



# The promotion of self-regulation of children's behaviour, an unresolved issue in initial teacher education in Catalonia (Spain)

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## ABSTRACT

The growing concern in classrooms over the increase in disruptive behaviour and its management poses the need to investigate the teaching competences that can help teachers to promote self-regulation of behaviour (SRB) among children. This requires an inclusive approach that understands behaviour in a holistic way, taking into account the whole context. Therefore, different competences need to be activated that together enable teachers to promote children's SRB. This article identifies which specific competences of 923 teaching plans of the five public Catalan universities would contribute to preparing student teachers to foster children's SRB. The perceptions of 929 final-year student teachers on the training they had received were collected using a questionnaire. The most present competences in the teaching plans are pedagogical, inclusive, teacher reflection and collaboration. Among the least present are communication and classroom management, although they are the most essential for promoting children's SRB. Participants reported that the contribution of university subjects to promoting children's SRB is scarce and is largely limited to external regulation strategies instead of supporting children's SRB. In terms of behaviour management as a fundamental and incipient aspect of fostering children's SRB, student teachers do not feel that they even have the key competences for managing behaviour in the classroom, although there are differences between universities and degrees. The active role of student teachers in children's SRB should be enhanced during initial teacher education, even in the attention to diversity specialisation and in the dual system programme. There is an urgent need for universities to equip student teachers with competences to promote children's SRB. The competence profile should be clarified and unified, so that this set of competences can be worked on in a complementary, cross-curricular and practical way in different subjects, regardless of teaching specialisation.

## 1. Introduction

Inclusive education has raised new concerns and situations that schools need to address, including behavioural problems in the classroom, which are increasingly present according to the TALIS report (OECD, 2019) and are also receiving special attention from the scientific community (e.g., Alter & Haydon, 2017; Armstrong, 2019; Paramita et al., 2020). The presence of behaviours such as fights, arguments and tantrums and their impact on student and group well-being are of particular concern, as they are in turn linked to

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phenomena such as low school engagement, low academic achievement or dropout (Bulotsky-Shearer & Fantuzzo, 2011; Duncan & Magnuson, 2011; Zachrisson et al., 2013). Moreover, these situations have a higher incidence in the context of poverty, thus increasing the possibility of reproducing social inequalities (Graziano & Hart, 2016; Gunzenhauser & von Suchodoletz, 2015; Ursache et al., 2012). Furthermore, there are numerous studies that have focused on how reducing behavioural problems in schools has a particular impact on improving academic performance (Durlak et al., 2011; Sklad et al., 2012; Weare & Nind, 2011; Wigelsworth et al., 2016). Therefore, it is necessary to consider the role of the teacher in the achievement of children's Self-Regulation of Behaviour (SRB) and it seems especially relevant to focus on the different competences that teachers need to manage such situations and thus guarantee a quality and equitable education for all students within mainstream schools. These competences need to be understood holistically within the framework of teacher competences (Caena, 2014; Caena, 2011; TKCOM, 2018).

### 1.1. Promoting children's self-regulation of behaviour

Behaviour refers to the manifestations of people, which show their personality and their way of acting in interpersonal relationships, being a consistent psychological state in different contexts and stable over time (Bolea & Gallardo, 2012). This highlights the need for regulation. Regulation is the adaptation of psychological mechanisms and resources to the circumstances children encounter, and for a specific purpose (Bolea & Gallardo, 2012). These mechanisms are acquired in interaction; therefore, they involve a process of learning models of social behaviour (Pantoja, 1986). To promote internalisation, from interpsychological to intrapsychological level (Vigotsky, 2006), external regulation is necessary, in addition to providing quality learning contexts in emotionally supportive environments (Broekhuizen et al., 2017; Moritz et al., 2016; Schindler et al., 2015). The scaffolding process explains how teachers can explicitly model, prompt and provide hinting help to transfer responsibility to pupils so that they can use strategies independently (Radford et al. 2015; Vigotsky, 2006; Wood et al., 1976). In this regard, teachers should scaffold children's social and emotional learning understood as the process through which children develop the skills, knowledge, and attitudes necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions (CASEL, 2020).

Fostering children's SRB requires a holistic, comprehensive, and interdisciplinary approach that provides a multi-faceted look towards school organisation, classroom management processes, teaching strategies, etc. and equips student teachers with the necessary competences to deal with diversity (European Commission, 2017). Therefore, competences beyond classroom management—a construct that includes behaviour management (e.g., Dicke et al., 2015; Hickey et al., 2017; Tschannen-Moran & Hoy, 2001)—are needed to promote children's SRB. Other competences involved are collaborative and communicative, as it is necessary to coordinate practices across key settings, both within and outside the school context (Ball et al., 2016; Bhroin & King, 2020; CASEL, 2020; Puigdemívol et al., 2017; Tuluhan & Yalcinkaya, 2018). In this regard, the meta-analysis by Schindler et al. (2015) determined that the success of these socio-emotional programmes aimed at working on these competences to help children's SRB lies not only in training children in social skills, but also in providing training for teachers and families in behaviour management. In turn, Ainscow and Sandill (2010) have already pointed out that collaborative competence in decision-making and problem-solving processes was central to the development of inclusive education for all.

Additionally, inclusive competence contributes to creating equitable and culturally responsive environments, being sensitive to diversity in the classroom, and promoting children's inclusive SRB strategies, among other things (Kuyini et al., 2016; Larson et al., 2018; Salend, 2010; Symeonidou, 2017). Pedagogical competence is also linked to the promotion of children's SRB, as engaging and high-quality learning opportunities prevent off-task behaviour (Jardí et al., 2021). To develop these, teachers need to have professional, curricular and planning knowledge and skills (CEC, 2020; Das et al., 2013). Indeed, learning is often associated with on-task behaviour and children's and prosocial skills (Godwin et al., 2021; Wiedermann et al., 2020). This comprehensive approach to education and children also requires teachers to engage in reflective practice and continuous improvement, an essential competence for analysing patterns of challenging behaviours and for selecting and improving SRB strategies (Jardí et al., 2021; Hayes & Stringer 2016; Walker & Snell 2017). Other research and standards on diversity-sensitive teaching competences also consider evaluative competence as a key competence (CEC, 2020; Conderman, 2013; Das et al., 2013, Kuyini, 2016). In summary, the literature shows that the interlocking of different types of competences is necessary for teachers to be able to promote SRB in their students.

### 1.2. The learning needs of teachers to promote self-regulation of behaviour

Taking into consideration teacher training in behaviour regulation, various studies show that teachers feel that they do not have enough tools to respond to the demands of their students in this matter (Amornpaisarnloet & Arthur-Kelly, 2023; Cejudo & López-Delgado, 2017; Suberviola-Ovejás, 2011; Zinsler et al., 2016). Sugai and Horner (2006) point out precisely that this lack of training means that teachers' response to disruptive student behaviour is more rigid, reactive and with a tendency to impose punitive measures, which tend to make the situation worse. It is precisely this type of teacher intervention that increases the most aggressive behaviour of students (Webster-Stratton et al., 2008).

Despite the number of existing publications on behaviour management, there is not much research on the impact of initial teacher education on this topic and, specifically, on promoting children's SRB. The research reviewed deals with the way in which student teachers develop their self-regulation competences from a self-knowledge point of view. However, little is explored about how teaching processes in the initial training of teachers contributes to developing such competences, namely the type of support they must generate to help their students to self-regulate behaviour (Castillo et al., 2013; Gallego et al., 2016; Palomera et al., 2017; Pérez-Escoda et al., 2013). Other studies have delved deeper into the identification of emotional competences in teacher education,

observing that Spanish study plans focus little on the development of these competences (López-Goñi & Goñi, 2012). A field that remains to be analysed is how future teachers are prepared to manage diverse and complex classroom scenarios, especially when behavioural problems crop up. Therefore, it seems appropriate to investigate how the competences most associated with providing effective support to student teachers in promoting children's SRB are represented in initial teacher education, as suggested by various studies in this line (Buettner et al., 2016; Cejudo & López-Delgado, 2017; Jones et al., 2018; McLaughlin et al., 2017).

### 1.3. Training designs from a competence-based approach

In the context of the knowledge society and in a world undergoing rapid and increasing change, competence-based curriculum design seems more than justified. While there seems to be agreement on the desirability of developing competences, there are different stances on how to conceptualise this term. For the purposes of this paper, *competence* is understood as: "a complex combination of knowledge, skills, understanding, values, attitudes and desire which lead to effective, embodied human action in the world, in a particular domain" (Deakin Crick, 2008, p. 313). Competence is therefore distinguished from skill, which is defined as "the ability to perform complex acts with ease, precision and adaptability" (Caena, 2014, p. 9).

Applied to the teaching profession, competence would involve the implementation of different resources (to know, to know how, to know how to be) in order to be able to solve complex teaching situations in various contexts. This implies not only competence in the classroom (teaching competences) but also a holistic vision, linked to the school, the local community, professional networks or the educational system (teacher competences) (Caena, 2011). The teacher is perceived as a reflective practitioner, as a professional who innovates, who is capable of working in a team and taking care of his or her own professional development (Pérez Gómez, 2019).

Therefore, teaching competences—composed of knowledge and understanding, skills and dispositions (beliefs, attitudes, values and commitment) (Caena, 2014)—need to be integrated in order to have the ability to handle complexity, unpredictability and change (OECD, 2019). This requires overcoming a fragmented vision of the disciplines and the "puzzle" vision of training (OECD, 2016) to propose training designs where student teachers learn to solve situations and respond to the demands of a specific and determined context, mobilising their resources—cognitive, functional, personal and attitudinal—as required (Álvarez et al., 2008; Tejada & Ruiz, 2016).

### 1.4. Competence-based approach in the university context: the case of teacher training in Catalonia

The structure of university education promoted by the European Higher Education Area provides initial training preparation for activities of a professional nature (Spain, 2007d), which is the entry point to the career. Such training must encourage cognitive change that leads to a corresponding impact on their future teaching practice and student learning (Bhroin & King, 2020). The Catalan education system is the reference in initial teacher training. It has a clear commitment to inclusion (Catalonia, 2017). To foster inclusive education, various authors argue that training should be characterised by being transversal, assisting student teachers with positive experiences, being contextualised (Symeonidou, 2017), promoting active and research-based learning, and that it is collaborative and professionally relevant learning (Salend, 2010). In fact, evidence suggests that the training that has the most significant impact on teaching practice and student learning is that which balances curriculum-specific knowledge with the most effective teaching strategies (Bhroin & King, 2020).

In the context of this study, all student teachers receive general and basic training for the teaching profession, and it is not until the final year of the degree that they specialise in a specific field (e.g., attention to diversity, foreign languages, music, etc.). Following the principle of university autonomy (Spain, 2007c), as well as the Decree-Laws that establish the requirements for the verification of university degrees to exercise the profession of Primary Education Teacher (6-12 years) (Spain, 2007b) and Early Childhood Education (0-6 years) (Spain, 2007a), the competences that future teachers must develop, both basic and specific, are defined by each university, always ensuring that upon completion of the degree, student teachers have achieved the minimum competences and knowledge to develop their profession and to continue lifelong learning. In the case of Catalonia, these degrees are subsequently evaluated and accredited by the Catalan Agency for the Quality of the University System (AQU).

Although all Catalan public universities work to develop the basic competences of student teachers, previous research seems to show that there are some for which initial education does not help to prepare them sufficiently (AQU, 2015; Freixa, 2017). In fact, in the study by Piesanen and Välijärvi (2010), it is found that the most promoted teaching competences at European level are those most closely linked to the knowledge of the subject and pedagogical ones, while the competences most focused on leadership and mobility are less present. In this regard, the study by Freixa (2017) shows that although newly qualified teachers consider that the competences of classroom management, conflict management, detection of difficulties or the ability to learn and act are very important for a teacher, they perceive that they do not have these competences sufficiently developed.

On balance, the evidence seems to indicate that initial teacher education is not offering enough learning experiences related to fostering children's SRB, leading to a perception among newly graduated teachers that they are not able to confront a variety of issues in different contexts (AQU, 2015). As previously mentioned, preparing student teachers to promote children's SRB requires a holistic, comprehensive, and interdisciplinary approach (European Commission, 2017). To this end, we take as reference the most common key competences identified in European teacher competence frameworks (Caena, 2014; Caena, 2011; TKCOM, 2018).

Considering the conceptual framework, the objectives of this study are (1) to identify what specific competences that help regulate behaviour are incorporated into the teaching plans for the training of teachers in Early Childhood Education, Primary Education and the Double Degree in Early Childhood and Primary Education at Catalan universities; and (2) to identify the perception of student teachers regarding the training received for the development of these competences according to their learning pathways.

## 2. Methods

A review of the teaching plans of the teaching degrees of the five Catalan public universities is carried out and contrasted with the perceptions of final-year student teachers collected through a questionnaire.

### 2.1. Participants

The analysis of teaching plans included the five public universities in Catalonia that offer teaching studies (Degree in Early Childhood Education, Primary Education and a double degree with both qualifications). Two of them are in the metropolitan area of Barcelona while the rest are in the other provincial capitals (Tarragona, Lleida, and Girona). The subjects are organised in four years for the Early Childhood and Primary Education degrees and in five years for the double degree. All universities have core subjects (taken by all student teachers) and electives (free choice). The total number of subjects per degree programme in the 2019-20 academic year ranged from 36 to 90 subjects ( $M = 61.53$ ,  $SD = 17.76$ ).

For the study of the perception of final-year student teachers, four of the five universities agreed to administer the questionnaire. All final-year student teachers at these four universities were invited to participate (cluster sampling stratified by university and degree). The number of student teachers needed was 304 ( $N = 1448$ ; assuming maximum heterogeneity, a 95 % confidence interval and a margin of error of 5 %). Of the 1041 student teachers who participated, those with more than 20 % of incomplete data were eliminated and the missing results were imputed (Schlomer et al., 2010). A final sample of 929 student teachers—University 1,  $n = 436$ ; University 3,  $n = 212$ ; University 4,  $n = 105$ ; University 5,  $n = 176$ ); 83.42 % female; aged between 20 and 59 years ( $M = 23.20$ ,  $DT = 3.39$ )—was obtained. A total of 31.53 % student teachers were enrolled in early childhood education, 62.76 % in primary education and 5.71 % in a double degree. Table S1 in the supplementary material compares the sample obtained with the distribution of enrolled student teachers per degree and university. A total of 27.8 % ( $n = 258$ ) of these final-year student teachers were enrolled in the specialisation of attention to diversity (to become special education teachers). In addition, 23 student teachers were enrolled in the dual system programme at University 5.

### 2.2. Instruments and procedure

For the study of the teaching plans, an analysis guideline based on reviews of European teacher competence frameworks (e.g., Caena, 2014; Caena, 2011; TKCOM, 2018) was drawn up with the aim of comparing the competences defined for each degree (early childhood education, primary education, and double degree) in each of the five universities on the basis of the same competence framework. This framework included eight competences: pedagogical competence, classroom management competence, assessment competence, reflective practice competence, inclusion competence, collaborative competence, communicative competence and digital competence. Table S2 of the supplementary material defines each competence used as a category for this analysis.

The guide made it possible to classify the core and specific competences defined by each of the degrees and universities analysed, excluding transversal competences. Once classified, those competences most closely linked to fostering children's SRB were identified. The interrater agreement of this classification and identification of competences was examined using Cohen's Kappa Statistic obtaining excellent agreement ( $K = 0.881$ ). Disagreements were discussed until consensus was reached. Through this analysis, it was possible to count the number and type of subjects that include competences that can facilitate the promotion of children's SRB of all the teaching plans of the teaching degrees of the five universities ( $n = 923$ ).

A questionnaire was applied using Qualtrics software. The questionnaire was prepared ad hoc based on the guidelines proposed by Muñiz and Fonseca-Pedrero (2019). The questionnaire consisted of 18 close-ended questions (6 Likert scales with 4 response options and one 11-point Likert scale) and 5 open-ended questions organized into four blocks: a) demographic data, b) attributions regarding SRB, c) training to foster children's SRB, and d) self-efficacy for behaviour management. The validation process consisted of three strategies: a focus-group discussion (Krueger & Casey, 2008) with final-year student teachers ( $n = 6$ , 50 % female, ranging from 21 to 28 years old,  $M = 23.33$ ,  $SD = 3.01$ ); a pilot test with experienced teachers ( $n = 8$ , 100 % female, ranging from 39 to 64 years old,  $M = 51.89$ ,  $SD = 9.34$ ); and a short Delphi study (Couper, 1984) with international experts on the subject matter ( $n = 5$ , 80 % female, ranging from 41 to 59 years old,  $M = 50.30$ ,  $SD = 9.36$ ). Both technical aspects (e.g., length, clarity of instructions, etc.) and content were well evaluated (correcting some writing issues). The Delphi study yielded means of representativeness and relevance between 6.75 and 10 points for all the items ( $M = 9.76$ ,  $SD = 0.50$ ), but those that obtained lower scores were reconsidered, eliminating some repetitive items. The level of agreement among the experts ranged from moderate ( $K = .48$ ) to excellent ( $K = 1.00$ ).

In addition, internal structure (6 factors structure,  $CFI = .90$ ,  $TLI = .91$ ,  $RMSEA = .03$ ), reliability (Cronbach's alphas from .62 to .92) and validity of the instrument (assessing the correlation between the various scores, obtaining coefficients between .02 and .81; and the training received, obtaining coefficients between .05 and .57) were analysed with the full sample. For the present study, four questions are considered: three open-ended questions (i.e. "In which of all the subjects of the degree have you worked on skills to manage students' behaviour?", "What is the contribution of these subjects to enable you to promote self-regulation of behaviour in the future?" and "Are there any aspects that you would like to comment on in relation to the training you have received in self-regulation of your future students' behaviour that you have not been able to share during the survey?") and the 11-point Likert scale question belonging to block c of the questionnaire ("Rate from 0 to 10 the competences you think you have acquired thanks to this degree to manage the behaviour of your future students").

The ethical recommendations for research described by the European Commission (2013a) and our intuition's Code of good research practices (based on the principles of honesty, responsibility, trustworthiness, rigour, respect, and independence) (Universitat

**Table 1**

Presence of competences in the teaching plans according to university and degree.

University	Degree	Percentage (presence in core subjects/total subjects)								<i>M</i>	<i>SD</i>
		Pedagogical	Classroom management	Assessment	Reflective practice	Inclusion	Collaborative	Communicative	Digital		
1	PE <sup>a</sup>	93.90	0	32.93	31.71	53.66	46.34	0	0	32.32	32.9
	ECE <sup>b</sup>	61.76	23.53	16.18	45.59	51.47	61.76	30.88	0	36.4	22.45
	P+EC <sup>c</sup>	90.32	8.06	30.65	48.39	56.45	58.06	16.13	0	38.51	30.38
2	PE	21.43	65.48	39.29	61.90	58.33	66.67	3.57	16.67	41.67	24.99
	ECE	55.358	48.21	19.64	62.5	64.29	66.07	5.36	0	40.18	27.5
	P+EC	54.55	61.82	36.36	72.73	67.27	67.27	10.91	30.91	50.23	21.88
3	PE	51.06	14.89	0	48.94	17.02	10.64	63.83	0	25.80	25.01
	ECE	64.86	18.92	0	72.97	37.84	70.27	62.16	0	40.88	31.07
	P+EC	61.11	30.56	0	63.89	38.89	41.67	66.67	0	37.85	26.68
4	PE	88.46	66.67	0	16.67	78.21	28.21	0	0	34.78	37.39
	ECE	75.64	70.51	20.51	29.49	85.89	10.25	0	0	36.54	35.43
	P+EC	88.89	71.11	10	23.33	83.33	25.56	0	0	37.78	37.38
5	PE	68.09	8.51	0	48.94	19.15	25.53	12.76	0	22.87	24.20
	ECE	48.843	27.91	0	48.84	6.98	30.23	9.30	0	21.51	20.34
	P+EC	58.33	13.33	0	50	15	28.33	11.67	0	22.08	21.85
	<i>M</i>	65.51	35.30	13.70	48.39	48.92	42.46	19.55	3.17		
	<i>SD</i>	19.54	25.88	15.21	17.11	25.63	21.28	24.51	8.79		

<sup>a</sup> PE: Primary Education degree.<sup>b</sup> ECE: Early Childhood Education degree.<sup>c</sup> P+EC: Early Childhood and Primary Education degrees.



de Barcelona, 2010) have been considered. First, an email explaining the objectives of the project was sent to the coordinator of each degree of the five Catalan public universities. The voluntary nature of participation, the right to withdraw the consent, the anonymity of the data, the exclusive use of the information for research, and the commitment to share the published results was also emphasised. Four universities agreed to participate and facilitated the in-person administration of the questionnaire. Subsequently, the research team contacted the teachers to reach all the final-year student teachers, in order to agree on the timing of the questionnaire. The objectives of the study and the conditions of their collaboration were explained to the student teachers. The first page of the questionnaire introduced the consent form. The student teachers could answer the questionnaire by computer, tablet, or mobile phone. The mean time to complete the questionnaire was 31.80 minutes ( $SD = 28.89$  and range = 3.2 - 86.5 minutes).

### 2.3. Data analysis

The exploration of the teaching plans was carried out based on the validated analysis guideline that identifies, unifies and classifies the competences that contribute to fostering children's SRB (see procedures). Specifically, all the teaching plans for each degree programme were downloaded and the number of subjects mentioning a specific competence was counted for each degree programme at each university. From the absolute values, the relative frequency with which each of the competences appeared in the whole of a degree was calculated. To analyse possible differences between degrees (early childhood education, primary education and double degree) and the five universities, various Kruskal-Wallis tests were undertaken with the support of SPSS 27 software. If the comparisons were significant, pairwise comparisons were analysed with the Bonferroni correction, to identify the significant differences between degrees, universities or competences.

On the other hand, given the non-normal distribution of the data from the questionnaire, non-parametric tests were conducted, and the medians were presented. It was analysed whether there were significant differences between the perceptions of student teachers from different degrees (early childhood education, primary education, and double degree) and the five universities performing various Kruskal-Wallis tests. In the case that the Kruskal-Wallis test showed significant differences, a pairwise comparison was made and Bonferroni correction was applied. The Mann-Whitney test was used to analyse if there were significant differences between those who specialised in attention to diversity and those who did not. Differences between the student teachers enrolled in the primary education dual system programme and those enrolled in the regular primary education programme at University 5 were also analysed with the Mann-Whitney test.

Finally, for the open-ended questions, a thematic-content analysis was undertaken. The subjects that student teachers highlight as having contributed to the development of their behavioural management skills were deductively categorised according to the following fields: attention to diversity and psychology, school and community, school organisation, specific didactics and others (e.g., external placements). The inductive categories that comprise the contribution of these subjects are the following: behavioural self-regulation strategies, classroom management strategies, teacher self-regulation, teamwork, knowledge of learners and/or their context, type of contribution (theoretical knowledge or practical experience) and degree of contribution (e.g., no contribution or little work). Finally, all final comments were related to a lack of training and were inductively categorised according to training content (e.g., self-regulation of behaviour, classroom management, etc.). All categories were discussed until a consensus was reached on each set of coded text, ensuring its validity.

## 3. Results

This section is organised into two parts; the first one presenting the results of the analysis of teaching plans, and the second, the views of student teachers on the training received.

### 3.1. The competences to foster children's SRB in the teaching plans

The analysis of the teaching plans for all subjects shows that the most represented competence that can contribute to preparing student teachers to promote children's SRB in all universities is pedagogical (65.51 %), followed by inclusive (48.92 %), reflective teaching (48.39 %) and collaboration (42.46 %) (see Table 1). The competences related to fostering SRB among children that are less represented in the study plans are digital (8.79 %), assessment (15.21 %), communication (24.51 %) and classroom management (25.88 %).

The study examined whether there are significant differences regarding the presence of competences related to fostering children's SRB between the different degrees (primary, early childhood and the double degree) and the university. The Kruskal-Wallis test reveals that there are no significant differences regarding degrees. However, statistically significant differences are found between universities in pedagogical competence ( $H(4) = 9.5, p = 0.05, r = 0.68$ ), classroom management ( $H(4) = 11.63, p = 0.02, r = 0.83$ ), assessment ( $H(4) = 11.37, p = 0.023, r = 0.81$ ), reflection ( $H(4) = 12.23, p = 0.016, r = 0.87$ ), inclusive ( $H(4) = 13.23, p = 0.01, r = 0.94$ ) and communication ( $H(4) = 10.65, p = 0.031, r = 0.76$ ). Nonetheless, pairwise comparisons with the significance value adjusted for the number of comparisons by means of the Bonferroni test, show that significant differences are only found for classroom management competence between University 1 and 4 ( $p = 0.035$ ), for reflective competence between 4 and 2 ( $p = 0.046$ ), for inclusive competence between 5 and 4 ( $p = 0.014$ ), and for communicative competence between 4 and 3 ( $p = 0.015$ ).

In terms of these significant differences, University 4 ( $Mdn = 70.51$ ) is the one that is most committed in its teaching plans to including specific classroom management competences that would contribute to preparing student teachers to promote SRB in their future classrooms. The university that contemplates more specific reflective competences in which the promotion of children's SRB can

be worked on is University 2 ( $Mdn = 62.5$ ). As for those included in the inclusive competence, they are more represented in the teaching plans of University 4 ( $Mdn = 83.33$ ). Finally, the teaching plans of University 3 ( $Mdn = 63.83$ ) include significantly more specific communication skills related to promoting children's SRB.

### 3.2. Student teachers' perception of their training to foster children's SRB

The final-year student teachers of the four participating universities (1, 3, 4 and 5) do not feel that they have achieved the minimum level of competences to manage the behaviour of their future students ( $M = 4.71$ ;  $SD = 2$ ). However, the perception of student teachers varies according to the university, since the Kruskal-Wallis test showed that there are significant differences ( $H(3) = 77.34$ ,  $p < .000$ ,  $r = 0.08$ ). Pairwise comparisons with Bonferroni correction showed significant differences between University 5 ( $Mdn = 6$ ) and the others: 1 ( $Mdn = 4$ ;  $p = .000$ ), 3, ( $Mdn = 5$ ;  $p = .000$ ) and 4 ( $Mdn = 5$ ;  $p = .000$ ), with students from University 5 having a higher perception of having acquired these competences.

Despite the fact that the teaching plans of University 5 are not different from those of other universities, it offers a wide variety of degree programmes (e.g., creative management or the dual system) in addition to the specific training according to educational stages that other universities offer. To further analyse these perception differences, we specifically studied the dual system programme of this university. The dual system is of interest for fostering children's SRB since student teachers are tutored at the same time by both university and school tutors, becoming trainees and spending more time within schools. Both tutors support student teachers throughout their entire learning process scaffolding their autonomy and the acquisition of professional and academic skills. Surprisingly, the Mann-Whitney test did not show statistically significant differences between the perception of competence acquisition between the student teachers enrolled in the primary education dual system programme and those enrolled in the regular primary education programme ( $U = 515.5$ ,  $p = .432$ ,  $r = 0.09$ ).

Considering the educational stages, there are also statistically significant differences ( $H(2) = 13.154$ ,  $p = .001$ ,  $r = .014$ ) between the evaluation of the acquisition of competences for the management of student behaviour according to degree programmes of the four universities. The adjustment with Bonferroni correction showed significant differences between Early Childhood ( $Mdn = 5$ ,  $M = 5.01$ ,  $SD = 2.01$ ) and Primary Education degree programmes ( $Mdn = 5$ ,  $M = 4.56$ ,  $SD = 2.01$ ;  $p = .001$ ). The student teachers who best value the acquired competences for behaviour management are those in the Early Childhood degree.

Regarding the training itinerary in terms of specialities, the Mann-Whitney test did not show statistically significant differences between the perception of competence acquisition between student teachers who specialised in attention to diversity and those that did not ( $U = 84749.5$ ,  $p = .617$ ). However, 46.99 % of the subjects identified by the 584 student teachers as helpful for developing behavioural management skills, belong to the field of attention to diversity and psychology. It should be noted that, of these, 26.82 % are elective subjects related to attention to diversity, which means that not all student teachers follow this training. The rest of the subjects mentioned by the student teachers belong to the field of school and community (16.14 %), school organisation (9.19 %), others (7.42 %) and specific didactics (7.3 %).

To go somewhat further, they were asked about the contribution that these subjects had offered to them in terms of encouraging SRB in the classroom. Of the 694 participants who answered this question, 18.73 % reported that the subjects had provided them with strategies to foster children's SRB, although 58.46 % of them did not specify any strategy, dynamic or resource learned. The rest specified that they had learnt different resources to promote children's SRB related to emotional education or relaxation: e.g., knowing dynamics to work on the regulation of emotions (S-113); different techniques such as nemo, traffic lights, emotional awareness (S-306); relaxation techniques (S-309); making students aware of what they feel in order to change it (S-691); the importance of listening to students and seeing what the problem is in order to try to deal with it and facilitating self-regulation (S-678); etc.

Continuing with the contributions of the subjects, 21.18 % specified classroom management strategies that, although they contribute to creating a favourable environment for promoting children's SRB, their implementation does not ensure that students in the classroom self-regulate their behaviour. Among the classroom management strategies highlighted, 52.38 % were aimed at all students, 22.45 % at the specific management of cases of disruptive behaviour, 12.24 % at management and intervention of students with disabilities and/or disorders and 13.6 % referred to the skills or qualities that a teacher should have to manage the classroom (e.g., being empathetic, calm, transmit confidence, having language skills, etc.).

Regarding those aimed at all students, one student teacher points out that "group cohesion is very important, the classroom atmosphere and the links with the reference person" (S-600); other highlights having learnt "mechanisms for planning and classroom management" (S-708), or that the subjects highlighted have given her "tools and strategies to deal with educational situations that may occur in the classroom. In addition, we have broadly seen the diversity of the students present in the classroom and the transversality of the teacher's actions" (S-486). Regarding the management of disruptive behaviour cases, S-244 points out that "they have helped him to learn some possible measures to deal with disruptive behaviour and also a series of resources to which I can have access". Among those who reported learning about intervention with students with disabilities and/or disorders, S-910 specifies that "the subjects were not focused on promoting students' self-regulation. The subject was about learning disorders, so actions to handle these different disorders were offered". Along the same line, S-775 shares that she does not feel very qualified to promote SRB since disorders such as ADHD or ASD have always been prioritised.

Maintaining a specific and restrictive approach to self-regulation, a small group of participants (1.73 %) indicated that in terms of self-regulation they had learned to detect disorders or, at best, warning signs. On the other hand, 4.32 % of the student teachers reported having acquired resources for their own self-regulation as future teachers (e.g., S-759: "We have worked on self-knowledge of our own emotions and their management, so that we can also perceive the emotions of others"). To a lesser extent, they also referred to teamwork with other school professionals, external services and families (3.17 %) or the importance of knowing the students and/or

their context (1.73 %, e.g., S-462: "I have learned the importance of listening to and observing the students, understanding their attitudes, bearing in mind that this does not mean that the student is a bad student because there is no such thing as a bad student").

It is worth noting that 15.8 % of the participants directly remarked that they had not worked much on SRB –e.g., "in Early Childhood Education, little is worked on because we have not been taught that self-regulation is very important and it should not be that way" (S-814) or "we may have been given some strategies, but most of the training comes from our own experience and from courses outside the teaching degree" (S-773). In fact, 4.47 % said that the subjects did not offer them anything in this respect. 12.82 % of the participants explicitly stated that they had received theoretical learning in order to understand concepts or become aware of those not intimately involved in promoting children's SRB –e.g., "know the skills of pupils according to their stage and age" (S-220) or "to understand that each and every one of us is different, but to understand that this difference makes us richer" (S-11). On the contrary, 6.48 % emphasised the practical experience acquired: "I think I would know how to manage some of these situations thanks to the internship experience and for having worked in the field of educational leisure, but in no case due to the training received at the university" (S-711) or "the ones that have given me the most have been the Practicum 1 and 2 subjects. There, I was able to see behavioural problems in different pupils and see how the teacher gave them different self-regulation strategies, how he coordinated with the team, families and external services" (S-429).

In addition, 239 student teachers added a final comment in the space provided to reflect what they had not been able to express through the questionnaire. All the comments related to lack of training, mostly in promoting children's SRB (76.99 %) and lack of more practical training (11.3 %). Other student teachers reported a lack of training in classroom management (2.93 %) and universal support measures (preventive and focused on all students, 2.93 %).

#### 4. Discussion

With regards to the first objective, the results show that the most widely represented competence that can contribute to preparing student teachers to promote children's SRB in the set of five Catalan public universities is pedagogical competence, which is included in the teaching plans of 65.51 % of the subjects, on average, reaching 93.9 % of the subjects in the primary school degree at University 1. This first approximation coincides with that provided by the study by [Piesanen and Välijärvi \(2010\)](#) at the European level, where they show that initial teacher education at the European level largely promotes knowledge of the subject and pedagogical competences.

Pedagogical competence is followed by inclusive competence, teacher reflection and collaboration. It is encouraging, therefore, to see that these competences are among the most represented in the study plans analysed, as they are linked to better management of classrooms with diversity ([Ainscow & Sandill, 2010](#); [Bhroin & King, 2020](#); [Salend, 2010](#); [Symeonidou, 2017](#)). Despite this, our study also indicates that, among the competences that are less represented in the study plans of Catalan public universities, and which are essential to fostering children's SRB, are communication and classroom management ([Bhroin & King, 2020](#); [Durlak et al., 2011](#); [Symeonidou, 2017](#)). In this sense, the under-representation of the classroom management competence is one of the most alarming results in terms of teacher education to promote SRB for their future students. According to the literature ([Buettner et al., 2016](#); [Cejudo & López-Delgado, 2017](#); [Jones et al., 2018](#); [McLaughlin et al., 2017](#); [OECD, 2019](#)), teachers must know how to manage the classroom and what happens in it in order to generate safe spaces where it is easier to control the most conflictive situations and encourage children's SRB. Furthermore, these results coincide with the results reported by [Freixa \(2017\)](#), in which Catalan novice teachers point out the importance of competences such as classroom management and conflict management, among others, and in turn, the lack of preparation they feel regarding these competences after leaving teacher training. It therefore seems necessary to point out the need to strengthen classroom management competences, both in *ad hoc* subjects and in an interdisciplinary way throughout the study plan.

The results also highlight the fact that the use of ICT as a tool to support children's SRB is poorly exploited, when it has really great potential to enhance students' learning ([OECD, 2019](#)). However, the results of the present study reflect a greater display of specific competences that are strongly linked to the teaching of specific disciplinary content, relegating to second place those more transversal competences such as communicative competence or classroom management, which are related to fostering SRB among children. Moreover, the bulk of the specific competences analysed suggest that universities tend to prepare future teachers more in knowledge than abilities and attitudes; all three aspects being essential components of becoming competent ([Caena, 2014](#)). For practical purposes, this could mean that, for example, the subjects in the field of languages teach how to convey content, how to 'teach', without addressing the more interactive aspects of language (e.g., looks, signals, gestures) that emanate from the skills and attitudes of the identified competences, and which are key to favouring SRB among children ([Jardí et al., 2021](#)). However, the mere presence of competences likely to favour SRB does not mean that they are effectively worked on in university classrooms. This fact is supported by the voices of student teachers who feel unprepared to manage children's behaviour and the few student teachers who reported learning anything related to fostering children's SRB at university.

Furthermore, this analysis reflects the tendency to draw up competences as objectives, in contrast to the line of competence adopted by the EU ([European Commission, 2013b](#)). This result also indicates a lack of knowledge or management in relation to the approach to competences in initial teacher education and affects not only the conceptualisation of competences but also the way in which they are worked on throughout the study plan. Overcoming these barriers and adopting a more holistic approach without this clear disciplinary fragmentation would call for certain requirements to be met in teaching plans: a reduced number of competences, a wording of each competence that is as clear as possible and an integration of both specific and transversal competences in various training units or proposals ([Cano, 2018](#)). On the other hand, one of the characteristics of competences is that they are developed throughout life and, therefore, one never becomes fully competent ([Cano, 2015](#)). Hence, it is essential that they are clearly defined and worked on continuously in initial teacher education, in teacher induction and lifelong teacher training.



In this respect, another conclusion drawn from the results obtained has to do with the diversity of training approaches proposed by the different Catalan public universities. There is evidence of a

There is a clear lack of consensus on the competences of student teachers that are essential to foster children's SRB, which leads to the shaping of different profiles of teachers in the same context. On the other hand, the disparity both in teaching plans and in student teachers' perceptions depending on the universities where they study, shows the need for all institutions to unify the teaching profile for those who are expected to undertake their professional duties in increasingly complex and diverse classroom contexts, where behavioural problems are becoming more frequent day by day. Precisely this diversification of teaching plans, and the errors in the way competences are named, have been a limitation when carrying out the analysis, as well as the difficulties in implementing the questionnaire in one of the universities analysed. Inconsistency in initial teacher education is a worldwide problem (e.g., Flower et al., 2017; Oliver & Reschly, 2010; O'Neill & Stephenson, 2012a) that has an impact on teacher preparation.

In relation to the second objective, if we contrast what the analysis of the different teaching plans provides us with the perception of the student teachers, their perceptions sustain and support part of the conclusions that can be drawn from the study of the teaching plans: the participating student teachers consider that, on reaching the last year, they do not achieve the minimum competences they consider essential for managing behaviour, which is in line with similar studies in the Catalan context (Freixa, 2017), and a perception in line with international evidence (O'Neill & Stephenson, 2012b; Sciuchetti & Yssel, 2019).

Even so, our study revealed some differences depending on the universities. Student teachers at University 5 have a better perception of having acquired these competences. This perception does not coincide with the results of the analysis of their teaching plans: the university that includes more competences that can contribute to preparing student teachers to promote children's SRB is not the one in which the student teachers feel significantly more prepared for behaviour management (basic to promote SRB). Despite not being different in terms of competences, University 5 offers different degrees such as the primary education dual system degree or the double degree in primary education and physical education. It is worth noting that the quantity of in-school hours should matter for improving the competences to foster children's SRB. However, our study shows that there are no differences in the perception of having acquired competences to foster children's SRB between the student teachers of the primary education dual system degree –with more hours of immersion and support within the schools– and the student teachers enrolled in the regular primary education degree at the same university. This is particularly relevant since perception of competence, and especially of the competences to manage disruptive behaviours, is usually more linked to practice and personal efforts than to training (Tsouloupas et al., 2014). Therefore, the type of practice within schools, even in the dual system, must be rethought to encourage student teachers to put themselves in the role of teachers, perhaps fully implementing co-teaching practices. Student teachers should be seen as teachers, engaging them in key co-teaching practices such as managing any school situation, participating in decision-making, sharing authority, co-reflection, co-assessment, etc. (Guise et al., 2022; Jardí et al., 2022; Thompson & Schademan, 2019). The provision of time alone would not improve student teachers' perception of competence; what matters is the quality of the time. Nonetheless, these surprising results could be explained by the Dunning-Kruger effect, whereby people with fewer skills tend to overestimate their competence (Kruger & Dunning, 1999).

It is also interesting to note that student teachers from the Early Childhood Education degree are those who best value the competences acquired to foster SRB among children in the classroom compared to those in primary education. However, no significant differences are found in this respect in the teaching plans, so it cannot be directly attributed to these. This difference would lead us to ask what other variables may be influencing student teachers' perceptions of SRB. It is possible that these may be aspects such as the way in which the educational stages of pre-primary and primary education are conceived, prioritising integral education of the student and more global methodologies in Early Childhood Education; the approach to attention to diversity in the different stages; or simply the specific characteristics of the children attended to in these stages.

Regarding the specialisations that can be chosen as a training itinerary in the context of initial teacher education, the results show no differences in the perception of being prepared to facilitate SRB in the classroom between student teachers taking the specialisation in attention to diversity and the rest. However, most of the subjects that student teachers highlight as having received training to promote children's SRB belong to this area. The fact that the student teachers specialising in attention to diversity do not feel significantly more prepared than the rest could also be explained by the Dunning-Kruger effect (Kruger & Dunning, 1999); the student teachers in the specialisation could be more aware of and sensitive to the behavioural situations that emerge in the classroom.

The fact that student teachers perceive that they have developed competences to foster children's SRB mostly in subjects in attention to diversity and psychology suggests that SRB is understood from a very reductionist position, where it is the teacher of support and attention to diversity who carries the weight of this type of intervention in schools. This contrasts with the role of the teacher of support and attention to diversity that is promoted from the paradigm of inclusive education and the role of the tutor who must attend to all students (Gómez-Zepeda et al., 2017). It is noteworthy to identify how the measures referred to in the open questions have more to do with additional or specific measures and support for pupils with behavioural problems, and not with universal measures aimed at all pupils in the classroom and which can help to prevent conflictive situations.

There are different limitations in terms of procedure, sample and interpretation. Regarding the procedure, each university had written the competences differently and in order to be able to compare them, we had to unify them. Despite the validation of the procedure, there may be errors (e.g., a nuance in the wording may cause a particular competence to be classified in one way or another). As for the sample, all universities are from the same region of Spain, so the interest of some comparisons is more local. Moreover, when we explore the case of the dual system, the results should be interpreted with caution because it is only implemented in one class-group of one university ( $n = 30$ ). Continuing with the interpretation, the analysis of the teaching plans only provides us with a theoretical mapping of the presence of competences in the teaching plans; the perception of having actually worked on them is provided by the voices of the student teachers. In fact, even if a specific competence has a strong presence in the teaching plans, this

may not reflect reality for various reasons such as the idiosyncrasies of teachers who do not work on these competences in general or on promoting children's SRB. And it is this discrepancy that underpins our results since the university that includes more competences that can contribute to preparing student teachers to promote children's SRB is not the one in which the students feel significantly more prepared. Finally, we must take into account all those limitations regarding research based on perceptions of preparedness; in addition to the Dunning-Kruger effect noted above, their own understanding of what a competence is, what SRB is, and which competences contribute to promoting children's SRB.

## 5. Conclusions

This study provides a mapping of those competences that can prepare student teachers to foster children's SRB that are present in the teaching plans of all the teaching degrees at Catalan public universities. The standardisation of the wording of these competences on the basis of recognised competence frameworks allows for international comparison. This analysis of the Catalan context shows that the degrees have specific competences that could be used to prepare teachers to foster children's SRB. This is revealing because of its implications, given that with the current teaching plans, it is already possible to work in a transversal way, in the case that it is not possible to create ad hoc subjects. However, it would be necessary to ensure that the competences are worked on in this sense, namely those aspects that will really favour the promotion of children's SRB are addressed. In the same way, it would be necessary to verify that these competences are worked on effectively, not only by considering them as conceptual knowledge, but also by enabling the development of the skills and attitudes that will help student teachers to be and feel competent to promote SRB in the classroom. The active role of the student teachers regarding children's SRB during initial teacher education, even in the dual system programmes, should be enhanced.

With this review of competences, the coordinators of degrees will be able to check the coherence between subjects to effectively prepare student teachers with the competences required by today's society. This would also entail reinforcing teacher training with the objective that it is essential to teach how to educate for all, with the diversity of teaching competences that this implies, instead of returning to teaching the contents of early childhood education and primary education, a fact that can be explained by the over-representation of pedagogical competence through subjects of content knowledge. Universities should put into practice the global approach that is then required in schools, instead of continuing with a model based on disciplines that understand reality in a fragmented way (e.g., language, mathematics, music).

Despite the existence in the current plans of competences that are likely to favour the promotion of children's SRB, degree programmes need to improve their plans so that more account is taken of competences such as classroom management and communication. Our results take issue with the TALIS Report (2019), which states that teacher education includes aspects related to student behaviour and classroom management.

In addition to intra-university coherence in study plans, the results of the research highlight the importance of its coherence since the final objective is the same: to train competent teachers for today's and tomorrow's society. In short, as far as initial teacher education is concerned, it is necessary to challenge the view that SRB is a matter of subjects of attention to diversity. It is essential for any teacher of any speciality to encourage SRB to the whole student body.

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## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.ijer.2023.102263](https://doi.org/10.1016/j.ijer.2023.102263).

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