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Students of Primary Education Degree from two European universities: a competency-based assessment of performance in multigrade schools. Comparative study between Spain and Slovenia

Estudiantes del grado de Educación Primaria de dos universidades europeas: una evaluación basada en la competencia del rendimiento en escuelas multigrado. Estudio comparativo entre España y Eslovenia

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Abstract

The success of teaching in multigrade contexts demands that teachers have the knowledge and skills considered necessary to enhance the pedagogical possibilities of these environments. This quantitative, descriptive and non-experimental study explores the extent to which students in the Primary Education Degree in two European universities, one in Spain and one in Slovenia, feel prepared to teach in a multigrade school, based on the training they have received. The results show a relationship between the level of confidence students have in the training received for multigrade performance and differences in the levels of confidence acquired in the competencies assessed. The conclusions emphasise the need to develop university training experiences that contribute to the development of the required teaching skills.

Keywords: Competencies; teaching; multigrade; teachers training; comparative education.

Resumen

El éxito de la enseñanza en contextos multigrado exige que los maestros tengan los conocimientos y aptitudes necesarias para mejorar las posibilidades pedagógicas de estos contextos. Este estudio cuantitativo, descriptivo y no experimental explora en qué medida los estudiantes del Grado de Educación Primaria de dos universidades europeas, una en España y otra en Eslovenia, se sienten preparados para enseñar en una escuela multigrado, basándose en la formación que han recibido. Los resultados muestran relación entre el nivel de confianza que los estudiantes tienen en la formación recibida para el desempeño en multigrado y diferencias en los niveles de confianza adquiridos en cada una de las competencias evaluadas. Las conclusiones destacan la necesidad de desarrollar experiencias de formación universitaria que contribuyan al desarrollo de las competencias docentes multigrado requeridas.

Palabras clave: Competencias; enseñanza; multigrado; formación de profesores; educación comparada.

1. Introduction

The specialised literature has discussed two general terms to refer to mixed-age classes. Veenman (1995) and Cornish (2010) differentiate multigrade and multilevel schools according to the forms of teaching and learning that condition each of these environments, as well as the reason for their creation. They define multigrade education as the type of schooling created by necessity in the face of the geographical, economic and administrative conditions of the community; and multilevel education as that based on the pedagogical benefits provided by learning in the mixed classroom. Although different countries around the world use different terms to refer to the educational modality that has been established as a possibility of bringing education to remote areas of the country, this article uses the term multigrade as it is the most widely used in the international literature, in addition to being the type of schooling studied in this research.

Children around the world live in rural communities and attend rural schools in both developing and developed countries (Smit, Hyry-Beihammer and Raggl, 2015). In this sense, multigrade schools represent the struggle of education systems to enshrine the right of access to comprehensive education that will enable future generations to acquire and develop knowledge and skills to participate in sustainable development goals and make individual and collaborative decisions based on a commitment to human rights to transform society. UNESCO (2015) considers that this type of schooling helps nations to achieve the mandatory goals of Education for All, and Ronksley-Pavia, Barton and Pendergast (2019) state that these schools are necessary to achieve the fourth goal of Quality Education of the Sustainable Development Programme for 2030.

Generally, these schools are small educational centres located in low density populations, where natural environments are one of their main characteristics (Tahull and Montero, 2018). The low enrolment in these schools does not justify the integration of a teacher for each grade; therefore, students attending multigrade schools maintain their grade and the educational materials corresponding to their curriculum, and the teacher is responsible for simultaneously and transversally integrating the contents of the different school grades to cater for the students' chronological diversity, developmental levels and learning styles (Ronksley-Pavia, Barton, and Pendergast, 2019).

Hargreaves *et al.* (2001), Little (2001) and Kucita *et al.* (2013) explain how the absence of an education policy and a specialised training for multigrade school teachers is the main cause of the development of decontextualised, traditionalist and conservative teaching practices in these scenarios. This data supports the points made by Veenman (1995), who states that the success of the educational processes in multigrade schools is conditioned by the knowledge that teachers have about these school and its didactics, which influences the type of educational practices that they develop. These aspects imply that teacher training is a central element in improving the quality of rural education. Despite the fact that research states that the pedagogical, administrative and organisational peculiarities of multigrade schools require training models that provide future teachers with the theoretical and practical knowledge for professional multigrade teaching (Berry and Little, 2006); international studies on the subject reveal how the multigrade school and its didactics have been neglected, postponed and denied within university curricular approaches (Demirkasımoğlu, 2019; Kivunja and Sims, 2019; Kucita *et al.*, 2013).

Although research emphasizes multigrade teachers' needs for enhanced training, and the benefits that can be obtained by students attending these schools, provided that the teachers maximise the pedagogical possibilities of these environments; the literature search did not identify studies that analyse the perception of future teachers in relation to the skills acquired and developed through the teacher training received for teaching in these settings.

Based on the above, and taking into account the declarations of the European Commission (2019), in Slovenia, and Abós (2011), in Spain, who state that from the formal curriculum, in both countries students from some universities could have access to knowledge about teaching methodology in multigrade classrooms, it is considered relevant to know whether students have had the opportunity to receive content related to this educational modality, and the extent to which students from primary schools in the aforementioned countries feel prepared to teach in multigrade environments, based on the training received.

2. Knowledge and skills for multigrade teaching

The standards and criteria with which multigrade teachers must comply in order to carry out their functions demand that they master the theoretical and didactic knowledge specific to this educational modality, such as: making curricular adaptations and differentiations; implementing different teaching and grouping approaches to diversify the teaching practices; focusing on individualised teaching; implementing differentiated assessment; and organising and managing time, space and didactic resources effectively (Marland, 2004).

Perrenoud (2007) defines teaching skills as those cognitive abilities and resources that are necessary to act efficiently in specific situations. Regarding the multigrade context, Miller (1991), Little (2006), Mulryan-Kyne (2007), and recently Boix and Buscà (2020), agree that the skills and abilities that multigrade teachers must have in order to guarantee an education that responds to the needs and demands of this educational modality, require a modification of the role of generalist teachers that is closer to a more polyvalent profile and provides the professional with a global vision of education and of the changing world that characterises the different educational scenarios.

In view of the above, teacher training is seen as an opportunity to help student teachers acquire and develop the guidelines that define the social, ethical and pedagogical expectations of teaching, and assume responsibility for their practices, contributing to the development of effective teaching methods and, consequently, to their impact on improving the quality of education (Enayati, Zameni, and Movahedi, 2016).

Ponce (2005; cited in Martínez-Chairez, Guevara-Araiza and Valles-Ornelas, 2016) defines professional teaching as the ability of teachers to responsibly execute, guide and evaluate the elements that make up the specific functions of their profession. Baggini (2005) defines teacher professionalism as the extent to which teachers are able to overcome difficulties through knowledge, skills and experiences related to their profession.

Demirkasımoğlu (2019), who analyses teaching professionalism, considers that definitions and standards of teacher professionalism vary according to the educational context. In this respect, studies that have analysed the issue of multigrade schools have,

over time, identified a number of skills that teachers feel they must possess for successful multigrade teaching. Miller's (1991) classification, taken up by Vincent (1999), states that teaching success in multigrade classrooms is related to the mastery of six areas that address curricular, content, student, context and multigrade knowledge: (1) classroom organisation (teaching resources and learning spaces); (2) classroom management and discipline (clear classroom routines); (3) educational organisation, curriculum and assessment (adapting instruction to student needs); (4) teaching and grouping approaches; (5) self-directed learning (developing independent learners); and (6) planning and use of peer tutoring. The above aspects were also recognised by the Marland classification (2004). On the other hand, Taole and Cornish (2017) build on this classification and establish time management as an aspect of effective multigrade group organisation.

On the other hand, Magro (2019) agrees with the classifications of the authors cited above and states that the mastery of multigrade teaching also implies that teachers develop skills related to the territorial dimension of the rural context, which is the appreciation of the singularities of these spaces, as well as skills aligned with the education for diversity dimension (identity, culture, religion). For its part, the recent study by Boix and Buscà (2020), which seeks to delimit teaching competences for the rural context, coincides with that mentioned by Magro (2019), integrating the dimensions of the community-school relationship and the pedagogical-methodological dimensions that make up the classifications of the authors cited in the previous paragraphs.

From the analysis of the training needs for multigrade performance, Mulryan-Kyne's (2007) proposal stands out. Based on a documentary review of the knowledge and skills considered necessary for the development and promotion of teachers working in these scenarios, she delimits a series of areas and teaching skills that are relevant to emphasise during teacher training (See Table 1). This classification coincides with the theoretical and procedural knowledge that Miller (1991), Vincent (1999), Marland (2004), Taole and Cornish (2017), and Magro (2019) delimit as relevant for achieving professional performance in the multigrade classroom, and adds aspects related to the specificity of the rural school and the collaboration of the educational community, thus gathering the contributions of the authors mentioned in this section and delimiting in more detail the specific competences to be developed in the future teachers for each of the training areas mentioned.

Table 1.
Areas of training and skills for multigrade teaching

Training areas	**Teaching skills to develop**
Specificity of the multigrade rural school	Understanding and appreciating the context and implications of the multigrade rural school
Curriculum adaptation and differentiation	Selecting the appropriate teaching-learning content and adapting it to the needs of the different levels of the grade-group
Classroom organisation	Designing the classroom considering the needs of the class group
Teaching-learning materials	Designing, developing and effectively using teaching resources that graduate the curricular content of the different grades that make up the group/class
Grouping and teaching for instruction strategies	Becoming aware of, and implementing, the teaching and grouping strategies for the multigrade classroom
	Encouraging self-directed learning among students in the classroom
Time management	Using time effectively so that all students participate efficiently during the school day
Learning environments (discipline and group control)	Generating effective learning environments for the development of educational processes
Group management strategies	Establishing routines and disciplinary techniques that contribute to maintaining an optimal learning environment
Formative evaluation	Evaluating differently the expected learning in students
Integration and collaboration of the educational community	Consolidating the support of the educational community in the educational processes

Source: Magro (2021; based on Mulryan-Kyne, 2007).

Mulryan-Kyne (2007), who contextualises the specific characteristics and needs that teaching in a multigrade context demands, considers that by addressing the elements set out in Table 1 it is possible to strengthen the development of creative, innovative and dynamic practices in multigrade schools. She also states that specific contents of multigrade schools can be addressed in conjunction with the general contents of teacher training whilst also acknowledging that monograde teachers can also receive benefits from the implications of working in a mixed environment.

Whilst it is important to address theoretical knowledge of multigrade schools during teacher training; Carrascal *et al.* (2019) consider it essential that teacher training be based on the key principles that Murga-Menoyo (2015) points out as relevant for the acquisition and development of formal skills and abilities in students: critical analysis, systematic reflection, collaborative work and learning through projects committed to society. The aforementioned authors consider that the complexity of developing competencies in future teachers requires the inclusion of diversified educational strategies and transversal training based on different multidisciplinary areas.

For the European Commission (2013), Tang, Wong, and Cheng (2016), and Ortega (2020) effective development of teaching skills goes beyond promotion and acquisition

of the theoretical, technical and practical knowledge required for teaching performance in each educational modality. Preparing students for organisational and working life implies that future teachers know and understand schools in its different dimensions and implications (school organisations and modalities, teamwork, organisational, administrative and political aspects, among others).

Le Cornu (2009) and Rots and Aelterman (2012) agree that bringing student teachers closer to the reality of the context in which they will work contributes to the development of teacher skills and consolidates teacher confidence. Therefore, both authors state that learning experiences that student teachers go through during their teacher training can positively or negatively affect their performance, confidence, motivation and commitment in fulfilling their role as a teacher.

3. Context of multigrade schools in Spain and Slovenia

In both countries, multigrade schools has a relevant role in strengthening the socio-cultural life of the communities in which they are established. The analysis carried out by Smit, Hyry-Beihammer and Raggl (2015) in rural schools from Spain to Central Europe and Scandinavia, as well as the study by Hyry-Beihammer and Hascher (2014) in Finnish and Austrian multigrade schools, identified higher quality conditions for the development of educational processes in these areas, in comparison with countries such as Peru, Sri Lanka, Vietnam (Hargreaves *et al*., 2001), Mexico (Magro and Carrascal, 2018), and Turkey (Askoy, 2008), where rural schools may have more than 20 students per class and where the lack of resources, infrastructure and basic public services is evident.

More specifically, in Spain, Smit, Hyry-Beihammer and Raggl (2015) and Domingo and Boix (2015) find no difference between the resources of rural schools and those of urban areas. In Slovenia, there is a dichotomy of opinions on the resources of rural schools; while Repinc (2001) and Cenčič (2011) argue that Slovenian teachers face deficiencies in teaching spaces and materials, Echazarra and Radinger (2019) state that these schools are better equipped than urban schools.

In Spain, during the 2016/2017 school year, there were 727 rural schools with 6,585 units and 74,219 students enrolled in Pre-School and Elementary Education (2.4% of total enrolment in this type of education). In Slovenia, in 2018 there were 319 multigrade schools with an average of 53 students enrolled in each of their units (Ministry of Education, Culture and Sport, 2018; Ministry of Education, Science and Sport of the Republic of Slovenia, 2019).

Domingo and Boix (2015) and Smit, Hyry-Beihammer and Raggl (2015) present the skills that Spanish multigrade teachers develop through teaching experience in these scenarios to maximise the pedagogical possibilities that multigrade classrooms offer; however, Bustos (2006), Corchón (2005) and Santamaría (2018) in Spain, and Nolimal (2001) in Slovenia, have documented the difficulties that teachers face in both countries during their first years of service in organising and adapting the curriculum to the different educational levels, in order to simultaneously teach students and manage time teaching to meet the specific needs of each grade level.

According to Corchón (2005) and Bustos (2006) the lack of knowledge of the elements of multigrade teaching leads to Spanish teachers having feelings of insecurity and

anxiety in the development of their job during their first years of service. Sveršina (2012) reports the lack of trust that prevails in Slovenia among parents towards teachers working in multigrade classes.

The representation that multigrade schools have in both education systems establishes the need for teachers to have the necessary knowledge to teach efficiently in these scenarios. This demands universities to consider the different existing educational settings in their training programmes. Although European Commission (2019) states that, in Slovenia, the methodology of teaching mixed level classes is approached from the optional subjects of the Teaching Programmes, in general there is a lack of empirical evidence in research on multigrade teaching with respect to the quality of teaching and teacher training in this country. In Spain, the studies by Abós (2011), Boix and Busca (2020), Bustos (2006), Corchón (2005), Magro (2019), Ruiz and Ruiz (2017) and Santamaría (2018) show how little, through optional subjects, or no consideration has been given by universities to the specific elements of multigrade education in Spanish university curricula.

4. University teacher training in the Spanish and Slovenian context

The construction of the European Higher Education Area, promoted by the Bologna Declaration of 19 June 1999, has led to the adaptation of university programmes to the new social, cultural, economic and political realities in the international sphere, but specifically to the European geopolitical space (Fernández, 2014). Table 2 presents the juxtaposition of the university teacher training programmes of the countries that have been established as objects of study.

Table 2.
Comparison of the Degree of Primary Education in Spain and Slovenia

Indicators	**Spain**	**Slovenia**
Teacher training institutions	Universities	
Legal regulations	• Royal Decree 1393/2007, of 29 October • Order ECI/3857/2007, of 27 December • Royal Decree 1594/2011, of 4 November	• Higher Education Act of 1999/2009
Qualification for teaching in primary schools	Bachelor's Degree	Master's degree
Duration of the degree course	Duration of the Bachelor's Degree: 4 years (240 ECTS)	
	Not applicable	Master's degree: 1 year (60 ECTS)
Curricular content of the Degree	• Fundamentals of Psychology, Pedagogy and Didactics • Sociology of Education • Learning and Personality Development • Education and Educational Processes • Society, School and Family • Educational Organization and Management • Guidance and Tutoring • Educational Research Methods • Information and Communication Technologies • Scientific knowledge of the different disciplines: Experimental Sciences, Social Sciences, Mathematics, Languages, Music, Plastic and Visual Education and Physical Education • Teaching Practices • Final Degree Project	
	• Spanish Language • Optative subjects: Didactics Specific to Special Education: Inclusion and Curricular Adaptation; Spanish history; ICT in Education; Theology; Pedagogy and Didactics of Religion; Literature, Specialized Training in Physical Education, Arts, English, French and Mathematics.	• Slovenian Language • School Practices of Knowledge Areas: Didactic Practicum in Science and Technology, Social Sciences, Music Pedagogy. • Optative subjects: Outdoor Education, Environment and Society; School Gardens; Inclusive Education; School Management, School-family Relationship; Astronomy; Literature, Visual Thinking; Arts; Skiing and Nature School.
Curricular content of the Master's Degree	Not applicable	• Research Methodology • Information and Communication Technologies • Research in the Field of Art, Sport, Mathematics, Science and Technology • Practical Training • Master's Thesis

Resource: Own elaboration from the curricula of the universities studied.

As can be seen in the Table above, in both countries, initial teacher training is provided through universities where, based on the legal guidelines stipulated in each country, they draw up the proposals that regulate primary education degree qualifications (Royal Decree 1393/2007, of 29 October; Order ECI/3857/2007, of 27 December; and Royal Decree 1594/2011, of 4 November, in Spain and the Higher Education Act of 1999/2009 in Slovenia).

There is no homogeneity between the teacher training of both countries in relation to the duration of the degree certifying the qualification to work as a teacher. The differences in teacher training programmes are due to structural differences in both education systems: while in Spain, compulsory education lasts 10 years and is divided between primary and secondary education, in Slovenia, this level of education is organised in a single-structured nine-year basic school attended by students aged 6 to 15 (primary and lower secondary education) (European Commission, 2019).

Teaching in primary education requires teachers to have a university education or equivalent in higher education institutions. In Spain, the minimum required degree is the Bachelor's Degree, which establishes a four-year education (240 European Credits) (European Commission, 2019); whereas in Slovenia, the required degree is the Master's degree: 5 years, divided into two cycles: four for the first cycle (Bachelor's degree) and one for the second cycle (Master's degree) (Parodi *et al.*, 2012; Zgaga and Miklavič, 2011).

With regard to teacher training, it is found that both curricula integrate basic, compulsory, optional and practical training subjects for students. In respect to the basic and mandatory subjects, it is found that in both countries, the curricula of the Degree (1st cycle in Slovenia) are based on the scientific knowledge of the individual disciplines (Eurydice, 2019). Subjects are the result of the study of modern scientific literature in a specific field which individual teachers have supplemented with their findings: learning and personality development, educational processes and contexts, the link between society, school and family, the teaching and learning of Experimental Sciences, Social Sciences, Mathematics, Languages, Musical, plastic and visual education, and Physical Education.

Constructivist learning theory is evident in the practical training in basic education schools that both programmes require of students (Hus and Aberšek, 2011). In this sense, while in both countries, students undertake professional internships, in Slovenia, in the 1st cycle (Bachelor's Degree), the curricula encourage students to acquire the latest theoretical knowledge and practical skills in the individual disciplines and the teachers pass them on to the students using modern teaching methods, supported by practical examples: Practicum in Science and Technology, Social Sciences, Music Pedagogy and others.

In both cases, the inclusion of optional training areas gives teachers access to interdisciplinary fields. However, there are differences between the alternatives that the curriculum of the universities offers to students. While in Spain the optional subjects focus on deepening the didactics of specific knowledge areas, such as: Mathematics, Educational Inclusion; Artistic, sports, language teaching; the use Information and Communication Technologies in education, and others; in Slovenia, these subjects focus on the development of knowledge related to school management, the link between the school community and the school, as well as nature-centred pedagogy and didactics.

The difference in the length between both training plans lies in additional, the fifth year, of training that Slovenian students take (second cycle). A graduate of the 1st level of the program cannot perform the profession of primary education teacher, as the competencies for this are available only after the completion of the second level. However,

they can work within and outside the educational field, such as manager of various social groups and social and other services (Eurydice, 2019).

In this sense, the study program Elementary Education, 2nd level, in every respect (conceptually and in terms of content) refers to the university 1st level study program Elementary Education. Program structure represents an upgrading of the first level study program in terms of its complementarity and deepening. With the second level study program, Elementary Education, students acquire in-depth knowledge, skills and working methods that address several issues in the field of Education. The study program enables the candidates to acquire the knowledge and experience that qualify them for independent professional activity. This makes the study program an application-oriented and up-to-date program. During this training phase, knowledge of the scientific method is enhanced, focusing on the development of research processes linked to the educational practices that students carry out in basic education schools (Eurydice, 2019).

5. Objectives and context of the study

Despite the organisational differences between the two countries, in Slovenia and Spain teaching and learning processes prevail in schools with students of different grades, giving teachers in training the possibility to practise their profession in multigrade classrooms upon completion of their degrees. Based on this premise, it is worth analysing the positions of students in the Primary Education Degree in two European countries (Slovenia and Spain) that have similar, but not equal, characteristics regarding the focus of this study.

Within this framework of reflection, the research question established was: what skills for multigrade performance have or have not been acquired by students in the Primary Education Degree? Guided by this question, the following objectives were set:

- To ascertain the extent to which students of the Primary Education Degree in Spain and Slovenia consider that the university training received provided them with theoretical and methodological references for multigrade teaching.
- To determine the skills that students consider they have, or have not, acquired during their teacher training for multigrade teaching performance.
- To compare the results from both countries in relation to the university education received for multigrade teaching performance and the skill level students felt they acquired.

6. Methodology

The study was based on a descriptive, non-experimental method of empirical research and was conducted individually and anonymously.

6.1. Research sample

The sample was selected for convenience, based on non-probability sampling techniques (Otzen and Manterola, 2017); that is, the selection of participants depended on criteria necessary for the development of this study, such as accessibility and proximity to the subjects to carry out the research. The sample was made up of 51 Spanish and 54

Slovenian students, who were in the last year of their teaching careers (fourth year of teacher training in Spain and fifth year of teacher training in Slovenia), in two European public universities: one in Slovenia and one in Spain.

Table 3.
Number (f) and structural percentage (f%) of participating students per country

Country	**f**	**f%**
Spain	51	48.6%
Slovenia	54	54.4%
Total	**105**	**100.0%**

6.2. Instrument

Based on Mulryan-Kyne's (2007) study of the theoretical and procedural content that should be emphasised in initial teacher training for the development of pedagogical skills in multigrade settings, a questionnaire was designed to determine university students' perceptions of the teacher training received for performance in these educational environments. The questionnaire consists of three dimensions: 1) Social perception that students of the teaching degree have about the multigrade school, 2) Teacher training received for multigrade performance and 3) Teaching skills for multigrade performance. The questionnaire consisted of closed-ended and scaled questions, including 25 closed items.

Data was collected for all variables through a questionnaire with verified metrics (validity, reliability, and objectivity). Validity was ensured by pre-testing our questionnaire on a sample. Reliability was checked as we provided detailed instructions and specific unambiguous questions. It was also checked when processing the data, as the Cronbach alpha coefficient (α) was used, which was $\alpha = 0.865$ meaning that the items have a relatively high internal consistency, which is acceptable. The objectivity of the instrument was based on individual interviews without the presence of the evaluator.

6.3. Data collection

Data collection took place in February 2020 in the faculties of education of two public universities in each of the selected countries. The application of the questionnaire was carried out anonymously. Respondents were invited to complete the questionnaire, so participation was voluntary.

6.4. Data Analysis

Data obtained from the questionnaire was analysed using the SPSS Statistics Programme (version 25). Basic descriptive statistics and frequency distributions were used for data processing. During the analysis checks were carried out to determine whether there were any statistically relevant differences between the participating students with respect to their country. We used a non-parametric Mann-Whitney test to determine the differences between the two groups of students - Slovenian and Spanish - as non-parametric tests have some distinct advantages. Ordinal, classified, outlier or inaccurately measured results are difficult to analyse with parametric methods without making large assumptions about their distributions, as well as decisions about the coding of some values.

As written by Nachbar (2008), nonparametric tests differ from parametric tests in that the model structure is not defined a priori, but is determined from the data. Nonparametric tests are also called distribution-free tests. The Mann-Whitney U-test can be used to answer the researcher's questions about the difference between groups. It has a significant advantage that can be used also for small samples of subjects. Mann and Whitney and Wilcoxon developed the Mann-Whitney test, so this method is often referred to as the Wilcoxon-Mann-Whitney test or Wilcoxon sum rank test. „Like any statistical test, the Mann-Whitney U has strengths and weaknesses. In terms of forces, the Mann-Whitney U, like any nonparametric test, is not dependent on assumptions about distribution (i.e., there is no need to postulate the data distribution of the target population). It can also be used if the conditions of normality are neither fulfilled nor can be realized by transformations. It can also be used if the sample is small and the data are semi-quantitative or at least ordinal. In short, there are few limitations for this test" (Nachar, 2008, p. 19).

The difference between the groups was considered statistically significant if the degree of risk for the validity of the null hypothesis was less than 5% (p 0.05). The level at which the null hypothesis is rejected is usually set at 5 or less out of 100. The probability level of 0.05 is acceptable as a reasonable option in most social studies research today (Cramer and Howitt, 2004; Field, 2013).

7. Description and interpretation of the results in the Spanish context

7.1. Students' perceptions regarding the university training received for teaching in multigrade settings

With regard to the statement, *The university program I am currently studying provides me with the theoretical and methodological references for multigrade teaching*, Table 4 shows that 21.6% of the students assumed a neutral position in this statement; more than 50% disagreed and strongly disagreed regarding the training received for multi-degree teaching; and 5.9% of the sample agreed.

Table 4.
Number (f) and structural percentage (f%) of students' perceptions regarding the statement: The university programme I am currently studying provides me with the theoretical and methodological references for multigrade teaching

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
f	16	21	11	3	0	51
f%	31,3%	41.2%	21.6%	5.9%	0.0%	100.0%

7.2. Students' perceptions regarding knowledge and skills for multigrade teaching

With respect to the statement, *I have the necessary knowledge and skills to teach in a multigrade classroom*, it is evident that most of the sample was not clear about their position on this statement by focusing their answers on the neutral indicator (49.0%). It

was also found that, while 37.2% of the students did not have the confidence to teach in a multigrade classroom (11.8% strongly disagree and 25.5% disagree), 13.8% did not share this view by placing their answers on the indicators agree and strongly agree (11.8% and 2.0%, respectively) (See Table 5).

Table 5.
Number (f) and structural percentage (f%) of students' perceptions regarding the statement: I have the necessary knowledge and skills to teach in a multigrade classroom.

	Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**	**Total**
f	6	13	25	6	1	51
f%	11.8%	25.4%	49.0%	11.8%	2.0%	100.0%

Table 6 sets out more specifically the responses of Spanish students on the level of acquisition of each of the competencies for multigrade performance that they considered to have acquired, partially acquired, or not acquired during the teacher training received.

Table 6.

Number (f) and structural percentage (f%) of students' perceptions regarding the level of knowledge and skills for multigrade teaching.

Statement: Understanding and appreciating the context and implications of the multigrade rural school	Specificity of the multigrade rural school			Total
	Not acquired	Partially acquired	Acquired	
f	23	19	9	51
f%	45.1%	37.3%	17.6%	100.0%
Statement: Selecting the appropriate teaching-learning content and adapting it to the needs of the different levels of the grade-group	Adaptation and differentiation curriculum			
f	17	29	5	51
f%	33.3%	56.9%	9.8%	100.0%
Statement: Designing the classroom considering the needs of the class	Classroom organisation			
f	9	20	22	51
f%	17.6%	39.2%	43.1%	100.0%
Statement: Effectively using teaching resources that adapt the curricular content of the different grades that make up the group/class	Teaching-learning materials			
f	5	25	21	51
f%	9.8%	49.0%	41.2%	100.0%
Statement: Becoming aware of and implementing the teaching and grouping strategies for the multigrade classroom	Grouping and teaching for instruction strategies			
f	29	14	8	51
f%	56.9%	27.5%	15.7%	100.0%
Statement: Encouraging self-directed learning among students in the classroom	Encouraging self-directed learning			
f	16	20	15	51
f%	31.4%	39.2%	29.4%	100.0%
Statement: Using time effectively so that all students participate efficiently during the school day	Time management			
f	13	26	12	51
f%	25.5%	51.0%	23.5%	100.0%
Statement: Generating effective learning environments for the development of educational processes	Learning environments (discipline and group control)			
f	5	24	22	51
f%	9.8%	47.1%	43.1%	100.0%
Statement: Establishing routines and disciplinary techniques that contribute to maintaining an optimal learning environment	Group management strategies			
f	8	22	21	51
f%	15.7%	43.1%	41.2%	100.0%
Statement: Evaluating the expected learning in students differently	Formative and inclusive evaluation			
f	10	18	23	51
f%	19.6%	35.3%	45.1%	100.0%
Statement: Consolidating the support of the educational community in the educational processes	Support of the educational community			
f	12	21	18	51
f%	23.5%	41.2%	35.3%	100.0%

From the analysis of the students' responses, the table above shows that of the 11 competencies assessed, most future teachers considered that they had acquired this knowledge and skill in only two of these: *Classroom organisation* (43.1%) and *Formative and inclusive evaluation* (45.1%). Regarding the rest of the competencies, there was a tendency for the responses of student teachers to be at the level of their partial acquisition. While the majority of students considered that they had partially acquired seven of the items of knowledge and skills presented to them: *Curriculum adaptation and differentiation* (56.9%), *Teaching-learning materials* (49.0%), *Encouraging self-directed learning* (39.2%), *Time management* (51.0%), *Learning environments* (discipline and group control) (47.1%), *Group management strategies* (45.1%) and *Support of the educational community* (41.2%); of the two skills shown, the majority of the sample considered that they had not acquired them: *Specificity of the multigrade rural school* (45.1%) and *Grouping and teaching for instruction strategies* (56.9%).

8. Description and interpretation of the results in the Slovenian context

8.1. Students' perceptions regarding the university training received for teaching in multigrade settings

From the analysis of the responses of Slovenian students on teacher training for multigrade settings, it was identified that 37% did not have a clear position on the training received for teaching in multigrade settings, furthermore half of the Slovenian sample considered that the training received did not provide them with theoretical-methodological references to teach in this context (31.5% and 18.5% disagreed and strongly disagreed, respectively). Only 11.1% and 1.9% of the student teachers agreed and strongly agreed with this statement (See Table 7).

Table 7.
Number (f) and structural percentage (f%) of students' perceptions regarding the statement: The university programme I am currently studying provides me with the theoretical and methodological references for multigrade teaching.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
f	10	17	20	6	1	54
f%	18.5%	31.5%	37.0%	11.1%	1.9%	100.0%

8.2. Students' perceptions regarding knowledge and skills for multigrade teaching

From the analysis of the students' answers on the statement *I have the necessary knowledge and skills to teach in a multigrade classroom*, it is evident that, while 48.1% of the sample did not have the confidence to teach in a multigrade school (14.3% Strongly disagreed and 33.3% disagreed, respectively), 20.4% of the students did not share this opinion when placing their answers on the agreement indicator. There was also a lack of clarity in the positioning on this statement of 31.5%, who placed their answers on the neutral indicator (See Table 8).

Table 8.
Number (f) and structural percentage (f%) of students' perceptions regarding the statement: I have the necessary knowledge and skills to teach in a multigrade classroom.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
f	8	18	17	11	0	54
f%	14.8%	33.3%	31.5%	20.4%	0.0%	100.0%

Table 9 sets out more specifically the responses of the Slovenian students on the level of acquisition of competencies for multigrade teaching which they considered to have acquired, partially acquired, or not acquired during the teacher training received.

Table 9.
Number (f) and structural percentage (f%) of students' perceptions regarding the level of knowledge and skills for multigrade teaching.

		Specificity of the multigrade rural school			Total
Statement: Understanding and appreciating the context and implications of the multigrade rural school		Not acquired	Partially acquired	Acquired	
	f	8	31	15	54
	f%	14.8%	57.4%	27.8%	100.0%
Statement: Selecting the appropriate teaching-learning content and adapting it to the needs of the different levels of the grade-group		Adaptation and differentiation curriculum			
	f	6	26	22	54
	f%	11.1%	48.1%	40.7%	100.0%
Statement: Designing the classroom considering the needs of the class		Classroom organisation			
	f	6	35	13	54
	f%	11.1%	64.8%	24.1%	100.0%
Statement: Effectively using teaching resources that adapt the curricular content of the different grades that make up the group/class		Teaching-learning materials			
	f	5	18	31	54
	f%	9.3%	33.3%	57.4%	100.0%
Statement: Becoming aware of and implementing the teaching and grouping strategies for the multigrade classroom		Grouping and teaching for instruction strategies			
	f	10	30	14	54
	f%	18.5%	55.6%	25.9%	100.0%
Statement: Encouraging self-directed learning among students in the classroom		Encouraging self-directed learning			
	f	5	30	19	54
	f%	9.3%	55.6%	35.2%	100.0%
Statement: Using time effectively so that all students participate efficiently during the school day		Time management			
	f	4	25	25	54
	f%	7.4%	46.3%	46.3%	100.0%
Statement: Generating effective learning environments for the development of educational processes		Learning environments (discipline and group control)			
	f	2	24	28	54
	f%	3.7%	44.4%	51.9%	100.0%
Statement: Establishing routines and disciplinary techniques that contribute to maintaining an optimal learning environment		Group management strategies			
	f	2	34	18	54
	f%	3.7%	63.0%	33.3%	100.0%
Statement: Evaluating the expected learning in students differently		Formative and inclusive evaluation			
	f	3	25	26	54
	f%	5.6%	46.3%	48.1%	100.0%
Statement: Consolidating the support of the educational community in the educational processes		Support of the educational community			
	f	6	27	21	54
	f%	11.1%	50.0%	38.9%	100.0%

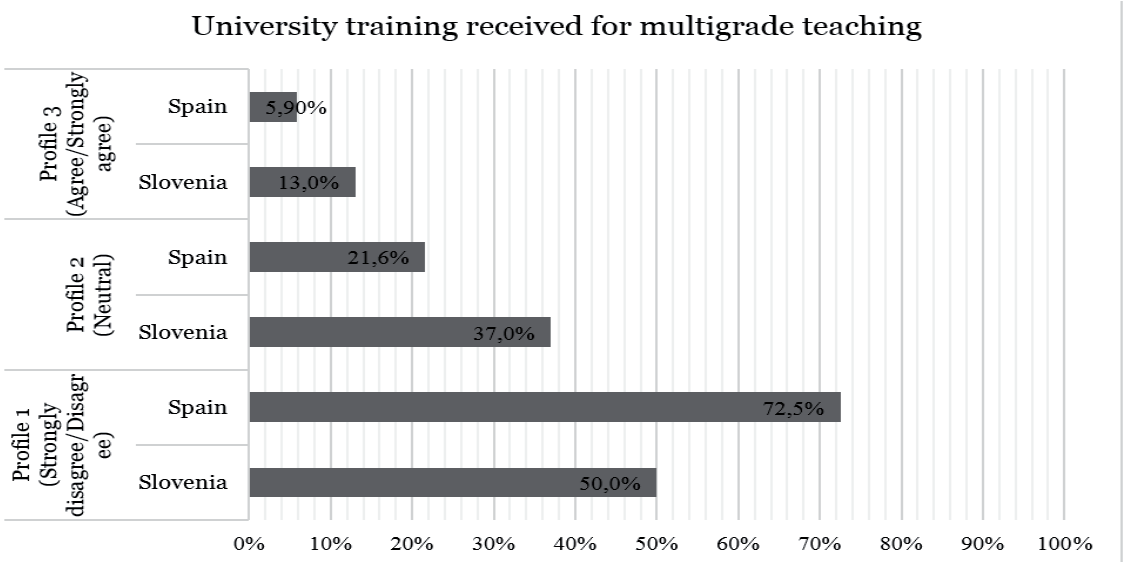
In Slovenia, the percentage of students who considered that they had not acquired any of the competencies presented in the questionnaire is a minority. There was a trend in the answers of student teachers to focus on the level of partial acquisition. The majority

of student teachers considered that they had partially acquired or acquired some of the competencies presented in the assessment of competencies. The responses on seven of the 11 competencies presented to prospective teachers, pointed to a partial level of acquisition: *Specificity of the multigrade rural school* (57.4%), *Curriculum adaptation and differentiation* (48.1%), *Classroom organisation* (64.8%), *Grouping and teaching for instruction strategies* (55.6%), *Encouraging self-directed learning* (55.6%), *Group management strategies* (63.0%), *Support of the educational community* (50.0%); and in three the majority of the answers pointed to the level of acquisition: *Teaching-learning materials* (57.4%), *Learning environments* (51.9%) and *Formative and inclusive evaluation* (48.1%). In the statement regarding time management, the students' position was not clear; while 46.3% of future teachers considered that they had only partially acquired *time management* skills, 46.3% of students considered that they had acquired them.

9. Results comparison

9.1. Students' perceptions regarding the university training received for teaching in multigrade settings

Graph 1 compares the results of the students of the Primary Education Degree from both countries in relation to the statement: *The university programme I am currently studying provides me with the theoretical and methodological references for multigrade teaching*. Taking into account the students' answers, three profiles were detected: 1) Students who considered that the training received provided them with theoretical-methodological references for multigrade teaching (totally agree and agree); 2) Students who held a neutral position and 3) Students who considered that the training received did not provide them with theoretical-methodological references for multigrade teaching (totally disagree and disagree).

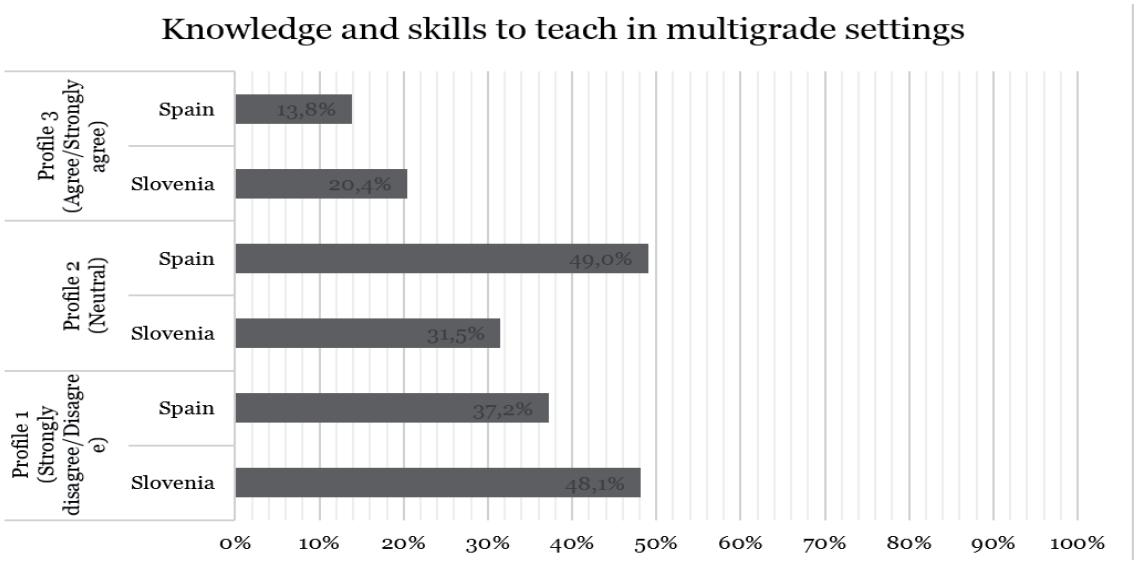


Graph. 1. Responses of the Spanish and Slovenian students in relation to the training received for multigrade teaching

No statistically significant differences were found in the responses of the future Slovenian and Spanish teachers according to the Mann-Whitney U test regarding this statement (P=0.147). Graph 1 shows that the training received for multigrade teaching in both countries was inadequate. In Spain 72.5% of the sample disagreed and strongly disagreed, in Slovenia 50% of the students' answers agreed with the previous position of the future Spanish teachers; 37% and 21.6% of Slovenian and Spanish students, respectively, were not clear about their position on this statement and placed their answers on the neutral indicator; and in both countries, the smallest part of the sample considered that the training received provided them with the theoretical and practical knowledge to teach in multigrade schools (5.9% in Spain and 13.0% in Slovenia).

9.2. Students' perceptions regarding knowledge and skills for multigrade teaching

Graph 2 shows the difference in the overall view that the Spanish and Slovenian students had according to the statement: *I have the knowledge and skills necessary to teach in a multigrade classroom*. Taking into account the students' responses, three profiles were detected: 1) Students who believed they had the knowledge and skills to teach in a multigrade classroom (strongly agreed and agreed); 2) Students who were in a neutral position and 3) Students who did not believe they had the skills to teach in a multigrade classroom (strongly disagreed and disagreed)

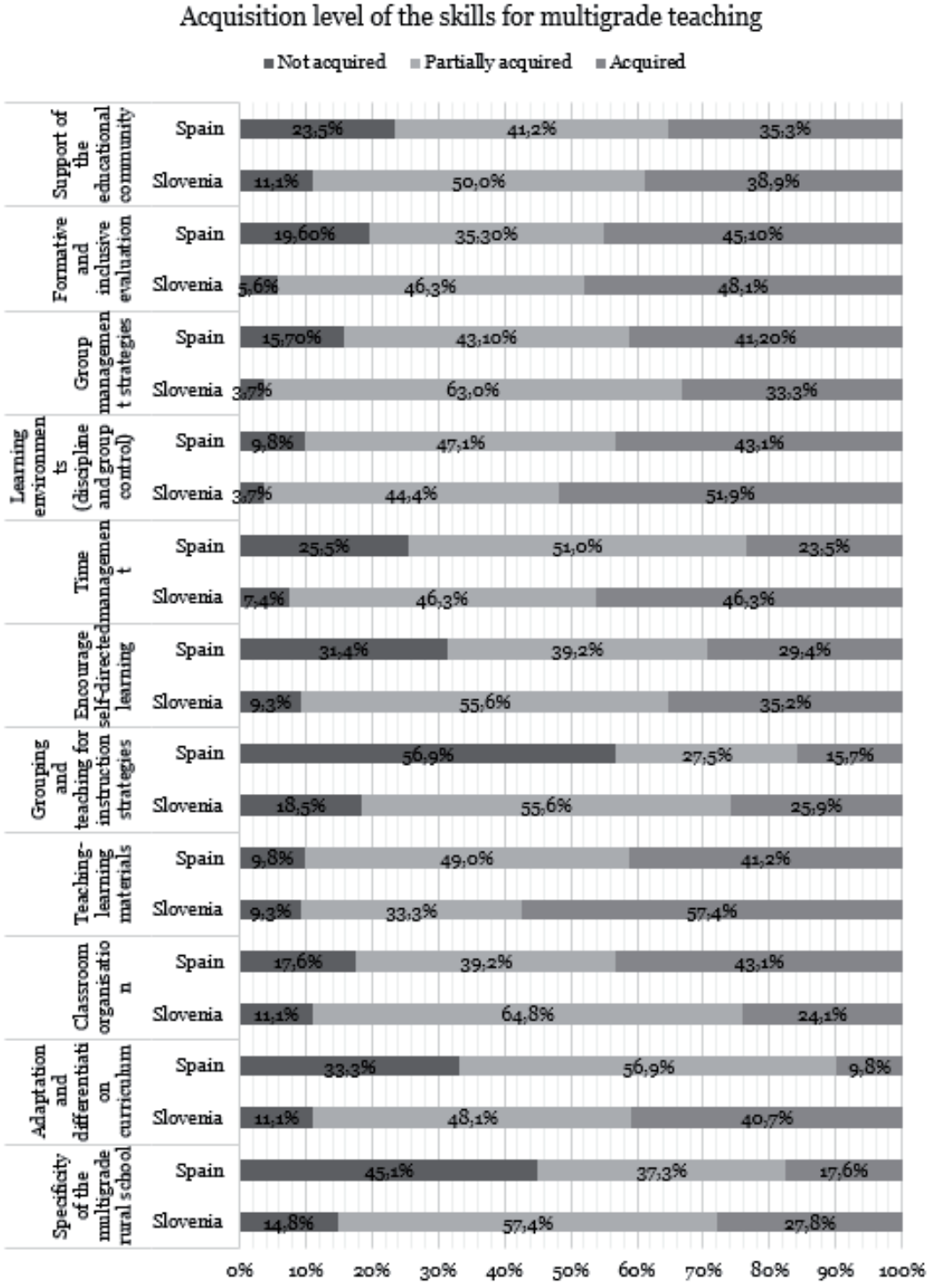


Graph. 2. Responses of the Spanish and Slovenian students in relation to the knowledge and skills to teach in multigrade settings

Despite the fact that, in the comparison of the responses of Primary Education Degree students in Slovenia and Spain using the Mann-Whitney U statistic, no significant statistical differences were found (P=0.611), Graph 2 shows that in both countries the smallest part of the sample was confident in their knowledge and skills for multigrade teaching (13.8% and 20.4% in Spain and Slovenia, respectively). It was also found that while in Slovenia the majority of future teachers in concentrated their answers on the disagree and strongly disagree indicators (31.5% and 48.1% respectively), the majority of Spanish students were not clear about their position as their opinions were centred on the neutral

level (49.0%). In general, the trend in the responses of students from both countries for positioning themselves in profiles 1 and 2 can be seen, thus revealing the lack of confidence of students to teach in multigrade settings.

Graph 3 specifically shows the comparison between competencies that students in Slovenia and Spain consider to have acquired, partially acquired, or not acquired.



Graph. 3. Acquisition level of the skills for multigrade teaching by the students of the Primary Education Degree in Spain and Slovenia

The Graph above shows that in Spain the level of confidence in the skills acquired during the teacher training, and through the personal experiences of each student, is lower than in Slovenia. The level of confidence of Slovenian students for multigrade teaching is focused on the level of partial acquisition or total mastery, so that, compared to Spanish students, Slovenians have a more precise visualisation of the knowledge they possess.

Comparing the responses of Slovenian and Spanish students through the Mann-Whitney U test, significant differences are found in relation to the following competencies: *Specificity of the multigrade rural school* (P=0.004), *Curriculum adaptation and differentiation* (P=.000), *Grouping and teaching for instruction strategies* (P=.000) and *Time management* (P=.003). While 45.1% of Spanish students considered that they had not acquired the *Specificity of the multigrade rural school* skill, only 14.8% of Slovenian students had the same opinion; 40.7% of Slovenian students felt able to make *differentiated curricular adaptations* to the different grades that the multigrade classroom can integrate, but only 9.8% of Spanish university students were in agreement with their Slovenian counterparts. While 56.9% of Spanish students did not consider they had the *Grouping and teaching for instruction strategies* skill, only 18.5% of Slovenians agree with this positioning; and although 46.3% of Slovenian students considered they had the *Time management* skill, only 23.5% of Spanish university students were in agreement (See Tables 5 and 8).

No significant differences were identified in the remaining competencies. Both countries coincided on the following points: Spanish and Slovenian students (43.1% and 51.9%, respectively) considered themselves capable of *generating effective learning environments* for the development of the educational process; likewise, 45.1% and 48.1% of students in Spain and Slovenia, respectively, felt capable of *carrying out a formative assessment* using hierarchisation and adaptation criteria for each of the groups that make up the multigrade classroom.

This analysis inevitably indicates that although Spain, in comparison with Slovenia, has higher percentages in the non-acquired domain in two of the competencies for multigrade teaching: 56.9% in *Grouping and teaching for instruction strategies* and 45.1% *in Specificity of the multigrade rural school*; in both countries, the majority of the competencies (seven in Spain and seven in Slovenia) were considered partially acquired. It is also worth mentioning that while the majority of Spanish students considered they had acquired two of the competencies presented, in Slovenia, the majority of the sample considered they had acquired three. In Slovenia, there was a dichotomy of opinion on one of the competencies: while 46.3% considered they had partially acquired the competence related to *time management,* the exact same percentage of students considered they had mastered this skill.

10. Discussions and conclusions

Judging from the results, it is clear that students have received little or no training in multigrade teaching. Most students in both countries considered that the university programmes in which they had been trained did not provide them with any theoretical and practical knowledge of the implications of multigrade teaching (See Tables 4 and 7).

The results of this research coincide with those of other studies which show the lack of explicit content on multigrade schools and their teaching in Spanish university programmes (Abós, 2011; Boix and Buscà, 2020; Magro, 2019). No studies on the subject can be found in Slovenia; however, results of Slovenian students' perceptions of

knowledge acquisition during their multigrade teacher training are supported by international research that has explored this issue and which points to the educational deficit in universities in relation to multigrade schooling (Mulryan-Kyne, 2007; Kivunja and Sims, 2019).

Within the framework of Le Cornu's (2009) research, that states that the learning experiences that student teachers have during their training positively, or negatively, affect the expectations of motivation in the future performance of their profession, these results show that the lack of knowledge and understanding of institutional elements, contextual and organisational aspects of educational policies, management of professional relations and elements of pedagogy and multigrade teaching influence their confidence as future teachers in multigrade schools, as well as the level of acquisition of the competencies they express (See Tables 5 and 8).

In general, Slovenian students considered that they had a higher level of acquisition of competences for multigrade teaching compared to Spanish students. From the brief curricular analysis presented, it is found that in both programmes there is no specific subject that declares from the formal curriculum the integration of pedagogy and didactics of the multigrade school, confirming again the statements of Abós (2011), Boix and Buscà (2020); Magro (2019); European Commission (2019) who insist that in the university centres the lack of attention to the concept of teaching in mixed classrooms persists.

However, from the optional subjects that Slovenian students can access in their Bachelor's studies, there are subjects that contribute to students establishing a link to school in natural contexts; facts that are closely linked to teaching in a multi-degree group. On the other hand, the difference in results can also be justified from the specific practical training that Slovenian students receive, as well as the way in which the Slovenian educational system is organised, where students receive one additional year of training compared to Spanish students. Another factor in understanding this difference in outcomes could be the formal and informal experiences that teachers in each country may have had during their training. These experiences could be linked to the use of the hidden curriculum, through which teacher trainers of future teachers can address content related to the rural multigrade school.

However, the fact that in both countries the *partially acquired* level of skills for multigrade teaching is predominant, and that in Spain there are two skills that future teachers considered they *had not acquired*, reveals that the formal and informal activities developed by the universities in both countries have not been sufficient for the promotion of competencies for multigrade teaching. It is possible to conclude that, although the duration of the teacher training programmes influences the level of acquisition of some of the skills for multigrade teaching, this does not determine the acquisition and development of these skills for subsequent performance. It is also possible to say that there are certain contents that can bring students closer to the knowledge of the undergraduate school in the rural context than others. In this sense, it is also worth mentioning the positive impact that the development of specific practices on the different subjects that Slovenian teachers take can have on the level of confidence of students.

We therefore advocate that teacher training, both generalist and multigrade, should integrate a change of approach, that in addition to integrating the global and specific elements of the different areas of knowledge that multigrade teaching involves, develops practical aspects and promotes an approach to the context of rural schools. We propose the development of tutorial sessions in which teachers with experience in multigrade

teaching exchange knowledge and experiences with future teachers and vice versa. Along the same lines, and coinciding with the work by Tang, Wong, and Cheng (2016), we consider that teacher training should integrate spaces of social construction to develop and strengthen self-confidence in future teachers as a basis for their critical and analytical thinking, this being the pillar on which students can evaluate their actions and attitudes.

We believe that the findings of this manuscript are a framework for further studies to investigate, on a larger scale, the perception and opinion of future teachers for multigrade performance. Likewise, this document provides a context for reflection by universities to make decisions focused on curricular modifications and training experiences that should be provided to strengthen the knowledge and skills that multigrade teaching demands, and consequently, to strengthen the self-confidence of future teachers.

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