

Strengthening teaching competencies in Early Childhood Education: an insight into classroom activities

Reforzar las competencias docentes en Educación Infantil: una mirada desde las actividades del aula

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Abstract

Introduction: the increase in the offer of places in Early Childhood Education (ECE) after the adoption of the new Education Law (LOMLOE, 2020) must entail a commitment to improve quality, and one of the pillars on which it is based is the teaching competence of its teachers. The present study analyzes teaching performance in the development of learning activities in the first cycle of ECE, based on the type of the most frequent activities observed in classrooms from 0 to 3 years old. The results of the study do not make inferences about the initial training received by the participating teachers, but it will raise questions contributing to the review and improvement of the training, especially in its practical aspect. **Methodology:** a systematic observation is carried out using the ITERS-3 (Infant/Toddler Environment Rating Scale, third edition) in an incidental sample of 31 classrooms from 21 ECE centres (0-3 years old) in 4 Spanish Autonomous Communities, with a total of 340 students and 58 teachers. **Results:** Data shows that the subscale “Activities” receives the lowest score, showing statistically significant differences when compared to the other subscales (Space and Furnishings, Personal Care Routines, Language and Books, Interaction and Program Structure). The mentioned subscale does not reach the minimum level of quality in 8 of the 10 items proposed by the scale: fine motor, arts, music and movement, blocks, dramatic play, nature/science, math/number and acceptance

of diversity promotion. “Appropriate use of technology” and “Gross Motor” items reach a minimum and good score respectively. Discussion: these results invite to rethink teachers’ training in respect to children’s education in Spain.

Key words: class activities, early childhood education, initial training, ITERS (Infant/Toddler Environment Rating Scale), preschool teacher, quality of education, teacher education.

Resumen

Introducción: el aumento en la oferta de plazas en Educación Infantil (EI) tras la aprobación de la nueva Ley de Educación (LOMLOE, 2020) debe conllevar una apuesta por mejorar la calidad, y uno de los pilares en los que ésta se sustenta es la competencia docente de su profesorado. El estudio que se presenta analiza el desempeño docente en el desarrollo de actividades de aprendizaje en el primer ciclo de EI, a partir del tipo de actividades más frecuentes observadas en las aulas de 0 a 3 años. De los resultados del estudio no se hacen inferencias sobre formación inicial recibida por los docentes que han participado, pero sí plantearán interrogantes que contribuyan a la revisión y mejora de la formación, muy especialmente en su vertiente práctica. **Metodología:** se realiza una observación sistemática empleando la escala ITERS-3 (Infant/Toddler Environment Rating Scale, third edition) en una muestra incidental de 31 aulas de 21 centros que imparten el primer ciclo de EI en 4 Comunidades Autónomas españolas, con un total de 340 alumnos/as y 58 maestros/as/as. **Resultados:** los datos muestran que la subescala “Actividades” es la que menor puntuación ha recibido, mostrando diferencias estadísticamente significativas respecto al resto de subescalas (Espacio y muebles, Rutinas de cuidado personal, Lenguaje y libros, Interacción y Estructura del programa). Dentro de dicha subescala, no se alcanza el nivel mínimo de calidad en 8 de los 10 ítems propuestos por la escala: motricidad fina, arte, música y movimiento, bloques, juego dramático, naturaleza y ciencias, matemáticas y números, y aceptación de la diversidad. En los ítems “Uso apropiado de la tecnología” y “Motricidad gruesa” se alcanza una puntuación mínima y buena respectivamente. **Discusión:** estos resultados invitan a repensar la formación del profesorado de EI en España.

Palabras clave: actividades de aula, ambiente de la clase, calidad de la educación, Educación Infantil, docente de preescolar, formación de docentes de preescolar, ITERS (Infant/Toddler Environment Rating Scale).

Introduction

In current national and international education policies, meeting the demand for accessible and affordable places in the first cycle of Early Childhood Education (OECD, 2020) is a very present objective. In the Spanish case, the (Organic Law) Ley Orgánica 3/2020, de 29 de diciembre, por la que se modifica la Ley Orgánica 2/2006, del 3 de mayo, de Educación (LOMLOE), considers this progress in the additional 24 Provision: “The General Budgets of the State (...) progressively incorporate the necessary appropriations to implement the gratuity in the first cycle of early childhood education referred to in Article 15(2).” Also in the 3 additional provision, it states that “within one year of the entry into force of this Law, the Government, in collaboration with the Educational Authorities, shall draw up an eight-year plan for the extension of the first cycle of early childhood education in such a way as to move towards a sufficient and affordable public offering with equity and quality and to ensure its educational character”. The new Law provides for equity in access and quality of processes, taking up the educational nature of the first cycle of Early Childhood Education, which the previous Law (LOMCE, 2013) had eliminated. In this sense, the incorporation of a general principle of quality control is an important step forward: Article 15.1.: “... All centres must be authorized and supervised by the relevant Educational Administration.” This purpose coincides with Objective 4.2 of UNESCO’s Sustainable Development Goals which states that, by 2030, all children shall have access to quality early childhood care and development services and preschool education. Such a statement places this goal in the International Agenda.

The importance of quality education at this stage, and its short-, medium- and long-term impact on development and learning, well-being, early abandonment rate reduction or increased life expectancy, is widely argued by numerous international authors and agencies (Blanco, 2008; Guijo, 2008; Heckman, 2017; OCDE, 2019a; UNICEF, 2019, among others).

In Spain, as in most OECD countries, teachers in the first ECE cycle must have a Degree in Child Education (ISCED 6) or the title of Technician in Child Education (ISCED 5). In Germany and Norway, 70% and 50% of the teachers in the first cycle have university education (ISCED 6 or higher) respectively.

More recently, the TALIS 2018 Report (OECD, 2019b) notes that the increase or improvement in quality in ECE is influenced by the increase in the teachers' training level. Teachers who have a university degree or higher studies tend to create more enriching learning environments and perform more stimulating activities -European Commission-, (Comisión Europea, 2019). Also, in the Quality Framework for Early Childhood Education and Care (Diario Oficial de la Unión Europea, 2019), initial teacher training is one of the 5 components needed to create a quality child education system. This statement is in line with the meta-analysis elaborated by Manning, Wong, Fleming and Garvis (2019), which shows a positive correlation between teachers' training level and the quality of child educational programs. It includes the studies from 1980 to 2015 which analyze the qualification of the teacher in relation to the evaluation of the quality of the environment in the classroom through the scales: ECERS, ECERS-R, ITERS e ITERS-R. In any case, the adequacy of this training remains a matter of concern and debate. Already in 2009, a report from the School Council of the Spanish State (Consejo Escolar del Estado, 2009) showed a mismatch between its "too theoretical approach" and the subsequent educational practice. Certainly, the key to boost teacher professional development is to identify the most appropriate strategies to help these professionals stay up-to-date on the most suitable pedagogical methods at this stage (Peterson et al., 2016). In the context of structural reforms promoted by the new Law (LOMLOE, 2020) - which reaches the teaching profession - it is important to review whether the standards governing the Degree of Teaching in Child Education responds to the challenges these teachers will have to face in schools.

The current study analyzes the teaching performance in the design and development of learning activities in the first cycle of ECE, based on the type of most frequent activities in classrooms from 0 to 3 years old. This is not intended, nor is it possible, to make an inference from the results of the study to the initial training received by the teachers who have participated, but to raise questions that contribute to the review and improvement of the initial training, especially in its practical aspect.

Initial Training of Early Childhood Education Teachers in Spanish universities

The regulation of the Degree of Teaching in Early Childhood Education is governed by -ORDER- ORDENECI/3854/2007, del 27 de diciembre, which sets out the requirements for the verification of official university degrees for the exercise of the profession of Teacher in Early Childhood Education.

TABLE I. Curriculum of the Bachelor's Degree in Early Childhood Education

Module	Number of European credits
<p>Basic training Educational processes, learning and personality development (0-6 years old). Learning difficulties and developmental disorders Society, family and school. Childhood, health and food. Organization of school space, teaching materials and skills. Systematic observation and context analysis. The Children's Education School.</p>	100
<p>Disciplinary didactics Learning the Sciences of Nature, Social Sciences and Mathematics. Language Learning and Literacy Music, arts and body expression</p>	60
<p>Practicum School internships, including end-of-grade work</p>	50

Source: own elaboration from the ORDEN ECI/3854/2007, del 27 de diciembre

This degree is widely supplied and demanded and has a high employability rate. According to the Ministry of Science, Innovation and Universities (MCIU, 2020a), in the 20/21 academic year, the number of universities offering the Degree in Early Childhood Education in Spain is 109 (77 public and 32 private). According to data from the -Ministry of Education and Vocational Training- Ministerio de Educación y Formación Profesional (MEyFP, 2020a), Spain has 56,731 in-service teachers in children's education centres, 48,092 students enrolled in the Degree and 10.153 students have graduated this academic year (MCIU, 2020b). In

2018, the 2013/14 promotion has an employability rate of more than 75% (MCIU, 2020c).

On the other hand, the increase of the enrolment in the first cycle of this stage is remarkable. In 2018, 26% of children under the age of 3 were schooled in early childhood education in OECD countries (OCDE, 2020). In Spain, the schooling rate in the first ECE cycle has doubled in the last 10 years, reaching 60% for those over 2 years old (MEyPF, 2020b).

The central role of the quality of teaching and learning activities in the ECE stage

According to the Spanish Education Law (LOMLOE, 2020), learning activities are one of the main axes that underpin the methodology and the educational process at this stage, and the most important element –along with relationships and the classroom climate– to ensure the principles of child welfare and development. Thus, with regard to the management and pedagogical principles of both cycles of the stage, the LOMLOE establishes in article 14.6: “Working methods in both cycles will be based on emotionally positive learning experiences, activities and play, and will be applied in an environment of affection and trust, to enhance their self-esteem and social integration and the establishment of a safe attachment”. Similarly, in paragraph 3, Objectives, of that aforementioned Order ORDEN ECI/3854/2007, del 27 de diciembre, which regulates the required teacher training, it is established that future teachers of Early Childhood Education must acquire a series of competences in order to be able to develop these activities in an adequate manner, through the design and adequacy of learning spaces, reflection on the practices that take place in the classroom, and the promotion of autonomous learning habits in students. As for the European Commission (Comisión Europea, 2019), it stresses that the teacher must plan the most necessary and satisfactory activities at this age, such as playing, running, singing, dancing, caring for plants, exploring and listening to stories for, among other purposes, “offering them positive learning experiences”. The richness and variety of activities – based on well-defined objectives that ensure progress towards the desired learning outcomes, promotes communication between children and teachers and encourage family

participation – as they are an essential element of high-quality education and care (Comisión Europea, 2014).

A great number of research highlights the importance of certain children's activities to lay the foundations of integral development; those that promote inclusion and interculturality (Barreto, Madrona y López (2017), mathematical competence (Clements, 2001; Espinoza, Reyes y Rivas, 2019; Rosales, Ramos, Jáñez y De Sixte, 2020; Watts, Duncan, Clements y Sarama, 2018), the notions of space and time, or creativity (Castro, Barrero y González, 2011; Román y Cardemil, 2014, Sáez-Sánchez, Gil-Madrona y Martínez-López, 2021), among others.

As a result of these approaches, the increase of affordable and accessible places in the first cycle of Early Childhood Education foreseen in the LOMLOE, together with the forthcoming promulgation of a Royal Decree that develops and concretizes its principles in minimum requirements of these teachings guaranteeing their educational function and quality, will require the revision and updating of the curricula of the Teaching Degree in Early Child Education, in order to specially consider the methodologies based on the principles of well-being, activity and integral child development.

Certainly, the improvement of teaching competence is not achieved exclusively by the modification of university curricula, as the available evidence holds. University curricula is still an important link in the chain for quality teaching professional development, which will put on the agenda (social and universities) the debate on what education we want, what education early childhood needs, and what skills should be developed by teachers.

This study aims to contribute to it. Its general objective is to analyze the quality of teaching performance by observing the learning activities carried out in classrooms of the first cycle. Ultimately, the aim is to provide empirical evidence that will contribute to rethinking the initial training of these teachers from the perspective of the well-being and integral development of children under 3 years of age.

Method

The design of this study is quantitative, non-experimental, with a descriptive approach to cross-sectional data. The data analysis plan

includes descriptive techniques (central trend and dispersion) for the overall results analysis, and inferential techniques for contrast of means.

Sample

Non-probabilistic, accidental or incidental sampling has been carried out for the selection of the centres, due to their accessibility. This type of sampling, which is widely used in the field of social sciences research, does not allow representative samples to be obtained from the population, but enables in-depth study of the topic of interest within a given context (Martínez, 2007). These centres have been accessed by reaching them through an e-mail in which their participation was requested. The sample, obtained in Spain, consists of 31 classrooms from 21 ECE centres, representing a total of 340 children, and 58 teachers. By autonomous communities the sample composition is: 5 classrooms in Andalusia, 4 classrooms in Castilla La Mancha, 5 classrooms in Navarra and 17 classrooms in Madrid. The ownership of the observed centres is 38.7% of public ones, 22.6% of private ones and 38.7% of government funded private centres. The age of children is between 4 months and 34 months old. The average number of children per classroom is 10.91, with 3 students being the lowest-rated classroom and 20 being the highest. With regard to the initial training of teachers and taking the total number of participating teachers, 6,5% have a university master degree, 67.7% have a university degree in Early Childhood Education and 25.8% have a higher degree in Vocational Training. The percentage of classrooms observed by levels is as follows: Classroom Infants (0-1 years old) 9.7%, Classroom 1-2 years old 25.8%, Classroom 2-3 years old 48.4% and Mixed Classroom (in which infants and/or children of different ages are grouped) 16.1%. Most classrooms had two educators (64.5%), followed by only one educator (22.6%). The presence of three teachers per classroom has only occurred in 9.7% of the cases. Finally, we can find a primary teacher and one for specific activities such as music, in 3.2% of the cases. The number of students with special educational needs is anecdotal (N=2). The observation was carried out during the months of October to December 2020.

Research tool

ITERS-3

The ITERS-3 Scale has been selected (Harms, Cryer, Clifford & Yazejian, 2020) -Infant/Toddler Environment Rating Scale, third edition- in its Spanish version. It is a widely used scale given its reliability and validity. The reliability measures provided by the questionnaire are: (1) reliability of the indicator – percentage of ratings matching exactly for each indicator assigned by two independent observers-. The average reliability was 86.9% throughout all the indicators and between pairs of observers, (2) reliability of the item, for which we calculated the concordance at item level between pairs of observers- concordance within the same point of 86.1% and Cohen's Kappa coefficient -0.600-. (3) Intraclass Correlation, in which an average score of 0.83 has been obtained and finally the validity, through an analysis of the internal consistency, with a Cronbach Alpha of 0.914, which leads to a high level of internal consistency (Harms, et al, 2020). The tool is designed to measure the quality of the environment in Early Childhood Education classrooms, from birth to 36 months of age. The scale is composed of 6 subscales: Space and Furnishings (4 items), Personal Care Routines (4 items), Language and Books (6 items), Activities (10 items), Interaction (6 items) and Program Structure (3 items) formed by a total of 33 items. Each item is composed of a series of indicators, resulting in a total of 457 indicators on the global scale. These are organized hierarchically, focusing on basic needs at low levels and on more educational and interactive aspects at the higher levels. They are graded on a scale of 1 to 7 (1 = inadequate, 3 = minimum, 5 = good and 7 = excellent) and their score is eliminatory; if an indicator is valued as negative that item will no longer get a higher score.

This questionnaire and its previous two versions (ITERS and ITERS-R) have been applied in the 5 continents. Table II shows some research in which this tool has been applied over the past 10 years. The search has been conducted in the main databases -Scopus, Web of Science, ERIC, as well as Google Academic, using the word ITERS and the surname of the first author (Harms).

TABLE II. International application of ITERS (2010-2020)

Continent	Country	Author	Year
Africa	South Africa	Biersteker, Dawes, Hendricks & Tredoux	2016
America	USA	Boller et al.	2010
		La Paro, Williamson & Hatfield	2014
		Torquati et al.	2011
	Jamaica	Kinkead-Clark & Escayg	2019
	Chile	Cárcamo, Vermeer, De la Harpe, van der Veer & van Ijzendoor	2014
Brasil	Evans & Kosec	2012	
Asia	Saudi Arabia	Gahwaji	2019
	India	Ramitha & Khadi	2019
	China	Xu, Brooks, Gao & Kitto	2020
Europe	Germany	Eckhardt & Egert	2018
	Greece	Megalonidou	2020
		Rentzou	2010
	Scotland	Bradshaw, Hinchliffe & Scholes	2020
	Spain	Larrea, Lopez de Arana, Barandiaran & Vitoria	2010
	Finland	Kalliala	2011
	Italy	Musatti & Picchio	2010
	Norway	Bjørnstad & Os	2018
		Kaarby & Tandberg	2018
	Netherlands	Helmerhorst, Riksen-Walraven, Fukkink, Tavecchio & Deynoot-Schaub	2017
		Helmerhorst, Riksen-Walraven, Deynoot-Schaub, Tavecchio & Fukkink	2015
	Portugal	Barros & Aguilar	2010
Barros et al.		2016	
Oceania	Australia	Fenech, Sweller & Harrison	2010
		Torr	2019

Source: own elaboration

It should be noted that the study of Larrea et al. (2010) is the first and only to date that to have applied this tool in Spain, specifically in the Basque Country, which contrasts with other countries such as Australia,

Germany, Scotland, Norway, Portugal or Chile, where the quality of the environment in children's classrooms (0-3) is frequently evaluated with ITERS, and in many cases the Government is the driving force behind these investigations.

The modules that make up the disciplinary didactic training of the current Teaching Curriculum (ORDEN ECI/3854/2007, del 27 de diciembre) are three (1) Natural Sciences, Social Sciences and Mathematics, (2) Language and Literacy and (3) Music, Arts and Body Expression. The ITERS 3 tool, through 6 subscales, allows the collection of information related to these modules, such is the case of the 10 items of the subscale Activities: Fine Motor, Art, Music and Movement, Blocks, Dramatic Play, Nature/Sciences, Math/Numbers, Appropriate Use of Technology, Promoting Acceptance of Diversity and Gross Motor. Or the 6 items of the subscale Language and Books: Talking with children, Encouraging vocabulary development, Responding to children's communication, Encouraging children to communicate, Staff use of books with children, and Encouraging children's use books.

Procedure

The administration of the scale requires an observation of three hours in a row that must coincide with the most active part of the day, so it has been done in a schedule between 09:15 and 13:00 h, depending on the organization of each school. The ITERS-3 does not allow for personal interview, and all information reflected in the scale has to be the result of careful observation according to the criteria specified on the scale. Other necessary data, such as teacher training or the ages of children, for example, are requested at the center before the observation begins. The observations have been carried out by a single applicator (principal investigator), who has prepared for observation through repeated and in-depth reading of the manual, where a specific section of "Administration of the scale" is established contributing in this way to its reliability, as well as with the reading of articles in which this scale has been applied, the viewing of explanatory videos on the tool made by the publisher, and the conversation with some experienced applicators in the tool, to know in advance the existence of any possible failure or additional complexity that was not reflected in the scale. It should be noted that the marked

objectives are of a descriptive rather than diagnostic type and the use of a single applicator reduces possible biases in scores, as well as errors and/or difficulties when comparing them.

Results

After a first exploration of the information coming from the tool with descriptive techniques (central trend and dispersion) inferential techniques for the contrast of means have been used. First, it has been analyzed whether there are differences between the subscales that make up the tool and the significance of those differences. Table III shows the mean scores obtained in the six subscales. As a preliminary step for the analysis of the significance of these differences, compliance with the assumptions of the model for the application of parametric contrast statistics of means has been verified, performing the Shapiro-Wilk normality test. Then, for the subscales that conform to a normal distribution, a Student T-test has been performed and for those that do not, the Wilcoxon sign range test. The *IBM SPSS Statistic version 25* is used for data analysis.

The overall results obtained on the *ITERS-3* scale are $\bar{X} = 4,81$ ($\sigma =,89$, minimum value 3,01 and maximum 6.27). Through the descriptive statistics (Table III) it is observed that the subscale Activities is in which a lower score is obtained ($\bar{X} = 2.59$), so the average score in general and specifically in Activities does not reach the minimum ($\geq 3 < 5$), and, however, in the subscale Language and Books a score has been obtained close to the average, with a result of $\bar{X} = 4,74$, being a very close result compared to that obtained in Space and Furnishing and Care Routines. The average score in the subscale Activities presents statistically significant differences in relation to the rest of subscales, which is why it has been decided to address an in-depth analysis of the items that make up this subscale.

TABLE III. Statistical descriptions

	N	Mini- mum	Maxi- mum	Mean	Standard Deviation
Mean_Space_Furnishing	31	1,75	7,00	4,6452	1,52449
Mean_Personal_Care	31	2,25	7,00	5,0968	1,20360
Mean_Language_Books	31	2,50	6,67	4,7419	,98492
Mean_Activities	31	1,20	4,67	2,5187	,76632
Mean_Interaction	31	3,17	7,00	6,0323	,89590
Mean_Program_Structure	31	2,67	7,67	5,8387	1,73391

Source: own elaboration

In order to verify whether these differences are statistically significant, a mean contrast test was performed for related samples (Table IV). The results of the Shapiro-Wilk normality test show that all subscales except Interaction and Program Structure conform to a normal distribution (Sig Space and furnishing=0,116; Sig Personal Care Routines= 0,402; Sig Language and books= 0,898; Sig Activities= 0,111; Sig= interaction 0,001; Sig= Program Structure 0,001). Therefore, it can be said that, in all variables except Interaction and Program Structure, we can use parametric tests (Student T). For interaction and structure of the program we must use nonparametric tests (Wilcoxon sign range test). However, interpretative difficulties have been considered due to the observation of coincidental results applying parametric and nonparametric statistics, so it is been decided to offer the results of the Student T test for all scales in the present study.

TABLE IV. Contrast tests of means subscale “Activities” vs others subscales.

95% confidence interval of the difference									
		Mean	Deviation	Dev. Error	Lower	Higher	T	Df	Sig. (bilateral)
Student T test	Space Furnishing	-2,126	1,314	,236	-2,608	-1,644	-9,004	30	,000
	Care Routines	-2,578	1,182	,212	-3,011	-2,144	-12,138	30	,000
	Lenguage & Books	-2,223	,736	,132	-2,493	-1,952	-16,798	30	,000
	Interaction	-3,513	,919	,165	-3,850	-3,17	-21,264	30	,000
	Program Structure	-3,319	1,560	,280	-3,892	-2,747	-11,842	30	,000

Source: own elaboration

These results are reflected in Figure I. It reveals the existence of significant differences between the subscale Activities and the rest of the subscales evaluated, in all cases statistically significant differences are determined.

FIGURE I. Mean score in subscales of the ITERS-3 questionnaire and confidence interval.



Source: own elaboration

Next, we deeply analyze the scores obtained in each of the items that make up this subscale.

TABLE VI. ITERS-3 Activity Results. Statistical descriptions.

	N	Mini- mum	Maxi- mum	Mean	Devia- tion	95% mean confidence interval
Fine Motor	31	1	7	2,52	1,895	1,82 3,21
Arts ¹	28	1	7	2,32	1,827	1,61 3,03
Music and Movement	31	1	4	2,16	,779	1,87 2,45
Blocks	31	1	7	1,97	1,741	1,33 2,61
Dramatic Play	31	1	6	2,42	1,728	1,79 3,05
Nature/Science	31	1	7	2,16	1,485	1,62 2,71
Math/number	31	1	6	1,71	1,395	1,20 2,22
Appropriate use of technology ²	13	1	7	4,23	2,976	2,43 6,03
Promoting acceptance of diversity	31	1	2	1,29	,461	1,12 1,46
Gross motor	31	1	7	5,16	2,162	4,37 5,95

Source: own elaboration

If each item is analyzed, it can be observed that the minimum level is only reached in two items, “Appropriate use of technology” ($\bar{X}=4.23$) and “Gross Motor”, the latter being the one in which a qualifying level is reached as good and the maximum score in this subscale ($\bar{X}=5.16$). In most of the centres observed there is no use of technology in the classroom, finding in almost all of the classrooms an exclusive use of a music player to play some children’s songs. Likewise, most centers have an outdoor space in which children spend at least 30 minutes, and both outside and inside there is material that stimulates a variety of skills - crawling, walking, running, climbing, jumping, etc. typical of gross motor

⁽¹⁾ In this case N is less than 31 since, as indicated in the scale, “if all of the group are under 18 months of age and no artistic activities are observed” will be qualified as NA, without taking into account this item in the general computation

⁽²⁾ In this case N is less than 31 since, as indicated in the scale, “if technology is not observed, rate NA to this item”. In this case, it is not also taken into account for the general count.

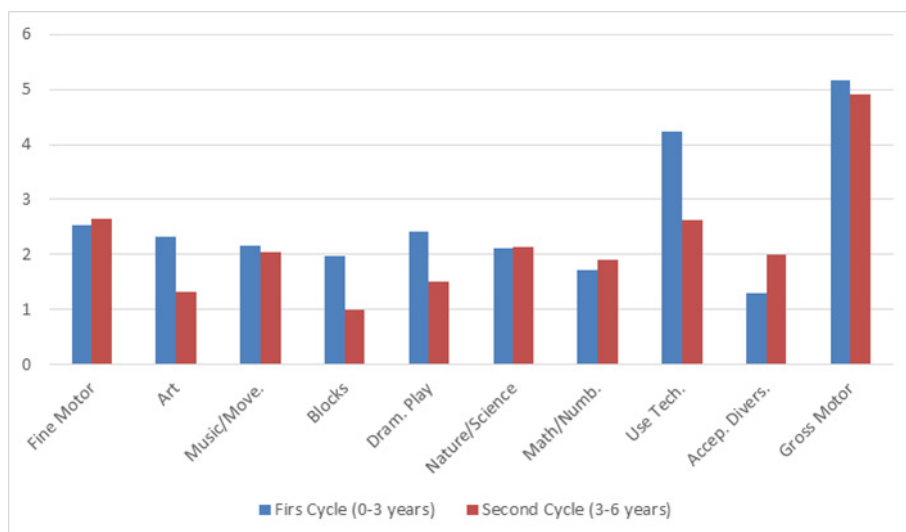
skills-, such as rockers, mini motorbikes, slides and tricycles, being the most frequent materials.

On the contrary, the worst results with a score of less than 2 have been obtained in “Promoting acceptance of diversity” ($\bar{X}= 1.29$), “Math/ numbers” ($\bar{X}= 1.71$) and “Blocks” ($\bar{X}= 1,97$). If we focus on the first item, it is remarkable that the maximum score obtained is 2 points. Mainly, no material representing diversity, race, culture, age, skill and/or non-traditional gender roles has been observed in the classrooms analysed. The only thing observed in any classroom is one or two black dolls. Regarding Mathematics, we have not found in most of the classrooms observed appropriate accessible materials for mathematics and numbers, nor have teachers used age-appropriate mathematical language ones (describe the sequences of an event, show the fingers when counted, compar3 figures, sizes and shapes...).

Analysing the item “Blocks”, there are not specific centres of interest, nor this material to be at children’s disposal in practically all the classrooms of the sample.

Finally, a comparison is presented (Figure II) with the results obtained in the subscale Activities in the first and second cycles of ECE, comparing the results of this work and the results of Morales Murillo et al. (2020). This comparative analysis has allowed us to observe how the data regarding the first cycle observed in our study are coincident with those obtained by Morales Murillo et al. (2020). This aspect will be discussed in more detail in the results discussion.

FIGURE II. Score in the subscale Activities First and Second Cycle



Source: own elaboration from the results of this research for the first cycle and Morales-Murillo, Grau-Sevilla, William and García-Grau (2020) for the second cycle

Discussion

After the application of ITERS-3, it is verified that the lowest score is obtained in the subscale “Activities” ($X=2,59$). These data are consistent with those provided in the previous study of Larrea et al. (2010) in classrooms with children between 0 and 3 years old, in which this tool was applied. In this case, Activities was also the lowest ranked subscale, with the average ($X=2,56$), which is distant from the desirable level.

The results obtained in the item “Promoting acceptance of diversity” are in line with the data provided by Barreto, Madrona and López (2017), in a study conducted with teachers and students of the Degree in Early Childhood Education in Spain, showing that training in intercultural competence is deficient, with little knowledge of interculturality. This contrasts with the reality in which we live, given that, if we take into account the data published by the INE (2020), the Spanish population increases thanks to the foreign population, which accounts for more than

10% of the total population. Outside the family environment, the classroom is the first place where the person begins to build his representation of the world, so it would be necessary to work to normalize diversity from this cycle.

Such low scores obtained in Math/Numbers contrast with evidence showing the importance of starting to learn mathematical concepts at an early age. The relationship between the learning of mathematics in ECE and the performance in mathematics at the end of Primary Education has been widely studied (Clements, 2001; Espinoza, Reyes y Rivas, 2019; Watts, Duncan, Clements y Sarama, 2018).

The score in the Blocks item also clashes with the evidence that the game through building blocks has benefits in different aspects, fundamentally mathematical, especially in the learning of spatial geometry, such as the composition and decomposition of geometric forms (Castro, Barrero and González, 2011) and that stimulate creativity by being unstructured materials, without a predefined purpose (Román and Cardemil, 2014).

Finally, it should be noted that these data, which show a score in which the minimum level is not reached in the subscale “Activities” observed in the first cycle of Early Childhood Education, coincide with those provided by Morales-Murillo et al. (2020) in a study of students of second cycle-students, also carried out in Spain in a sample of 22 centers (Figure II). In this case, the mean of the scores obtained in the area of Activities is also below the minimum or, although slightly lower than the average score achieved in this research ($\bar{X}=1,97$).

If we take the available data from the “Activities” subscale of other countries, we can see that, for example, in Scotland (Bradshaw, Hinchliffe & Scholes, 2020), as in Spain, it stands out as an area where many classrooms have achieved a minimum performance, with only 6% of classrooms with a score of 5 or more. On the contrary, in countries such as Norway (Kaarby & Tandberg, 2018) the results in “Activities” are higher ($\bar{X}= 3,51$), obtaining only a score below the minimum in three items: Blocks ($\bar{X}= 2,00$), Music and movement ($\bar{X}= 2,37$) and Arts ($\bar{X}= 2,91$).

While we do not stop at the Language and Books subscale after observing that the average score in that subscale is very close to those of the remaining four subscales, we would like to highlight the score obtained in the item concerning “Encouraging children’s use books” ($\bar{X}= 2,77$) because it is the only reagent in this subscale that does not reach

the minimum score. In most of the classrooms observed, there was no classroom library or accessible space for children, in which they had a variety of stories at their fingertips. This low result does not match the importance of promoting reading from an early age, as set out in the LOMLOE, article 8.5 of which speaks of “(...) encourage a first approach to reading (...)”.

The health crisis experienced during the information collection process could undermine the internal validity of the investigation, however, the data in this study is in line with data from previous research, as those carried out before the pandemic in Spain in the second cycle (Morales-Murillo, 2020) or in Scotland (Bradshaw, Hinchliffe & Scholes, 2020) both in the score of the subscale “Activities” and in the total score.

Conclusions

Improving the quality of Early Childhood Education brings countless benefits for the development and well-being of every child, as well as for society. And one of the pillars that sustain it is the professional competence of its teachers, developed not only through experience and modeling, but also through initial and permanent theoretical-practical training. In the performance of teaching, one of the essential aspects to work with children from 0 to 6 years old, is to apply the principles of well-being, activity and integral development and, accordingly, the appropriate selection of teaching and learning activities.

The score obtained in the “Activities” subscale of the *ITERS-3* tool is the lowest of all the evaluated, not reaching even the minimum level in 8 of the 10 proposed items; in the same way, it highlights that in the subscale “Language and Books” the minimum level is not reached in 1 of the 6 items. If we take as a starting point the modules of didactic-disciplinary training of the Degree in Early Childhood Education (Table I) and relate it to the items presented here: Arts, Music, Nature and Mathematics and Motivation towards the use of books, we find that in the scores obtained do not reach the minimum.

The results obtained in this study on the activities and disposition of educational resources and elements in classrooms of the first cycle of Early Childhood Education, which confirm the results obtained in the study applied in the second cycle by Morales-Murillo et al. (2020), contribute to

highlight the need for the competent educational administrations and the Faculties of Education to begin to rethink and update the professional development of teachers at this stage. In the case of initial training, it should be done with university training proposals leading to the degree of Graduate in Early Childhood Education. Not only the disciplinary programs, but the model of training practices and their relationship with the referents for the professional insertion of the early childhood teachers. It is necessary to offer sufficient tools to the next promotions of teachers and to equip them with the necessary competences to achieve a quality Child Education, without forgetting that in-service teachers need an adequate lifelong training. No generation of children should be educationally left behind, and this requires training and caring more and better for teachers who do so much and can make it happen.

Based on the interest of the results shown by this study, and despite the difficulty of obtaining representative samples from centres and classrooms in studies of this nature, it would be of great interest to continue working in order to be able to expand the sample and carry out a detailed analysis of the differences in the subscale “Activities” according to the contextualized variables associated: teaching qualification, age of children and type of centre, among others.

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