2014). However, there has been little consideration of this factor compared to others such as students' socio-economic level (Lorenz et al., 2016; Timmermans et al., 2015) and ethnicity (Gentrup et al., 2020; Wang et al., 2018). There is also evidence that teachers' characteristics, such as experience and gender, also influence the shaping of their own expectations (Riegle-Crumb & Humphries, 2012; Watson et al., 2017; Whitley, 2010). Specifically, the impact of teacher experience is quite small

and there is a lack of consistency between existing findings (Flanagan et al., 2020; Wang et. al., 2018). Consequently, this study will examine the effect of students' previous performance and the experience of teachers on the formation of teacher expectations.

1.1. Formation of teacher expectations

Teacher expectations are defined as "teachers' perceptions of a student's performance, capacity and level of educational achievement" (Dusek & Joseph, 1983). They are based on what the teacher knows about these students at a given moment (Good & Brophy, 1997). These expectations exist in the classroom and affect students' learning outcomes (Chandrasegaran & Padmakumari, 2018; Gentrup et al., 2020) positively or negatively (Rubie-Davies et al., 2006). So, if a teacher has high expectations of the level of learning of his or her students, these will tend to display better academic performance. And, conversely, when teachers have low expectations of their students' achievements, they will tend to display lower performances (Flanagan et al., 2020).

Teacher expectations are presented in the classroom in two ways: individually, that is to say, the teacher has expectations for each of the students; and collectively, when the focus of the teacher expectation is the class as a group (Van Houtte, 2011). Teacher expectations have mainly been measured individually, resulting in small effect sizes (Jussim et al., 2009). Few studies have assessed expectations at a collective level, despite the fact that the prior evidence shows that measures of this type could have a better relationship with students' learning (Brophy & Good, 1974). In this regard, Rubie-Davies (2010) investigated the effects of expectations at the class level, finding large effects for teachers with high expectations and small effects for teachers with low expectations. It is also important to consider that the effects of teacher expectations on student performance also depend on the age or year group of the students. There is evidence that teacher expectations can have a major impact, principally in the first years of school (Weinstein et al., 2004), although this reduces as students move through the years (Wang et al., 2021; Weinstein et al., 2004).

1.2. Previous student performance and the formation of expectations

One little-studied factor in the formation of teacher expectations is children's previous performance. Existing findings suggest that this is a predictor of teacher expectations (Kuklinski & Weinstein, 2001; Rubie-Davies et. al., 2014; Wang et al., 2018). On these lines, Hinnant et al. (2009) longitudinally analysed relationships between expectations and academic capacity in children from years one, three, and five of primary education in the areas of reading and mathematics. Their results suggested a correlation between students' previous performance and the expectations that the teacher later reports having. It should be noted that this study defined *previous performance* as the academic achievements obtained by the students in the school year immediately before the current one.

Other studies have found that students' previous performance was not associated with teacher expectations when measuring these expectations at the class level, but that there was a relationship when expectations were measured individually for each child (Friedrerich et al., 2015). It has also been observed that the effect of previous performance on teacher expectations seems to depend on the level the students are at. Kuklinski and Weinstein (2001) set out to assess a model of the trajectory of the effects of teacher expectations on the final performance of children from years one to five of primary education. According to the proposed model, initial performance corresponds with a predictor of teacher expectation, but this depended on the students' year group. In year one of primary school, this relationship was weak. However, in year-five of primary school, the effect of previous performance on the teacher's expectations was stronger. The authors concluded that the relationship is weak in the earlier year groups because teachers have less knowledge of the students' school background than with fifth-year students. The authors of this research measured previous performance by taking into account what students had obtained at the start of the school year.

Agreeing with this, Agirdag et al. (2013) found a strong correspondence between the two factors in students from year five of primary school. This study established that teachers believe that students with a low initial performance will have lower academic skills. Consequently, they expect lower academic achievement by these students. The study in question defined *previous performance* as the percentage of students who repeated the school year. For their part, Rubie-Davies et al. (2014) found that, although previous performance explains the variation in teacher expectations in the first year of primary school, in pre-school teachers, these variations are not explained by the previous achievement of the pre-school children. As noted above, there is a predictive relationship between students' previous performance and teacher expectations, but this is weak in the first years. Nevertheless, there are few studies of initial stages, and so research at these levels is required.

1.3. Teacher characteristics in the formation of their own expectations

The characteristics of teachers themselves, specifically their years of professional experience, have been found to be an influential factor in forming expectations. Even so, this area has been the subject of little research and the existing findings are inconclusive (Wang et al., 2018). On these lines, some research has found a negative relationship between teachers' experience and expectations. In other words, as teachers gain more years of professional experience, their expectations tend to become lower (Riegle-Crumb & Humphries, 2012; Whitley, 2010). Riegle-Crumb and Humphries (2012) measured expectation through personal assessment of students by their teachers. Teachers had to state whether they believed that the year they were teaching was easy, appropriate, or difficult for their students. For her part,

Whitley (2010) evaluated expectations through a single item that involved the teacher indicating how much potential particular students had to progress in their studies. The results of both of these studies indicated that teachers with more experience had less positive expectations of their students than their less experienced peers. In contrast, other authors suggest that, as teachers gain experience, they tend to have higher expectations than less experienced teachers, who display lower expectations of their students (Flanagan et al., 2020). Flanagan et al. (2020) indicate that these results are explained because teachers with more years of experience have the ability to resist being influenced by stereotypes, and so their expectations would be higher. These authors used a survey with two scales that considered the expectations and behaviour of teachers in relation to their students. Each scale comprised five items. Rubie-Davies (2010), however, used a list of 15 characteristics of students, that the teachers had to mark on a scale from 1 to 7, where 1 was very much below average and 7 very much above average. Both studies found that teachers with more experience have higher expectations of their students than their peers with less experience do. The discrepancies between the findings we have mentioned could be explained by the use of different instruments to measure expectations; and this might be because there are currently no agreed elements for measuring expectations (Speybroeck et al., 2012).

There is also evidence to suggest that teacher experience does not have a significant effect on teacher expectations (Rubie-Davies et al., 2012). So, it has been found that trainee teachers and in-service teachers have similar expectations of their students (Barriga et al., 2019; Dandy, 2015). It is important to note that the study by Rubie-Davies et al. (2012) had the aim of examining relationships between teacher expectations and the characteristics of the teacher, including experience. However, less-experienced teachers were over represented. This perhaps did not allow comparisons with teachers who had more years of professional practice, which might help explain why the results associated with this factor did not display significant relationships with teacher expectations.

1.4. The present study

In essence, research on teacher expectations has mainly concentrated on their effect on students' academic performance and on the factors that affect the formation of teacher expectations. On this latter point, the most studied factors have been the socio-economic level and ethnicity of the students. Nonetheless, there is limited evidence for how previous student performance and the characteristics of the teacher (e. g., professional experience) affect the formation of these expectations. The few pieces of research that consider the factors in question have measured teacher expectations at an individual level, and there are few findings relating to expectations at the class level. Furthermore, these studies were performed with students aged between 10 and 14. In this sense, it is significant to investigate the first years of school, as students seem to be most sus-

ceptible to their teachers' beliefs in these years. Finally, a greater understanding of the relationships between the factors studied might have more of an impact on the training of future teachers as well as on students' learning outcomes.

Therefore, the present study investigated the effect of previous student performance and the experience of teachers on the formation of their expectations, considering Chilean students from the first year of primary school (ages 6-7). Teacher expectations were measured at the class level, while student performance was assessed individually at the start of the school year. The teachers' experience considered how many years they had been working as teachers. In view of the evidence set out above, we expected to find a relationship (a) between prior student performance and formation of teacher expectation, and (b) between teacher experience and the formation of the teacher expectation.

2. Method

2.1. Participants

The sample in this study consisted of teachers and their respective students. 21 teachers (95% women and 5% men) from 11 schools participated. Their ages ranged from 26 to 59 (M = 36, SD = 8.66). Teachers' experience ranged from 4 to 39 years (M = 10, SD = 5.93). The teachers were classified into three groups based on their years of experience. Teachers with low experience were defined as those with 1-6 years of service. Their ages ranged from 26 to 36 (n = 5, M = 31, SD = 4.81). Teachers with medium experience were defined as those with 7-10 years of service. Their ages ranged from 30 to 35 (n = 8, M = 33, SD = 2.32). Teachers with high experience were defined as those with 11 or more years of service, and their ages ranged from 30 to 55 (n = 8, M = 45, SD = 9.33). The sample of students comprised 363 students from year one of primary education (53% girls and 47% boys) (age, M = 7.1, SD = 0.50).

2.2. Materials

Teacher expectations questionnaire. Teacher expectations of their students' performance were measured using a Likert-type scale (Barriga et al., 2019). The original scale comprised 14 items scored from 1 to 7 (1 = completely disagree, 7 = completely agree) and included 6 dimensions. From these, we selected the following dimensions: Dimension 1 "Positive expectations of academic achievements" (α =.78), comprising the items "Most of my students are capable of learning the content covered in class", "Most of my students will successfully compete this school year", "My students have the necessary academic skills to achieve the expected learning for the year"; dimension 4 "Positive expectations of students' attitude towards their learning" (α =.83), comprising the items "My students are motivated to do their best in class" and "Most of my students have a positive attitude towards learning"; and dimension 5 "Expectations of learning skills" (α =.65), comprising the following items: "It is likely that my students will work in non-professional occupations in future", "There is a high likelihood that

my students, in future, will leave the education system" and "It is likely that in two more years, most of my students will repeat a year". The choice of these dimensions was based on the aim of this study and we used factorial scores to carry out the analyses. The instrument was administered on paper and completed individually, and took 10 minutes to accomplish.

Knowledge of the sounds of letters. This test measures fluency in grapheme–phoneme association. It consists of a worksheet with 100 letters of the alphabet, distributed at random in 10 rows and 10 columns in relation with their order and type of allograph (upper or lower case). Students must say the sounds of the letters in order from left to right as quickly as possible. The score obtained is the number of letters correctly identified in one minute (α =.96).

Reading pseudowords. This test measures fluency in decoding. It comprises 75 one- and two-syllable pseudowords, distributed randomly in 15 rows and 5 columns. The student has to read as many pseudowords as possible in order from left to right. The score obtained is the number of pseudowords correctly identified in one minute (α =.84).

Phonological awareness task. This task measures students' level of phonemic awareness. It comprises 36 words and pseudowords distributed randomly in 18 rows and 2 columns. The tester says a word to the students who must repeat the word out loud and then say the first sound from this word. The score obtained is the number of phonemes correctly identified in one minute (α =.79).

Knowledge of the names of the letters. This task measures the child's knowledge of the alphabet. It consists of a worksheet with 100 letters of the alphabet, distributed at random in 10 rows and 10 columns in relation with their order and type of allograph (upper or lower case). The students had to say the name of the letters presented to them, from left to right, as quickly as possible. The score obtained is the number of letters correctly named in one minute (α = 0.96).

3. Procedure

Before starting the surveys, the parents of the students who participated in the study and the teachers were given information sheets and consent forms. Both documents set out the aim of the research, confirmed that the data would be confidential, and stated that participation was voluntary. The procedure was approved by the Ethics Committee of the Universidad Católica de la Santísima Concepción, Concepción, Chile.

The assessment of the teachers was done mid-way through the school year. To do this, the expectations questionnaire, which has a duration of approximately 15 minutes, was applied individually. The assessment of students' reading performance was done individually, in two sessions with an approximate duration of 15 minutes each. This assessment was done at the start of the school year, with previously trained testers.

4. Results

First, to reduce and create a reading performance variable, we carried out an exploratory factor analysis and factor extraction using principal component analysis with varimax rotation. The results of the analysis showed that the sample was sufficiently large for this analysis to be viable (KMO =.715). On its behalf, Bartlett's test of sphericity indicated that the matrix of correlations differed significantly from the identity matrix; that is to say, the level of correlations between the variables was acceptable to carry out the analysis, χ^2 (6) = 395.99, p <.001. All of the variables were grouped into a single factor that explained 59.90% of the variance with factor loadings exceeding .60 (.832, reading pseudowords; .799; knowledge of the sounds of letters; .739, knowledge of the names of letters; .664; phonological awareness).

Secondly, the descriptive statistics for the expectations variable were calculated according to the level of experience of the teachers. As Table 1 shows, the standard deviations of the factors of "long-term expectations (LTE)", "expectations regarding attitude to learning (EAL)", and "expectations of students' academic performance (EAP)" were within an appropriate range, with normal distribution of absolute values that did not exceed 1.3 *SD* in any of the levels, justifying the use of parametric statistical tests (Tabachnick & Fidell, 2013).

TABLE 1. Descriptive statistics.

Expectations	Experience	Mean	*SD*	*n*
Long-term expectations	Low	5.965	.804	104
	Medium	6.614	.371	108
	High	6.254	.275	101
	Total	6.277	.483	
Expectations of attitudes towards learning	Low	5.889	.566	104
	Medium	6.472	.483	108
	High	5.688	.489	101
	Total	6.016	.512	
Expectations towards academic performance	Low	4.753	1.052	104
	Medium	6.003	1.227	108
	High	6.162	.502	101
	Total	5.639	.927	

Thirdly, we used mixed-effects ANOVA to assess whether teacher expectations vary according to previous performance and teacher experience. The analysis considered different types of teacher expectation as intra-subject factors (long-term expectations / expectations of attitude / expectations towards academic performance). Teacher experience (high experience / medium experience / low experience) was introduced as an inter-subject factor categorised by years of service. Similarly, the previous performance variable was controlled in the model as a covariable. As Mauchly's sphericity test was significant ($\varepsilon = 0.72$, $\chi^2(2) = 110.33$, $p < .001$), the Greenhouse-Geisser correction was used in the *F*-test.

Firstly, a significant intra-subject effect of the type of teacher expectation on the scores from the questionnaire was identified, with a large effect size, $F_{(1.56,\ 482.67)} = 62.75$, $p < .001$, $\eta^2_p = .17$. This means that there are differences between the scores given by the teachers according to the type of expectation. Teacher experience also had a significant intra-subject effect, $F_{(2,309)} = 104.187$, $p < .001$, $\eta^2_p = .40$ as did previous performance, $F_{(1,\ 309)} = 16.82$, $p < .001$, $\eta^2_p = .05$, meaning that teacher expectations are affected equally by both variables at all levels. Finally, there was a significant interaction between teacher expectation and teacher experience, indicating that teacher expectation varies according to the years of experience of the teacher. No effects of the interaction between teacher expectation and previous performance were observed: $F_{(1.56,\ 482.67)} = 1.11$, $p = .316$, which suggests that the initial reading performance of the students affects all dimensions equally. According to commonly accepted guidelines (Cohen, 1988), the effect sizes (partial eta squared) found indicate small to large effects ($\eta^2_p = <.01$ irrelevant; .01 small; .06 medium; .14 large).

As for the results of the post hoc tests for teacher experience, the analysis showed that this differs significantly between high and low experience, high and medium, and low and medium (.792 units, $p < .001$). In the case of teacher expectation, the analysis showed that there are significant differences between long-term expectations and expectations of attitudes towards learning, long-term expectations and expectation towards academic performance, the same as between expectations of attitudes towards learning and expectation towards academic performance.

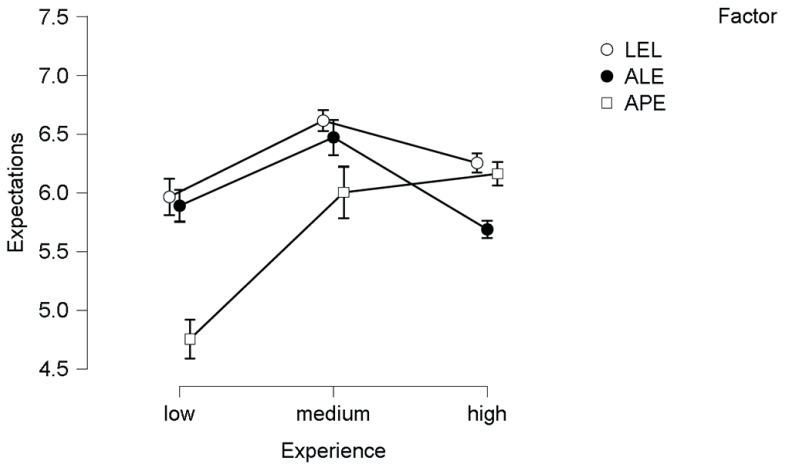
Finally, Table 2 shows the results of the contrasts to interpret the interaction between teacher experience and teacher expectation. Teachers with low and medium experience display significant differences in expectations compared to their peers with high experience. That is to say, while expectations towards the attitude towards learning and long-term expectations are higher than expectations towards academic performance among teachers with low and medium experience, teachers with high experience have similar expectations towards the attitude towards learning and expectations towards academic performance, while their long-term expectations are lower (see Figure 1).

TABLE 2. Post hoc contrasts-experience × expectations.

		Mean Difference	*SE*	*t*	Cohen's *D*	p_{tukey}
High, LTE	High, EAL	.570	.104	5.48	0.808	<.001
	High, EAP	.127	.104	1.224	0.180	.951
Low, LTE	Low, EAL	.071	.102	.699	0.101	.999
	Low, EAP	.180	.102	11.549	1.671	<.001
Medium, LTE	Medium, EAL	.142	.098	1.453	0.201	.877
	Medium, EAP	.609	.098	6.245	0.863	<.001
High, EAL	High, EAP	-.443	.104	-4.256	-0.627	<.001
Low, EAL	Low, EAP	1.108	.102	10.849	1.570	<.001
Medium, EAL	Medium, EAP	.468	.098	4.792	0.662	<.001

Note: LTE = long-term expectations; EAL = expectations of attitude towards learning; EAP = expectation towards academic performance.

FIGURE 1. Teacher experience × expectations interaction.



5. Discussion and conclusion

The aim of this study was to examine the effect of previous student performance and teacher experience on the formation of teacher expectations, considering Chilean students from year one of primary school. The results of this research are of interest given the limited body of evidence currently available, especially, in the early years of school, a

time when students are more sensitive to teacher expectations. Furthermore, expectations have mainly been assessed at an individual level and not at a class level, as this study did.

On the whole, the results indicate that teachers display high long-term expectations and expectations of attitudes towards learning, as well as low expectations towards academic performance. In relation to teachers' level of experience, the results showed that long-term expectations and expectations of attitudes towards learning are higher in teachers with medium experience. Meanwhile, expectations towards academic performance are higher in teachers with more experience than in those who have less experience.

Inferential analysis of the results showed effects of previous performance of the student and of teacher experience on teacher expectations. As in previous studies (Agirdag et al., 2013), the evidence relating to previous performance shows that this affects the formation of expectations in all of their dimensions significantly and in the same way. Nonetheless, the study by Agirdag et al. (2013) used an indirect measure of previous performance. They considered the percentage of students who repeated a school year and, to evaluate expectations, they applied a 31-item scale encompassing behaviours adjusted to the scale, cognitive-motivational behaviours, and personal-social behaviours. The current results suggest, for example, that,when students have high performance at the start of the year, teachers expect this to remain high throughout the year in question, as well as having positive attitudes towards their learning. Moreover, teachers predict more positive academic futures for those students who have higher previous performance. In contrast with the aforementioned results, Kuklinsky and Weinstein (2001) found a weak relationship between previous performance and teacher expectations for students from the first year or primary education, possibly because the teachers considered students' previous performance in the pre-school year. This contrasts with our findings, whose measurement of previous performance was calculated at the start of the first year of primary.

In relation to the results regarding teacher experience, we observed that this significantly affects the formation of expectations, but does so differently in its different dimensions. The long-term expectations and expectations of academic attitudes of teachers with 1 to 10 years of professional experience (that is, those with low and medium experience) were higher than their expectations towards academic performance. In other words, these teachers tend to have more positive expectations in relation to attitudes and predict more successful academic futures for students, but they report low expectations towards the academic performance that the students will obtain during the school year. On the other hand, teachers with 11 or more years of work (ones with high experience) have high expectations, both in the long-term and for academic performance in the current year, but they display low expectations towards the attitude of their students. These findings

are partly consistent with Flanagan et al. (2020), who measured expectations using a survey with two scales of five items each: one scale referring to expectations and another relating to the teacher's behaviour. Their results established that experience has an impact on teacher expectations, showing that, as teachers gain more years of experience, their expectations of their students are higher compared to teachers with fewer years of experience. Nonetheless, the findings mentioned do not allow for differentiation between dimensions.

In summary, this research makes important contributions to showing that expectations of academic performance increase with the level of experience of the teacher. For their part, there is a change in the behaviour of expectations of attitudes towards learning as teachers acquire more experience. A possible explanation for the earlier results might be found in Guo's (2012) suggestion that, as teachers gain experience, they set aside the stereotypes present towards certain groups of students. In other words, experience enables them to understand the existence of the individual characteristics of their students. Therefore, as teachers gain experience, they overcome the acquired biases and are capable of seeing their students' true academic capabilities independently of their social characteristics. In contrast with the results mentioned, some findings have established that experience does not seem to create differentiated expectations towards students, suggesting that teachers with low and with high experience display similar expectations of their students (Dandy et al., 2015; Rubie-Davies et al., 2012). Nonetheless, these studies measured expectations centred only on the students' academic performance without considering other dimensions as the present work did. In view of the foregoing, further research that considers expectations in different dimensions of experience with the aim of contributing to the convergence of results is needed.

As for how teacher expectations are assessed, unlike most previous research, this study used an instrument that enables teacher expectations to be grouped into dimensions. This made it possible to establish that the effect of teacher experience varies according to the specific domain of the expectation. It is important to note that few studies have measured teacher expectations in this way (Raisa & Alisa, 2018; Regalla, 2013). Consequently, the current results make it possible to assess different aspects relating to the expectations that the teacher forms, such as, for example, ones regarding the long-term academic performance of their students, their attitudes, and their current academic performance. This way of measuring expectations makes it possible to identify whether there are differences in how teachers project expectations in the different fields relating to the students' learning and subsequent academic outcomes. It is, therefore, important to consider this aspect in future works, as asking teachers about their long-term expectations is not the same as asking what they expect regarding the current academic performance of their students. It is important to consider the different focuses of expectations

because, as has been shown, this produces different results.

Finally, the findings with regards to the differences between the types or dimensions of expectations according to teacher experience are unprecedented results, as there are not currently any studies that have considered this matter. According to Raisa and Alisa (2018), educators create a combination of expectations with regards to what they expect of their students, in other words, expectations about academic abilities, expectations about attitudes, expectations relating to motivation, and expectations relating to the capacity for school work are mixed. King (2014) noted that teachers had high expectations of their students' ability to achieve a good performance and, at the same time, low expectations regarding the attitude of the student to obtain academic achievements. In line with that approach, the results of the present study can be interpreted in accordance with the theory of the stereotype content model. This model proposes that each stereotype has two dimensions, one of "warmth" and another of "competence", and that stereotypes tend to be mixed (Fiske, 2015). Warmth refers to the personal qualities that the other perceives in a group (e. g., warm, sincere, friendly); in contrast, competence refers to the qualities that contribute to success (competitive, intelligent). This is how the dimensions of the stereotype could be associated with teacher expectations. It is important that future research considers the characteristics of the teacher and student in the formation of teacher expectations, taking into account the contained stereotypes model, associated with the heterogeneity of the expectations according to the underlying dimensions.

In light of the findings of this work, it is necessary to identify some limitations that enable us to open the way to future research. One aspect to consider is the number of teachers participating in the measurement of expectations. It would be of great value to carry out future research that considers a larger number of teachers with different levels of experience. Longitudinal research that makes it possible to monitor the trajectories of expectations in a particular teacher in relation to their effect on academic performance would also be desirable. With regards to the characteristics of the teachers, it is important to consider greater balance in regards to their gender. Similarly, future works should consider measuring expectations individually with the aim of being able to determine the existence of individual differences in teacher expectations.

In conclusion, we have been able to demonstrate that teacher expectations are affected in the same way in all of their dimensions by prior student performance and in different ways by the experience of the teacher. This last point suggests that it is vital to explore in more depth how teacher expectations are operationalised, considering their different dimensions and how these are affected, both by factors of the teacher and of the students. Analysing both factors together would make it possible to explain in greater depth the effect of expectations in the classrooms and their relationship with academic performance.

This is vital to be able to determine potential intervention strategies for newer teachers in order to benefit / promote the formation of their expectations.

Funding

This study was supported by ANID-Chile (National Science and Technology Development Fund Postdoctoral grant no. 3230645; National Science and Technology Development Fund Regular no. 1161213) and Núcleo Milenio para la Ciencia del Aprendizaje (MiNSoL - Chile).

References

Agirdag, O., Van Avermaet, P., & Van Houtte, M. (2013). School segregation and math achievement: A mixed-method study on the role of self-fulfilling prophecies. *Teachers College Record*, *115* (3), 1-50. https://doi.org/10.1177/016146811311500305

Barriga, C. A., Rodríguez, C., & Ferreira, R. A. (2019). Factors that bias teacher expectations: Findings from Chile. *Revista Latinoamericana de Psicología*, *51* (3), 171-180. http://dx.doi.org/10.14349/rlp.2019.v51.n3.4

Brophy, J. E., & Good, T. L. (1974). *Teacher-student relationships: Causes and consequences*. Holt, Rinehart y Winston.

Chandrasegaran, J., & Padmakumari, P (2018). The role of self-fulfilling prophecies in education: Teacher-student perceptions. *Journal on Educational Psychology*, *12* (1), 8-18.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2.nd ed.). Routledge.

Dandy J., Durkin K., Barber, B., & Houghton, S. (2015). Academic expectations of Australian students from Aboriginal, Asian and Anglo backgrounds: Perspectives of teachers, trainee-teachers and students. *International Journal of Disability, Development and Education*, *62* (1), 60-82. https://doi.org/10.1080/1034912X.2014.984591

Dusek, J. B., & Joseph, G. (1983). The bases of teacher expectancies: A meta-analysis. *Journal of Educational Psychology*, *75* (3), 327-346. https://doi.org/10.1037/0022-0663.75.3.327

Fiske, S. T. (2015). Intergroup biases: A focus on stereotype content. *Current opinion in behavioral sciences*, *3*, 45-50. https://doi.org/10.1016/j.cobeha.2015.01.010

Flanagan, A. M., Cormier, D. C., & Bulut, O. (2020). Achievement may be rooted in teacher expectations: Examining the differential influences of ethnicity, &ears of teaching, and classroom behaviour. *Social Psychology of Education*, *23* (6), 1429-1448. https://doi.org/10.1007/s11218-020-09590-y

Friedrich, A., Flunger, B., Nagengast, B., Jonkmann, K., & Trautwein, U. (2015). Pygmalion effects in the classroom: Teacher expectancy effects on students' math achievement. *Contemporary Educational Psychology*, *41*, 1-12. https://doi.org/10.1016/j.cedpsych.2014.10.006

Gentrup, S., Lorenz, G., Kristen, C., & Kogan, I. (2020). Self-fulfilling prophecies in the classroom: Teacher expectations, teacher feedback and student achievement. *Learning and Instruction*, *66*, 101296. https://doi.org/10.1016/j.learninstruc.2019.101296

Gershenson, S., Holt S., & Papageorge N. (2015). Who believes in me? The effect of student-teacher demographic match on teacher expectations. *Economics of Education Review*, *52*, 209-224. https://doi.org/10.1016/j.econedurev.2016.03.002

Good, T. L., & Brophy, J. E. (1997). *Looking in classrooms* (7.th ed.). Longman.

Guo, Y. (2012). Exploring linguistic, cultural, and religious diversity in Canadian schools: Preservice teachers' learning from immigrant parents. *Journal of Contemporary Issues in Education*, *7* (1), 4-23. https://doi.org/10.20355/C5QC78

Hinnant, J. B., O'Brien, M., & Ghazarian, S. R. (2009). The longitudinal relations of teacher expectations to achievement in the early school years. *Journal of Educational Psychology*, *101* (3), 662-670. https://doi.org/10.1037/a0014306

Jussim, L., Robustelli, S. L., & Cain, T. R. (2009). Teacher expectations and self-fulfilling prophecies. En K. R. Wentzel, & A. Wigfield (Eds.), *Handbook of motivation in school* (pp. 349-380). Routledge.

King, G. D. (2014). *Teachers' expectations and reading achievement of African American middle school students* [Doctoral Thesis]. *Walden University*. https://scholarworks.waldenu.edu/dissertations/150

Kuklinski, M. R., & Weinstein, R. S. (2001). Classroom and developmental differences in a path model of teacher expectancy effects. *Child Development, 72* (5), 1554-1578. https://doi.org/10.1111/1467-8624.00365

Li, Z., Rubie-Davies, C., & Wu, Z. (2023). Stronger teacher expectation effects on foreign language learning: Student perceptions of the classroom environment as moderators. *Social Psychology of Education*. https://doi.org/10.1007/s11218-023-09849-0

Lorenz, G. (2018). *Selbsterfüllende Prophezeiungen in der Schule: Leistungserwartungen von Lehrkräften und Kompetenzen von Kindern mit Zuwanderungshintergrund [Self-fulfilling prophecies at school: performance expectations of teachers and competences of children with a migrant background]*. Springer-Verlag.

Lorenz, G., Gentrup, S., Kristen, C., Stanat, P., & Kogan, I. (2016). Stereotype bei Lehrkräften? Eine Untersuchung systematisch verzerrter Lehrererwartungen [Stereotypes among teachers? A study of systematic bias in teacher expectations]. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, *68* (1), 89-111. https://doi.org/10.1007/s11577-015-0352-3

Meissel, K., Meyer, F., Yao, E. S., & Rubie-Davies, C. M. (2017). Subjectivity of teacher judgments: Exploring student characteristics that influence teacher judgments of student ability. *Teaching and Teacher Education*, *65*, 48-60. https://doi.org/10.1016/j.tate.2017.02.021

Raisa, A., & Alisa, A. (2018). The influence of student ethnicity on teacher expectations and teacher perceptions of warmth and competence. *Psychology in Russia: State of the Art*, *11* (1), 106-124. http://doi.org/10.11621/pir.2018.0109

Regalla, M. (2013). *Teacher expectations and students from low socioeconomic background: A perspective from Costa Rica*. http://eric.ed.gov/?id=ED540254

Riegle-Crumb, C., & Humphries, M. (2012). Exploring bias in math teachers' perceptions of students' ability by gender and race/ethnicity. *Gender and Society*, 26, 290-322. https://doi.org/10.1177/0891243211434614

Ross, J. A. (1998). The antecedents and consequences of teacher efficacy. In J. Brophy (Ed.), *Advances in research on teaching. Expectations in the classroom* (vol. 7) (pp. 49-74). JAI Press.

Rubie-Davies, C. M. (2010). Teacher expectations and perceptions of student attributes: Is there a relationship? *British Journal of Educational Psychology*, *80* (1), 121-135. https://doi.org/10.1348/000709909X466334

Rubie-Davies, C., Hattie, J., & Hamilton, R. (2006). Expecting the best for students: Teacher expectations and academic outcomes. *British Journal of Educational Psychology*, *76*(3), 429-444. https://doi.org/10.1348/000709905x53589

Rubie-Davies, C. M., Flint, A., & McDonald, L. G. (2012). Teacher beliefs, teacher characteristics, and school contextual factors: What are the relationships? *British Journal of Educational Psychology*, *82* (2), 270-288. https://doi.org/10.1111/j.2044-8279.2011.02025.x

Rubie-Davies, C. M., Weinstein, R. S., Huang, F. L., Gregory, A., Cowan, P. A., & Cowan, C. P. (2014). Successive teacher expectation effects across the early school years. *Journal of Applied Developmental Psychology*, *35* (3), 181-191. https://doi.org/10.1016/j.appdev.2014.03.006

Rubie-Davies, C., & Rosenthal, R. (2016). Intervening in teachers' expectations: A random effects meta-analytic approach to examining the effectiveness of an intervention. *Learning and Individual Differences*, *50*, 83-92. https://doi.org/10.1016/j.lindif.2016.07.014

Schenke, K., Nguyen, T., Watts, T. W., Sarama, J., & Clements, D. H. (2017). Differential effects of the classroom on African American and non-African American's mathematics achievement. *Journal of educational psychology*, *109* (6), 794. https://doi.org/10.1037/edu0000165

Speybroeck, S., Kuppens, S., Van Damme, J., Van Petegem, P., Lamote, C., Boonen, T., & de Bilde, J. (2012). The role of teachers' expectations in the association between children's SES and performance in kindergarten: A moderated mediation analysis. *PloS One*, *7* (4), 1-8. https://doi.org/10.1371/journal.pone.0034502

Tabachnick, G., & Fidell, S. (2013). Using multivariate statistics, always learning (6.th ed.). Pearson.

Timmermans, A. C., Kuyper, H., & Van der Werf, G. (2015). Accurate, inaccurate, or biased teacher expectations: Do Dutch teachers differ in their expectations at the end of primary education? *British Journal of Educational Psychology*, *85* (4), 459-478. https://doi.org/10.1111/bjep.12087

Timmermans, A. C., Rubie-Davies, C. M., & Wang, S. (2021). Adjusting expectations or maintaining first impressions? The stability of teachers' expectations of students' mathematics achievement. *Learning and Instruction*, *75*, 101483. https://doi.org/10.1016/j.learninstruc.2021.101483

Tobisch, A., & Dresel, M. (2017). Negatively or positively biased? Dependencies of teachers' judgments and expectations based on students' ethnic and social backgrounds. *Social Psychology of Education*, *20* (4), 731-752. https://doi.org/10.1007/s11218-017-9392-z

Van Houtte, M. (2011). So where's the teacher in school effects research? The impact of teachers' beliefs, culture, and behavior on equity and excellence in education. In K. Van den Branden, P. Van Avermaet, & M. Van Houtte (Eds.), *Equity and excellence in education: Towards maximal learning opportunities for all students* (pp. 75-95). Routledge

Wang S., Rubie-Davies C., & Meissel, K. (2018). A systematic review of the teacher expectation literature over the past 30 years. *Educational Research and Evaluation*, *24* (3-5), 124-179. https://doi.org/10.1080/13803611.2018.1548798

Wang, S., Rubie-Davies, C. M., & Meissel, K. (2019). Instructional practices and classroom interactions of high and low expectation teachers in China. *Social Psychology of Education*, *22* (4), 841-866. https://doi.org/10.1007/s11218-019-09507-4

Wang, S., Meissel, K., & Rubie-Davies, C. M. (2021). Teacher expectation effects in Chinese junior high schools: Exploring links between teacher expectations and student achievement using a hierarchical linear modelling approach. *Social Psychology of Education*, *24* (5), 1305-1333. https://doi.org/10.1007/s11218-021-09654-7

Watson, P. W. S. J., Rubie-Davies, C. M., Meissel, K., Peterson, E. R., Flint, A., Garrett, L., & McDonald, L. (2017). Teacher gender, and expectation of reading achievement in New Zealand elementary school students: Essentially a barrier? *Gender and Education*, *31* (8), 1000-1019. https://doi.org/10.1080/09540253.2017.1410108

Weinstein, R. S., Gregory, A., & Strambler, M. J. (2004). Intractable self-fulfilling prophecies fifty years after Brown v. Board of Education. *American Psychologist*, *59* (6), 511-520. https://doi.org/10.1037/0003-066X.59.6.511

Westphal, A., Becker, M., Vock, M., Maaz, K., Neumann, M., & McElvany, N. (2016). The link between teacher-assigned grades and classroom socioeconomic composition: The role of classroom behavior, motivation, and teacher characteristics. *Contemporary Educational Psychology*, *46*, 218-227. https://doi.org/10.1016/j.cedpsych.2016.06.004

Whitley, J. (2010). Modelling the influence of teacher characteristics on student achievement for Canadian students with and without learning disabilities. *International Journal of Special Education*, *25* (3), 88-97. https://eric.ed.gov/?id=EJ909039

Authors' biographies

Carmen A. Barriga. Doctor in Education from the Universidad Católica de la Santísima Concepción (Chile). She is currently an Assistant Professor at the Universidad San Sebastián (Chile), and also collaborates as a postdoctoral researcher in the Millennium Nucleus for the Science of Learning (MiNSoL), a centre funded by the Millennium Scientific Initiative of Chile's National Research Agency (NCS2022_26).

https://orcid.org/0000-0001-5803-8042

Cristina Rodríguez. Doctor of Psychology from the Universidad de La Laguna. Associate Professor in the Faculty of Educational Sciences of the Universidad de Talca (Chile). She is currently acting director of the Millennium Nucleus for the Science of Learning, a centre funded by the Millennium Scientific Initi-

ative of Chile's National Research Agency (NCS2022_26).

https://orcid.org/0000-0001-9929-9767

Roberto A. Ferreira. Doctor of Psychology from the University of York (United Kingdom). Associate Professor in the Faculty of Educational Sciences of the Universidad de Talca (Chile). He is currently director of the Millennium Nucleus for the Science of Learning, a centre funded by the Millennium Scientific Initiative of Chile's National Research Agency (NCS2022_26).

https://orcid.org/0000-0002-2097-5759

Marcos H. Cárdenas-Mancilla. Doctor in Linguistics from the Pontificia Universidad Católica de Valparaíso (Chile). He collaborates as a young researcher in the Millennium Nucleus for the Science of Learning (MiNSoL), a centre funded by the Millennium Scientific Initiative of Chile's National Research Agency (NCS2022_26), and as a researcher in the Interdisciplinary Program for Experimental Research in Communication and Cognition (PIIECC) of the University of Santiago de Chile.

https://orcid.org/0000-0002-6942-6232

Cultivating democracy through children's play: An approach from the North American pragmatism of Addams, Dewey and Mead

Cultivando la democracia a través del juego infantil: una aproximación desde el pragmatismo norteamericano de Addams, Dewey y Mead

Laura CAMAS-GARRIDO, PhD. Assistant Professor. Universidad Complutense de Madrid (*laucamas@ucm.es*).

Abstract:

One vital constant in pedagogical narratives is the link between children's play and education. Study of their relationship from a philosophical perspective is marked by paradoxes and tensions that have often raised the implementation of their use in educational practice in differing and even opposing ways. This article seeks to set out new ways of interpreting the relationship between play and education from a conciliatory approach. This relationship is explored from the works of three contemporaneous pragmatist thinkers of the late nineteenth: Jane Addams, John Dewey, and George Mead. The results suggest that the possibility of a relationship between children's play and education is not so much found in the development of potentially educational materials, an extraordinary teaching method, or strictly teaching the curriculum. Rather, the significant contribution is concentrated in the conviction that play could be crucial for the cultivation of democracy. Pragmatists such as Addams and Dewey relied on the aesthetic experience of play as one of the most powerful possibilities for not only keeping democracy alive but also cultivating a cosmopolitan citizenship.

Keywords: philosophy of education, educational theory, history of education, pragmatism, Jane Addams, John Dewey, George Mead, children's play, democracy, cosmopolitanism.

Date of receipt of the original: 2023-09-18.
Date of approval: 2024-01-26.
Please cite this article as follows: Camas-Garrido, L. (2024). Cultivating democracy through children's play: An approach from the Northern American pragmatism of Addams, Dewey and Mead [Cultivando la democracia a través del juego infantil: una aproximación desde el pragmatismo norteamericano de Addams, Dewey y Mead]. *Revista Española de Pedagogía, 82* (288), 377-394. https://doi.org/10.22550/2174-0909.3997

Resumen:

Una de las constantes vitales de las narrativas pedagógicas ha sido la vinculación del juego infantil con la educación. El estudio de su relación en perspectiva filosófica está teñido de paradojas y tensiones que, a menudo, han planteado la materialización de su uso en la práctica educativa de maneras diversas y hasta opuestas. Este artículo trata de contener nuevas formas de interpretación de las relaciones entre lo lúdico y lo educativo desde un enfoque conciliador. En este trabajo, dicha relación se explora desde las obras de tres pensadores pragmatistas coetáneos de finales del siglo XIX: Jane Addams, John Dewey y George Mead. La presente contribución analiza cómo las obras de los tres autores sugieren que la posibilidad de la relación de lo lúdico y lo educativo no se encuentra tanto en el desarrollo de un material potencialmente educativo, un método de enseñanza extraordinario o el estricto desarrollo de un currículo escolar. Más bien, su aportación significativa se concentra en la convicción de que el juego podría ser crucial para el cultivo de la democracia. En concreto, Addams y Dewey confiaban en la experiencia estética del juego como una de las posibilidades más poderosas para no solo mantener viva la democracia, sino también cultivar una ciudadanía cosmopolita.

Palabras clave: filosofía de la educación, teoría de la educación, historia de la educación, pragmatismo, Jane Addams, John Dewey, George Mead, juego infantil, democracia, cosmopolitismo.

1. Introduction

Anyone who currently takes an interest in the relationship between children's play and education is likely to have encountered discourses on gamification and ludic pedagogies (Prieto-Andreu et al. 2022). Dissatisfaction and disenchantment with dominant educational forms and methods have contributed to the proliferation of pedagogies that seek to incorporate a ludic component into their school routines. The best-known of these pedagogical projects in Spain include the Waldorf, Montessori, Regio-Emilia and Amara-Berri schools; forest or beach schools, free or living schools, learning communities, and democratic schools. In these initiatives, it is common to encounter discourses that reveal different conceptual enclaves and multiple groups of relationships between the ludic and the educational in childhood. The differing pedagogical implications of each educational discourse lead us to think that the discussion about the relationship between the ludic and the educational is more alive than ever in our days.

Outside the orbit of schools, some voices have called for the repositioning of ludic activity in public life. These movements argue for the creation of safe, peaceful, and sustainable opportunities to play in the urban landscape. A number of initiatives in English-speaking countries stand out internationally, such as Play England, Play Wales, Play Scotland, Save the Children, Play Australia, and recently PlayfirstUK. In addition to these movements, there is the construction

of adventure playgrounds (play areas of Danish origin disassociated from the rigid and traditional configuration of ludic spaces) and the international school streets movement, which pushes for the provision of safe school routes to facilitate children's pedestrian movement free from the noise and traffic of cities. This last model is on the same line as the well-known Cities of Children of Tonucci. Following this path, movements such as Revuelta Escolar [school rebellion] in Spain carry out initiatives that invite us to rethink and interact with the urban public realm of cities peacefully, safely, and sustainably and, ultimately, in a way that better fits the lives of children and adolescents.

The repeated attempts and efforts of teachers and educational professionals mentioned above might converge around the deeply held belief that there is a great educational value in the ludic drive as it inspires the introduction of the human being to nature, society, and culture; in other words, to its own reality, that of others and of the other. This usually accompanies or aligns the interest and will encapsulated in the ludic activity with what adults have considered to be valuable on the journey towards their transformation into free human beings.

At a time when children's playgrounds seem to have lost a certain allure (Jover et al. 2018) and where digital spaces seem to have become the new ludic spaces for socialisation (Camas et al. 2022), it is worth asking: what could the relationship between the ludic and the educational be?, why is play so important in human affairs?, why can it be something attractive and valuable instead of something serious and banal?, what is the value of the ludic in the educational? Or, on the contrary, what value does the educational have in the ludic? (Quiroga & Igelmo, 2013). At the least, offering answers to these questions is an exercise in backward-looking reflection that leads us to explore and investigate the history of the first public spaces for children's play.

The question of the value and meaning of the ludic in the human condition leads us to the classic reflection on the relationship between leisure, wisdom, the good life, and the meaning of life. Going beyond the classic philosophical opposition between play and work (Huizinga, 2007; Sutton-Smith, 2001), this article, rather than opposing work and play, seeks to reconcile them through optimism and pedagogical hope, neither false hope nor a lack of hope (Hansen, 2023), and it aims to find new ways of interpreting the relationships between the ludic and the educational in childhood and adolescence. In the attempt to find this conciliatory hermeneutical space between play and education, we propose analyses of the works of three pragmatist thinkers from the late nineteenth century, who were contemporaries and did much of their thought in the city of Chicago, namely: Jane Addams, John Dewey, and George Mead. This contribution analyses how the works of the three authors suggest that the potential of the relationship between the ludic and the educational is not so much in the development of an educational material, an extraordinary school method, or the strict development of a school curriculum,

but rather its significant contribution is centred on the conviction that play in childhood and adolescence could be crucial for the *cultivation of democracy*, this latter being not so much a form of government but rather a form of dynamic human association that aspires to collective well-being, cooperation, solidarity, and mutual support. In their works, the authors theorise through various ideas that play could cultivate valuable associated ways of life that can be attained through everyday sensitisation of love for beauty, stimulation of the capacity for imagination from reality, and the search for a new harmony between the individual and the community.

The article argues that the philosophical reflection and investigation of these authors could be indispensable both to generate a solid and valuable educational practice and to continue to reimagine and explore educational practice from a theoretical-philosophical perspective. Careful rereading of their works might illuminate new conceptual frameworks and generate new meanings that nurture contemporary educational practices that are already being developed. So, their practices could reveal and feed-back into new and little-explored theoretical paths that are worth taking. Ultimately, this seems to be a valuable opportunity to reconcile old and new ideas in debates about education. As this research focusses on the time and place of late-nineteenth-century Chicago, the authors will be analysed in the chronological order in which they developed their projects in the city, namely, their order of arrival: Addams (1889), Dewey (1892), and Mead (1894).

2. Jane Addams and play as aesthetic experience: Freedom and variety in the socialisation of democracy

In recent years, while working on my doctoral thesis, I have carried out an introductory and exploratory study of the philosophy of education of Addams (1860-1935) and its possible educational implications (Camas, 2021; 2022; 2023). Specifically, I have analysed in depth the educational meaning and hopes that the author pinned on ludic activity while she ran the Hull-House settlement between 1889 and 1935. My readings of her texts suggest that, although Addams did not tackle analytically and systemically the question of children's play in her public discourses on education and childhood, she often mentioned ludic activity as an experience that permitted the cultivation of a cosmopolitan citizenship.

In collaboration and harmony with other cities such as New York, the Hull-House settlement opened the first playground in the city of Chicago (1893). According to Addams, the playground was founded as a response to the hostile conditions of the industrial city that hindered children's growth and social progress. Children's ways of living in the city barely differed from those of adults. They shared work, drug use, corruption through complex dynamics between gangs, delinquency, prostitution, and commercialised leisure. As well as the overlap between childhood and adulthood, Addams argued that homes were no longer safe spaces as the entry of women into the place of work loosened the sense of protection characteristic of the

domestic space, leaving children without adult supervision. They often slept in the street, disengaged, isolated, disorientated, and starving; sometimes, faced with the lack of a meaning of life and in the attempt to find a way out, they would turn to suicide. So, the state of abandonment of children and adolescents was part of the backdrop of the industrial city.

In view of these circumstances, many social reformers worked in pursuit of childhood progress. One of their biggest efforts was the creation of ludic spaces open to the public that offered conditions of safety, protection, and adult supervision. The initiative of creating public spaces for play was in response to a much broader nationwide movement of European origins that sought to generate transformation of the fabric of society in the USA. The playground movement along with the hygiene movement, and the kindergarten contributed decisively to the systematic creation of public play areas. However, far from pursuing a strictly individual goal, reformers were enthused with the social potential of play.

Perhaps Addams's most important and most complete work regarding childhood and play is her book *The spirit of youth in the city streets* (1909). In it, she articulated a critique of the ways of life that had been developing since the emergence of industrial cities. According to Addams, social, political, economic, and technological advances had repositioned the human activities of work and recreation, focussing on the former and neglecting others that were equally relevant. According to her thesis, for the first time in history, politics had stopped considering the provision of public recreation. The suppression of public recreation and the emphasis on mechanical and subdivided industrial work would lead to people forgetting the need for them to come together, enjoy themselves, and celebrate communally. In her words:

> We continually forget how new the modern city is, and how short the span of time in which we have assumed that we can eliminate public provision for recreation from public life. The Greeks held their games an integral part of religion and patriotism; the Romans made provision through the circus and the pageant for public relaxation and entertainment; the medieval city not only provided tournaments for the edification of knights and ladies, but dances and routs for all of the people within its walls, and the church itself presented a drama in which no less a theme than the history of creation was put upon the stage and became a matter of thrilling interest. But during these later centuries at the very time that the city has become distinctly industrial and daily labour is continually more monotonous and subdivided, we seem to have decided that no provision for public recreation is necessary. (Addams, 1907a, p. 492)

With this fragment, Addams advances two key points on her notion of *play*. Firstly, the urgency of advocating for ludic activity as a human need that is not limited to its practice in childhood and which is linked to the social, civic, cultural, and spiritual dimension of societies. Secondly, its potential as a community activity that maintained the power of *experimentation* and *variation* and, with them,

the possibility of bringing freshness to compensate and reimagine life in the face of the intense and monotonous doses of materialism of industrial cities. She suggests that through play and recreation, life could be more varied, spontaneous, social, creative, tolerable, and manageable or, in other words, less mechanical, aligned, isolated, segmented, monotonous, or boring, and, ultimately, much more human. Ludic activity was deeply rooted in the aesthetic experience. Its effect transcended the boundaries of the artistic dimension and expanded to the *aesthetic* and the *everyday*[1], as it was deeply linked with the everyday life of people in community.

The consideration of play as an experience of deep aesthetic and rewarding significance seems to resonate with the ideas of two German philosophers: Friedrich Schiller (1759-1805) and Mortis Lazarus (1824-1904). For Schiller, play was a free and spontaneous activity that was done for its own sake, without an external or utilitarian aim. He thought that play allowed human beings to live with a greater sense of freedom as, through their imagination, they were freed from the limitations of the real world. According to his thesis, human beings had a primary ludic drive that was activated by the abundant accumulation of vital energy. As the drive released energy, the individual and society could improve their moral development. Schiller's contributions inspired Lazarus's later theory of surplus energy in which ludic activity had a compensatory effect against work. Play involved a mechanism of harmonisation of energy that made it possible to relieve tiredness and refresh the body.

Considering their complementary nature, Addams avoided the false dichotomy that pitted play against work and separated herself from the logic that considered work as the only serious, important, and useful activity and play something banal, irrelevant, and useless. Work and play were for Addams, as they were for Tolstoy (one of her most admired thinkers), two human activities that, far from being antithetical, had a mutual need for one another. Ultimately, Addams seems to give play an educational meaning similar to that of *skholè* (σχολή) for the Greeks.

Addams (1998) criticised the inaction of the authorities in creating recreational opportunities for children and adolescents, as well as the increasing privatisation and commercialisation of the recreational sphere. This type of commercial and privatised leisure overstimulated the senses and numbed any attempt at cultivating the imagination. Addams described the state of numbing of the mind and the imagination as a "[state of] *aesthetic insensitivity*" (Addams, 1909, pp.154-155). This state hampered the appreciation of beauty, openness towards difference, communication, and comprehension of human depth. In contrast, it strengthened alienation, homogenisation, and the mechanisation of life.

Addams (1909) illustrated this as follows: "It is as if a child, starved at home, should be forced to go out and search for food, selecting, quite naturally, not that which is nourishing but that which is exciting and appealing to his outward sense" (p. 80). In this way, the only selection criteria

that they used was none other than "sight, sound, and taste" (p. 54), which were also numbed. Given their malnutrition, what they needed was to develop the virtuous "love of pleasure" (Addams, 1908, p. 25), through aesthetic experiences that made it possible to cultivate and harmonise the mind (imagination) and their senses. To justify her thesis, Addams used an extract from Plato's *Symposium* in which Diotima indicates to Socrates that love of beauty was above all love for the birth of beauty both of the soul and of the body (Addams, 1909).

Consequently, her approach to the notion of play as an aesthetic experience was a response to the state of aesthetic insensitivity. Two more basic coordinates emerge from these citations that bring us closer to understanding her notion of children's play. On the one hand, the idea of understanding play as a pleasant aesthetic experience that cultivates both the imagination (mind) and the senses (body). On the other hand, the need to accept the premise that the challenge of aesthetic sensitivity and the cultivation of the mind and body was a profoundly educational act in which adults should intervene and establish certain minimum conditions that would favour human growth. Therefore, the educational experiences organised at the Hull-House settlement (such as play; painting and crafts, lithography, literature, history, art, modelling, drawing, music and theatre classes; and fitness) were an attempt to awaken and cultivate aesthetic sensitivity, harmonise the body and mind, and care for the inner life of children and adolescents.

Finally, another key component of Addams's ludic notion, is to regard play as an activity that awakens the cultivation of a type of cosmopolitan citizenship, that in turn has a close relationship with *democracy*. Democracy is understood here more as a form of institutional and formal governance, than as a way of life in society based, in the words of Addams, on "*sympathetic understanding*" (1902, p. 273), in other words, in the emotional attitude based on patience and listening, whose basis should be mutual and reciprocal understanding. In her autobiographical work *Twenty years at Hull-House*, Addams (1910) affirmed that the aims of the educational activities and the existence of the settlement itself "are but differing manifestations of the attempt to socialize democracy" (p. 301). So, the value of children's playgrounds was closely linked to the cultivation of democracy.

Her notion of cosmopolitanism is sustained when faced with the possibility of overcoming a conception of the self, other and the other based on rivalry and superiority (moral-cultural, linguistic, ideological, and/or religious) characteristic of the period. According to Addams, European nations, and especially the USA at the start of the twentieth century, practised a type of nationalist, militarist, and supremacist patriotism typical of the mindset of the eighteenth century that endangered the stability and global peace of peoples. "That old Frankenstein," Addams (1907b) wrote, "is still haunting us, although he never existed save in the brain of the doctrinaire" (p. 60). This moral conviction was supported on the basis that any immigrant cultural expression or manifestation was ultimately inferior to the predominant

or original one of each nation. In countries with high levels of immigration, this patriotism had a homogenising effect that inclined immigrants to abandon the cultural traditions of their places of origin and to adopt the dominant ones of the country. In this way, she denounced the USA's processes of assimilation.

Addams, who participated in the pacifist movement of her time, maintained that aesthetic activities such as play facilitated experimentation and the production of a type of variability that could be exceptionally valuable for citizenship. According to her thinking, the expression of variation that emerged from the act of play, cultivated collective and associated ways of life that could be more valuable for democracy. That is to say, from her interpretation, the power of variation in the act of group play would always bring something better and extraordinary for both society and the individual.

Aesthetic experiences like play were *unifying experiences* for Addams, as they could reestablish and integrate the maladjustments of childhood and adolescence caused by industrial life and the tendency towards homogenisation. Experimentation, dynamism, and change that occurred in aesthetic activities were the source of all types of art. The vindication of the cultivation of the cosmopolitan and pacifist imagination through everyday aesthetic childhood experiences such as play is a key aspect of the thought of Addams and is fundamental for understanding her notion of *democracy*. In her idea of democracy, then, the seed of variation as the basis for individual and social harmony is found. The aesthetic experiences of Hull-House placed the emphasis on everyday and social activities that were done in interaction with the interests and the affection of other people. So, the cultivation of aesthetic experiences such as play awoke the imagination and facilitated the socialisation of democracy.

The organisation of education was in the hands of the play supervisors, who could be *kindergarten* teachers (for the younger students) or police (for the older ones). In fact, Hull-House accommodated the first school for training play supervisors under the direction of Neva Leona Boyd: Recreation Training School of Chicago. Their role involved ensuring that girls and boys would play under conditions in which the "liberty of each is limited by the like liberty of all" (Addams, 1911, p. 38), so that "the grounds are used fairly and with a certain amount of fair play" (A Fourth of July Anticipation at the Abraham Lincoln Centre, 1908, p. 28). By subordinating individual liberty to collective liberty, the conditions for the socialisation of democracy were guaranteed.

According to Addams, supervised play was the only human activity through which people from diverse backgrounds (traditions, languages, religions, and ideologies) could collectively build a solid emotional foundation from which to feel in harmony. This *democratic* root enabled them to cultivate aspects such as goodness, compassion, association, affections, good humour, and goodwill. That is to say, understanding that, independently of their particular features, when playing

they were capable of finding *similarities* in their *differences* and *differences* in their *similarities*. But, above all, to understand that, beyond their differences, there was something profoundly human that kept them united. The aesthetic potential of play laid in the possibility of generating a disposition to openness to difference and the unknown. In this way, it became a space for intergenerational and intercultural cohabitation that favoured the development of a cosmopolitan identity and a type of collective human relations that overcame the high doses of materialism, nationalism, and militarism.

For Addams, ludic intercultural spaces generated unique opportunities for seeking progress and social transformation. Spaces like the playground permitted encounters between children and adolescents from different religious, linguistic, and cultural backgrounds. The diversity of immigrant traditions in the USA represented for Addams a historic opportunity to experience the possibility of variation, as in their folklore and cultural traditions there was an inexhaustible ancestral reserve of material capable of stimulating the imagination.

Ultimately, the impact Addams had was none other than the profound rejection of the moral convictions of the Victorian, which viewed immigrants as inferior beings characterised by animality and brutality and who needed to be civilised. Recognising folklore and traditions as the best source of inspiration for social progress, Addams argued in favour of the cultural wealth of humanity, as immigrants had an extraordinary cultural value (thanks to their potential for variation in benefit of the reimagining of democracy), and they had much to contribute to the search for progress and development, both industrial and cultural. In summary, the aesthetic value of play and its application in the everyday life of people provided the necessary force to construct more reciprocal, cooperative, comprehensive, and egalitarian human relations.

3. Play as a ludic attitude in the works of John Dewey

Rodríguez (2018) has systematically analysed Dewey's (1859-1952) views of play. Dewey started as a great admirer of the educational theories of Froebel. In fact, he became a teacher in the Kindergarten Training School of Chicago, which delivered its classes at the Hull-House building. The students of this school often supervised and organised play in the playground of that enclosure.

Probably owing to the influence of the *kindergarten* movement and of Froebel's contributions, Dewey centres the discussion on play in its childhood version. While Dewey embraced Froebel's theories with pedagogical enthusiasm, his frustrated attempts to apply them led him to be ever more critical of them. Froebel tested his educational theories under the assumption that there was an innate power in children that had to be fed and nourished by providing the appropriate materials. Dewey's intermediate works, however, started to criticise the "abstract symbolism" of the German pedagogue and the rigidity of his educational proposal and structure (Dewey, 1997).

The materialisation of Dewey's ideas about play can be seen in one of his most ambitious educational projects: the Laboratory School, which he developed between 1896 and 1904 as Head of the Department of Philosophy, Psychology and Pedagogy of the University of Chicago. In his book *My Pedagogical Creed* (Dewey, 1897), Dewey argued for the need to see the school as a space that represented everyday life. A life "as real and vital for the child as the one lived at home, in the neighbourhood, or in the playground" (p. 6). Dewey's ideas about play had a profoundly social meaning. Outside the logic of organisation by subjects, the centre was structured around the practice of various activities referred to as "active occupations". These had a profound social meaning and involved both play and work. Among the occupations there were: sports, growing plants, workshop, cooking, sewing, and crafts. That is to say, for Dewey, it was through familiar, everyday, and concrete activities that children approached the study of the abstract. The author referred to the "period of play" as a phase in early childhood. In *Democracy and education* (Dewey, 1997), he appears to offer a much wider definition of ludic activity and its link to work:

> It is still usual to regard this activity [play] as a specially marked off stage of childish growth, and to overlook the fact that the difference between play and what is regarded as serious employment should be not a difference between the presence and absence of imagination, but a difference in the materials with which imagination is occupied. (p. 251)

Dewey argued that the distinction between ludic and work activity was not restricted to the difference between childhood or adulthood. Play could be done in all stages of life, but these had different emphasis: "There is no distinction of exclusive periods of play activity and work activity, but only of emphasis" (Dewey, 1997, p. 212). Play, Dewey wrote, was "an imaginative activity" (p. 246) that offers freedom of action and thought, as it expands the habitual responses and, although only momentarily, dissolves the limitations of the present reality. He described it as a "natural, unforced expression" (Dewey, 2008, p. 340). As people matured, Dewey recognised that they tended towards activities that allowed them to achieve ends with "tangible and visible" results, like games of chance, according to the author, of questionable moral value. According to Dewey, play in childhood shaped the fantasy of the possibility (up to a certain real point) so that it tended to generate an *attitude of absorption*, until in adulthood it faded as its unachievable and impossible to materialise character was perceived rationally. Observable results were necessary to permit people to have a sense and a measure of their own powers. When fantasy was recognised as such, the mechanism for creating objects in fantasy is feasible for stimulating intense action. It is enough to observe the face of children who are really playing to realise that their attitude is of serious absorption; this attitude cannot be maintained in adulthood, when the environment ceases to offer an adequate stimulus (Dewey, 1997, p. 239).

According to Dewey's works, the division between play and work, so popular in Western culture, was another dualism that falsified reality. For Dewey, it made no sense to state that play emphasised the process and work of the product, as this could lead people to a "false [and] unnatural separation between process and product" (Dewey, 1989, p. 164). Nor was it related to the presence or absence of an end, as both work and play hid an end. Consequently, the place where attention should be focussed to identify and differentiate the two activities was more on the interest that people exercised in the activity itself. Both activities had means and ends although in play "the interest is more direct" as the children entered into a state of "hypnotic daze" and they responded to "a direct excitation" (Dewey, 1997, p. 237).

The author argued that, far from what was usually thought, play was not incompatible with industry or schools. "It is the business of the school," he said, "to set up an environment in which play and work shall be conducted with reference to facilitating desirable mental and moral growth" (Dewey, 1997, p. 170). The work of educators was based on identifying the form and interest of the development of the activity; that is, if it "flowed on from moment to moment", referring to play, or if the activity tended "to culmination," referring to work (Dewey, 1989, pp. 213-214).

In *How we think* (1933), the author argued that what determined whether an activity was approached from its ludic character was the attitude and interest of the people in it. Dewey emphasised the need to educate in the development of a "playfulness" or "playful attitude" (Dewey, 1989, p. 210). What was important was not so much the type of activity, but rather the "playful attitude" with which any activity was performed. In this way, one same activity could be approached from an attitude that flowed or tended towards culmination. It is consequently not for Dewey (2013) an activity, but rather a "mental attitude" (p. 83).

For Dewey, as for Addams, play was the original expression of all classes of art (Skilbeck, 2017). For Dewey, "work which remains permeated with the play attitude is art" (Dewey, 1916, p. 219). The playful attitude was related to the artistic ideal, a mental state that combined the ludic and the serious (Dewey, 1989, p. 220). It was a mental habit that imparted a new attitude to life. The activity of the artist was an example of how ends and means could be harmonised in adult life. Play, in the context of childhood, represented this harmony between ends and means, between the serious and the simulated.

In *Art as experience*, Dewey (2005) established connections between play and art, underlining their shared roots in action, in "doing something" (p. 282). Play, he wrote, gives an external manifestation to images; it makes ideas interact with objects. Objects function as stimuli for experimentation and action, enabling the idea to come to fruition. As the idea evolves towards a plan with an end as a result of this interaction, play transforms into work, that is to say, it receives an external purpose. In this conception, work includes the "work of art" (Dewey, 2005, p. 283). Thus, Dewey argued

that "playful attitude becomes interest in the transformation of material to serve the purpose of a developing experience. Desire and need can be fulfilled only through objective material" (p. 285).

In art, freedom is achieved through the manipulation and transformation of the material, turning it into expression; in play, according to Dewey, freedom is achieved through the imaginative expansion of the limits through action (that is to say, doing-believing). In both cases, freedom prospers over restriction and in turn comprises the fertile ground for the imagination.

Dewey argued that for a work to be done in a satisfactory way, workers had to be able to "enjoy themselves in the production process itself" (Rodríguez, 2018, p. 143) and, consequently, play and work overlapped on a gradient. In this sense, the experience needed the connection between the ludic and attitude and work attitude. In the words of Dewey "play must imperceptibly transform itself into work" (Dewey, 2008, p. 318). Schools should, therefore, focus their attention on the development of this ludic attitude in play and in work.

Years later, Dewey published his work *Experience and education* (1938) in which he explained how play should be aimed at educating society. In this book, he made a similar distinction to that found in Mead's approach (which we will consider in detail below) between play, game, and work. Dewey conceptualised play as a free, spontaneous, symbolic, and plastic activity (pretend play). The game was the intermediate space between play and work and had both rules and defined objectives. In a game, unlike in play, there is a commitment to the environment and to the needs and preferences of others. Baseball exemplified a game with rules, agreements, and shared expectations with the challenge of achieving a shared objective. Ultimately, the approach of both pragmatists, whether in its aesthetic meaning (Addams) or in its conceptualisation as an attitude that inclines towards the imagination (Dewey), seeks to support the idea that play is vital for social progress and democracy.

4. *Play, game*, and *the generalised other* of George Mead

George Herbert Mead (1863-1931) was one of the founders of pragmatism, along with Pierce, James, Dewey, and Addams. Mead was a great friend of Dewey and Addams and his articles contributed to the development of disciplines such as sociology and modern psychology, and he was widely known as the instigator of symbolic interactionism.

In his address *The relation of play to education* (1896), Mead distinguished between three types of general human activities: work, art, and play. Work was an activity with a defined end and its means were directed at achieving this end. As Dewey also argued, in art the attention was on the harmony between means and ends. Finally, play was a spontaneous activity that lacked extrinsic ends and means. Mead argued that schools should not undertake activities such as work, but instead offer and "arrange these stimuli [so] that they

will answer to the natural growth of the child's organism" (Mead, 1896, p. 145).

For Mead, doing ludic activities was a form of spontaneous expression resulting from an abundance of energy. An "escape valve" through which children could express their new learning. As with Addams, his notion of play as an expression of the accumulation of energy, seems to have German influences from the philosophy of Schiller and Lazarus. Children's activities in the process of growth included play, in other words, dedicating themselves to what they did with a "native interest". Education had to take charge of creating a sufficiently stimulating environment for "spontaneous use of … coordinations" (Mead, 1896, p. 145). In other words, finding the appropriate stimuli to awaken their senses and create synaptic connections (or coordinations).

In his text "The kindergarten and play" (n. d.), Mead asserted the need to recognise the nature of the child through advances in psychology in relation to the evolution of human beings (Mead, n. d.; 1934). In the *kindergarten*, it was necessary to find the appropriate educational processes and organise them so that they would be done spontaneously with a view to the subsequent adult activity (work). Mead stated his foundational idea in the following terms: "We only have to order his world" (Mead, n. d.; 1934). With this, he referred to games essential for life and nature such as seeking food, refuge, care, etc.

Manual and sensory education were implemented in the *kindergarten*. To do this, activities relating to objects were practised, such as working with textiles, building shelters, and hunting. This sought to elicit emotional and imaginative forms or reactions that would later shape the moral and aesthetic judgement of the adult. In synthesis, the principal question of education in the *kindergarten* for Mead was to organise the educational activities for children in a way that they would develop them spontaneously. In this sense, Dewey's ideas about the need for play to progressively and unconsciously become work are apparent.

Play was especially important for Mead as it mediated in processes of construction of the mind and of the self. For him, the mind was the product of the individual's participation in society in a process of social interaction in which he or she would learn to use socially recognised symbols (Mead, 1934). Like Dewey, Mead rejected the body-mind dualism typical of Platonic approaches. Far from being born with an already developed mind, people construct it through contact and interaction with the social environment. In Mead's words:

> Mind arises in the social process only when that process as a whole enters into, or is present in, the experience of any one of the given individuals involved in that process. When this occurs, the individual becomes self-conscious and has a mind; he becomes aware of his relations to that process as a whole, and to the other individuals participating in it with him; he becomes aware of that process. (Mead, 1934, p. 134)

Mead differentiated between three types of instances of the self involved in

the construction of the mind: I, me, and the self. The social construct of the self was mediated by two processes. Firstly, the response or the drive of the individual to the attitudes of others (I) and secondly, the organised set of attitudes of others that an individual assumes (me). This differentiation between me and I had previously been established by James; Mead subsequently developed it and linked it to the game.

According to Mead's theory, the construction of the self was based on the reflection of the processes of interaction between the me and the I during the interaction in social processes such as: language, play, and the game. The explanation for the distinction between these activities can be found in his essay "Play, the game and the generalized other" (1934), according to which the differentiation between play and game had a different implication and degree of commitment in the interaction with others.

Mead connected to the evolutionist narratives of the game. He argued that the first symbolic human interaction was carried out through what the author called the *conversation of meaningful gestures*. "Gestures," according to Mead, were "movements of the first organism which act as specific stimuli calling forth the (socially) appropriate responses of the second organism" (Mead, 1934, p. 14). So, prior to formal language, gestures were ludic interactions that marked the start of the first forms of social communication and interaction. The first ludic interactions by means of gestures were loaded with symbolic value for babies.

Once language was acquired, younger children as well as more *primitive* people would generally practise play or a symbolic play where they interpreted a role other than their own: "there we have a much more primitive response; and that response finds its expression in taking the role of the other" (Mead, 1934, p. 153). According to Mead, the practice of this type of game would be very similar to the work that was done in the *kindergarten*. This categorisation included processes such as the representation of figures like gods and heroes, but also important figures such as mothers and fathers, and the practice of different professions. In play, there was no type of ethical and political commitment to otherness, as "the child says something in one character and responds in another character, and then his responding in another character is a stimulus to himself in the first character, and so the conversation goes on" (Mead, 1934, p. 159). Consequently, in play, individuals did not have their own individual or defined character or personality.

In contrast, the game was another type of higher game practised at older ages and including taking into account the attitudes and behaviour of the other people involved. In the game, individual attitudes and behaviours are articulated in a group, social body, or community, which Mead called the "generalised other", capable of "controlling his own behaviour or conduct accordingly" (Mead, 1934, p. 154).

Through games, the individual developed a self-conscience resulting in acceptance of the functioning of a social group that shared a common aim. It is in this

type of game that they started to seek a sense of social belonging and as a consequence it is when their personality and character starts to form. Mead situated the practice of the game as the genesis of the process of formation of the moral personality (Miras-Boronat, 2013).

The importance of the game lay in its connection with the development of experience as only in this type of game could they have an "individual's experience" (Mead, 1934, p. 159). To explain the social meaning of the game, Mead used the notion of shared "ownership" as "one must have a clear attitude of control of one's own property and respect for the property of others". What made a group of people a society were the distinct forms of social organisation that displayed common aims and attitudes such as religious beliefs, education, or family relations. In Mead's words: "we cannot have rights until we have common attitudes" (Mead, 1934, p. 164).

The main difference between game and play was therefore found in the involvement and control of the individual in the attempt to handle the complexities of a community or group during the ludic activity. Participating in a game involves not only understanding the interaction with others, but also understanding how the others can interact in a wide variety of situations. Playing the game was a reflection of what happened in the daily life of people, given that "what goes on in the game goes on in the life of the child all the time." (Mead, 1934, p. 160). There was therefore a connection between game and the development of life in a community and in a society. This is why, for Mead, team sports were so valuable in moral and political terms.

The nature of the ludic activity, expressed in its two fundamental forms, play and game, was governed by evolutionary principles that went from some more primitive forms of expression (play) to more advanced forms (game). Like Addams, Mead showed great concern for the function of the game in society. Like other reformers from the period, Mead and Addams were in agreement on the potential of team sports such as baseball or basketball, in fact these were frequently practised in the Hull-House settlement.

In summary, what we find in Mead's works on ludic activity is a continuum between different activities, game and play, which are fundamental for the development both of the self and the moral development of people. For Mead, the game was fundamental in the social and cognitive development of people. Children learnt to interact with others and they acquired knowledge about the rules of a society through play first and then through the game. When playing the game, children were able to put themselves in the role of the other, that is to say, to understand the forms of thought, action, and feelings of someone who is both similar to and different from ourselves.

5. Conclusions

The discussion about the extent, boundaries, and intersections of the ludic and the

educational remains alive today. Most current studies argue for the educational value of play as a means for dynamizing school learning (Prieto-Andreu et al. 2022). The pragmatists considered here argue that play is of value not so much as scrupulously designed material, a teaching method in search of a lost motivation or a means for curriculum development of the famous key competences, but instead they conceptualise play from a socially broad educational vision that goes beyond (although, in a way, also includes) the academic-school sphere. The important contribution of these three authors to the debate about the ludic and the educational is that play could be key for the *cultivation of democracy*. Democracy here is not so much a form of government but rather: an organic and dynamic form of human association based on: the desire to participate, display oneself, and share with the world; the conception of people as incomplete beings who mutually enrich one another (self); sensitivity towards plurality; openness, curiosity, and a commitment to the reality of the other (especially with marginalised or excluded people); harmony, mutual support, and trust; comprehensive, sincere, and reciprocal communication; the collective imagination; the search for the balance of individual and social freedoms or the conviction that improving society (or the group) is an expression of progress both individual and social, among others. The pragmatists showed insight when arguing that what children did when they played had great implications in their real life and so in their present. that what happened in play was not the expression of dreams or fantasies that were unattainable or were frustrated in the terrain of the unreal, but that play was an activity that was sufficiently everyday and real for an extraordinary variety of actions and ideas to be put into practice and put to the test. Its openly aesthetic and everyday character, following Dewey and Addams, could be framed within what Yuriko Saito (among others) has called an *everyday aesthetic*. Play *makes people believe* that they are in a mental, corporal, affective, spiritual and aesthetic state of spontaneity, direct interest, curiosity, fluidity, a sensation of absorption, wonder, experimentation, and searching for variation that inclines them to participate directly in life and so sustain the vital signs of democracy. Accordingly, through the everyday aesthetic play could offer continuous experiences of participation for constructing the self (between similarities and differences perceived by others and self-perceived) and for cultivating democracy in a profoundly *pleasant* and *virtuous* way. The pragmatists trusted in the aesthetic experience of play as one of the most powerful possibilities for not only keeping democracy alive, but also for cultivating a cosmopolitan citizenship where the construction of the self remains open to interchange with the different or the unknown for mutual enrichment, and this is especially relevant in the intercultural societies that we live in now. Conceptualising play from a cosmopolitan outlook would involve incentivising encounters between people of different orientations (religious, ideological, cultural, linguistic, etc.) so that they coexist in times and spaces. Something that David Hansen (2013) has argued in his many works is the possibility of "fus[ing] reflective openness to new people, ideas, values and practices with reflective loyalty to local commitments and ways

of life" (p. 158). Thus overcoming possible rivalries or domineering attitudes that denote superiority and that could hinder the development of human relations based on harmony, solidarity, and egalitarianism. So, for pragmatists, education in its broad sense (like play) is a profoundly social experience and play helps create this social ambience that is directed towards the search for justice, progress, and the transformation of the individual and society.

In view of the foregoing, and in conclusion, this article does not suggest rejecting the conceptions of play that argue for the creation of materials, ludic methodologies, or the reshaping of school or urban spaces intended for play; these educational demands are, of course, of profound value, but (especially in regulated educational contexts, including the university) we are perhaps still unable to appreciate, from a broad and complex perspective, the educational value of play in human affairs. Play can be an aesthetic and everyday experience of great value in the cultivation of democracy.

Note

[1] While it is true that the everyday aesthetic is a matter of topical interest in Western faculties of philosophy and education, Hull-House was probably one of the first efforts to expand the consideration of the artistic towards the aesthetic and to reconsider it from the everydayness of people. For more information, see the doctoral thesis *Educación, juego y pragmatismo en el settlement Hull-House: del playground de Jane Addams a los playworkers de Neva Boyd* (2022).

References

A fourth of July anticipation at the Abraham Lincoln Centre. (1908, July 2). *Chicago Tribune*, 280.

Addams, J. (1902). *Democracy and social ethics*. MacMillan. http://archive.org/details/cu31924032570180

Addams, J. (1907a, 3 d e agosto). Public recreation and social morality. *Charities and The Common*, *18*, 492-494.

Addams, J. (1907b). *Newer ideals of peace*. MacMillan. http://archive.org/details/neweridealspeac02addagoog

Addams, J. (1908). Address to the Playground Association. *The Playground*, 25-28. https://digital.janeaddams.ramapo.edu/items/show/4941

Addams, J. (1909). *The spirit of youth and the city streets*. MacMillan. http://archive.org/details/spirityouthandc00addagoog

Addams, J. (1910). *Twenty years at Hull-House: With autobiographical notes*. Courier Corporation.

Addams, J. (1911). Recreation as a public function in urban communities. *American Sociological Society Publications*, *6*, 35-39. https://digital.janeaddams.ramapo.edu/items/show/7260

Camas, L. (2021). Jane Addams y la educación socializada en el *pleasure ground* [Jane Addams and socialised education on the pleasure ground]. *European Journal of Pragmatism and American Philosophy*, *13* (2). https://doi.org/10.4000/ejpap.2622

Camas, L. (2022). Bringing the origins of playgrounds into the current educational debate: Jane Addams and the kitchens of socializing democracy. In N. S. Miras, & M. Bella (Eds.), *Women in pragmatism: Past, present and future [Las mujeres en el pragmatismo: pasado, presente y future]* (173-186). Springer, Cham. https://doi.org/10.1007/978-3-031-00921-1_14

Camas, L. (2023). Playing for the socialization of democracy: Reimagining Jane Addams' philosophy of education. *Philosophy of Education Journal*, *79* (2), 113-127.

Camas, L., Del Prado, M., & Sánchez-Serrano, S. (2022). Game over? Perceptions of children's and adolescents' play and leisure during the Covid-19 lockdown. *International Journal of Play*, *11* (3), 311-326. https://doi.org/10.1080/21594937.2022.2101278

Dewey, J. (1989). *Cómo pensamos. Nueva relación entre pensamiento reflexivo y proceso educativo [How we think. New relationship between reflective thinking and educational process]*. Paidós Ibérica.

Dewey, J. (1997). *Democracy and education*. The Free Press.

Dewey, J. (2005). *Art as experience*. Perigee.

Dewey, J. (2008). Contributions to a cyclopedia of education. In J. A. Boydston (Ed.), *The Middle Works of John Dewey, 1899-1924 [Las obras centrales de John Dewey, 1899-1924]* (pp. 1912-1914). Southern Illinois University.

Dewey, J. (2013). *The school and society and the child and the curriculum*. University of Chicago Press.

Hansen, D. T. (2013). Cosmopolitanism as a philosophy for life in our time. *Encounters in Theory and History of Education*, *14*, 35-47. https://doi.org/10.24908/eoe-ese-rse.v14i0.5036

Hansen, D. T. (2023, September 6). *Democratic imagination in the university* [conferencia]. X Congreso Internacional de Filosofía de la Educación, Barcelona, España. https://www.ub.edu/ubtv/en/node/128840

Huizinga, J. (2007). *Homo ludens*. Alianza.

Jover, G., Camas, L., Martin-Ondarza, P., & Sánchez-Serrano, S. (2018). *La contribución del juego infantil al desarrollo de habilidades para el cambio social activo [The contribution of children's play to the development of skills for active social change]*. Universidad Complutense de Madrid.

Mead, G. H. (1896). The relation of play to education. *University Record*, *1* (8), 141-145.

Mead, G. H. (1934). *Mind, self and society: From the standpoint of a social behaviorist*. University of Chicago Press.

Mead, G. H. (1999). *Play, school, and society*. Peter Lang.

Mead, G. H. (n. d.). *The kindergarten and play*. https://brocku.ca/MeadProject/Mead/Unpublished/Meadu12.html

Miras-Boronat, N. S. (2013). Playground as the laboratory for democracy. Mead on games and play. *Bordón: Revista de Pedagogía*, *65* (1), 93-102.

Prieto-Andreu, J. M., Gómez-Escalonilla-Torrijos, J. D., & Said-Hung, E. (2022). Gamificación, motivación y rendimiento en educación: una revisión sistemática [Gamification, motivation, and performance in education: a systematic review]. *Revista Electrónica Educare*, *26* (1), 251-273. https://doi.org/10.15359/ree.26-1.14

Quiroga, P., & Igelmo, J. (2013). La pedagogía Waldorf y el juego en el jardín de infancia: una propuesta teórica singular [Waldorf education and play in the kindergarden: An outstanding theoretical proposal]. *Bordón: Revista de Pedagogía*, *65* (1), 79-92.

Rodríguez, C. (2018). *El trabajo y el juego en la sociedad industrial: una perspectiva deweyana [Work and play in industrial society: A Deweyan perspective]* [Doctoral Dissertation]. Universidad Nacional de Educación a Distancia. http://e-spacio.uned.es/fez/view/tesisuned:ED-Pg-Filosofia-Crodriguez

Saito, Y. (2007). *Everyday aesthetics*. Oxford University Press.

Skilbeck, A. (2017). Dewey on seriousness, playfulness and the role of the teacher. *Education Sciences*, *7* (1), 16.

Sutton-Smith, B. (2001). *The ambiguity of play*. Harvard University Press.

Author's biography

Laura Camas-Garrido. Assistant Professor in the Department of Educational Studies at the Universidad Complutense de Madrid. Her research focuses on the exploration of the intersection between play, aesthetics, education, democracy, cosmopolitanism. She has studied authors such as Jane Addams, John Dewey, and George Mead. She has been a guest researcher at Queen's University (Canada), Teachers College of Columbia University (USA), Uppsala Universitet (Sweden), and the Universidad de Barcelona. She has done research in the *International Journal of Play*, *European Journal of Pragmatism*, *American Philosophy* and *Philosophy of Education Society Journal*, and with publishers such as Springer.

https://orcid.org/0000-0001-8077-2358

Continuing training of non-university teachers: An analysis of impressions, preferences, and needs

La formación permanente en el profesorado de enseñanza no universitaria: análisis de impresiones, preferencias y necesidades

María-José MAYORGA-FERNÁNDEZ, PhD. Associate Professor. Universidad de Málaga (*mjmayorga@uma.es*).
Inmaculada MARTÍNEZ-GARCÍA, PhD. Associate Professor. Universidad de Málaga (*inmamartinez@uma.es*).
Fabián NÚÑEZ-AVILÉS, PhD. Director of the Vélez-Málaga Teachers' Centre (*fabian.nunez.edu@juntadeandalucia.es*).

Abstract:

Continuing training is a key component in teachers' professional development as it enables them to meet the educational needs of the knowledge society and contribute to a quality educational system. This research aims to identify the training needs and preferences of in-service teachers and their impressions of the continuing training they receive. To do so, a quantitative study with a descriptive and correlative ex-post facto design was used. A total of 801 non-university teachers from schools in the autonomous community of Andalusia participated in the research. The data were collected using a questionnaire with an ad hoc design, taking as reference the instrument developed by Sangrà et al. (2019). For the data analysis, an exploratory factor analysis was performed giving 9 dimensions. The correlations between them were calculated and the non-parametric Mann-Whitney test was used to compare differences in means by gender. The results show that teachers are motivated for teacher training as they see that it is linked to improvements in their professional practice and in student results, and that they prefer formal training activities. The content they prefer relates to school development, entrepreneurial skills and their transfer, innovative teaching methodologies, didactic updating, and ICT. Some gender differences in training preferences were found, although the total score is similar for men and women, with women wanting more training in four of the dimensions and being more motivated to participate in such training.

Date of receipt of the original: 2023-12-18.
Date of approval: 2024-01-02.
Please cite this article as follows: Mayorga-Fernández, M. J., Martínez-García, I., & Nuñez-Avilés, F. (2024). Continuing training of non-university teachers: An analysis of impressions, preferences, and needs [La formación permanente en el profesorado de enseñanza no universitaria: análisis de impresiones, preferencias y necesidades]. *Revista Española de Pedagogía, 82* (288), 395-416. https://doi.org/10.22550/2174-0909.4010

In conclusion, there is a need to consider new training strategies such as lesson study, where teachers are the protagonists of their ongoing training.

Keywords: continuous training, training needs, modalities of training, non-university teaching.

Resumen:

La formación permanente del profesorado es un elemento clave en su desarrollo profesional, puesto que les permite hacer frente a las demandas educativas de la sociedad del conocimiento y contribuir a un sistema educativo de calidad. La presente investigación tiene como objetivo conocer las necesidades formativas, así como las preferencias e impresiones de la formación permanente recibida por los/las docentes en ejercicio. Para ello, se ha realizado un estudio cuantitativo con un diseño *ex post facto* descriptivo y correlacional. Han participado un total de 801 profesores/as de centros de enseñanza no universitaria pertenecientes a la comunidad autónoma andaluza. Los datos se han recogido a través de un cuestionario diseñado *ad hoc*, para el que se ha tomado como referencia el instrumento elaborado por Sangrà et al. (2019). Para el análisis de datos, se ha realizado un análisis factorial exploratorio del que se han obtenido 9 dimensiones, se han calculado las correlaciones entre ellas y se ha utilizado la prueba no paramétrica Mann-Whitney con el fin de comparar la diferencia de medias en cuanto al género. Los resultados muestran que los/las docentes se encuentran motivados por la formación del profesorado, ya que la vinculan con la mejora de su práctica profesional y de los resultados del alumnado, y que prefieren las actividades formativas regladas. En cuanto al contenido que demandan, está relacionado con el desarrollo del centro educativo, las competencias emprendedoras y la transferencia, las metodologías docentes innovadoras, la actualización didáctica y las TIC/TAC. Se han encontrado diferencias de género en las preferencias formativas, aunque la puntuación total es similar en ambos. Las mujeres demandan mayor formación en cuatro de las dimensiones y sienten mayor motivación por participar en dicha formación. Se concluye que es necesario plantear nuevas estrategias formativas como las *lesson study*, donde los/las docentes sean los protagonistas de su formación permanente.

Palabras clave: formación permanente, necesidades formativas, modalidades de formación, enseñanza no universitaria.

1. Introduction

Over the last decade, we have moved from the information society to the knowledge society (Tobón, 2017; García & Martínez, 2017). In this context, the verdict of the Grupo de Trabajo sobre la Convergencia Educativa en Andalucía (Working Group on Educational Convergence in Andalusia), approved in a plenary session of the Andalusian parliament on 18 February 2010, stated that the role of the school in the knowledge society cannot be the same as its traditional one (Acevedo & Romero, 2019). This is

because, in a society that is changing at a dizzying rate, teaching centres must provide an appropriate response to this social evolution, helping the population to understand it and accept it with a critical spirit (Imbernón, 2017). Above all, schools must teach to learn, provide knowledge that boosts learners' ability to analyse and reflect on the world, contribute to students' personal realisation, and prepare them for training that will extend throughout all of the professional activity (Romero, 2018). Because of all of this, teachers must have professional competences that enable them to adapt to new socioeducational needs, which are marked by uncertainty (Souto-Seijo et al., 2019; Fong et al., 2020). In this context, continuing training is the best way to acquire competences and develop them and keep them up to date (TALIS, 2018) as this is a fundamental pillar of teachers' professional development (Körkkö et al., 2016), which is constructed all through their careers (Imbernón, 2017; Orellana-Fernández et al., 2020).

In this regard, a number of studies have found a clear correlation between teachers' training and a quality education system (Callealta et al., 2020), establishing meaningful links between teacher training programmes, improvements in education, and students' learning outcomes (Azpillaga et al., 2021; Hijano, 2021). Furthermore, according to the Programme for International Student Assessment report (Pisa, 2015), the quality of teaching practice is crucial for the good health of education systems. One example of this is the case of Singapore, the country that led all of the most recent PISA rankings, where one of the key factors for its academic success is the initial training, selection, and continuing training of teachers (Gopinathan & Lee, 2018).

At this point, continuing training can be defined as training that is provided for in-service teachers and contributes to updating and/or developing their capacities with the aim of strengthening the development of their professional competences (Amortegui et al., 2018). Specifically, continuing training can be said to prepare them for teaching (Fischer, et al., 2018; Crespi et al., 2020) taking into account the socio-cultural and technological changes that occur in educational contexts (Gómez, 2018). Accordingly, Spain's Ministry for Education and Professional Training has recently created a discussion paper with 24 proposals for reform to improve the teaching profession, which defines continuing training of teachers as:

> The set of training activities aimed at improving scientific, technical, didactic and professional training. It must be consistent with the evolution of the sciences and specific didactics, provide knowledge of methodology, and include a number of aspects relating to the teaching activity in specific contexts. (Ministerio de Educación y Formación Profesional, 2022, p. 11)

In a review of the types of training available to teachers, authors such as Tébar (2017) and Gálvez et al. (2020) consider that the most successful is that

which is done in collaboration with a higher education institution. Torres (2020), in turn, carried out research with 221 primary-school teachers, concluding that the main trend in continuing training was to do postgraduate courses centred on specialisations, principally in university education centres; results that agreed with those obtained by Barría (2019). On the same lines, Karlberg and Bezzina (2022), after a study in Sweden with 1884 teachers from compulsory education levels, concluded that the preference continued to be formal continuing training organised in university courses. In contrast, Derakhshan et al. (2020), in a research with 177 Iranian teachers, concluded that the most appropriate training was the type delivered in the specific work settings, given that, as claimed by Cárdenas-Forero et al. (2019) and Shachter et al. (2019), this type of training developed from the needs of the people involved. In this sense, training in centres enables capacity development that considers the educational institution's context, idiosyncrasies, needs, and interests to be crucial elements (Imbernón, 2019), with this forming an essential component in improving the centres as a whole (Alfageme-González & Nieto-Cano, 2017). This type of training has a technical-reflexive orientation and is the type that teachers currently prefer for their continuous updating (De la Herrán, 2019; Guarro et al., 2017).

With regards to the type of training, in Andalusia, the Agencia Andaluza de Evaluación Educativa (Andalusian Educational Assessment Agency) (Consejería de Educación, 2018) carried out a study of 1650 public centres, concluding that early childhood and primary teachers in Andalusia preferred specific, obligatory training (27.88%), with a smaller percentage (26.41%) favouring global, voluntary training. The study participants regarded teacher training as very important, identifying it as a motor for change towards a competence-based curriculum model.

By comparison, Souto-Seijo et al. (2019), in a study centred on 73 primary teachers from the autonomous community of Galicia concluded, that these teachers preferred formal activities outside class time and during the school year, with the modality chosen being in-person. The principal reason for doing it was intrinsic. These results are on the same lines as those of Sangrà et al. (2019), who observed that teachers placed a higher value on formal training adjusted to social needs, although they also positively valued non-regulated training activities.

Various studies of in-service teachers' preferences for the content of training have been done in recent years. According to Castro (2019), the continuing training demanded by this group is fundamentally based on the acquisition of socioemotional competences and skills. There is also great demand for training in collaborative working strategies (Bowe & Gore, 2017). This interest could be motivated by the fact that, as González-Calvo and Fernández-Balboa (2018) state, the pedagogical identity of teaching lies in

the interpersonal essence of the profession. Educational innovation, use of ICT in the classroom, and digital competences are other areas on which the training needs of teachers' centre (Iglesias et al., 2018; Marciá & Garreta, 2018; López-Mayor & Cascales-Martínez, 2019; Gallardo et al., 2019; Sangrà et al., 2019). As are the need to acquire strategies to improve teaching–learning processes such as evaluation (Pascual-Arias & López-Pastor, 2019) and tutorial action (López-Mayor & Cascales-Martínez, 2019). Furthermore, in recent times there has been proliferation in training provision and demands centred on developing mechanisms to provide educational attention to students with special educational needs to implement inclusive education (Amortegui et al., 2018; González & Macías, 2018; Barría, 2019; Valdés-Pino et al., 2021).

The literature on this subject shows that for continuing training to meet educational demands, its planning and design must consider the following aspects: the interest it inspires in its recipients; the content to be covered; whether it fosters active, collaborative learning; to ensure that models of effective practices are used with opportunities for guidance; as well as support from experts, feedback, and reflection; and to ensure that its duration is appropriate (Darling-Hammond et al., 2017). When comparing Spain with other European countries, according to the Teaching and Learning International Survey (TALIS, 2014), teachers in Spain tend to display lower rates of participation than the European average in training activities such as courses and workshops, education conferences, visits to other centres as observers, and participation in teaching networks. In contrast, their participation rate is higher than the mean for individual or collaborative research activities.

It should also be noted that there are studies that analyse gender and aspects relating to continuing teacher training, such as preferences for subject areas and the type of training. The relevance of studying *gender* as a variable in this context is justified on various grounds. One of these is the unequal presence of men and women in the teaching profession, with more women (Álvarez-Rementaría et al., 2021). There are also work-life balance grounds, which influence the type of training requested (classroom-based or distance), and also women's perception when assessing their capacities compared with those of their male colleagues, with women being more modest about some competences, as reported by authors such as Grimart-Álvaro et al. (2020).

Examples of research on these lines, include that of Álvarez-Rementaría et al. (2021), who, in a research carried out in the Basque Country with a total of 26 251 participants, of whom 77.7% were women, found differences between men and women with regards to training interests. Women preferred training in attention to diversity and managing emotions, while men favoured centre management and ICT. On the same lines, González and Cutanda (2017)

studied a sample of 1413 teachers to establish the training preferences of men and women. They observed significant differences in all of the items analysed: class planning, use of new methodologies, managing the atmosphere in class, and attention to students with the most needs, with higher scores for women, results that match those obtained by Escudero et al. (2017). Previously, Barquín and Fernández (2002) did research with 1873 teachers from Andalusia, finding that women were more in favour of continuing training being voluntary (63%) rather than compulsory. The results showed that female teachers attended the activities provided by CEP (teacher training centres) more than their male counterparts.

With that in mind and starting from this situation, the general objective of the present study is to analyse the continuing training impressions, preferences, and needs of teachers in public teaching in the non-university context in Andalusia. It focuses on the following specific objectives:

- To establish the principal training needs of non-university teachers in the autonomous community of Andalusia.
- To identify their level of satisfaction with the continuing training provided by regulated and non-regulated educational institutions.
- To identify the principal motivations that lead teachers to continue to train throughout their professional careers.
- To analyse whether there are significant differences between training preferences by gender.

2. Method

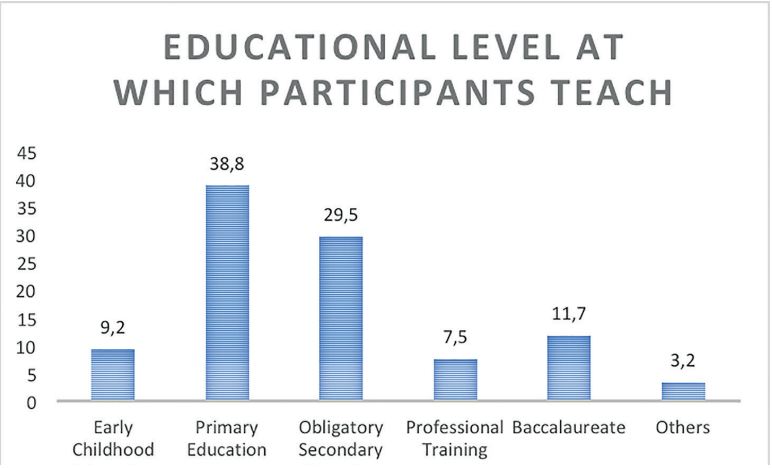
This study used a quantitative methodology employing surveys as a data collection technique. The research design is ex post facto non-experimental and is descriptive and correlational. The variables used were not modified and no treatment was applied to them, as the aim is to describe and explain a situation (Hernández & Maquilón, 2010), in this case, teachers' training preferences and needs.

2.1. Participants

The participants were selected through purposive non-probability sampling, using the snowball technique.

The total population of non-university teachers in the autonomous community of Andalusia is 107 309 (Junta de Andalucía, 2023). This work used a sample of 801 teachers. So, the sampling error was E(P) = 0.182, with a confidence interval of 95%, indicating a very acceptable margin of error. Of the sample studied, 40.1% were between 46 and 55 years of age and 68.2% were women. The 55.4% who completed the survey had more than 15 years' professional experience as in-service teachers, with 78.5% of them being career public servants. Figure 1 shows the percentage of teachers who teach at each of the educational levels investigated.

FIGURE 1. Educational levels at which the study participants teach.



2.2. Instrument

To collect the information a questionnaire with an ad hoc design was used, based on the research objectives and taking as a reference the instrument developed by Sangrà et al. (2019). The questionnaire was called "Preferences and identification of needs of continuing training" and included a total of 82 items organised in 5 blocks of content:

1. Block 1. Demographic data and general questions. This comprises 12 items regarding the geographic location of the centre where the respondents taught, the ownership of the centre, their gender and their age, years of experience, employment situation, prior training, educational level they teach at, their preferred form of continuing training, and its duration.

2. Block 2. Motives for training. This comprises 8 items that consider the reasons that account for training interests: obtaining accreditation or merits, improving professional practice, updating competences, contributing to improve the centre or the results of the students.

3. Block 3. Impressions of training actions. This comprises 9 items that ask participants to evaluate the type of training according to their preferences: continuing training offered by regulated and non-regulated institutions, training organised by teachers' centres, and the need to update the training offer.

4. Block 4. How training should be. This comprises 11 items that evaluate the type of training teachers prefer, including self-study, training with colleagues or through observing other teachers, courses with active participation, working groups, virtual teaching processes, and the creation of interdisciplinary teams, among others.

5. Block 5. Content of training. This comprises 42 items that cover content relating to the following areas: improving educational practices, methodologies, educational innovation and research, open and participatory schools, continuous improvement, and professional capacity building.

Apart from in block 1, an answer format based on a Likert-type scale is used for the items with participants' levels of satisfaction being evaluated on the basis of the following measure: 1 "disagree completely" and 5 "agree completely".

The reliability of the instrument was analysed using Cronbach's α, with a total reliability of α = .94, which is a very acceptable value. To establish the validity of the instrument, an exploratory factor analysis was performed by extracting principal components using the varimax rotation method. In this case, both the Kaiser-Meyer-Olkin measure (KMO = .923) and Bartlett's test of sphericity, with a chi-squared of 17935.493 (p = .001), indicate that the factor analysis is appropriate. The varimax rotation indicated the existence of 9 factors that explained 59.98% of the variance of the instrument. The 69 original items (the items relating to demographic data from block 1 were not included) were reduced to 45 items after this analysis.

2.3. Data collection procedure

We contacted the members of the management teams (head teachers, heads of studies, and/or secretaries) of all of the centres in Andalusia by email to explain the characteristics and aim of the research. In the message, we asked them to forward the email to the teaching staff at their centres with the link to the questionnaire so that the management teams and all of the teachers could complete it. Participation was voluntary and this tool ensured that each person could only participate in the survey once, guaranteeing anonymity and preserving the confidentiality of the data. Three weeks after the initial message, a reminder was sent to those who had not already completed it.

2.4. Data analysis

The data analysis was done with the SPSS V27 statistics program. First, an exploratory factor analysis was performed to identify the factors into which the training needs of the teachers were grouped, which gave rise to training subject areas and the characteristics of the training. Secondly, this analysis was complemented by a descriptive and correlational analysis of the dimensions of the instrument. And thirdly, a contrast hypothesis was performed to test whether there were differences in means between the different dimensions on the basis of gender using the non-parametric Mann-Whitney test.

3. Results

3.1. Teachers' training motivations, impressions, and preferences

The results in Table 1 show that the 45 items to which the instrument is reduced after the factor analysis give nine factors or

dimensions, which describe the training motivations of the teachers, their impressions on the training activities that they know, and the most necessary or relevant content. The following factors were obtained:

F1. Training for development of the centre: this comprises 7 items on aspects relating to the organisation and functioning of educational centres.

F2. Innovative methodologies: this comprises 8 items centred on teaching methodologies.

F3. Competence development and transfer: this has 6 items that revolve around internationalisation and entrepreneurial competences.

F4. Didactic updating: this comprises 7 items on good teaching practices, emotional education, and didactic updating, among others.

F5. ICT/LKT: this comprises 3 items on the use of mobile devices, social networks, ICT and LKT.

F6. Motivation towards training: this includes 3 items on what motivates training in teachers.

F7. Characteristics of the training: this comprises 4 items relating to the type of training teachers prefer.

F8. Regulated continuing training: this comprises 3 items that evaluate the training offered by regulated institutions.

F9. Non-regulated continuing training: this comprises 2 items that evaluate the training offered by non-regulated institutions.

The final instrument treats these factors as dimensions for performing the corresponding analyses.

TABLE 1. Factor analysis and dimensions.

Dimensions	**Rotated component matrix***								
	Component								
	F1	**F2**	**F3**	**F4**	**F5**	**F6**	**F7**	**F8**	**F9**
Processes that favour participation in the educational centre	.780								
Participation, intervention, and community development models	.762								
The formal and informal curriculum	.753								
Work strategies for specific learning environments	.707								

Interculturality as a factor in community development	.689			
Creating learning communities	.553			
Evaluation and quality management systems	.522			
Visual thinking		.728		
Project-based learning		.673		
Problem-based learning		.670		
Flipped classroom		.650		
Thinking-based learning		.647		
Cooperative learning		.608		
The research process in education		.577		
Educational innovation: factors for success		.534		
Improving and updating competence in foreign languages			.783	
Didactic updating and methodology in foreign languages			.740	
European programmes and internationalisation of the centre			.684	
Scientific-technological updating			.562	
Programmes and projects for the development of enterprise culture and social enterprise			.531	
Development of the enterprise culture			.523	
Emotional education and its integration into the curriculum				.724

Developing multiple capacities and intelligences	.716			
Positive education	.690			
Good practices	.488			
Didactic and curricular updating	.434			
Training in educational regulations	.430			
Key competences as the basis of the curriculum	.430			
Use of mobile devices in education		.816		
Social networks as drivers of knowledge and communication		.786		
Use of ICT and LKT: methodological integration		.706		
I train to improve my professional practice			.833	
With training, I aim to update my professional competences			.809	
With my training, I aim to contribute to improving my students' results			.746	
In training in centres, it is fundamental to have good guidance and support from subject experts				.697
Creating interdisciplinary teams of experts that take care of training would be very beneficial				.616
I learn much more on courses where I participate actively and in collaboration with my colleagues				.491
I usually do training based on what my educational centre requests/requires				.403

The training offer of the regulated institutions is sufficient	.778	
The courses organised by the teachers' centres enable me to stay up to date with my training needs	.755	
The best continuing training is delivered by regulated training institutions (teachers' centres, universities, etc.)	.661	
I generally prioritise training that allows me to obtain accreditation	.265	
The best continuing training is offered by non-regulated training institutions (associations, academies, other training centres)		.786
The training offer of non-regulated institutions is sufficient		.744
I know the different training activities that non-regulated institutions offer		.645
Extraction method: principal component analysis Rotation method: varimax with Kaiser normalisation		

*The rotation converged in 7 iterations.

Table 2 shows the descriptive data for each of the 9 factors or dimensions (the score for each dimension comprises the sum of the scores of the items in it), showing the mean *(M)*, standard deviation *(SD)*, skew *(CS)*, and kurtosis *(CK)*. Analysis of the data shows that teachers have medium-high training needs in increasing development of the educational centre (D1, $M = 25.16$), acquiring innovative methodologies (D2, $M = 29.67$), and increasing competence development and transfer (D3, $M = 20.69$). Their level of satisfaction with the training provided by regulated training institutions is medium-high (D8, $M = 12.70$), and it is medium-low (D9, $M = 7.54$) for non-regulated teaching. They are aware that they need greater didactic updating, with a high mean in this dimension (D4, $M = 27.66$), as well as greater skills training in ICT/LKT, again with a high mean (D5, $M = 11.17$). They believe that training should be done in interdisciplinary teams, collaboratively, and

encouraging participation, given that they display a high level of satisfaction (D7, M = 15.95). Finally, it is notable that, of all of the dimensions, the items with the highest valuations and very high means (D6, M = 14.31) are the ones relating to motivations towards training. In this sense, the teachers believe that the purpose of their training is to improve their professional practice, update their professional competences, and contribute to improving their students' results. The overall mean of the instrument is medium-high (M = 164.87).

TABLE 2. Descriptive statistics by dimensions.

Dimensions	*M*	*SD*	*CS*	*CK*
D1. Training for development of the educational centre	25.1625	6.27557	-.574	.216
D2. Innovative methodologies	29.6742	6.68431	-.463	.126
D3. Competence development and transfer	20.6937	5.56652	-.406	-.330
D4. Didactic updating	27.6654	5.40143	-.659	.183
D5. ICT/LKT	11.1723	2.76003	-.542	.031
D6. Motivation towards training	14.3159	1.25553	-2.117	4.616
D7. Characteristics of the training	15.9588	2.49841	-.624	.713
D8. Regulated continuing training	12.7091	3.06089	-.130	-.190
D9. Non-regulated continuing training	7.5468	2.24402	.392	.349
Instrument total	164.87	24.89	-.357	.087

Focussing on regulated continuing training, Table 3 shows that the item that evaluates satisfaction with the training provided by regulated educational institutions has the same score as the item about whether working groups are the most appropriate training options for acquiring continuing training. Despite this, the variance is smaller for the item referring to working groups, indicating that the data are less disperse, and so as the scores are closer the study participants can be said to place more value on working groups as a training strategy.

TABLE 3. Descriptive statistics for training preference items.

		The best continuing training is delivered by regulated training institutions (teachers' centres, universities, etc.)	I think that working groups are the most appropriate training options for my continuing training
n	Valid	801	801
	Missing	9	9
Mean		3.36	3.36
Standard dev.		1.124	.999
Variance		1.263	.999

After this, we calculated the correlations between the different dimensions, finding that in all of them. Dimension 1 «training for development of the educational centre» has a high correlation with dimension 2 «innovative methodologies» (sig. 0.000; r = .705), dimension 3 «competence development and transfer» (sig. 0.000; r = .629), and dimension 4 «didactic updating» (sig. 0.000; r = .670). In turn, it should be noted that the correlation between dimensions 2 and 4 is also high (sig. 0.000; r = .635).

3.2. Teachers' training preferences by gender

Table 4 shows the descriptive data for the 9 dimensions of the instrument by gender. In this case, the Kolmogorov-Smirnov (KS) statistics were calculated to establish the normality of the data, finding that they do not follow a normal distribution (p <0.05). In addition, the non-parametric Mann-Whitney test was used to compare the difference in means of two different samples. The total score is similar in both genders. Furthermore, it can be seen that, in all of the dimensions analysed, there are only significant differences in dimension 2 «innovative methodologies» (p = .004), dimension 4 «didactic updating» (p = .045), dimension 5 «ICT/LKT» (p = 0.03), and dimension 6 «motivation towards training» (p = .000).

TABLE 4. Significance of training preferences by gender.

	Gender	Kolmogorov-Smirnov			Mann-Whitney	Z	Sig
		KS	*df*	Sig.			
D1	1.00	.057	254	.043	63 877.500	-1.760	.078
	2.00	.087	545	.000			
D2	1.00	.054	254	.075	60 540.500	-2.898	.004
	2.00	.074	545	.000			
D3	1.00	.107	254	.000	68 229.000	-.325	.745
	2.00	.074	545	.000			
D4	1.00	.083	254	.000	63 261.000	-2.003	.045
	2.00	.088	545	.000			
D5	1.00	.110	254	.000	60 519.000	-2.926	.003
	2.00	.118	545	.000			
D6	1.00	.350	254	.000	60 258.000	-3.651	.000
	2.00	.418	545	.000			
D7	1.00	.123	254	.000	63 602.000	-1.902	.057
	2.00	.108	545	.000			
D8	1.00	.119	254	.000	66 823.500	-.832	.405
	2.00	.080	545	.000			
D9	1.00	.140	254	.000	64 158.500	-1.721	.085
	2.00	.102	545	.000			

Table 5 shows the mean ranges in order to determine where the principal differences are. It is apparent that, in all of the dimensions, women want more training than men in dimension 2, regarding innovative methodologies (MR = 416.62); in dimension 4, regarding didactic updating (MR = 411.64); in dimension 5, regarding ICT/LKT (RP = 416.66). It has also been observed that women have more motivation towards acquiring this training (MR = 417.14).

TABLE 5. Ranges by dimensions.

	Ranges			
	Gender	***n***	**Mean rank**	**Sum of ranks**
D1	1.00	254	378.99	96262.50
	2.00	545	409.79	223337.50
	Total	799		
D2	1.00	254	365.85	92925.50
	2.00	546	416.62	227474.50
	Total	800		
D3	1.00	254	396.12	100614.00
	2.00	545	401.81	218986.00
	Total	799		
D4	1.00	254	376.56	95646.00
	2.00	546	411.64	224754.00
	Total	800		
D5	1.00	254	365.76	92904.00
	2.00	546	416.66	227496.00
	Total	800		
D6	1.00	254	364.74	92643.00
	2.00	546	417.14	227757.00
	Total	800		
D7	1.00	254	377.90	95987.00
	2.00	546	411.01	224413.00
	Total	800		
D8	1.00	254	390.58	99208.50
	2.00	546	405.11	221191.50
	Total	800		
D9	1.00	254	380.09	96543.50
	2.00	546	409.99	223856.50
	Total	800		

4. Discussion

Analysis of the data shows that the teachers who participated in the study are conscious of their training needs and that their commitment to continuing training is clear, as can be seen in the overall evaluation of the instrument. This results in an improvement in the quality of the educational system, as Callealta et al. (2020) and the Pisa report (2015) already stated.

In reference to the close ties that various studies have found between teachers' engagement in continuing training and improvements in education, these are corroborated in the present study (Azpillaga et al., 2021; Hijano, 2021), with teachers displaying medium-high training needs in development of the educational centre, in innovative methodologies, and in competence development and transfer, with strong correlations between these dimensions. On the same line, Gopinathan and Lee (2018) indicated that continuing training of teachers is one of the key elements for the success of the education system, as it enables the development of professional competences (Amortegui et al., 2018) and prepares people to teach (Fischer et al., 2018; Crespi et al., 2020). These matters are reflected in the present study as high scores are obtained in teachers' motivation towards their participation in training as a form of developing professional competences and improving professional practice.

The forms of continuing training can currently be done in regulated educational institutions and non-regulated ones. This study has found that teachers prefer training activities in regulated educational institutions, a result that agrees with those obtained by Barría (2019), Sangrà et al. (2019), Souto-Seijo et al. (2019), Gálvez et al. (2020), Torres (2020), and Karlberg and Bezzina (2022). However, it is also observed that, within regulated training, their priorities are incline slightly towards working groups within educational centres, as is found in the studies by Cárdenas-Forero et al. (2019), Derakhshan et al. (2020), Imbernón (2019), and Shachter et al. (2019). Training in centres is then the favoured mode of training and it is put into practice by teachers to a greater extent, in line with Guarro et al. (2017) and De la Herrán (2019).

With regards to the content of continuing training, it should be highlighted that this focusses on competence development, didactic updating (Pascual-Arias & López-Pastor, 2019; López-Mayor & Cascales-Martínez, 2019), and ICT skills training, with these results matching those obtained by Iglesias et al. (2018), Marciá and Garreta (2018); López-Mayor and Cascales-Martínez (2019); Gallardo et al. (2019), and Sangrà et al. (2019). These results also agree with those obtained in 2014 by the TALIS report, as teachers, to a greater extent, want training activities in which interdisciplinary teams participate and work in a collaborative and participatory way.

With regards to gender, it should be noted that the split between men and women in this study's sample is uneven with more women, as Álvarez-Rementaría et al. (2021). After completing the contrast hypothesis relating to gender, it should be noted that there are significant differences in 4 of the 9 dimensions analysed, namely

D2. Innovative Methodologies, D4. Didactic Updating, D5. ICT/LKT, and D6. Motivation towards training. Female teachers had higher scores than male teachers in all of them. These results partially match those of González and Cutanda (2017) and Escudero et al. (2017), as in their studies women had higher scores in new methodologies and classroom management, while according to the results of Álvarez-Rementería et al. (2021) men had higher scores in ICT. Similarly, the results agree with those obtained by Barquín and Fernández (2002), as female teachers were more motivated towards training than male teachers.

5. Conclusions

Continuing training is a fundamental element of the professional development of in-service teachers in today's society. Therefore, to implement quality continuing training that meets educational needs, it is necessary to identify these teachers' training impressions, preferences, and needs, since they must be the true protagonists of the training.

Having completed this study, we conclude that the institutions responsible for training must strive to adapt training content and forms to the demands of teachers to a greater extent, as they prefer regulated training activities. In this sense, it would be necessary to shift the approach of the training, so that its beneficiaries can have times, spaces, and strategies for training during their working day to continue to perfect themselves. This would require a significant financial outlay by the educational institution that would directly affect the quality of education. The teachers who participated in this study showed their commitment to training, especially the women, and so it would be necessary to provide them with the necessary tools and strategies to enable them to implement what they learn. Therefore, consideration should be given to training strategies based around collaborative research–action in workplaces, where teachers become researchers in their own practice alongside interdisciplinary teams that are concerned with the improvement and quality of the teaching action, such as the lesson study methodology. Proposing methodological strategies with these characteristics strengthens the development and transfer of teachers' competences, the implementation of innovative methodologies, the motivation to participate, and the creation of true learning communities in educational centres. This makes it possible to reduce the institutionalisation of training and increase its contextualisation to meet the real educational demands and needs of education centres.

Despite the findings of this study, it is important to recognise its limitations. These include the difficulty of obtaining data owing to a lack of teachers responding to the questionnaires, as well as the typical limitations of the survey technique and the chosen methodological design.

In future research, it would be of interest to identify possible differences in training preferences by educational stage, province, and type of centre (state assisted, public or private). Designing training proposals based on the strategies proposed above in order then to evaluate and establish the results of their implementation would also be of interest.

References

Acevedo, K., & Romero, S. (2019). La educación en la sociedad del conocimiento [Education in the knowledge society]. *Revista Torreón Universitario*, *8* (22), 79-83.

Alfageme-González, M. B., & Nieto-Cano, J. (2017). Los docentes de la enseñanza obligatoria en España y las actividades de formación continua [Teachers in Spain's obligatory education and continuing education activities]. *Perfiles Educativos*, *39* (158), 148-165.

Álvarez-Rementería, M., Darretxe, L., & Arandia, M. (2021). La formación continua del profesorado desde una perspectiva de género. Análisis del plan formativo del País Vasco [Teachers' in-service training from a gender perspective. Critical analysis of the training plan of the Basque Country]. *Revista Estilos de Aprendizaje*, 62-74.

Amortegui, S. A., Chávez, N., & Martín, D. M. (2018). La formación permanente de los docentes de la educación primaria básica en la atención educativa a los escolares con necesidades educativas especiales, en el contexto colombiano [The permanent formation of teachers of basic primary education in the educational attention to the escolars with special educational needs, in the Colombian context]. *Revista Conrado, 14* (65), 170-175.

Azpillaga, V., Bartau, I., Aierbe, A., & Intxausti, N. (2021). Formación y desarrollo profesional docente en función del grado de eficacia escolar [Teacher training and professional development in accordance with the level of school effectiveness]. *Revista de Educación*, (393), 155-179. https://doi.org/10.4438/1988-592X-RE-2021-393-489

Barquín, J., & Fernández, J. (2002). Género, ideología, experiencia y actitud del profesorado andaluz frente a la formación permanente [Gender, ideology, experience and attitude of Andalusian teachers towards permanent training]. *Revista Interuniversitaria de Formación del Profesorado*, (43), 75-92.

Barría, S. (2019). La formación docente y la práctica educativa del profesor para la inclusión sociolaboral en jóvenes con discapacidad intelectual. Análisis en el contexto chileno [Teachers' training and educational practice for work and social inclusion in young people with intellectual disabilities. Analysis of the chilean context]. *Perspectiva Educacional*, *58* (2), 1-27. https://doi.org/10.4151/07189729-vol.58-iss.2-art.942

Bowe, J., & Gore, J. (2017). Reassembling teacher professional development: The case for quality teaching rounds. *Teachers and Teaching*, *23* (3), 352e366. https://doi.org/10.1080/13540602.2016.1206522

Callealta, L., Donoso, M., & Camuñas, N. (2020). Identidad profesional docente: la influencia de las competencias y la formación inicial de los aspirantes a profesores de educación secundaria [Teachers today: Skills and initial training as priority axes in their identity construction]. *Estilos de Aprendizaje*, *13* (25), 84-98. https://doi.org/10.55777/rea.v13i25.1880

Cárdenas-Forero, Ó. L., Benítez-Agudelo, M. L., & Uribe-Garzón, S. M. (2019). La constitución de los maestros en el marco de las redes y colectivos: el caso de la red «Maestros en colectivo» [The constitution of teachers in the framework of networks and groups: the case of the network "Teachers in collective"]. *Educación y Ciudad*, *2* (37), 37-46. https://doi.org/10.36737/01230425.v2.n37.2019.2146

Castro, E. (2019). La formación continua como fuente de desarrollo de las competencias y habilidades socioemocionales de acuerdo con los requerimientos del Modelo Educativo para la Educación Obligatoria 2017. Una aproximación teórica sobre el tema [Continuous training as a source of development of socio-emotional skills and abilities according to the requirements of the Educational Model for Compulsory Education 2017. A theoretical approach on this subject]. *Dilemas contemporáneos: Educación, Política y Valores*, *3* (3), 1-31.

Consejería de Educación. (2018). *Resultados cuestionarios «Repensar la primaria: centros públicos» [Questionnaire results "Rethink primary: Public centres"].* Junta de Andalucía. AGAEVE.

Crespi, L, Noro, D., Finimundi, M, & Peruzzo, V. (2020). Neurociências na formação continuada de docentes da pré-escola: lacunas e diálogos [Neurosciences in the continuing education of pre-school teachers: Gaps and dialogues]. *EDUCA - Revista Multidisciplinar em Educação*, *7* (17), 62. https://doi.org/10.26568/2359-2087.2020.4060

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). *Effective teacher professional development.* Learning Policy Institute.

De la Herrán, A. (2019). Algunos fundamentos sobre la formación continua del profesorado desde el enfoque radical e inclusive [Some foundations on teacher training from the radical and inclusive approach]. *Revista boletín Redipe*, *8* (2), 29-57.

Derakhshan, A., Coombe, C., Zhaleh, K., & Tabatabaeian, M. (2020). Examining the roles of continuing professsional development needs and views of research in English language teachers' success. *Teaching English as a Second or Foreign Language*, *24* (3), 1-27. https://tesl-ej.org/wordpress/issues/volume24/ej95/

Escudero, J. M., Cutanda, M. T., & Trillo, J. F. (2017). Aprendizaje docente y desarrollo profesional del profesorado [Teacher learning and teacher professional development]. *Revista Currículum y Formación del Profesorado*, *21* (3), 83-102.

Fischer, C., Fishman, B., Dede, C., Eisenkraft, A., Frumin, K., Foster, B., Lawrenz, F., Levy, A. J., & McCoy, A. (2018). Investigating relationships between school context, teacher professional development, teaching practices, and student achievement in response to a nationwide science reform. *Teaching and Teacher Education*, *72*, 107-121. https://doi.org/10.1016/j.tate.2018.02.011

Fong R., Orozco J., & Herrera J.A. (2020). La profesionalización docente ante las dificultades en la enseñanza: caso de educación primaria, secundaria y medio superior [The teaching professionalization in front of the difficulties in teaching: Case of primary education, secondary school and half a superior]. *Revista Electrónica Entrevista Académica, 6* (2), 163-183.

Gallardo, I. M., San Nicolás, M. B., & Cores, A. (2019). Visiones del profesorado de primaria sobre materiales didácticos digitales [Perceptions of primary teachers on digital didactic materials]. *Campus virtuales: revista científica iberoamericana de tecnología educativa*, *8* (2), 47-62.

Gálvez, M. C., Barrio, M., & García, F. (2020). Open data and education: Teacher training in the digital society. *Páginas de Educación*, *13* (2), 1-20. https://dx.doi.org/10.22235/pe.v13i2.1913

García, F. J., & Martínez, R. (2017). Implicación de la educación en la sociedad del conocimiento, información y comunicación [Implication of education in the knowledge, information and communication society]. *CULCyT*, *13* (59), 358-362.

Gómez, J. E. (2018). La formación continua del docente de la educación básica primaria en Colombia [The continuing education of the primary basic education teacher in Colombia]. *Revista Conrado*, *14* (64), 174-178.

González-Calvo, G., & Fernández-Balboa, J. M. (2018). A qualitative analysis of the factors determining the quality of relations between a novice physical education teacher and his students' families: Implications for the development of professional identity. *Sport, Education and Society*, *23* (5), 491-504. https://doi.org/10.1080/13573322.2016.1208164

González, M. T., & Cutanda, M. T. (2017). La formación continuada del profesorado de enseñanza obligatoria: incidencia en la práctica docente y el aprendizaje de los estudiantes [The continuous training of compulsory education teachers: Influence in teaching practice and in student's learning]. *Revista Currículum y Formación del Profesorado, 21* (2), 103-122.

González, I., & Macías, D. (2018). La formación permanente como herramienta para mejorar la intervención del maestro de educación física con alumnado con discapacidad [Lifelong learning as a tool to improve physical education teachers' intervention with students with disabilities]. *Retos: nuevas tendencias en educación física, deporte y recreación*, *33*, 118-122.

Gopinathan, S., & Lee, M. (2018). Excellence and equity in high-performing education systems: Policy lessons from Singapore and Hong Kong. *Prospectives*, *41* (2), 203-247. https://doi.org/10.1080/02103702.2018.1434043

Grimalt-Álvaro, C., Usart Rodríguez, M., & Esteve, V. (2020). La competencia digital docente en la formación continua del profesorado desde una perspectiva de género: estudio de caso [Teaching digital competence in continuous teacher training from a gender perspective: Case study]. In R. Roig-Vila (Ed.), *La docencia en la enseñanza superior. Nuevas aportaciones desde la investigación e innovación educativas [Teaching in higher education. New contributions from educational research and innovation]* (pp. 214-224). Octaedro.

Guarro, A., Martínez, B., & Portela, A. (2017). Políticas de formación continuada del profesorado: análisis crítico del discurso oficial de comunidades autónomas [Continuing professional development policies: Critical analysis of the official discourse of Spanish Autonomous Communities]. *Revista currículum y formación del profesorado*, *21* (3), 21-40

Hernández, F., & Maquilón, J. J. (2010). Introducción a los diseños de investigación educativa [Introduction to educational research designs]. In S. Nieto Martín (Ed.), *Principios, métodos y técnicas esenciales para la investigación educativa [Essential principles, methods and techniques for educational research]* (pp. 109-126). Dykinson.

Hijano, A. (2021). La formación permanente del profesorado. Análisis de la normativa andaluza [In-service teacher training: Analysis of the Andalusian legislation]. *Avances en Supervisión Educativa*, (36). https://doi.org/10.23824/ase.v0i36.734

Iglesias, M. J., Lozano, I., & Roldán, I. (2018). La calidad e innovación educativa en la formación continua docente: un estudio cualitativo en dos centros educativos [Educational quality and innovation in teacher training: A qualitative study in two schools]. *Revista Iberoamericana de Educación*, *77* (1) 13-34. https://doi.org/10.35362/rie7713090

Imbernón, F. (2017). *Ser docente en una sociedad compleja. La difícil tarea de enseñar [Being a teacher in a complex society. The difficult task of teaching].* Editorial Graó.

Imbernón, F. (2019). La formación del profesorado de secundaria: la eterna pesadilla [Secondary education teachers's training: The eternal nightmare]. *Profesorado, Revista de Currículum y Formación del Profesorado*, *23* (3), 151-163. https://doi.org/10.30827/profesorado.v23i3.9302

Junta de Andalucía (2023). *Estadísticos de la educación en Andalucía [Statistics for education in Andalusia].* Consejería de Desarrollo Educativo y Formación Profesional.

Karlberg, M., & Bezzina, C. (2022). The professional development needs of beginning and experienced teachers in four municipalities in Sweden. *Professional Development in Education*, *48* (4), 624-641. https://doi.org/10.1080/19415257.2020.1712451

Körkkö, M., Kyrö-Ämmälä, O., & Turunen, T. (2016). Professional development through reflection in teacher education. *Teaching and Teacher Education*, *55*, 198-206. https://doi.org/10.1016/j.tate.2016.01.014

López-Mayor, C., & Cascales-Martínez, A. (2019). Acción tutorial y tecnología: propuesta formativa en educación primaria [Tutorial action and technology: Formative proposal in primary education]. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, *22* (3), 233-249. https://doi.org/10.6018/reifop.347231

Macià, M., & Garreta, J. (2018). Accesibilidad y alfabetización digital: barreras para la integración de las TIC en la comunicación familia/escuela [Access and digital literacy: Barriers of the integration of ICT in family/school communication]. *Revista de Investigación Educativa*, *36* (1), 239-257. http://dx.doi.org/10.6018/rie.36.1.290111

Ministerio de Educación y Formación Profesional. (2022). *Documento de debate. 24 propuestas para la mejora de la profesión docente [Discussion document. 24 proposals for the improvement of the teaching profession].* https://www.educacionfpydeportes.gob.es/dam/jcr:11de0388-9df4-4846-af56-fe19fc82dbaf/documento-de-debate-24-propuestas-de-reforma-profesi-n-docente.pdf

Orellana-Fernández, R., Merellano-Navarro, E., Berríos-Villarroel, A., & Almonacid-Fierro, A. (2020). Teachers in dictatorship and democracy: Biographical perspective of teachers at the end of a professional career. *Revista Brasileira de Educacao*, *25*, 1-23. https://doi.org/10.1590/s1413-24782019250007

Pascual-Arias, C. P., & López-Pastor, V. M. (2019). Seminario de formación permanente internivelar sobre evaluación formativa y compartida [In-service teacher education seminar on formative and shared assessment]. *Revista Infancia, Educación y Aprendizaje*, *5* (2), 66-70.

PISA. (2015). *Programa para la evaluación internacional de los alumnos. Informe español [Programme for international student assessment. Spanish report].* Ministerio de Educación, Ciencia y Deporte.

Romero, G. (2018). Calidad educativa: engranaje entre la gestión del conocimiento, la gestión educativa, la innovación y los ambientes de aprendizaje [Educational quality: Gear between knowledge management, educational management, innovation and learning environments]. *Revista de estudios y experiencias en educación, 17* (35), 91-103. https://doi.org/10.21703/rexe.20181735romero6

Sangrà, A., Estévez, I., Iglesias, V., & Souto-Seijo, A. (2019). Desarrollo profesional docente a través de las ecologías de aprendizaje: perspectivas del profesorado [Professional teacher development through learning ecologies: Teachers' views]. *Edutec. Revista Electrónica de Tecnología Educativa*, *68*, 42-53. https://doi.org/10.21556/edutec.2019.68.1307

Shachter, R., Gerder, H. K., & Hatton-Bowers, H. (2019). Guidelines for selecting professional development for early childhood teachers. *Early Childhood Education Journal*, *47*, 395-408. https://doi.org/10.1007/s10643-019-00942-8

Souto-Seijo, A., Estévez, I., Iglesias, V., & González-Sanmamed, M. (2019). Entre lo formal y lo no formal: un análisis desde la formación permanente del profesorado [Between the formal and the non-formal: An analysis from the perspective of continuing teacher training]. *Educar*, *56* (1), 91-107. https://doi.org/10.5565/rev/educar.1095

TALIS. (2014). *Informe TALIS 2013. Estudio internacional de la enseñanza y el aprendizaje [TALIS report 2013. International study of teaching and learning].* Ministerio de Educación, Cultura y Deporte.

TALIS. (2018). *Informe TALIS 2018. Guía del profesorado [TALIS 2018 report. Teacher's guide].* OCDE. www.oecd.org/education/talis

Tébar, F. (2017). Mejorar la calidad de la inspección educativa [Improve the quality of educational inspection]. *Supervisión 21. Revista de Educación e Inspección*, *44* (44), 1-19.

Tobón, S. (2017). Conceptual analysis of the socioformation according to the knowledge society. *Knowledge Society and Quality of Life (KSQL)*, *1* (1), 9-35.

Torres, K. F. (2020). Tendencias y necesidades de formación continua de docentes en instituciones educativas de la ciudad de Piura, Perú [Trends and needs for continuous teacher training at educational institutions in the city of Piura, Perú]. *TZHOECOEN*, *12* (3), 371 -381. https://doi.org/10.26495/tzh.v12i3.1334

Valdés-Pino, M. A., Calvo-Álvarez, M. I., & Martínez-Abad, F. (2021). Formación inclusiva del profesorado de primaria en tres regiones chilenas [Inclusive training of elementary teachers in three Chilean regions]. *ALTERIDAD. Revista de Educación*, *16* (1), 117-129. https://doi.org/10.17163/alt.v16n1.2021.09

Authors' biographies

María-José Mayorga-Fernández. Doctor in Pedagogy from the Universidad de Málaga and associate professor in the Department of Didactics and School Organisation. She is a member of the "Rethinking education Hum 311" research group. Her main research interests are teacher evaluation, didactic methodologies, lesson study, digital competence, and continuing training.

https://orcid.org/0000-0003-3749-1264

Inmaculada Martínez-García. Doctor in Pedagogy from the Universidad de Sevilla. She is an associate professor in the Department of Didactics and School Organisation. She is a member of the "Teaching and learning in the framework of educational innovation and technology (Innoeduca)" research group (SEJ-533). Her main research interests are innovation in teaching and new technologies, teacher training, competence-based training, educational and professional guidance, school management and educational leadership, and the psychological well-being of doctoral students.

https://orcid.org/0000-0002-4507-7410

Fabián Núñez-Avilés. Doctor in Research Methods and Resources in Educational Research and Innovation from the Universidad de Málaga. He is the director of the Vélez-Málaga Teachers' Centre (Junta de Andalucía). He is a member of the "Education, sport, innovation, and health (EDISA)" research group, which has the objective of fostering health through preventive education and creating technological systems with artificial intelligence to help professionals perform their tasks.

https://orcid.org/0000-0003-0164-1726

The Mention in Music Education in primary and early-childhood education degrees in Spain: Presence and approach

La Mención en Educación Musical en los grados de Maestro/a en España: presencia y enfoque

Ángela MORALES, PhD. Associate Professor. Universidad Autónoma de Madrid (*angela.morales@uam.es*).
Marta MARTÍNEZ-RODRÍGUEZ, PhD. Assistant Professor. Universidad Autónoma de Madrid (*marta.martinezr@uam.es*).
Miren PÉREZ-EIZAGUIRRE, PhD. Assistant Professor. Universidad Autónoma de Madrid (*miren.perez@uam.es*).
Isabel MONTARAZ, PhD. Assistant Professor. Universidad Autónoma de Madrid (*isabel.montaraz@uam.es*).

Abstract:

Given the current situation with regards to the publication of the Development Orders to Improve University Teaching approved by Royal Decree 822/2021, which might affect degree mentions in Spain, this research focuses on a study of the form of the curriculum for the Mention in Music Education. To do so, we have selected public and private centres (n = 48) that are affiliated to the Conference of Deans of Education. We examined the offer of this specialisation on the degrees in Early Childhood Education and Primary Education, the distribution of subjects, and access requirements. In addition, the content of the subjects was classified. and the presence of specific placements and final degree projects was considered. The results show a reduction in credits and training capacity compared to the previous specialism. In addition, the more restricted offer of this mention in Early Childhood Education than in Primary Education is shown. The Kruskal–Wallis non-parametric test did not find any statistically significant differences in the availability of these courses in different autonomous communities. In the case of modules offered, it is apparent that both stages share the same musical categories (vocal, instrumental, auditory, musical language and rhythm, movement and dance,

Date of receipt of the original: 2024-01-22.
Date of approval: 2024-03-26.
Please cite this article as follows: Morales, A., Martínez-Rodríguez, M., Pérez-Eizaguirre, M., & Montaraz I. (2024). The Mention in Music Education in primary and early-childhood education degrees in Spain: Presence and approach [La Mención en Educación Musical en los grados de Maestro/a en España: presencia y enfoque]. *Revista Española de Pedagogía, 82* (288), 417-445. https://doi.org/10.22550/2174-0909.4051

among others) but that the teaching load differs. Likewise, it was also found that few centres offer specific practicals and final degree projects for the mentions. For all these reasons, taking into account all of the foregoing is recommended in the event of any modification that could increase the number of credits with the publication of the afore mentioned orders.

Keywords: music education, degree in education, mention, Spain, music, education.

Resumen:

Debido a la situación en la que nos encontramos en referencia a la publicación de las órdenes de desarrollo para mejorar las enseñanzas universitarias aprobadas en el Real Decreto 822/2021 y que puedan afectar a las menciones en España, la presente investigación se centra en exponer un estudio sobre la concreción curricular de la Mención en Educación Musical en nuestro territorio. Para ello se han seleccionado los centros públicos y privados (n = 48) que aparecen adscritos en la Conferencia de Decanos de Educación. Se ha procedido a examinar la oferta de esta mención en los grados de Educación Infantil y Educación Primaria, la distribución de las asignaturas, así como los requisitos de acceso. Además, se ha realizado una clasificación de los contenidos de las asignaturas y se ha estudiado la presencia de prácticum y TFG específicos. Los resultados ponen de manifiesto la pérdida de créditos y la capacidad formativa en relación con la especialidad. Además, se muestra la escasa oferta de esta mención en Educación Infantil en comparación con la de Educación Primaria. Con relación a la presencia de estas enseñanzas en función de la Comunidad Autónoma, no se encuentran diferencias estadísticamente significativas tras realizar la prueba no paramétrica de Kruskal-Wallis. En cuanto a las asignaturas ofertadas, se observa que ambas etapas comparten las mismas categorías musicales (Vocal, Instrumental, Auditiva, Lenguaje musical y Ritmo, movimiento y danza entre otras), pero la carga lectiva es diferente. Asimismo, se revelan los escasos centros universitarios en los que se brinda la posibilidad de realizar prácticas específicas de las menciones y el TFG. Por todo ello, se recomienda tener en cuenta todo lo indicado, en caso de que se produzca una modificación que pudiese aumentar el número de créditos con la publicación de las órdenes anteriormente señaladas.

Palabras clave: educación musical, grado de maestro, mención, España, música, educación.

1. Music teacher training: from the Specialism to the Mention

The legislative framework relating to initial teacher training in music education in Spain has been shaped by a number of reforms. The previous specialist diplomas (180 credits/3 years), defined by Royal Decree 1440/1991, in which music education had its own three-year training programme, have been abolished and have been replaced by four-year bachelor's degrees (240 ECTS credits/four years) in which the specialisation in music is organised as a group of optional modules that make up the mentions of between 30 and 60 ECTS credits that provide the relevant

qualifications, in accordance with Order ECI/3857/2007.

Authors such as Aróstegui (2006), Berrón (2021), Carbajo (2009), Cremades-Andreu and García-Gil (2017), Esteve *et al.* (2007), and López *et al.* (2017) noted that this teacher-training model tended to favour more generalist training instead of specialist training. They warned that this situation could create a feeling of uncertainty about the future of music teaching in schools, and it was perceived as a backward step compared with the existence of a specific specialism dedicated to this field. Serrano *et al.* noted in this regard that:

> The discussion is oriented towards the coherence of the reform plan with the diverse empirical studies carried out. It is concluded that the proposal of national reform of the primary teacher degrees disregards the results of the empirical studies on which the decision is based, hence resulting in a contradiction that may cause a rupture between the specialist degree and its professional profile. This stance would move away the reform from its raison d'être, that is to adapt the degrees following the recommendations of the European Commission that, among others, demanded from associate countries a greater effort to conciliate the academic degrees with their respective professional profiles. (2007, p. 534)

There were notable quantitative changes, as the following table shows.

TABLE 1. Comparison of Royal Decree 1440/1991 and Order ECI/3857/2007.

Royal Decree 1440/1991 (Diploma) 1 credit/10 class hours		**Order ECI/3857/2007 (Degree) 1 ECTS credit 25/30 hours (10 class hours)**	
Core primary and early-childhood education qualification modules in all specialities	40 credits/400 hours	**Basic training module**	60 ECTS credits/600 hours
Core modules of the speciality	64 credits/640 hours	**Disciplinary didactic module**	100 ECTS credits/1,000 hours
Practices	32 credits/320 hours	**Placement–Final Degree Project**	50 ECTS credits/500 hours
Free choice and speciality options	42 credits/420 hours	**Mentions**	Between 30/60 ECTS credits

Under the new system, each university adopted a different model, interpreting the offer of options in quantitative and qualitative terms with a range of structures. Although Royal Decree 1440/1991 structured the specialisms with a specific

model, Order ECI/3857/2007 offered the opportunity to set different curricular pathways for each mention, including the possibility of offering modules from outside the mention.

According to Royal Decree 1440/1991, the music specialism had to include the core modules shared by all of the specialisms on the qualification as well as the core modules for this specific specialism.

TABLE 2. Curricular pathway from Royal Decree 1440/1991. Core modules of the speciality.

CORE MODULES FOR THE SPECIALISM		
INSTRUMENTAL TRAINING	Studying a melodic or harmonic instrument	8 CR
MUSICAL GROUPS	Instrumental band practice School repertoire for different types of instrumental and vocal organisations	8 CR
RHYTHM AND DANCE TRAINING	Fundamental elements of rhythm. didactics of corporeal expression Different aspects of dance applied to basic education elementary choreographies. Improvisation. Repertoire.	4 CR
VOCAL AND AUDITORY TRAINING	Vocal and auditory techniques. Externalising and internalising melody. Repertoire	4 CR
HISTORY OF MUSIC AND FOLKLORE	Analysis of works. Studying different periods and aesthetics	4 CR
MUSICAL LANGUAGE	Theoretical–practical study of the necessary musical elements for reading and playing music	4 CR
PLACEMENT	An integrated set of teaching initiation classroom practices, to be done in the corresponding levels of the education system	32 CR

Despite these directives, the universities put together different syllabuses in relation to the subjects and credits specified by the Royal Decree, which standardised the starting point for training specialist music teachers throughout the whole country. This situation did not continue after Order ECI/3857/2007, as the training models that emerged and remain in use today are varied and have different content.

With the move from the specialisms to the Mention in Music Education contemplated as an intensification of the curriculum, studies such as that by Cuenca *et al*. (2021) noted that the number of credits specifically dedicated to music training for teachers at the Universidad Autónoma de Madrid fell considerably from 74 ECTS credits in the old Diploma in Music Education to 33 ECTS credits in the Mention in Music Education in the Degree in Primary Education, and to 42 ECTS credits in the Mention in Development of Musical Expression on the Degree in Early-Childhood Education. Moreover, the teaching of these mentions would be delivered in a four month period.

As for career prospects, the Mention in Music Education on the Primary Education Degree became a mention that provides professional training to prepare students to teach music at this educational stage. However, the mentions in the Degree in Early-Childhood Education only involved training and curricular intensification within this qualification and have not provided more professional training pathways within the field of employment (Pérez-Eizaguirre *et al.*, 2024).

With regards to the initial training of teachers in this mention, Cremades-Andreu (2023) has identified the difficulty that graduates face in acquiring the music teaching competences needed to enter the job market under the current training framework, and has suggested that there is a need to consider in more depth what the training should be and what it should be like to satisfy the demand for music teaching specialists.

Furthermore, Fernández-Jiménez and Valdivia (2020) categorise the sequencing and timing of the Mention in Music Education in different Spanish universities. On this line, the work by Hernández-Portero and Colás-Bravo (2022) examines the initial training demanded by the different education laws for music teachers in secondary education and the training they actually receive. In addition, Blanco-García and Peñalba-Acitores (2020) analyse syllabuses, identifying eight categories of intersection between university syllabuses and the primary and secondary curricula. These categories are grouped into two dimensions: musical content (listening, musical interpretation, dance and movement, musical and cultural contexts, music and technologies), and transversal content.

At the international level, a growing concern with examining syllabuses in the training of future music teachers has been observed. This is apparent in countries like Singapore (Rim *et al.*, 2020). Similarly, in China various pieces of research

such as those by Wong (2022) and Yang (2023) agree on the importance of evaluating existing needs to be able to design new syllabuses. In Finland, for its part, a significant reduction in musical studies in the general training of teachers has been observed in recent decades, as noted by Suomi *et al.* (2022), something that poses a risk for the achievement of the musical objectives established in the national curriculum. There has also been research in countries such as Chile, where Jordán-González and Álvarez-Bulacio (2022) warned of the need to review and revise the contents in the syllabuses in the training of music teachers. De Villiers (2021) has also highlighted this need in the case of South Africa.

Finally, it is important to highlight research that compares syllabuses. For example, Ivanova Iotova and Siebenaler (2018) analyse the training of music teachers in Spain and California, providing a comparative study. Similarly, Gubbins (2021) examines the general music education model in Ireland and the specialist one in the USA, offering a detailed analysis of both perspectives.

In view of these data, the objectives for this research are to study and enumerate each proposal for training teachers in the Mention in Music Education in Spain, which will be carried out through the following objectives:

- To establish which Spanish universities offer the Mention in Music Education by autonomous communities and cities.
- To establish the availability of the Mention in Music Education in the primary and early-childhood degrees, the distribution of the different modules, and the access requirements.
- To examine the teaching load of the modules in degrees that offer a Mention in Music Education and to classify their content by thematic areas.
- To study the presence of specific placements and final degree projects for the mention in each of the universities from Spain.

2. Method

To achieve these objectives, we used a qualitative methodology that centres on an in-depth understanding of educational and social phenomena, as well as on transforming socioeducational practices and environments (Sandín, 2003). As a strategy to compile and analyse the information, a documentary analysis was performed, which involves examining, in a planned way, the existing documents that cover a wide range of modalities (Bisquerra, 2004). In this case, official documents were used that provide data relating to the situation of the Mention in Music Education in Spain, with the aim of obtaining an overview of its status.

The present research uses a three-phase methodological design:

- Phase 1: A study of the university centres that offer the Mention in

Music Education in their degrees in Primary Education and Early-Childhood Education.

- Phase 2: Evaluation of the relationship between the number of mentions offered by autonomous communities and autonomous cities.

- Phase 3: Content analysis and descriptive analysis of the syllabuses of the university centres that offer the Mention in Music Education.

2.1. Procedure and sample

The process of analysis in the first phase centres on determining which university centres offer the Mention in Music Education as an option and establishing their distribution by autonomous communities and autonomous cities. The documents analysed were consulted directly from the websites of the universities. To visualise the number of mentions offered by autonomous communities and autonomous cities corresponding to the second phase, we used the Kruskal–Wallis non-parametric test for comparing means. The data were analysed using the SPSS version 25 statistics package. For the third phase, the syllabuses of all of the universities whether public, private or affiliated were found, and the content of the programmes of the specific modules on the Mention in Music Education was analysed. A descriptive analysis was performed of the programmes that offer the Mention, the years in which they are distributed, the access requirements, and the presence of specific practices and final degree projects. With regards to the study of the content and descriptive analysis of this phase, López-Noguero (2002) was followed, using the technique of thematic identification and classification into categories derived from the analysis of the syllabuses. The categories of analysis are vocal, instrumental, auditory, didactic, composition and creation training, repertoire, musical language, rhythm, movement, and dance, music and new technologies, history of music, musical heritage, music and diversity, active musical pedagogy, and curriculum and research. These were critiqued and discussed by five expert coders from the field of music education who served as "arbitrators to control the reliability of the analysis, who helped to profile and enrich the different categories" (López-Noguero, 2002, p. 176).

Centres that are members of and affiliated to the Conference of Deans of Education (CoDE, 2022) were used in the data collection, giving a total of 79 (n = 79). The following inclusion criteria were considered when choosing the initial sample:

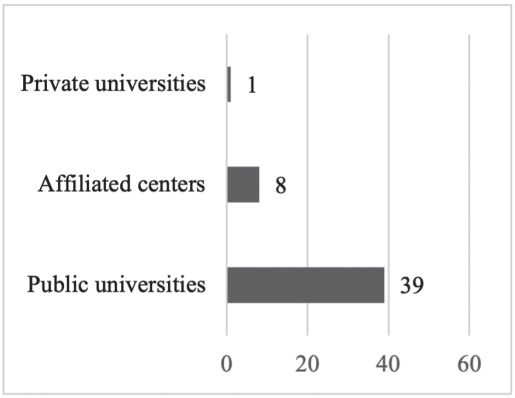
Centres with a degree in Primary Education with a Mention in Music Education.

Centres with a degree in Early-Childhood Education with a Mention in Music Education.

This selection gave a sample of 48 centres (n = 48). Figure 1 shows their distribution by ownership.

The selection did not take into consideration the centres that offer programmes with mixed mentions that are not specific to music education.

FIGURE 1. Frequency of the qualifications by type of university from the sample analysed.

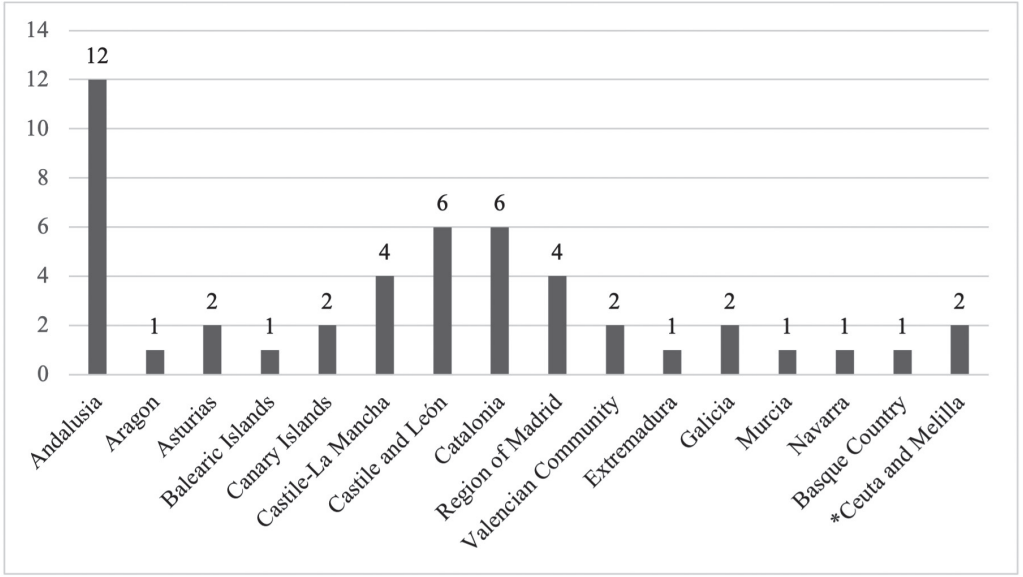


3. Results

3.1. Centres with a Mention in Music Education by autonomous community

Primary and early-childhood education programmes are available in all of Spain as all of the autonomous communities have faculties of Education, although not all of them offer the Mention in Music Education in these programmes. As Figure 2 shows, the autonomous communities of Andalucía, Castilla y León, Catalonia, and Madrid have the most centres where this Mention can be studied.

FIGURE 2. Number of centres that offer the Mention in Music Education by autonomous community.



* Autonomous cities.

The communities of Cantabria and La Rioja do not appear in this classification, as they do not offer the possibility of studying mentions in music education. As for the relationship between the number of mentions offered in each autonomous community and autonomous city, the non-parametric comparison of means test (Kruskal–Wallis) found no statistically significant differences in the number of mentions (chi-squared (11) = 11.00, p = 0.443). In other words, there is no association between the autonomous community and the number of mentions offered.

3.2. Programmes, years in which the mention is distributed, and access requirements

To establish the distribution of programmes that offer this mention, we studied its frequency in the degrees in Primary Education and Early-Childhood Education (see Table 3).

TABLE 3. Degrees with a Mention in Music Education.

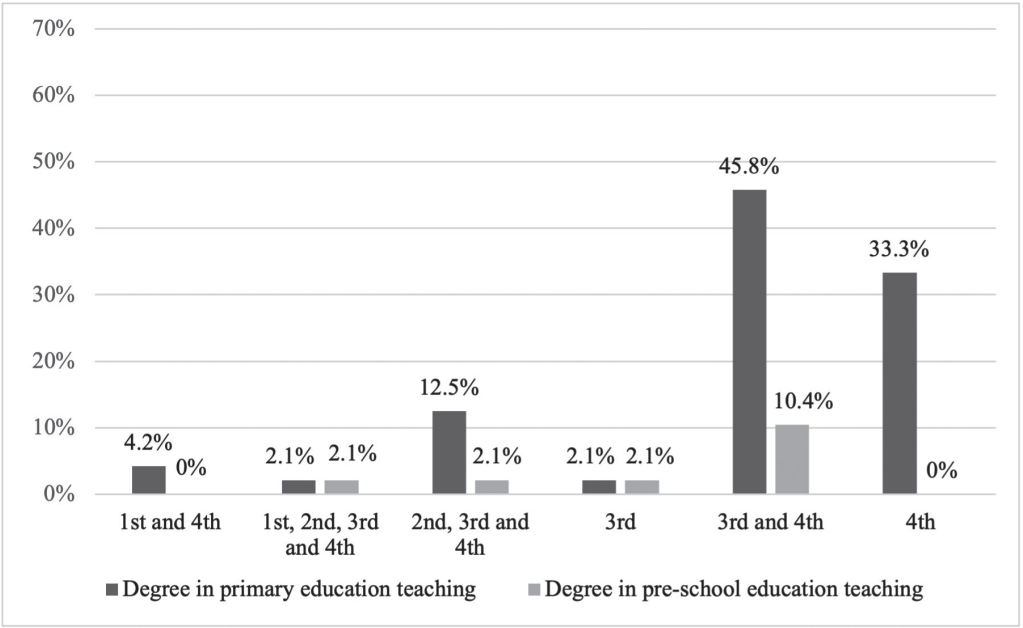
	Frequency	Percentage of the total
Degree in Primary Education	48	100.0
Degree in Early-Childhood Education	8	16.7

Of the 48 centres analysed, 100% offer the mention in the Degree in Primary Education while only 16.7% offer the mention in the Degree in Early-Childhood Education. The Mention in Music Education is offered in both degrees in 16.7% of centres and only in the Degree in Primary Education in 83.3% of them.

The modules that make up the mention in the different degrees are distributed differently in the various degree programmes over the four academic years that comprise the qualification (240 credits). Figure 3 shows a classification of the distribution by years of the mention in the degrees in Primary Education and Early-Childhood Education.

The modules are most often concentrated in years three and four, followed by mentions that group the topics (courses, modules, subjects) corresponding to the mention in the fourth year, as many centres schedule all of the mention in that year. This is the most common distribution in the primary and early-childhood degrees. To a lesser extent, some centres schedule modules from the Mention over all four years (the Centro de Enseñanza Superior Alberta Giménez affiliated to the Universitat de les Illes Balears [primary and early childhood]), in years one and four (the Universidad de Córdoba and the Centro de Magisterio Sagrado Corazón, affiliated to the Universidad de Córdoba), or in the third year only (Centro de Magisterio María Inmaculada, affiliated to the Universidad de Málaga).

FIGURE 3. Years in which the mention is distributed in the Primary Education and Early-Childhood Education degrees.



As for access requirements, only 8.3% of centres impose some type of requirement. Among these, the Universidad Autónoma de Barcelona and the Universidad de Girona require the Elementary Conservatory Degree or proof of an equivalent level. The Universidad de Burgos requires successful completion of the obligatory Music Education module. Similarly, the Universidad Autónoma de Madrid requires successful completion of the obligatory modules in Music in the Primary School and Music Education in the Early-Childhood Stage to enter the Mention in the respective degrees.

On the other hand, some universities do not impose restrictions but do make recommendations. The Universidad Pública de Navarra recommends having training equivalent to or greater than the Elementary Degree, and the Universidad Complutense de Madrid allows direct access for students with an academic qualification related to music and who can prove personal knowledge or experience in this field. Students who cannot certify that they fulfil any of the conditions above must participate in an indicative music session, done in a group, to assess their level.

3.3. Distribution of content in the Mention in Music Education

The syllabuses of the qualifying Mention that the different universities offer include specific modules for musical training (vocal, instrumental, and auditory), although their names differ. A classification by thematic categories is made considering the content that is present in the handbooks for the different syllabuses for the Degrees in Primary Education (see Table 4).

TABLE 4. Classification by thematic categories of the modules in the Mention of Music Education of the Degree in Primary Education.

Thematic categories	Module	No.	Type	Credits
Vocal	Music Training: Vocal and Auditory Training	1	OP[1]	3*
	Vocal and Auditory Training	11	OP	30*
	Vocal and Auditory Education	4	OP	13.75*
	Vocal, Rhythmic, and Auditory Education	1	OP	3*
	Vocal Training and its Application in the Classroom	1	OP	6
	The Voice and the Song Training and Didactics	1	OP	6
	Choral Group	1	OP	5
	Vocal Groups	1	OP	3
	Singing and Vocal Groups in the Classroom	2	OP	12
	Vocal and Bodily Expression	3	OP	9*
	Vocal and Auditory Training and Psycho-Educational Effects of Musical Therapy	1	OP	4*
	Voice and Singing Education. Developing Musical Capacities	1	OP	3
	Voice Education	1	OP	3
	Choral Training	1	OP	3
	Vocal Education and Choral Practice	1	OP	6
	Vocal Education and Singing	1	OP	6
	Singing in School	1	OP	6
	Performance and Creation: Vocal	1	OP	6
	Vocal Training, Groups, and Choir Direction	1	OP	6
	Voice, Choir, and School Orchestra	1	OP	3*
	Vocal Training	1	OP	6
	Vocal Technique and Choral Practice	1		6
	Vocal and Instrumental Band	1	OP	6*
	Choral and Instrumental Direction	1	OP	1.5*

	Music Training: Instrumental Band and Recorder	1	OP	9
	Instrumental Training and School Musical Groups	5	OP	30
	Instrumental Formations and Groups	2	OP	12
	Instrumental Training	7	OP	42
	Instrumental Training for Primary Education	2	OP	6
	School Instrumental Band	1	OP	3
	Musical Instruments: Training and Didactics	1	OP	3
	Musical Interpretation and its Didactics	2	OP	12
	Performance and Creation: Instrumental	1	OP	6
	Instrumental Training	1	OP	5
	Choral and Instrumental Direction	1	OP	1.5*
Instrumental	Musical Expression and Creation through Instruments	2	OP	12
	Instrumental Expression	4	OP	24
	Musical Groups	2	OP	7.5
	Analysis of Musical Language. Application to the Recorder	2	OP	12
	Instrumental Practice and Creativity	1	OP	3
	Instrumental Practice, Creativity and Improvisation	1	OP	3
	Practice with Musical Instruments at School	1	OP	6
	Instrumental Groups in the School	3	OP	12
	Musical Groups in the Primary Classroom	1	OP	3
	Voice, Choir, and School Orchestra	1	OP	3*
	Vocal and Instrumental Band	1	OP	6*
	Rhythmic and Instrumental Training	1	OP	4.5

	Analysis, Listening, and Creation	1	OP	3
	Listening and Musical Contexts	1	OP	6
	Hearing: The Histories of Music	1	OP	3
	Music Training: Vocal and Auditory Training	1	OP	3*
	Musical Listening: Analysis and Methodology	1	OP	6
	Vocal and Auditory Training	11	OP	30*
	Vocal and Auditory Education	4	OP	13.75*
	Vocal, Rhythmic, and Auditory Education	1	OP	3*
Auditory	Listening Training	1	OP	6
	Listening Education	1	OP	6
	Listening as an Educational Element. History of Music. Musical Heritage and Folklore	1	OP	2*
	Ear Training and Musical Listening	1	OP	3
	Listening in Musical Styles	2	OP	12
	Musical Listening in the School	1	OP	6
	Vocal and Auditory Training and Psycho-Educational Effects of Musical Therapy	1	OP	4*
	Active Musical Listening	2	OP	12
	Didactics of Music I	8	OP	29.5
	Didactics of Music II	1	OP	3
	Didactics of Music Education	3	OP	15
	Didactics of Musical Expression	12	OP	71
	Didactics of Musical Expression and Communication	1	OP	6
Didactic	Music Education and its Didactics	1	OP	6
	Musical Didactics and Perception	1	OP	6
	Music Education in Primary School	2	OP	12
	Musical Foundations and their Didactics	1	OP	6
	Musical Language and its Contexts	1	OP	12
	Didactics of Music and Dance in Primary School	1	OP	3

Composition and Creation	Musical Composition and Creation	1	OP	5
	Musical Creation	1	OP	3
	Musical Interpretation and Creation	1	OP	6
Repertoire	Creation and Selection of Musical Repertoire for the Classroom	1	OP	6
	Music Repertoire in the School	1	OP	6
Musical Language	Musical Language	10	OP	55.5
	Foundations of Musical Language	1	OP	6
	Musical Language and Vocal Expression	1	OP	6
	Musical Language in Primary School	1	OP	6
	Musical Languages	2	OP	12
	Musical Language and Harmony	1	OP	4.5
	Musical Language through Movement and School Instruments	2	OP	12
	Musical Language and its Didactic Application	1	OP	6
	Music Training	1	OP	6
Rhythm, movement and dance	Music Training: Rhythm and Dance Training	1	OP	6
	Rhythm, Movement, and Dance	3	OP	18
	Rhythmic Education and Movement	1	OP	6
	Music and Movement: Training and Didactics	1	OP	6
	Vocal and Bodily Expression	4	OP	9*
	Movement through Musical Expression and its Didactics	2	OP	12
	Music, Movement, and Education	1	OP	6
	Dance at School	1	OP	3
	Rhythm and Dance Training	6	OP	36
	Music and Movement	2	OP	9
	Corporal Expression and Dance	1	OP	6
	Dance: Music in Movement	1	OP	3

Music and New Technologies	Technology Applied to Music Education	1	OP	6
	Music and New Technologies	1	OP	3
	Musical Training V: New Technologies Applied to Music Education	1	OP	6
	Applying ICT to Teaching: Learning Music	1	OP	3
	New Techniques and Musical Trends	1	OP	4.5
	Hearing and Musical Comprehension and Use of Audiovisual Technologies	1	OP	3
	Music Education and New Technologies	1	OP	3
	Technologies and Teaching Musical Expression	1	OP	3
	Music and ICT	1	OP	3
	ICT Applied to Music Education	1	OP	12
	New Technologies for Music Education in the School	1	OP	6
History of Music	History of Music	9	OP	48.5
	Listening as an Educational Element. History of Music. Musical Heritage and Folklore	1	OP	2*
	History of Music: Evolution, Renovation, and Styles	1	OP	3
	History of Music and Folklore	3	OP	18
	The History of Music as a Didactic Resource	1	OP	3
	Musical Culture	1	OP	6
Musical Heritage	Musical Artistic Heritage in the Classroom	2	OP	12
	Musical Traditions of the World	1	OP	6
	Music in Cultures	1	OP	6
	Music as Cultural Expression	1	OP	6
	Listening as an Educational Element. History of Music. Musical Heritage and Folklore	1	OP	2*

Music and Diversity	Musical Intervention with SEN Students	1	OP	6
	Music and Diversity	1	OP	3
	Vocal and Auditory Training and Psycho-Educational Effects of Musical Therapy	1	OP	4*
	Music in Special Education	1	OP	3
	Music, Culture, and Diversity	1	OP	12
Active Musical Pedagogy	Active Pedagogy	1	OP	6
	Active Musical Pedagogy	1	OP	6
	Creative Musical Practices	3	OP	13.5
	Musical Practice and Foundations	2	OP	12
	Musical Dynamisation Projects	1	OP	3
	Didactic Processes and Projects in Music Education	1	OP	4.5
	Planning, Criteria, and Musical Practice in the Current School	1	OP	5
	Musical Resources for the School	1	OP	6
	Planning and Resources for Musical Initiation	1	OP	6
	Forms of Musical Expression	1	OP	12
	Methods and Resources for Music Education	1		3
	Interaction of Languages. Audiovisual Culture. Revision from a Gender Perspective	1	OP	6
	Current Music Education Methods and Models	1	OP	6
	Traditional Music Education Methods	1	OP	6
	Learning Music in Primary Education	1	OP	6
Curriculum and Research	Curriculum and Research Development for Music Education	1	OP	6

* Modules that include content from two thematic areas and divide their credits.
[1] OP = optional.

This classification reflects the wide diversity in the names of modules, even though the handbooks feature similar content. All of these modules are classed as optional in the syllabuses. However, the universities specify which modules are obligatory for the mention. In some universities, the modules offered are limited to those necessary to apply for the mention and in other centres the offer is much greater, giving students a real choice of options. Some centres concentrate more content into particular modules and give them more credits, such as for example the Vocal and Auditory Training and Psycho-Educational Effects of Musical Therapy module, which has 12 credits and which has been classified in three thematic categories. In contrast, other universities organise their syllabus around a larger number of modules worth fewer credits each.

As the classification shows, some modules' names are repeated in different syllabuses, such as Musical Language or Vocal and Auditory Training. However, while some names may seem similar, they sometimes contain semantic differences, as with Didactics of Music, Didactics of Music Education, Didactics of Musical Expression, and Didactics of Musical Expression and Communication. Finally, the inclusion of content with a gender perspective in the title of a module at the Faculty of Education of Bilbao is of note.

The classification by thematic areas is shown next, taking into account the content shown in the handbooks of the syllabuses of the Degrees in Early Childhood Education (see Table 5).

TABLE 5. Classification, by thematic areas of the modules in the Mention in Music Education on the Degree in Early Childhood Education.

Thematic area	Module	No.	Type	Credits
Vocal	Voice, Direction, and Singing	1	OP[1]	6
	Vocal and Auditory Education	1	OP	3*
	Voice Education and Singing. Developing Musical Capacities	1	OP	3
	Choral and Instrumental Direction	1	OP	1.5*
	Vocal Training	1	OP	6
	Vocal Technique and Choral Practice	2	OP	12
	Vocal, Rhythmic, and Auditory Education	1	OP	2*

Instrumental	Choral and Instrumental Direction	1	OP	1.5*
	Instrumental Training	1	OP	6
	Instrumental Groups for the School	1	OP	6
	Instrumental Training	1	OP	6
Auditory	Analysis, Listening, and Creation	1	OP	3
	Vocal and Auditory Education	1	OP	3*
	Listening as an Educational Element. History of Music. Musical Heritage and Folklore	1	OP	2*
	Hearing and Musical Comprehension and Use of Audiovisual Technologies	1	OP	1.5*
	Listening Education	1	OP	6
	Vocal, Rhythmic, and Auditory Education	1	OP	2*
Didactic	Didactics of Music I	1	OP	6
	Didactics of Music II	1	OP	3
	Didactics of Music and Repertoire in Early Childhood	1	OP	4.5
	Music Education and its Didactics	1	OP	6
	Didactics of Music Education	1	OP	3
	Didactics of Music Education II	1	OP	3
	Didactics of Musical Expression	1	OP	6
Repertoire	Didactics of Music and Repertoire in Early Childhood	1	OP	4.5*
	Creation and Selection of Musical Repertoire for the Classroom	1	OP	6
	Music Repertoire in the School	1	OP	3
Musical Language	Musical Language	1	OP	6
	Foundations of Musical Language	1	OP	6

Rhythm, movement and dance	Music and Movement	1	OP	6
	Rhythmic Education and Movement	1	OP	6
	Dance at School	1	OP	3
	Rhythm and Dance Training	1	OP	6
	Corporal Expression and Dance	1	OP	6
	Vocal, Rhythmic, and Auditory Education	1	OP	2*
Music and New Technologies	Music Education Resources with ICT	1	OP	6
	Hearing and Musical Comprehension and Use of Audiovisual Technology	1	OP	1.5*
	New Technologies for Music Education in the School	1	OP	6
	Technology Applied to Music Education	1	OP	6
History of Music	Listening as an Educational Element. History of Music. Musical Heritage and Folklore	1	OP	2*
	History of Music: Evolution, Renovation, and Styles	1	OP	3
Musical Heritage	Listening as an Educational Element. History of Music. Musical Heritage and Folklore	1	OP	2*
	Music in Cultures	1	OP	6
	Music as Cultural Expression	1	OP	6
Active Musical Pedagogy	Planning, Criteria, and Musical Practice in the Current School	1	OP	6
	Musical Games	1	OP	6
	Traditional Music Education Methods	1	OP	6
	Current Music Education Methods and Models	1	OP	6

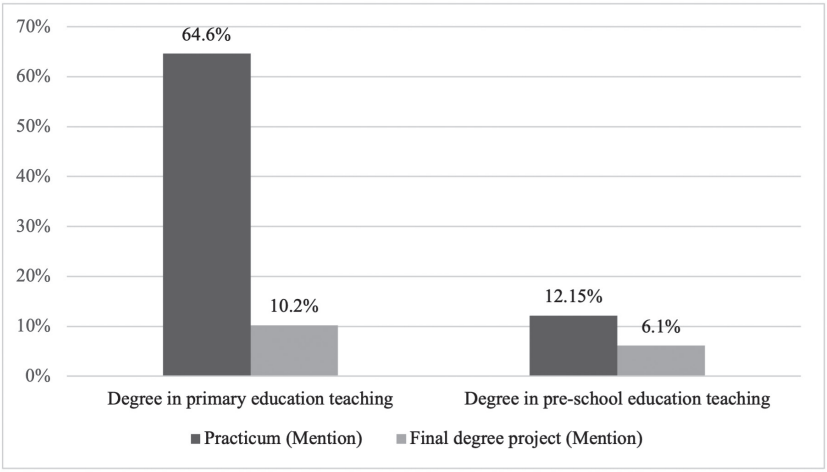
Curriculum and Research	Curriculum and Research Development for Music Education	1	OP	6

* Modules that include content from two thematic areas and divide their credits.
[1] OP = optional.

Hardly any modules have the same names on the early-childhood degrees, although a similar distribution of content across the different universities is observed and all of them organise their modules with content for vocal, instrumental, auditory, and didactic training, principally. The majority use generic names that match those used in the primary degrees. Only the Didactics of Music and Repertoire in Early Childhood module specifically mentions the early childhood stage.

Finally, programmes that offer specific practices and final degree projects for the mention in the Primary and Early-Childhood degrees are analysed (see Figure 4).

FIGURE 4. Degrees that include specific practices and final degree projects for the mention.



Of the centres that offer the Degree in Primary Education with a Mention in Music Education, 64.6% have specific practices for this mention. The teaching varies greatly, ranging from 6 credits (Universidad Complutense de Madrid) to 12 credits (Universidad de Cádiz), where only part of the total placement is done in institutions linked to the nature of the mention. Equally, there are centres where the practice has a greater teaching load and is fully focussed on the specialism of the mention, as at the Universidad Autónoma de Madrid (27 ECTS credits) or the Universidad de Extremadura and the Universidad de Girona (24 ECTS credits). Another way of

organising the mention placement is displayed by the Universidad de Santiago de Compostela where students are required to do a work project linked to the mention, which is allocated a value of 3 credits from the total number of credits that the practices include.

On the other hand, a small number of centres require a specific final degree project for the mention (f= X; 10.2%). The Universidad de Santiago de Compostela indicates that, in the final degree project, the development of the specific competencies of the mention is contemplated, with a value of 3 of the 9 credits assigned in total.

In the Degree in Early-Childhood Education, the percentages are lower, as fewer centres offer the mention in this qualification. It is also observed that 12.15% of the centres have specific practices that assign from 6 to 27 ECTS credits. Only 6.1% (the Universidad de Alicante, the Universidad Autónoma de Madrid, and the Universidad de Girona) refer to a Mention in Music Education final degree project. Finally, a large number of centres (36.7%) do not offer mention practices or final degree projects in any of their programmes, even when they have the Mention in Music Education.

3.4. Teaching load on modules in the Mention in Music Education

The teaching load of the modules has been classified in thematic categories that quantify the number of credits to identify which categories have the most weight within the mention. Figure 5 shows that the Instrumental category has the greatest load, followed by Didactics, Vocal, and Auditory. There is also a significant presence of all of the modules relating to Rhythm, movement, and dance, as well as Musical Language, and the Active Musical Pedagogy category, which includes those that cover current educational methods and Creative Musical Practices.

The areas of History of Music, Music and new technologies, and Music and Diversity are present to a lesser extent. The last of these includes modules that cover musical interventions with students with special educational needs, as at the universities of Almería and Girona. The thematic areas with the lowest teaching load are Musical Heritage, which covers aspects such as the wealth and musical diversity of different cultures, at the Universidad de Oviedo and the Universidad de Alicante, and the Composition and Creation area and the area of Repertoire. With just one entry, the Curriculum and Research category is only offered at the Universidad Pública de Navarra.

Credits are distributed differently across the thematic areas in the early childhood degrees. Figure 6 shows that Vocal Training has greater weight than in primary syllabuses, where the Instrumental area has greater presence. It is followed by Didactics and Rhythm, movement, and dance, which have greater importance in this stage than in the primary stage.

FIGURE 5. Teaching load of modules by thematic area in the Mention in Music Education on the Degrees in Primary Education.

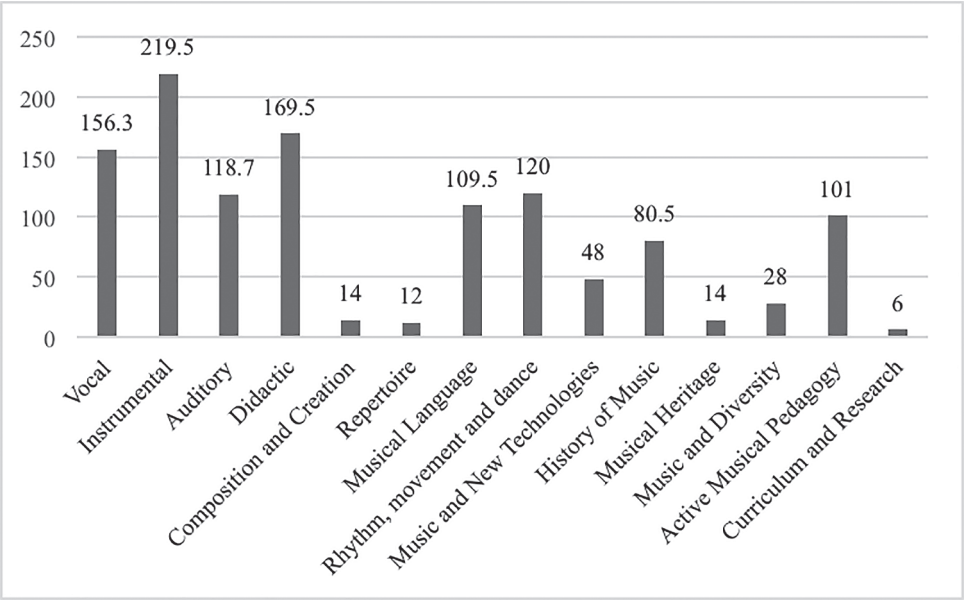
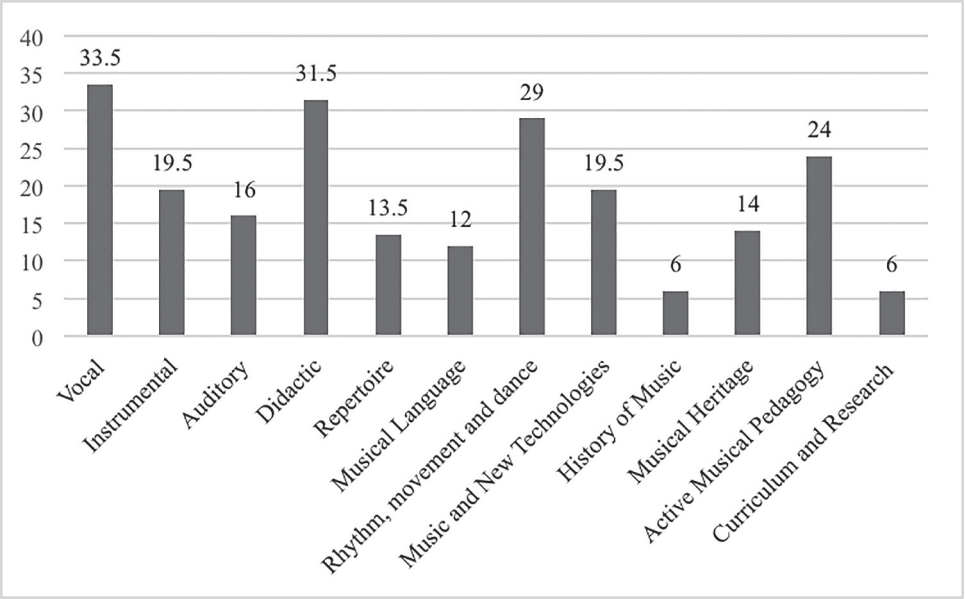


FIGURE 6. Teaching load of modules by thematic areas in the Mention in Music Education of the Degree in Early Childhood Education.



There is also a significant presence of the areas of Active Musical Pedagogy, Music and New Technologies, and Repertoire, which includes modules of active Repertoire Selection for the Early-Childhood Classroom, for example at the Universidad de Salamanca and the Universidad Autónoma de Madrid.

Some areas are not offered at this stage, such as Composition and Creation and Music and Diversity.

4. Discussion and conclusions

The aim of this research was to: (a) explain the offer of the universities in Spain that deliver the Mention in Music Education by autonomous communities and Cities in Spain; (b) establish the availability of the Mention in Music Education in the primary and early-childhood degrees, the distribution of the different modules, and the access requirements; (c) examine the teaching load of the modules in the degrees with a Mention in Music Education and to classify their content by thematic areas; (d) to study the presence of specific placements and final degree projects for the Mention in each of the universities from Spain.

Regarding the first objective, it has been observed that Primary Education and Early-Childhood Education degrees are present in autonomous communities and cities that have faculties of education, even though not all of them offer the Mention in Music Education in their programmes. There are no statistically significant differences in the number of mentions offered in each of them.

In relation to the second objective, the results show that the offer of the mention in the Primary Education and Early Childhood Education degrees is very uneven, being much higher in the former. Likewise, the modules are in most cases concentrated in the third and fourth years, followed by the mentions that group the topics (courses, modules, subjects) corresponding to the mention in the fourth year, given that many centres combine all of the mention there. This is the most common distribution in the Primary Education and Early-Childhood Education degrees. As for access requirements, a very low percentage of programmes have any type of these. Some universities do not have requirements but instead have recommendations.

If we pause to consider the third objective, the teaching load of the modules in the Mention in Music Education in the Degree in Primary Education, the Instrumental category has the most credits, followed by Didactics, Vocal, and Auditory. All of the modules relating to Rhythm, Movement, and Dance also have an important presence, as well as Musical Language, and Active Musical Pedagogy, which include modules that tackle Current Education Methods and Creative Musical Practices. In the case of the Mention in Music Education in the Degree in Early-Childhood Education, some variations are observed, with the Vocal category predominating

followed by Rhythm, Movement, and Dance and Active Musical Pedagogy in this order.

The last objective was to analyse everything relating to the provision of specific placements and final degree projects for the mentions. We observed that the percentage of centres that offer practices in the Mention in Music Education in Primary Education has fallen notably, and that this fall is still more notable in the mention in early-childhood as fewer centres offer it. With regards to the final degree project, most universities do not offer the possibility of doing it on the Mention in Music Education. One cause of this situation may be that although the final degree project module is not specific, teachers from the mention are allocated so that students can do these works on topics that are closer related to the mention, and so there is a limitation owing to the teaching staff's teaching load.

If we analyse the possible consequences of the changes identified between the specialism and the mention, we can see that the reduction in the number of credits affects the training of the students. As an example of this, under the previous legislation there were obligatory shared modules that have now been eliminated. At present, students can acquire the Mention in Music Education without studying *Rhythm and Dance Training*, which used to be a core module at all of the universities. However, it is now optional (Berrón, 2021). Furthermore, after carrying out the analysis, it was found that there are areas in the early-childhood stage with no type of representation, such as Composition and Creation and Music and Diversity. In addition, the option of doing practices that are specific to the Mention in Music Education is not very high, something that is more striking in the case of the Degree in Early Childhood Education.

If we return to the debate on the preference between generalist or specialist teachers and consider what a number of authors (Aróstegui, 2006; Berrón, 2021; Carbajo, 2009; Cremades-Andreu & García-Gil, 2017; Esteve *et al.*, 2007; López *et al.*, 2017; Serrano *et al.*, 2007) have stated, the backwards step in the training of music teachers is apparent, as is the loss of credits and of training capacity. Even so, taking this mention to be able to teach this subject in the school is always recommended. Blanco-García and Peñalba-Acitores (2020) also underline that the training of teachers in the Mention in Music Education has been reduced in relation to the speciality and that music training is limited. They also note that there is insufficient emphasis on developing Listening for Creation, and that the Musical Heritage category has insufficient presence, something that matches the results of our study.

Regarding initial training for secondary music teachers, Hernández-Portero and Colás-Bravo (2022) establish the analysis categories of Musical Training, Didactic Training, and Technological Training of Teachers. In conclusion, they note the lack of pedagogical

and technological content in this training. This matches the results of the research, which show that technological training is present, but not to the same level as other categories such as vocal training for example. Suomi *et al*. (2022) note that this reduction in hours can result in the musical objectives of their country's curriculum not being achieved. This analysis would correspond with the content of the present article.

By comparison, one positive aspect is the appearance of a specific mention in the Degree in Early Childhood Education, wholly destined to content from this level. As earlier studies have shown, this mention has high enrolment because of the affinity that teachers feel and its usefulness for them in their future practice, even if it does not provide professional training (García-Gil & Bernabé, 2019). According to the authors, this might be because of the importance of music, as it is an element that is very much present in the everyday lives of students at this stage. On these lines, Cuenca *et al*. (2021) observe that it might be due to a smaller offer of mentions in the Early-Childhood Education Degree than in the Primary Education Degree – which has seven different mentions, compared with the four mentions in early-childhood – and the dual availability of the Mention in Music Education in morning and afternoon shifts at the university identified in their study.

Although the current overall picture relating to various questions concerning the delivery of the Mention in Music Education at the different Spanish universities is shown, it is apparent that the move from the specialism to the mention has involved a backward step, not only in the number of credits but also in the training capacity and in the provision of a broad education that is needed to be able to teach music as a subject at school correctly. Furthermore, it is advisable to take this itemisation of the situation of the Mention in Music Education into account in the event that the publication of the development orders to improve university education approved by Royal Decree 822/2021 goes ahead, and modifications are finally made to the mentions with the ECTS credits increasing to 48. The research carried out up to now has clearly indicated a need to increase the teaching load to achieve the objectives set in the national curriculum in the area of music education.

References

Aróstegui, J. L. (2006). La Formación del Profesorado en Educación Musical ante la Convergencia Europea en Enseñanzas Universitarias [Teacher Training in Music Education and the European Convergence in University Education]. *Revista de Educación,* (341), 829–844. https://www.educacionfpydeportes.gob.es/revista-de-educacion/en/numeros-revista-educacion/numeros-anteriores/2006/re341/re341-34.html

Berrón, E. (2021). De la especialidad a la mención: un paso atrás en la formación universitaria del maestro de Educación Musical [From specialisation to mention: a step backwards in the university training of music education teachers]. *Revista Electrónica Complutense de Investigación en Educación Musical, 18,* 111–126. http://dx.doi.org/10.5209/reciem.69694

Bisquerra, R. (2004). *Metodología de la investigación educativa [Educational research methodology]*. Editorial La Muralla.

Blanco-García, Y., & Peñalba-Acitores, A. (2020). La formación de futuros docentes de Música en las universidades de Castilla y León: creatividad, ciudadanía y aprendizaje permanente como claves del cambio educativo [The training of future music teachers in the universities of Castilla y León: creativity, citizenship and lifelong learning as keys to educational change]. *Revista Electrónica de LEEME,* (46), 166–186. https://doi.org/10.7203/LEEME.46.17756

Carbajo, C. (2009). *El perfil del docente de Música en Educación Primaria: autopercepción de competencias profesionales y la práctica de aula* (Tesis doctoral) *[The profile of the music teacher in primary education: self-perception of professional competences and classroom practice* (PhD Thesis)*].* Universidad de Murcia. Departamento de Teoría e Historia de la Educación. http://hdl.handle.net/10803/11079

CoDE. (2022). *Estatutos de la Conferencia de Decanas y Decanos de Educación [Statutes of the Conference of Deans of Education].* (CoDE). https://confede.es/estatutos/

Cremades-Andreu, R. (2023). Formación inicial en la mención en música en primaria: desafíos y perspectivas actuales [Initial music education in primary school: current challenges and perspectives]. *Revista Interuniversitaria de Formación del Profesorado, 98*(37.3), 117–136. https://doi.org/10.47553/rifop.v98i37.3.101066

Cremades-Andreu, R., & García-Gil, D. (2017). Formación musical de los graduados de Maestro en Educación Primaria en el contexto madrileño [Musical training of Primary Education teacher graduates in the Madrid context]. *Revista Española de Pedagogía, 75* (268), 415–431. https://doi.org/10.22550/REP75-3-2017-06

Cuenca, M. E., Pérez-Eizaguirre, M., & Morales, Á. (2021). Estudio y análisis de la evolución de los estudiantes matriculados en titulaciones de Educación Musical en la Universidad Autónoma de Madrid [Study and analysis of the evolution of students enrolled in Music Education degrees at the Autonomous University of Madrid]. *Revista Electrónica de LEEME,* (47), 17–38. https://doi.org/10.7203/LEEME.47.18295

De-Villiers, R. (2021). The Force Field Model applied to a Music Education teacher training framework in a South African context. *British Journal of Music Education, 38*(3), 219–233. https://doi.org/10.1017/S0265051721000164

Esteve, E., Molina, J. M., Valero, M. Á., & López-de-Rego, C. (2007). El futuro de los estudios de maestro especialista en música [The future of specialist music teaching studies]. *Música y Educación,* (72), 21–34.

Fernández-Jiménez, A., & Valdivia, F. A. (2020). Secuenciación y temporalización de los planes de estudio de la Mención en Educación Musical del Grado en Educación Primaria en las universidades españolas [Sequencing and temporalisation of the syllabuses of the Music Education section of the Degree in Primary Education in Spanish universities]. *Revista electrónica de LEEME*, (46), 143–165. https://doi.org/10.7203/LEEME.46.17619

García-Gil, D., & Bernabé, M. D. M. (2019). Formación y preparación musical en el Grado de Educación Infantil: Consideraciones de las alumnas en Educación Superior [Music Education and Preparation in Early Childhood Education: Considerations of Female Students in Higher Education]. *Prisma Social: revista de investigación social*, (25), 126–178. https://revistaprismasocial.es/article/view/2692

Gubbins, E. (2021). Music across the waves: An international comparative examination of the Irish generalist and the American specialist models of music education from the teacher's perspective. *British Journal of Music Education, 38*(1), 74–91. https://doi.org/10.1017/S0265051720000224

Hernández-Portero, G., & Colás-Bravo. P. (2022). El acceso del profesorado de Música a la docencia en Educación Secundaria [The access of music teachers to teaching in Secondary Education]. *Profesorado. Revista de Currículum y Formación del Profesorado, 26* (2), 319–339. https://doi.org/10.30827/profesorado.v26i2.17005

Ivanova-Iotova, A., & Siebenaler, D. (2018). La formación del profesorado de música en la Universidad Complutense de Madrid y la Universidad Estatal de California: Un estudio comparado [Music teacher education at the Complutense University of Madrid and the California State University: A comparative study]. *Profesorado, Revista de Currículum y Formación del Profesorado, 22*(3), 295–315. https://doi.org/10.30827/profesorado.v22i3.8003

Jordán-González, L. F., & Álvarez-Bulacio, R. (2022). Histórias da música popular no currículo chileno [Popular music stories in the Chilean curriculum]. *Música Hodie, 22*. https://doi.org/10.5216/mh.v22.70180

Ley orgánica 6/2001, de 21 de diciembre, de Universidades [Organic Law 6/2001 of 21 December 2001 on Universities]. *Boletín Oficial del Estado, 307*, de 24 de diciembre de 2001. https://www.boe.es/buscar/pdf/2001/BOE-A-2001-24515-consolidado.pdf

Ley orgánica 4/2007, de 12 de abril, por la que se modifica la Ley Orgánica 6/2001, de 21 de diciembre, de Universidades [Organic Law 4/2007, of 12 April, which amends Organic Law 6/2001, of 21 December, on Universities]. *Boletín Oficial del Estado, 89*, de 13 de abril de 2007. https://www.boe.es/eli/es/lo/2007/04/12/4/con

Ley orgánica 2/2023, de 22 de marzo, del Sistema Universitario [Organic Law 2/2023, of 22 March, on the University System]. *Boletín Oficial del Estado, 79*, de 23 de marzo de 2023. https://www.boe.es/eli/es/lo/2023/03/22/2/con

López, N., Madrid, D., & De-Moya, M.ª V. (2017). La formación musical en los planes de estudios para maestros de Primaria en la Universidad de Castilla-La Mancha [Music education in the syllabus for primary school teachers at the University of Castilla-La Mancha]. *Estudios Pedagógicos (Valdivia), 43*(1), 423–438. https://dx.doi.org/10.4067/S0718-07052017000100024

López-Noguero, F. (2002). El análisis de contenido como método de investigación [Content analysis as a research method]. *XXI. Revista de Educación, 4*(1), 167–179.

Orden ECI/3854/2007, de 27 de diciembre, por la que se establecen los requisitos para la verificación de los títulos universitarios oficiales que habiliten para el ejercicio de la profesión de Maestro en Educación Infantil [Order ECI/3854/2007, of 27 December, which establishes the requirements for the verification of official university degrees that enable the exercise of the profession of Early Childhood Education Teacher]. *Boletín Oficial del Estado, 312*, de 29 de diciembre de 2007. https://www.boe.es/eli/es/o/2007/12/27/eci3854

Orden ECI/3857/2007, de 27 de diciembre, por la que se establecen los requisitos para la verificación de los títulos universitarios oficiales que habiliten para el ejercicio de la profesión de Maestro en Educación Primaria [Order ECI/3857/2007, of 27 December, which establishes the requirements for the verification of official university degrees that enable the exercise of the profession of Primary Education Teacher]. *Boletín Oficial del Estado, 312*, de 29 de diciembre de 2007. https://www.boe.es/eli/es/o/2007/12/27/eci3857

Pérez-Eizaguirre, M., Morales, A., Cuenca-Rodríguez, M. E., & Privado, J. (2024). Percepción del alumnado universitario español de los grados de Maestro/a sobre la mención en Educación Musical: estudio de caso [Perception of Spanish university students of the Bachelor's Degree in Teaching about the mention in Music Education: a case study]. *Revista Complutense de Educación*, *35*(2), 407–417. https://doi.org/10.5209/rced.85389 .

Real Decreto 1440/1991, de 30 de agosto, por el que se establece el título universitario, oficial de Maestro, en sus diversas especialidades y las directrices generales propias de los planes de estudios conducentes a su obtención [Royal Decree 1440/1991, of 30 August 1991, establishing the official university degree, official university qualification of Teacher, in its various specialities and the general guidelines for the curricula leading to its award]. *Boletín Oficial del Estado*, *244*, de 11 de octubre de 1991. https://www.boe.es/eli/es/rd/1991/08/30/1440

Real Decreto 1393/2007, de 29 de octubre, por el que se establece la ordenación de las enseñanzas universitarias oficiales [Royal Decree 1393/2007, of 29 October, which establishes the organisation of official university education]. *Boletín Oficial del Estado*, *260*, de 30 de octubre de 2007. https://www.boe.es/eli/es/rd/2007/10/29/1393/con

Real Decreto 822/2021, de 28 de septiembre, por el que se establece la organización de las enseñanzas universitarias y del procedimiento de aseguramiento de su calidad [Royal Decree 822/2021, of 28 September, which establishes the organisation of university education and the procedure for quality assurance]. *Boletín Oficial del Estado, 233*, de 29 de septiembre de 2021. https://www.boe.es/eli/es/rd/2021/09/28/822/con

Rim, M., Park, E., & Lim, H. (2020). A Study of Singapore Music Teacher Training System. *Korean Journal of Research in Music Education, 49*(2), 197–217. https://doi.org/10.30775/KMES.49.2.197

Sandín, M. P. (2003). *Investigación Cualitativa en Educación. Fundamentos. Tradiciones [Qualitative Research in Education. Foundations. Traditions]*. Mc Graw and Hill.

Serrano-Sánchez, J. A., Lera-Navarro, Á., & Contreras-Jordán, O. R. (2007). Maestros generalistas vs especialistas: claves y discrepancias en la reforma de la formación inicial de los maestros de primaria [Generalist vs specialist teachers: keys and discrepancies in the reform of the initial training of primary school teachers]. *Revista de Educación,* (344), 533–555.

Suomi, H., Hietanen, L., & Ruismäki, H. (2022). Student teachers' views of their own musical skills to teach the National Core Curriculum in Finland. *Music Education Research, 24*(3), 327–339. https://doi.org/10.1080/14613808.2022.2053511

Wong, M. W. (2022). Music curriculum development for the senior secondary schools of Macao. *Arts Education Policy Review, 1–13.* https://doi.org/10.1080/10632913.2022.2106335

Yang, Y. (2023). Challenges in teachers' professional identity development under the National Teacher Training Programme: an exploratory study of seven major cities in Mainland China. *Music Education Research, 25*(4), 468-484. https://doi.org/10.1080/14613808.2023.2246136

Authors' biographies

Ángela Morales. Doctor of Didactics of Corporeal Expression from the Universidad Autónoma de Madrid (UAM). Graduate of the Higher Music Conservatory of Madrid in Recorder and Singing and Diploma in Training General Basic Education Teachers Training, Science Speciality, from the UAM. She has taught and been head of studies at the Conservatorio Profesional de Danza de Madrid [Professional Dance Conservatory of Madrid] and at the Escuela Comarcal de Música de Villacañas [Regional Music School of Villacañas], and she is director of the Orff choir and instrumental group. She currently runs the Pedagogy Section of the Interfaculty Music Department in the Faculty of Teacher Training and Education at the UAM. She has presented various works in conferences concerning the new bachelor's degree programmes, the situation of music education in primary education, curriculum organisation, teaching innovation projects, and other subjects.

https://orcid.org/0000-0002-9839-5877

Marta Martínez-Rodríguez. Diploma in music education and Degree in Primary Education and Music History and Sciences from the Universidad de Valladolid, University Master's in Research in Psychology and Educational Sciences from the Universidad de León. Doctor of Education. She is currently assistant professor in the Interfaculty Music Department (education section) of the Faculty of Teacher Training and Education at the UAM. She is a member of the Music and Education research group at the UAM, she is a researcher at the Heritage Education Observatory in Spain, and she has prepared public consultation reports for the Directorate General of Cultural Heritage of the Community of Madrid and with the Ministry of the Economy (sec. 83 of the Organic Education Act). She has published various articles and book chapters on music education and heritage education.

https://orcid.org/0000-0003-0675-7752

Miren Pérez-Eizaguirre. Doctorate, Licentiate degree in Musical History and Sciences, Diploma in Primary Teaching with Music Speciality, Master's in Advanced Music-Therapy and Applications and a Plan 66 Professional Degree in music (flute). She is currently assistant professor in the Interfaculty Music Department at the UAM, and academic coordinator of the Master's in Innovation and Research in Music Pedagogy at the same university. Her research interests focus on two fundamental areas: music and attention to diversity, and music education. In both, she has been involved in various articles, book chapters, and innovation and research projects, and has supervised doctoral theses as well as writing conference papers and presentations.

https://orcid.org/0000-0003-0959-6907

Isabel Montaraz. Specialist Teacher in Music and Early-Childhood. Doctor from the UAM. Diploma in Early-Childhood Education, specialising in Music Education (UAM), Degree in Early Childhood Teaching (U. Camilo José Cela), Master's in Music Education (UAM), and University Master's in Management and Administration for Quality of Educational Centres (U. Francisco de Vitoria). In the field of research, she has participated in teaching innovation projects and in international conferences, publishing articles and papers in the field of music teaching. She has studies in the flute, piano, choir, and musical language, performing concerts such as solo flautist with the Dionisio Aguado Municipal Band from Fuenlabrada.

https://orcid.org/0000-0002-7213-808X

Book reviews

Bernal-Guerrero, A. (Ed.) (2022).
Identidad emprendedora. Hacia un modelo educativo
[Entrepreneurial identity. Towards an educational model]
(Jesús Conde)

Urpí, C. (Ed.) (2022).
Creatividad y bienestar
[Creativity and well-being]
(Alicia Encío)

Fuentes, J. L., Fernández-Salinero, C., & Ahedo, J. (Eds.) (2022).
Democracia y tradición en la teoría y práctica educativa del siglo XXI
[Democracy and tradition in educational theory and practice in the 21st century]
(Marta Ambite Pérez)

Book reviews

Bernal-Guerrero, A. (Ed.) (2022).
Identidad emprendedora. Hacia un modelo educativo
[Entrepreneurial identity. Towards an educational model].
Tirant Lo Blanch. 265 pp.

For a number of years now, the expression *entrepreneurial identity* has had a high profile in international research with the aim of better explaining and justifying entrepreneurial processes. Its emergence has almost exclusively been linked to the economic sphere. This work, however, offers a different perspective, in line with the approach to entrepreneurship education of the research group led by Professor Antonio Bernal, from the Universidad de Sevilla, in which renowned researchers from a variety of Spanish and foreign universities participate. This broader vision of the phenomenon of entrepreneurship is associated with the different settings where processes of entrepreneurship can occur, including their social and personal versions, in addition to the productive one. The book forms part of the project called *Formación del potencial emprendedor. Generación de un modelo educativo de identidad emprendedora [Training entrepreneurial potential. Generating an educational model for entrepreneurial identity]* (PID2019-104408GB-I00), which is included in the VIII Plan Estatal de Investigación Científica y Técnica y de Innovación [VIII State Plan for Scientific and Technical Research and Innovation].

Before analysing the construct *entrepreneurial identity*, the prologue to the work notes that it forms part of an individual's personal identity. In this way, it considers how personal identity is built through an interactive and evolutionary social process, in which interact, on the one hand, the attributed identity, which is external in nature and through which subjects wish to be recognised; on the other hand, the claimed identity, which is internal in nature, in which individuals seek to evaluate the meaning of their own life experience, as well as which aspects of their identity they wish to conserve and which ones they wish to acquire. From the result of this valuation, crises of identity occur, in which people have to take

particular decisions in which their condition of principle of action is manifest. In this sense, entrepreneurial activity is associated with the configuration of one's identity, as the different choices taken will also shape the structure of the entrepreneurial self.

The entrepreneurial process is complex, as it involves developing an *entrepreneurial identity* that goes beyond merely acquiring *entrepreneurial competence*. The latter involves knowledge and skills aimed at the action, at knowing how to act, at building a plan for entrepreneurial action that is optimal with regards to how it fits the need demanded by the practical context itself. However, competence is not sufficient. Instead, it needs a motor that drives entrepreneurial action from its start until its development. This is known as *entrepreneurial potential* and, unlike entrepreneurial competence, it is not observable. Therefore, it cannot be evaluated externally or publicly as it cannot be reduced to a simple system of actions. "Entrepreneurial identity" consists of both competence and potential.

The volume is structured in three sections. The first of them provides a conceptual sketch of a formative model for entrepreneurial identity and it contains chapter one. The second section aims to consider the elements that make up entrepreneurial potential. This section comprises chapters two, three, and four. The third section presents an array of competences that embrace entrepreneurial competence. This last block consists of chapters five, six, seven, eight, and nine. The second and third blocks emphasise the existence of two entrepreneurial dimensions: competence and potential, aspects which, as noted above, are interrelated.

In chapter one, Bernal presents an educational model of entrepreneurial identity: the MEGIE (General Entrepreneurial Identity Educational Model), which provides an interpretative framework of reference for understanding the phenomenon of entrepreneurship and developing appropriate training actions for it. Prior to the orientation of the model, the importance for current society of entrepreneurial identity and its complexity are explained, and the theories and scientific studies that primarily support this model are analysed. MEGIE is a theoretical innovation in a field that needs training models that can offer a more complete understanding of the entrepreneurial phenomenon, not limited to the commercial or employment field.

Chapter two starts the second section of the book, which seeks to explore entrepreneurial potential. This chapter conceptualises potential as an underlying construct through which subjects can develop their own life projects. Evaluation instruments derived from the scientific literature on entrepreneurial attitudes are reviewed and then the elements that make up entrepreneurial potential itself are extracted. Especially notable attitudes include creativity, innovation, motivation, leadership, self-esteem, etc. Identifying these entrepreneurial attitudes serves to develop formative plans that give as a re-

sult a working life project configured optimally and meaningfully. In this way, this chapter presents a variety of methodological strategies for educating entrepreneurial potential, such as lean thinking, design thinking, lateral thinking and the scrum agile methodology, among others.

Chapter three presents the perception of self-efficacy as a key aspect for entrepreneurial action. The self-perception of efficacy of the entrepreneurial self results in a fundamental valuation to facilitate or block the entrepreneurial process. Through an educational innovation project on Service Learning (SL) for primary teaching students from the Universidad de Burgos (Spain) to acquire competences linked to social entrepreneurship, the importance of the personal perception of entrepreneurial behaviour when making training plans for entrepreneurship is underlined.

Section two ends with chapter four, in which the findings of an empirical research study carried out by various Spanish universities are presented. This investigation concludes that the family has a direct impact on the generation and promotion of entrepreneurial culture in young people in the stage of Baccalaureate and Professional Training. The results then agree with previous studies that find that our personal beliefs and aspirations are modulated by interaction with our direct social context. Consequently, looking forwards, it is necessary to explore social settings, specifically the family, to examine in depth how entrepreneurial intent is modulated by other exogenous variables linked to sociological or cultural factors.

With the previous section analysing entrepreneurial potential now completed, section three of the work starts, setting out the practical projection of entrepreneurial identity: the competence. Chapter five analyses management competences in entrepreneurship: leadership, managing change, and innovative culture. This chapter contains an analysis of the importance of the influence of leaders for the success of other agents in the entrepreneurial task. In addition, a range of dimensions that comprise the transformational leadership of innovative cultures are analysed. This chapter concludes that, in the fourth industrial revolution, which we are currently experiencing, teachers must mediate in activities that make students learn to learn and be entrepreneurs, and so teachers must promote innovative and creative tasks to ensure that their learners acquire knowledge and skills that can shape a life project that is in line with the real needs of society.

Chapter six defines social capital as an object of study to identify the component of entrepreneurial competence with the greatest social depth. This chapter presents the origin, conceptualisation, types of social capital, and ways of measuring it, and then explains the importance of the commitment of the educational institutions and agents as generators of social capital. This capital, which derives from the social network in which people are situated, is offered as an opportunity for entrepreneurship.

Chapter seven analyses the basic set of psychological attributes that make up the individual's entrepreneurial capacity, such as emotional intelligence, personal initiative, and resilience, among others. It starts from a shortcoming detected in the education system, which is the absence of designed and planned training to favour entrepreneurship contemplating this more personal and internal dimension.

Chapter eight analyses the business dimension of entrepreneurial activity. In it, different entrepreneurial competences typical of the particular institutional setting of businesses are presented: corruption of the country, language or religion. The social legitimisation of the entrepreneur is also examined as a variable that influences by conditioning the social dynamic of entrepreneurship. This chapter shows that the phenomenon of entrepreneurship, from the entrepreneurial vision, is multidimensional and demands the activation of a holistic competence including everything from knowledge of business aspects to competences for business planning, for the configuration of the business plan and the strategic plan, for funding, and for innovation.

Finally, closing the work, chapter nine considers the competences associated with personal growth. Specifically, it provides a proposed teaching methodology, which seeks to achieve comprehensive entrepreneurial training. The presence of entrepreneurial education in the curriculum is vital for students, as it prepares them for the society in which they are immersed through life projects originating in our culture. Entrepreneurial culture cannot be neglected, but its promoting for the optimal development (personal, social, intellectual, and moral) of all individuals is a challenge for the field of education.

To finalise, and in the words of the editor, Antonio Bernal Guerrero,

> this work seeks to contribute to the development of the debate around the virtualities that entrepreneurial education contains, which, after a journey of more than two decades, calls for models capable of better understanding the process of formation of entrepreneurial intent … to broaden the horizon of possibilities for individual and social growth. (p. 21)

It will then be of particular value for anyone with an interest in knowledge of entrepreneurial education and its scope, as well as people who are curious about training the very processes that shape personal identity.

Jesús Conde ■

Urpí, C. (Ed.) (2022).
Creatividad y bienestar [Creativity and well-being].
Narcea. 209 pp.

The central theme of this book edited by Carmen Urpí Guercia (doctor of Educational Sciences at the Universidad de Navarra, specialising in aesthetic and artistic education) is the promotion of creativity through using the arts. It contains a collection of theoretical studies and a variety of case studies to highlight the poten-

tial of the arts in diverse educational and social contexts.

The introduction is by the editor herself, and it positions the reader with regards to the work's main aim. Thus, it brings together the principal contributions that locate the role of art as a source for personal enrichment, emphasising its function as something that is educational, therapeutic, and motivates learning. The book is structured in three sections. The first defines the psycho-pedagogical framework of creativity and well-being, while the second and the third present practical proposals in educational and social settings.

The first section, "El potencial educativo de las artes y la creatividad en la promoción del bienestar [The potential of the arts and creativity in the promotion of well-being]", consists of three chapters that all have very similar structures, which helps readers to position themselves in the specific theoretical framework. Carmen Urpí and María Ángeles Sotés-Elizalde start this section with the objective of deciphering the map that currently guides the direction of culture and art from public bodies. The European Commission, through the 2030 Agenda plan, recognises the role of culture as an essential medium for contributing to the sustainable development goals (SDGs). Specifically, the authors emphasise resilience, sustainability, peace, citizen training, and cultural diversity as the lines of action that can be enriched by artistic-cultural proposals that use participatory methodologies, called co-creative.

The second chapter, by Concha Iriarte Redín, provides a synthesis of research works that relate emotional intelligence (EI) to art or creativity. Research from neuroscience, a meta-analysis that correlates both variables, and other independent studies with valuable results and discussions such as those of Ivcevic (2019; 2020) stand out. As well as the theoretical synthesis, some proposals are summarised that are a source of inspiration for readers and that reflect the important contribution of artistic activities such as drawing and painting to the growth of IE, as they "can be an important means of unblocking or boosting positive emotional states and well-being" (p. 34).

The first section ends with an investigation by Carmen A. Sánchez Salvador, Álvaro Balaguer, and Elkin O. Luis García that lists artistic programs that generate psychological well-being and promote social inclusion. The conceptual delimitation between exclusion and inclusion, as well as between the two perspectives of psychological well-being, the hedonic and the eudaimonic, enable the authors to go on to list interventions that have used artistic or creative practices for promoting health. Although there are three benefits for well-being and inclusion, the limitations of the design are also identified. These include the specificity of the participating population, whose situation hinders commitment and continuity.

The second part of the book starts with chapter four, by Ana Costa-París and María Peralta-Fernández, which presents practical proposals in educational contexts.

In this case, the authors describe the proyecto *Carmen* [*Carmen* project], an experience in the university field in which a version of Bizet's opera of the same name adapted for school students was prepared and performed. This experience has served to consider the effectiveness of this artistic action on the well-being of the students based on the valuations that they provided at the end of each rehearsal by means of a diary. The authors make an invitation for further studies to measure the degree of growth of each category extracted from the analysis.

In chapter five, Apolinar Varela, Miriam Carretero-García, Lara Varela-Garrote, and Raúl Fraguela-Vale consider how physical artistic-expressive activities can contribute to students' well-being at the primary level. The authors analyse Spain's current education system and conclude that this type of activity is not prioritised in teacher training or in the classroom. In response, their main contribution is a description of a proposal for artistic-expressive activities in physical education using a non-directive focus that fosters exploration in a flexible setting. The proposal described in this chapter could be of great help for educational professionals, although the authors themselves recognise the importance of adaptation to the developmental stage and specific circumstances of the context and of the students to whom it is directed.

Beyond the school context, Laura García-Rodríguez and Olga Alicia Carbonell Blanco frame chapter seven in the family context; specifically, the mother–baby relationship. They explore everyday interactions in an urban context of high psycho-social vulnerability in the city of Bogotá, Colombia, to investigate the role of mothers' singing in the raising of babies. Although the results are not generalisable, the authors' qualitative study makes it possible to consider the potential of song as "a medium through which the mother can synchronise with her child" (p. 119), anticipating its stress, avoiding its discomfort, as a ludic activity, or establishing routines of care.

Returning to university students, the second part of the book concludes with the presentation by Ignacio Perlado González and Aitor Rodríguez Salaverría of the impact that university residential colleges, or *colegios mayores*, can have on the well-being of everyone who participates in what the authors call *cultured cohabitation*. The *colegio mayor* is presented as a setting where the environment of leisure and free time is impregnated by culture, the responsibility of which comprises helping members of the college to be able to explore the world free from pressure and to have time to enjoy cultural activities that relax the body and elevate the spirit. To justify the contribution to well-being, they analyse surveys that were aimed at college members who participated in cultural life and other non-resident university students that benefited from the organised activities. Among the results identified, it is worth noting the dissonance between well-being and rest when considering cultural activity as conducive to well-being, but not necessarily to rest.

The third section centres on studying opportunities from the social context for encouraging creativity. Chapters eight, nine, and ten are dedicated to the museum as one of the principal places where people gather. Teresa Barrio Fernández starts this part by setting out the potential of the museum in the promotion of personal and social well-being by means of a case study of the *Museos + Sociales* [More social museums] project. In view of the situations of crisis or contexts of emergency such as the Covid-19 pandemic, that have hindered the consolidation of the project, the adaptability of museums is suggested as a fundamental strategy to guarantee its permanence. The case of the Museo Arqueológico Nacional [National Archaeological Museum] is set out, illustrating how the path passes through "reconsidering or rethinking their digital strategy" (p. 145) and placing greater emphasis on attention to families.

Chapter nine, by Carmen Palacios Hernández and José Fernández Prado, presents two pedagogical projects (*Arte y Memoria [Art and Memory]* and *10x5*) from the Würth La Rioja Museum aimed at groups of adults. Both experiences are centred on "introspection, personal evocation and the contemporary process of artistic creation" (p. 150) to favour participants' well-being and improve their attitude towards life. Although the programmes were not originally designed with research aims, the valuations by users have motivated continued work in this field.

¿Por qué no nos mira esa mujer? [Why doesn't that woman look at us?], carried out at the Universidad de Navarra Museum (MUN), is the project that Fernando Echarri Iribarren and Teresa Barrio Fernández describe in chapter ten. The initiative of opening the museum to the public has the aim of guaranteeing its accessibility to everyone, under the concept of an *inclusive museum*. Using the creative-collaborative-inclusive methodology that they themselves created, they describe a project that has the aim of fostering the value of equality from the work *After Gerhard Richter*, by Vik Muniz.

The third part of the book concludes with a change of context and tackles the social enterprise in the cultural sector and its contribution to personal growth and social development. Carmen María Basanta Vázquez, Víctor Lana Arceiz, Marianna Scott McMillan, and Laura Venzal Ballester, from the legal field, set out the need in the context of Spain to develop a legislative framework similar to model of benefit corporations from the context of the USA to shape civil society. The *Barabaiki* social enterprise project, which is currently a foundation under the legal framework, is described as a model of how business can have a transformational character in society and provide "spaces for reflection on social causes and solutions for contextual problems that favour the well-being of their communities" (p. 201).

The contribution of artistic-expressive activities to personal and social well-being in very varied contexts means that the readership for which this book is intended is equally broad. From the field of research, the discussions and future

possibilities of their own works that the authors provide could be very valuable lines for further work in this field. Teaching professionals in the school or university area or the non-formal context can also be inspired to design their own projects. Finally, business people who want to go beyond the profit-making sense of the sector and bet on positioning the person at the heart of their activity can use *Barabaiki* as a clear reference point.

Alicia Encío ■

Fuentes, J. L., Fernández-Salinero, C., & Ahedo, J. (Eds.) (2022).

Democracia y tradición en la teoría y práctica educativa del siglo xxi [Democracy and tradition in educational theory and practice in the 21st century].
Narcea. 180 pp.

Democracia y tradición en la teoría y práctica educativa del siglo xxi, the book edited by Juan Luis Fuentes, Carolina Fernández-Salinero, and Josu Ahedo, tackles the unavoidable debate about the role of education in establishing a democratic society in the current century, starting from a broad understanding of the concept of democracy: in the words of Dewey, cited in the prologue by Gonzalo Jover, as a form of moral and spiritual association first and then a form of government. Thematically, the text is arranged around three complex concepts: democracy, tradition, and education. The eight chapters into which it is divided, written by seventeen authors from the field of the theory and history of education from nine different universities, consider questions such as "what goals should a democratic education set itself at present?"; ¿what can be provided to the education of people in the plural setting typical of a democratic society by, on the one hand, religion and tradition, and, on the other, by emerging proposals such as character education, service-learning, or maker culture?"; "what can we learn nowadays from the law of 70, enacted under Franco's dictatorship, or how can we turn technology into a source of pedagogical opportunities instead of resigning ourselves to seeing it as a threat to democratic coexistence?".

In chapter one, Cortina presents a robust argument about how an education for democratic citizenship can combat the decadence that democracy has slipped into since the end of the 20th century. This education, understood as a cooperative activity, is responsible for equipping young people with the necessary tools to choose their own model of happiness and a good life, and also to identify and highlight a situation as unjust when appropriate, choosing dialogue with those who have different perspectives. To achieve these goals, Cortina proposes a triple path of Kantian inspiration: educating in basic knowledge and competences (imperative of skill), education in how to be happy and in how to be just (imperative of prudence), and education in the importance and meaning of justice, freeness, and compassion (moral imperative).

In the second chapter, Cámara, Fuentes, and Naval start by setting out a social-historical-theoretical framework

that covers the evolution of character education during the 20th and 21st centuries, and its link to different concepts and theories. After concluding that the current consensus involves an integral education that does not neglect non-intellectual dimensions (aesthetic, affective, moral, social, etc.), the authors consider various focusses for character education, such as clarifying values or social and emotional learning. They also define them and note how to put them into practice with examples of specific interventions and noting relevant criticisms of them. The authors dedicate the last part of the chapter to defining key factors in the resurgence of character education: the applicability of Aristotelian philosophy at present (integral education, common framework and vocabulary, consideration of emotions in moral action), the ethical commitment of the educator (teacher as model), and the need for intellectual virtues in moral formation (support of habit, critical and political dimension, link between flourishing and happiness).

In the third chapter, Hogan reflects on how tradition affects the experience of human comprehension, drawing on key authors in the field of phenomenology such as Heidegger, Gadamer, or MacIntyre. Inevitably, the understanding of reality is linked to a series of filters (preconceived ideas, prejudices, etc.) that situate it historically and socially. Therefore, didactics should not take a neutral perspective regarding tradition, but instead should go out to meet it, from a conversational perspective that invites rival traditions to the critique. This active and enquiring interaction will result in revelations about personal identity and renewal of the tradition from the hospitable encounter.

In chapter four, Luque, Igelmo, and Martínez Cano try to lay the foundations for a dialogue on religious education (RE) to flourish in Spain. To do so, after defining the current religious context in which this education should be considered, they suggest three areas for debate where RE seems to make significant contributions. Firstly, they highlight the importance of reincorporating in the curriculum the spiritual dimension, which has been replaced by content of a technical nature in recent decades. They also explore how, from the concept of moral conscience and the encounter with the intranscendental, the moral dimension of RE can be considered in more depth. Finally, they consider the link between religious education and political action aimed at social transformation, emphasising the interrelation with the other and the examination of ethical and democratic aspects from the phenomenon of religion.

In chapter five, Canales illustrates the process of approval of Spain's General Education Act of 1970, which ushered in comprehensive education under the dictatorship, and the revolutionary repercussion of this at the social level. Having considered in some depth the factors that enabled the implementation of this law, the author reflects on the disquiet that attributing the milestone of comprehensive education to the Francoist government generates among researchers to, finally, cast light on its socialist origins.

In chapter six, Gozálvez, Buxarrais, and Pérez analyse the loss of quality of the democratic system, based on two focuses that are critical of liberal democracy: notions of post-democracy and of illiberal democracy. The authors then explore a variety of strategies that seek to tackle the political disaffection and the loss of ethical-civic commitment of current young generations. These include educational action driven by the European Union centred on three large fields: political literacy and civic attitudes and competences. Moreover, they recognise the family as a driver of democratic settings and experiences in everyday life. Finally, they note the role of ICT in the problem in question, arguing for the need for digital literacy and underlining the benefits of the maker movement.

Chapter seven is situated in line with this same concept. In it, Alonso Díaz and Hernández Serrano consider in depth the conceptualisation of maker culture, which promotes the collaborative construction of responses to social challenges through the use of technology. Based on active learning (Dewey's learning by doing) and adopting an informal, social, and anti-capitalist perspective, it enables the development of entrepreneurial competence with a democratic focus. The authors argue that it is a social movement with a democratic basis by nature and they list concrete experiences at all educational levels, such as *fablabs* and changemaker schools.

Finally, the book concludes with a text by Santos Rego, Sáez-Gambín, and Lorenzo Moledo, who administer a questionnaire to students involved in university service-learning projects and obtain a series of results that give rise to interesting conclusions about SL: the ideal moment to do it, who should participate in it, and what it aims is. Accordingly, their principal argument is that continuous and collective reflection is recommended with the aim of sharing ideas about experience and linking service to curriculum content and the development of attitudes and values.

As a whole, the direct and in-depth nature of the analysis of the different questions, which goes beyond the circumstantial, as well as the mixture of theoretical reflections and more practical proposals, make this work a key point of reference in its thematic field. Reading *Democracia y tradición en la teoría y práctica educativa del siglo xxi* is, ultimately, necessary for any reader and researcher who seeks to build a solid comprehension of the essential questions that shape the debate about democratic education and, especially, for those educators who aspire to lead the move towards an education that responds to contemporary challenges and meets the needs of our time.

Marta Ambite Pérez ■

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. It publishes three issues per year.

B. Languages used in the journal

The **REP** is published on the journal's website (revistadepedagogia.org) in Spanish and English. If an article is accepted, an economic agreement will be reached with the authors to implement the procedure that guarantees the use of appropriate academic language in them, with the translation being done by native expert professionals in each of the languages who must translate all the contents of the original article, including tables and graphs.

The 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 typeface.

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) 6 to 8 keywords should be included.

5) 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/

6) 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.

7) To highlight a word, italics will be used. Underlining or bold should not be used.

8) 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).

9) 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.

10) 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/

11) 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.

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. Communication with authors and evaluation of originals

The reception of originals is permanently open. Special deadlines may be set for public calls for papers for monographic issues.Special deadlines may be set for public calls for papers for monographic issues.

The assessment process is objective and impartial. To this end, the "double-blind" principle is applied. External reviewers will work in the assessment process to guarantee expert opinions.

The corresponding author will receive an automatic notification confirming receipt of his article. Within three weeks of this notification, the author will receive the results of the first evaluation carried out by the journal's editors. The

time frame established for completing the review process is four months, counting from the email of receipt of the article. After this deadline, the author will ordinarily be informed of the final outcome of the assessment. An author whose paper has not been selected may resubmit other papers at a later date.

The publication of articles does not entitle authors to any form of remuneration. All authors are required to use the most effective methods to disseminate their articles, obtain citations and contribute to the advancement of pedagogical knowledge.

E. Publication costs

Once the article has been approved for publication in the **REP**, authors only have to pay for the translation of their article into Spanish or English, if applicable. ITo ensure the quality of published works, we follow a policy of accepting only professional translations from accredited translators.

Payment for translation is based on the following conditions:

- If the article is supported by a research grant, or similar, the invoice will be paid in full by the body supporting the research.
- In the case of a freelance article, the author must pay the fixed amount of 400 euros (taxes included), and the journal will be responsible for the rest of the cost of the translation.

F. Dissemination of published papers

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.

The **Revista Española de Pedagogía** has profiles on the main social networks (Facebook, Twitter and LinkedIn), where it disseminates the papers it publishes, consequently we recommend that authors follow the journal on these networks and share their publications.

https://www.facebook.com/revistadepedagogia

https://twitter.com/REPedagogia

https://www.linkedin.com/company/revista-espanola-de-pedagogia

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.

Authors are also encouraged to deposit or disseminate accepted articles in:

- Institutional repository of their university and public repositories (SSRN, Zenodo, etc.).
- 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.