

Teacher Training for the Construction of Classrooms Open to Inclusion¹

Formación del profesorado para la construcción de aulas abiertas a la inclusión

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Abstract

Teachers of the 21st century must be competent to respond to the challenges of the new millennium, as it requires a well-trained professional who is committed to the postulates of inclusive education. The objective of this article is to analyze the training of teachers and other professionals to meet the special educational needs of students who require extensive and generalized support. A non-experimental, descriptive and survey-type research design was used for our investigation. The population group is characterized by the set of specialized open classrooms in the Region of Murcia during the 2018/19 academic year, a total of 108 open classrooms and 1043 teachers or professionals. The selection of the sample was carried out through a non-probabilistic convenience sampling, involving 88 specialized open classrooms and 490 professionals (tutor of specialized open classroom, tutor of reference classroom and the teaching and professional team of these classrooms). To collect the information, three ad-hoc questionnaires were used for the tutor of the specialized open classroom, the

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tutor of the reference classroom, and the teaching and professional team of the specialized open classroom. The data analysis has been carried out using a quantitative approach with descriptive statistics, inferential analysis based on socio-demographic variables (sex, dedication, educational stage, ownership of the center, professional profile, experience in the center, experience with the group of students and age) and correlational analysis. The results indicate the lack of training and ability of the participants when facing the response to the educational needs of the students enrolled in specialized open classrooms. This situation is more pressing in the non-specialist teachers in attention to diversity. Likewise, we highlighted a positive correlation between the training received, the knowledge of the open classroom and the development of planning functions and curricular adjustments to offer inclusive responses to students who require extensive and generalized supports.

Key words: training, inclusive education, teachers, primary education, secondary education.

Resumen

El profesorado del siglo XXI debe ser competente para responder a los retos del nuevo milenio, un profesional bien formado y comprometido con los postulados de la educación inclusiva. La finalidad de este artículo es analizar la formación del profesorado y otros profesionales para atender las necesidades educativas especiales del alumnado que requiere apoyos extensos y generalizados. Se utilizó un diseño de investigación no experimental, descriptivo, tipo encuesta. La población está caracterizada por el conjunto de aulas abiertas presentes en la Región de Murcia en el curso académico 2018/19, un total de 108 aulas abiertas y 1043 docentes o profesionales. La selección de la muestra se realizó mediante un muestreo no probabilístico por conveniencia en el que participaron 88 aulas abiertas y 490 profesionales (tutor/a aula abierta, tutor/a aula de referencia, y el equipo docente y profesional de estas aulas). Para la recogida de la información se utilizaron tres cuestionarios elaborados ad hoc, dirigidos al tutor/a de aula abierta especializada, tutor/a de aula de referencia, y equipo docente y profesional del aula abierta especializada. El análisis de datos se ha realizado desde una aproximación cuantitativa a partir de estadísticos descriptivos, análisis inferencial, en función de variables sociodemográficas (sexo, dedicación, etapa educativa, titularidad del centro, perfil profesional, experiencia en el centro, experiencia con el grupo de alumnos y edad), y análisis correlacional. Los resultados indican la falta de formación y capacidad de los participantes para responder a las necesidades educativas del alumnado de las aulas abiertas, siendo esta situación más acuciante en el profesorado no especialista en atención a la diversidad. Asimismo, se muestra una correlación positiva entre la formación recibida, el conocimiento del aula abierta y el desarrollo de funciones de planificación y ajustes curriculares, para ofrecer respuestas inclusivas al alumnado que requiere apoyos extensos y generalizados.

Palabras clave: formación, educación inclusiva, docentes, educación primaria, educación secundaria.

Introduction

The 2030 Agenda and its Sustainable Development Goals (UNESCO, 2105a; 2015b), itemises 169 goals and 232 indicators focussing on the main social challenges of the 21st century. More specifically, SDG 4 (Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all) is the framework supporting this paper on training teachers in inclusion. Teachers in the 21st century must be able to respond to the challenges of the new millennium, as it requires well-trained professionals who are committed to their job, with social recognition in regard to the importance of their work and being passionate about ongoing learning and teaching (Dieste, Coma and Blasco- Serrano, 2019). Regarding this topic, research by Hattie (2003) concluded that teacher quality is the main variable to obtain good schooling results and/or to improve on them. In another piece of research, the same author (Hattie, 2009) proved that teachers who receive feedback from their assessment, value and improve their work.

From this standpoint, a study by Navarro, López and Rodríguez (2021) analysed the training beliefs and needs that teachers have in regard to inclusive education, highlighting that inclusion is still understood in many cases as a synonym of integration. This study showed that 37.5% of teachers in infant and primary education, and 25% in secondary education believed that their centres were not ready to respond to the demands of inclusive education, and only employed “palliative” solutions. The study also showed that 18.75% of teachers at all levels of education believe that they are suitably trained to deal with all pupils, with the exception of secondary school teachers (who do not appear to be sufficiently well trained to cater to the needs of pupils with special education needs). Furthermore, 12.25% of infant and primary school teachers believe that a very high ratio impedes being able to deal with individual differences; and 25% of secondary school teachers claim that the subject of inclusive education needs to be rethought, although 31.25% believe that the idea

of inclusion could transform today's educational system, with this belief being shared by 18.75% of infant and primary school teachers. Another relevant piece of data is the lack of teachers who are trained to deal with inclusion goals (18.75% in infant and primary education, and 31.25% in secondary education), and the difficulty of the conceptual perspective by considering inclusion as only for special needs pupils.

It has been demonstrated that specific training on diversity, in the use of concrete methods for this teaching, is a fundamental requirement that all teachers should have in order to achieve significant learning in pupils with special educational needs. This is discussed in the research by Larraceleta (2020) on practices based on evidence established by the US National Professional Development Center on Autism Spectrum Disorders, directed by teachers for the education of Autism Spectrum Disorder (ASD) pupils, with the aim of improving their social, communication and academic skills at education centres.

Other studies (Angenscheidt and Navarrete, 2017; Friesen and Cunning, 2020), on the skills, beliefs and knowledge of teachers on inclusive education, concluded that a strong commitment is required towards pupil centric learning and on inclusion practices in the classroom to ensure the best attitudes and more democratic teaching. Therefore, these authors believe that creating an environment of inclusion for the development of pupils is the basis of any teacher training programme.

Along these same lines, Specht et al. (2016) claim the importance of inclusion in teacher training, as do Hutchinson (2017) and Sharma and Sokal (2016), who showed that teachers who are trained to improve their attitudes towards inclusion, produce more inclusive teaching practices. There are studies that clearly show the correlation between attitudes by teachers towards inclusive education and the effectiveness they perceive in developing inclusive teaching practices. Consequently, positive attitudes towards inclusion are a determining factor for more effective educational practices from the perception that teachers have (Savolainen, Engelbrecht, Nel and Malinen, 2012; Woodcock and Faith, 2021; Yada and Savolainen, 2017). Likewise, with less positive attitudes towards inclusion, teachers show moderate levels of self-efficacy in the implementation of inclusive education, as brought to light in the study carried out by Bawa, Desai and Umesh (2020). In addition to the above, in the research by Desombre, Lamote and Jury (2019), generalist teachers reported poorer attitudes and less efficacy in regard to developing inclusive practices than

teachers specialising in diversity. This highlights the need to develop positive attitudes towards inclusion in teacher training programmes.

Finally, attention must be brought to the research coordinated by Echeita and Simon (2020), sponsored by the Ministry of Education and Vocational Training, analysing four educational systems (Italy, Portugal, Canada and United Kingdom) in relation to special education centres. In their conclusions they emphasised the empirical need for teacher training, particularly ongoing training, on diversity and inclusion in order to meet the challenges of building flexible, open, personalised syllabuses, taking into account the Universal Design for Learning (UDL) designed at the Center for Applied Special Technology (CAST).

In view of the aforementioned research papers, one of the main challenges teacher training today faces, and training of other professionals, is preparing them for the challenge of quality, equitable and inclusive education in a changing, uncertain, complex and deeply unequal society, in a context of uncertainty and the information society (Navarro et al., 2021). But why not promote true inclusive education? What are the most effective methodologies to implement it? Teachers perhaps ask themselves these and other questions, since they face them on a daily basis in the classroom, to which others could undoubtedly be added: Was I trained and can I continue to be trained to ensure the challenge of guaranteeing inclusive education for all materialises?

Where there seems to be no room for argument is that in order to achieve, quality, inclusive education, we need committed, well-trained professionals. Obviously, to achieve this, the initial and ongoing teacher training needs to be improved, teaching practices and educational policies need to be improved, and research and innovation on more effective teaching is required (López, Rupérez, 2014). This idea is shared by the Organisation of Ibero-American States for Education (OEI, 2013), since they consider improvement in basic teacher training as one of their specific goals (within the Education Goals Project 2021), encouraging ongoing training, developing professional careers and quality teaching. In this sense, implementing measures to improve teaching quality would be desirable, such as making the teaching profession more attractive, dignifying the image of teachers, developing better skills in the education profession, optimising the teacher recruitment system, improving promotion opportunities, creating education communities of teachers and involving them in the preparation of education policies. And of

course, restructuring and adapting the teacher training faculties to bring them up to date with the requirements of the 21st century (Arnaiz, 2019).

Initial and ongoing training: an unavoidable question

Except for some token particularities, teachers are not trained at university in a way that prepares them to tackle the challenges of a complex society, not to mention any training preparing them to design inclusion syllabuses (Aguaded, Rubia and González, 2013; Santos Rego, Cernadas and Lorenzo, 2014; Rodríguez, 2019), and consequently, a lot of the time university teacher training is a solid barrier preventing the adoption of inclusive approaches (European Agency, 2011; Leiva, 2012; Moriña, Sandoval and Carnerero, 2020).

Bearing in mind the above, university teacher training for Primary Education must be more versatile, which does not mean that these teachers have to be capable of being able to do everything and doing it well, but that their academic and practical training should prepare them to carry out different types of education strategies, owing to the many different situations that arise at their workplaces (Álvarez and López, 2015; Hernández Pallarés and Moñino, 2019). Therefore, through their university education, future teachers must start building their theoretical / practical knowledge that not only allows them to learn specific skills, but also, and fundamentally, to ensure they are self-sufficient to be able to deal with the many different situations they may find in their working lives (De Loor-Aldás and Aucapiña-Sandova, 2020). Consequently, training teachers to work in inclusive environments means training teachers who are ready to deal with diversity, with the cognitive, affective and practical competences and skills that they need in a complex, changing social context (Cernadas, Santos Rego y Lorenzo, 2013).

This means that universities must prepare teachers to reflect on the theory of concepts such as culture, interculturality, diversity, inclusion..., but also on categories that mark the difference between people, such as social class, gender and inequality.

The Talis Report on Teaching and Learning (National Institute of Educational Assessment, 2019) highlights that only a small percentage of Spanish teachers who take part in formal professional development programmes, regularly attend training courses and seminars or take part

in ongoing, inter-school training (Bunch, 2015; Muntaner, Pinya and de la Iglesia, 2015). Among the many reasons for this situation, we need to draw attention to the fact that the money allocated to the ongoing training of teachers has been cut back considerably since 2011. But there are also reasons related to the type of training teachers are offered.

One of the reasons for this is that all teacher training action must fundamentally have the ultimate goal of responding to problems that teachers encounter in their daily work, finding a “shortcoming in the training courses offered to teachers and the real needs that are required from the different bodies with the educational community” (González y Castro, 2012, p. 246). There does not appear to be much discussion here, but the answer must be held in context, because there are no validly applicable training recipes for any context. Teachers want training that provides them with good working tools, knowledge, techniques, strategies and methodologies, whilst also focussing on other important aspects of their training such as attitudes, feelings, interests, motivation, etc. Indeed, in research carried out in Galicia on ongoing teacher training (Santos Rego et al., 2014), it was concluded that there is still very low participation by teachers in training activities, and when they do demand training, they request action strategies that can be taught at the school itself, and in collaborative environments as a learning factor to drive improvement (Krichesky and Murillo, 2018).

The study discussed in this paper is part of a research project (EDU2016-78102-R) addressing the assessment of regulation, functioning and educational response of Specialised Open Classrooms (SOC), a specific measure to cater to diversity established in the Region of Murcia. To achieve this, it is worth pointing out the meanings of these special educational needs units at ordinary centres in regard to the approaches to inclusive education and how they are regulated. In this sense, the Order by the Education, Training and Employment Council of 24th May 2010, regulating authorisation and functioning of SOC at ordinary public and state subsidised schools in the Region of Murcia, states that this measure has the ultimate goal of ensuring implementation of the principles of educational standardisation and inclusion for pupils with extensive and generalised support (PEGS) needs in all areas of the syllabus (severe intellectual disability, autism spectrum disorders and multiple disabilities. Including pupils in these units requires a process of psychological educational assessment, and the relevant schooling report.

Indeed, according to the Order of 21st June 2012 by the Education, Training and Employment Council, establishing the general criteria to determine the real needs of teachers at Infant Schools, Infant and Primary Schools, Special Education Centres and Grouped Rural Schools, where the ratios are between 3 and 6 pupils in Infant Schools and between 4 and 7 in Primary and Secondary Education Schools. These pupils share their school timetables in Physical Education, Music, Art and Religion or Alternative subjects with the mainstream students in the classes they are assigned to, depending on their levels of competence and age, which are known as the reference classrooms. Likewise, they share common time and spaces with the rest of the students, such as celebrations of “...day”, festivities, playground, canteen, and after-school activities.

The teachers in open classrooms consist of a number of professionals such as: the open classroom tutor (specialising in Therapeutic Teaching), a Hearing and Speech specialist and the teachers of the aforementioned subjects. This team is completed by other members, such as the Educational Support Assistant who helps the pupils and teachers during school hours. For open classrooms to work properly, specific knowledge on how to deal with diversity is required for appropriate undertaking of participative processes in education planning, and good coordination, communication and cooperation among the members of staff.

In view of the foregoing, the general objective of this article is to identify the perception that teachers have about how their training prepares them to deal with special educational needs of pupils who require extensive and generalised support. The specific objectives are as follows: 1) to identify the perception teachers have about their training to deal with special educational needs of pupils in order to meet their needs for extensive and generalised support; 2) to analyse the perception teachers have on their capabilities and training needs to meet the educational requirements of pupils in special open classrooms; 3) to assess the extent to which teacher training is an obstacle to meet the needs of pupils who require extensive and generalised support.

Method

Design

A quantitative, non-experimental, descriptive design was used in this study, employing questionnaire techniques. The importance of descriptive studies must be taken into account in order to identify, describe, assess and intervene in a research problem, in this case special open classrooms and the training of teachers who work in these classrooms, as discussed by Sampieri and Fernández (2016). By identifying and analysing the training given to teachers and professionals who work in open classrooms we will be able to identify and implement changes to improve it, hence the importance of the design employed.

Population and sample

The population included in this study is defined by the specialist open classrooms in the Region of Murcia. During the 2018/2019 academic year, there was a total of 108 special open classrooms in 82 centres in the Region of Murcia. Choosing the sample was carried out by means of a non-probabilistic sampling process in accordance with suitability (MacMillan and Schumacher, 2005). More specifically, the sample invited to take part in the study included 1043 professionals involved at the aforementioned 108 classrooms. Finally, as shown in Table I, 490 professionals eventually participated, from 88 of the classrooms at 68 centres, which accounts for a confidence interval of 99% ($Z= 2.576$) with an error margin below 5%.

TABLE I. Distribution of study sample

	INVITED SAMPLE	PARTICIPATING SAMPLE		
	Total	Primary	Secondary	Total
Management Team Members	164	66 (61.7%)	41 (38.3%)	107
Special Open Classroom Tutors	108	64 (72.7%)	24 (27.3%)	88
Teaching and Professional Staff	771	124 (66.3%)	63 (33.7%)	295
Specialist hearing and speech teaches	108	32 (68.1%)	15 (31.9%)	47
Physical Education Teachers	108	23 (65.7%)	12 (34.3%)	35
Art Teachers	108	21 (65.6%)	11 (34.4%)	32
Religion or Alternative Subject Teachers	108	13 (68.4%)	6 (31.6%)	19
Educational Support Staff	108	26 (63.4%)	15 (36.6%)	41
Other area or subject teachers	10	5 (55.6%)	4 (44.4%)	9
Educational Therapy Specialists	5	4 (100%)	0 (0%)	4
Reference Classroom Tutors	216	78 (72.2%)	30 (27.8%)	108
Total	1043	332 (67.8%)	158 (32.4%)	490

Source: Own source

Information compilation instruments

The questionnaire technique was used to compile information, through three ad hoc questionnaires addressing: specialist open classroom tutors, reference classroom tutors and the specialist, open classroom teaching and professional staff. In order to analyse the validity of the content, the questionnaires were subjected to a panel of experts technique. To analyse the internal consistency, Cronbach's Alpha was used, producing the following values: specialist open classroom tutors (.780), reference classroom tutors (.778) and open classroom teaching and professional staff (.818).

The items in the questionnaires are grouped together in three different areas:

1. *Initial and ongoing training to meet the educational needs of pupils who require extensive and generalised support.* 5 items: initial training; centre training; training requirements; capability for pupils in open classrooms; taking training courses.
2. *Open classroom planning and coordination.* 18 items: knowledge on the organisation and functioning of open classrooms and the participation processes in planning and developing the teaching

programme, the Individual Work Plan (IWP), syllabus adaptation (activities, methodologies and adapted materials) and Training Units.

3. Assessment of the open classroom. 11 items: implications and barriers of open classrooms for inclusion. The analysis of this field is not included in this study.

The items in the two studied fields include dichotomous items and Likert type items with four score values (1= Not at all; 2= Poor; 3= Moderate; 4; Very). Approximately half of the questions in the questionnaires were common and the other half specific for the analysed groups. To complete the information and to enhance the perspectives of the interviewees, we resorted to the item in the questionnaire not used in this study in regard to the management of the participating sites such as: Have any training/information courses been held for the teachers of the open classroom reference groups?

Procedure and data analysis

The questionnaires were conducted through the Education Council's platform in order to make it more accessible for teachers and support staff. This followed a letter by the Education Council and research project director inviting the schools to take part in the study. A brief explanation about the purpose of the research and informed consent was included in the questionnaires. The research was approved by the Murcia University Ethics Committee.

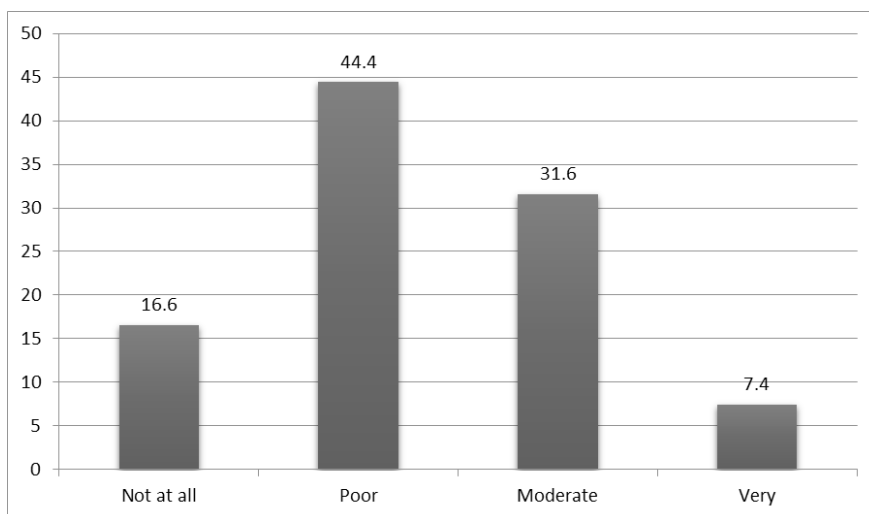
Descriptive statistics were used to analyse the data (frequencies and percentages) in order to identify teachers' perceptions on the established objectives. Inferential statistical analyses were performed to assess the existence of differences in accordance with the following variables: gender (male or female), dedication (full or part time), education stage (primary or secondary), school ownership (state or state-subsidised), professional profile linked to the diversity speciality (specialist and non-specialist profiles), years of experience at the school, years of experience with the group of pupils and age group. Since the study variables did not have a normal data distribution, as the normal distribution was not met (Kolmogorov-Smirnov test, $p < .001$) and homoscedasticity or equality of variances (Levene test, $p < .005$), we resorted to non-parametric statistics

through the Kruskal-Wallis H test and Mann-Whitney U test, arriving at a level of statistical significance of $\alpha = .05$. To analyse the correlation between the variables in the two analysed fields, we employed the Spearman correlation. These analyses were performed using version 24 of the SPSS statistics package.

Results

The results showing the perception by teachers at ordinary schools on their initial and ongoing training to meet the educational needs of PEGS are provided as follows in regard to specific objective 1. As can be seen in Graph I, over half of the participating teachers (61%) stated that their initial training was not at all or only slightly sufficient (16.6% not at all and 44.4% only slightly sufficient). Therefore, only 39% of teachers believe that their training is adequate (31.6% moderately sufficient and 7.4% very sufficient).

GRAPH I. Perception on initial training to meet the needs of PEGS



Source: Own source

To assess the existence of possible differences according to the studied variables (gender, dedication, education stage, school ownership, specialist or non-specialist profile, experience at the centre, experience with the group and age group), the non-parametric de Mann Whitney U-test and Kruskal Wallis H-test were performed, obtaining the differences shown in Table II.

TABLE II. Differences in the perceptions on initial training to meet the needs of pupils requiring extensive and generalised support

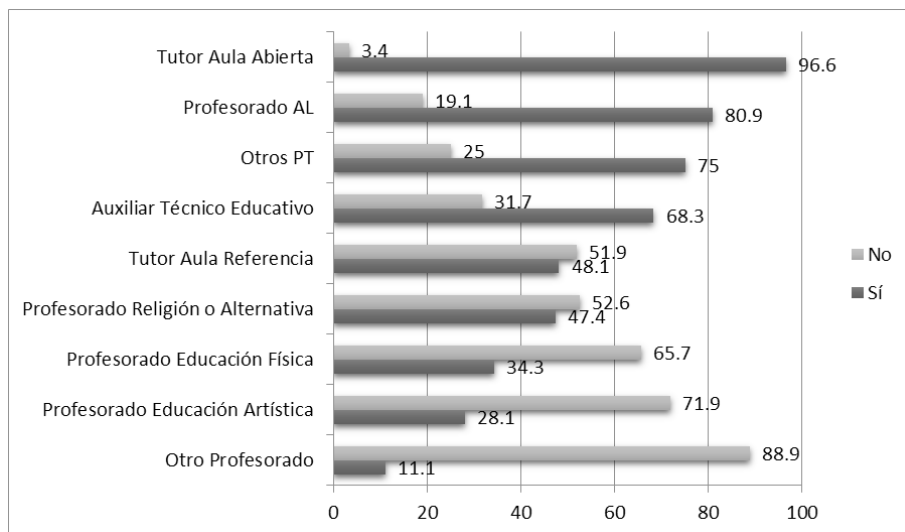
	Mann Whitney U-test	Sig. (bilateral)	Management	
Gender	4635.50	124	Women = Men	
Dedication	3243.00	.008	Part time > Full time	
Stage	4128.50	.497	Primary = Secondary	
Ownership	4763.50	.020	State subsidised > State	
Diversity Profile	6654.000	.000	Specialist profile > Non-specialist profile	
	Kruskal Wallis H-test	df	Sig. (bilateral)	Management
Experience at centre	9.83	3	.020	Between 1-5 years > Over 15 years
Experience with group	1.06	3	.787	= All years of experience
Age (ranges)	3.71	3	.293	= All years of experience

Source: Own source

The results prove that there are statistically significant differences in the perception of initial training by the participants depending on: their dedication ($U = 3243.00$; $p = .008$), ownership of the school ($U = 4763.50$; $p = .020$), professional profile associated with diversity care specialisation ($U = 6654.00$; $p < .001$) and the professional experience at the education centre ($\chi^2 = 9.83$; $df = 3$; $p = .020$).

In regard to the perception on ongoing training by teachers in open classrooms, over half of the interviewees (61.8%) claim that they have undergone or are undergoing training on special educational needs; however, 38.2% state the opposite. Graph II shows the itemised values according to professional profile.

GRAPH II. Perception of the degree of ongoing training on special educational needs according to professional profile



Source: Own source

We also assessed if their perception on taking training courses with the aim of catering to PEGS could be explained according to the study objective variables, leading to the results shown in Table III.

TABLE III. Differences in the perception on ongoing training to meet the needs of pupils requiring extensive and generalised support

	Mann Whitney U-test	Sig. (bilateral)	Management	
Gender	4582.50	.134	Women = Men	
Dedication	3041.50	.040	Part time > Full time	
Stage	3748.00	.601	Primary = Secondary	
Ownership	4807.00	.008	State subsidised > State	
Diversity Profile	6221.500	.000	Specialist profile > Non-specialist profile	
	Kruskal Wallis H-test	df	Sig. (bilateral)	Management
Experience at centre	3.23	3	.356	= All years of experience
Experience with group	3.45	3	.326	= All years of experience
Age (ranges)	1.95	3	.581	= All years of experience

Source: Own source

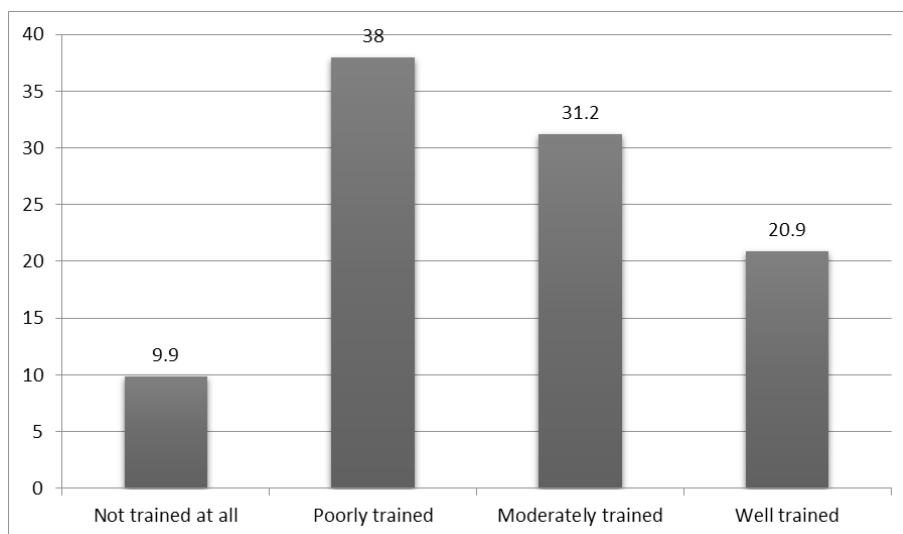
The results show that there are statistically significant differences in the perception of training action by PEGS to meet special educational needs depending on their dedication ($U = 3041.00$; $p = .040$), ownership of the school ($U = 4807.00$; $p = .008$), professional profile associated with diversity care specialisation ($U = 6221.50$; $p < .001$).

The above data contrast with the support that centres offer their teachers in regard to training action. 88.9% of participants consider that the centre where they work favours their training to meet the basic training requirements for teaching PEGS. Only 11.1% consider that the centre should provide more support for its teachers in regard to this type of training. In fact, 58.5% of managerial teams at centres with open classrooms stated training sessions had been held for teachers in the last academic year.

We shall now look at how teachers perceive their own ability to meet the educational needs of PEGS, objective 2.

Nearly half of the teachers who took part in this study (47.9%) claim that they are less able to meet the needs of PEGS than the rest of the pupils compared to 52.1% who claim they are capable of meeting the needs of PEGS.

GRAPH III. Perception of teachers on their ability to meet PEGS.



Source: Own source

The differences in the teaching ability to cater to PEGS according to the study variables are shown in Table IV:

TABLE IV. Differences in the perception of teachers on their ability to meet PEGS.

	Mann Whitney U-test	Sig. (bilateral)	Management (less capable)	
Gender	8571.00	.100	Women = Men	
Dedication	1580.00	.002	Full time > Part time	
Stage	7637.00	.018	Primary > Secondary	
Ownership	7972.00	.007	State > State Subsidised	
Diversity Profile	3381.00	.000	Non-specialist profile > Diversity specialist profile	
	Kruskal Wallis H-test	df	Sig. (bilateral)	Management
Experience at centre	5.95	3	.114	= All years of experience
Experience with group	3.21	3	.360	= All years of experience
Age (ranges)	4.41	3	.220	= All years of experience

Source: Own source

The results show that there are statistically significant differences in the perception of the ability by the participants to meet PEGS depending on their dedication ($U = 1580.00$; $p = .002$), education stage ($U = 7637.00$; $p = 0.18$), ownership of the school ($U = 7972.00$; $p = .007$), professional profile associated with diversity care specialisation ($U = 3381.00$; $p < .001$).

Over half the teachers (59.5%) perceive they have a lack of training to cater to the needs of PEGS (47.1% moderate and 12.5% great need), compared to 40.5% who state they have little (34.6%) or no need (5.9%). The differences in training needs according to the studied variables are shown in Table V:

TABLE V. Differences in the perception on training needs to cater to PEGS

	Mann Whitney U-test	Sig. (bilateral)	Management (less capable)	
Gender	9294.50	.859	Women = Men	
Dedication	2209.50	.406	Full time = Part time	
Stage	8412.00	.371	Primary = Secondary	
Ownership	8421.50	.075	State = State Subsidised	
Diversity Profile	6614.50	.000	Non-specialist profile > Diversity specialist profile	
	Kruskal Wallis H-test	df	Sig. (bilateral)	Management
Experience at centre	10.06	3	.018	Between 6 and 10 years > Between 1 and 5 years
Experience with group	7.81	3	.050	= All years of experience
Age (ranges)	3.76	3	.288	= All years of experience

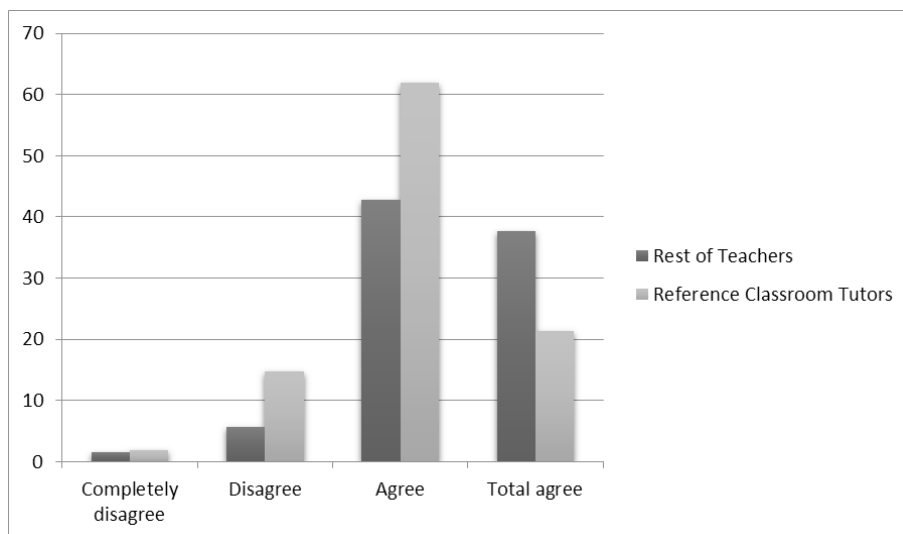
Source: Own source

The results show that there are statistically significant differences in the perception of training needs by the participants to cater to PEGS depending on: their professional profile associated with diversity care specialisation ($U = 6614.50$; $p < .001$) and their experience at the school (chi-square = 10.06; $df = 3$; $p = .018$).

We then moved on to identify to what extent teacher training was perceived as an obstacle for PEGS education, objective 3.

92.8% of the participants stated they fully agreed (37.6%) or agreed (42.8) to knowing the organisation and functioning of open classrooms, therefore, only 7.2% disagreed (5.7%) or fully disagreed (1.5%) with this statement. Nevertheless, as can be seen in Graph IV, in the case of reference classroom tutors, to whom open classroom pupils are assigned, the percentages on the lack of knowledge were higher (14.8% disagreed, 1.9% fully disagreed), compared to 83.3% who claimed they did know about the organisation and functioning of open classrooms.

GRAPH IV. Knowledge of the organisation and functioning of open classrooms



Source: Own source

We wanted to know if there was a statistically significant relationship between the perception teachers have about their training and the functions they require to undertake open classroom educational processes. To do so, we used Spearman’s rank correlation coefficient (r_s). The findings are shown in Table VI:

TABLE VI. Correlation between training perception and open classroom knowledge

	Perception on initial training	Perception on training needs	Perception on feeling less capable	Ongoing training (Courses)
I know how open classrooms are organised and how they function	.299**	-.231**	-.517**	.319**

** The correlation is significant at level 0.01.

Source: Own source

A direct correlation can be observed between how teachers perceive their training and the knowledge they have on the organisation and functioning of open classrooms. There is a positive correlation and weak intensity according to the perception on their initial and ongoing training ($r = .299$ and $.319$ respectively). It is negative and weak in regard to their training needs ($r = -.231$) and moderate according to their ability to cater to PEGS ($r = -.517$).

The correlation between teacher training and cooperation, coordination and communication processes among professionals (Table VII) show a direct relationship between them, although they are not very intense and are weak.

TABLE VII. Correlation matrix between training and planning and coordination variables

	Perception on initial training	Perception on training needs	Perception on feeling less capable	Ongoing training (Courses)
<i>Coordination with the other professionals who intervene in open classrooms</i>	.256**	-.214**	-.230**	.165*
<i>Cooperation with the open classroom tutor in preparing, monitoring and assessing specific programmes</i>	.202**	-.158*	-.218**	.188**
<i>Collaboration in IWP decision making and syllabus adaptation for pupils in open classrooms</i>	.174*	-.080	-.160*	.246**
<i>Cooperation in adapting and preparing material, following the guidance by the open classroom tutor</i>	.292**	-.169*	-.282**	.141
<i>Feedback to the tutor and the rest of the open classroom team on the aspects established during individual action with pupils</i>	.219**	-.170*	-.224**	.135
<i>Meetings with the rest of the open classroom team members</i>	.211**	-.117	-.105	.202**
<i>Collaboration with the open classroom tutor in designing and adapting activities and materials</i>	.243*	-.110	-.266**	.169

* Correlation is significant at level 0.05. ** Correlation is significant at level 0.01.

Source: Own source

Likewise, a correlation analysis was performed to measure the degree of association between the perception teachers have about their training and the open classroom educational planning and development processes. The results are shown in Table VIII

TABLE VIII. Correlation matrix between training and planning and coordination variables

	Perception on initial training	Perception on training needs	Perception on feeling less capable	Ongoing training (Courses)
Have you taken part in preparing the Open Classroom Teaching Programme?	.109	-.090	-.207**	.175*
Have you taken part in preparing the Individual Work Plans (IWP) for each of the open classroom pupils?	.159*	-.076	-.155*	.196**
Have you taken part in preparing Training Units?	-.023	-.038	-.045	.040
Do you take part in developing Training Units?	.057	-.087	-.185*	.073
Is any prior planning carried out for the activities when open classroom pupils attend reference classrooms?	.213*	-.117	-.144	.224*
Do you design activities that have been adapted to the characteristics and needs of the open classroom pupils?	.288*	-.152	-.139	.054
Do you design methodologies that have been adapted to the characteristics and needs of the open classroom pupils?	.353*	-.117	-.136	.165
Do you design educational material adapted to the needs of open classroom pupils?	.286**	-.130	-.110	.096
Do you plan and develop group dynamics and activities in the classroom that facilitate participation by open classroom pupils?	.197	-.099	-.160	.054
Do you use specific methodologies (TEACCH, PEANA, ¿SAAC...) with the open classroom pupils?	.190	-.241*	-.119	.151

* Correlation is significant at level 0.05. ** Correlation is significant at level 0.01.

Source: Own source

Although correlations are not very intense and are fairly weak, there is a direct correlation between the perception teachers have about their training and the educational development and planning functions carried out by professionals in open classrooms. This correlation is more recurring in the perception teachers have in regard to their initial training. The higher the perception, the greater their participation functions in planning and development of IWP and syllabus adaptation to meet PEGS needs.

Discussion and conclusions

Teacher training in the paradigm of inclusion is imperative for building inclusive schools. Therefore, Universities where initial is provided and continuous training schools are responsible for fostering training action for teachers and the other professionals who take part in inclusive schools, as defined in the Agenda 2030 (Arnaiz, 2019; UNESCO, 2015a; 2015b). To this end, they must guarantee quality, inclusive education for all, training competent teachers to meet and respond to this challenge (Dieste et al., 2019; Hattie, 2003; McKinsey & Company, 2007). As Specht et al (2016) point out, training for inclusion must be a part of teacher training and must be given the importance it deserves.

In our study, the general perception by teachers on their initial training to encourage inclusion and to meet the educational needs of PEGS, is that their training is insufficient. The University training they are given is not valid to be able to provide quality, equitable education, and is even less valid to enable them to prepare inclusive syllabuses (Hernández Pallarés and Moñino, 2019; Santos Rego et al., 2014). Following this line of argument, the European Agency (2011), and Leiva (2012), Moriña et al., 2020 and Rodríguez (2019), have revealed that university training at the Teacher Training Faculties does not favour inclusive approaches. Hence the need to provide training for future teachers, as pointed out by Cernadas et al., (2013), that takes classroom inclusion into account, developing inclusive attitudes and the possibility of generating more equitable teaching practices (Hutchinson, 2017). Nevertheless, specialist teachers (TP and HS) consider their training is adequate. In our study, the teacher training level at private and state subsidised schools to cater to PEGS is better than in state schools, and the same is observed in the case of part time teachers and those with less experience. y

Insofar as ongoing training is concerned, most teachers consider they carry out enough training on an individual basis or at the school where they work (Hattie, 2009). Management teams claim they encourage teacher and other professional training at the schools where there is inclusive education, and also teach knowledge on open classrooms. Nevertheless, it is the teachers specialising in diversity who carry out most training rather than non-specialists, which is more evident in state subsidised schools and in part time teachers.

This all points to the unavoidable need to review and improve initial and ongoing teacher training, particularly in regard to educational policies and teaching practices (Álvarez and López, 2015; López Rupérez, 2014). Our results agree with the Talis Report on Teaching and Learning (INEE, 2019) when it is stated that more, ongoing teacher training is required, since a significant proportion of teachers do not go through any continuous training on inclusive practices in classrooms. In this respect, we recall the comments by Echeita and Simón (2020) on the empirical need for permanent teacher training on inclusion in order to build flexible, open syllabuses.

As for the capability of teachers to cater to pupil diversity, it is extremely striking that almost half of the teachers in our centres with PEGS claim that they have not been trained to cater to their specific educational needs. These data contrast with the study by Aguaded et al., (2013) on competences by teachers to work in educational inclusion, where it was concluded that teachers believe they are competent to use inclusion techniques in education, but they do not have positive attitudes towards inclusion or sufficient tools to develop and materialise it.

Even considering the shortcomings of initial training, ongoing training action appears to be insufficient to be able to cater to the educational reality involving the presence of open classrooms at mainstream schools. This reality is likewise present in the studies by Angenscheidt and Navarrete (2017) in infant and primary schools, and in those by De Loor-Aldás and Aucapiña-Sandova (2020), Specht et al. (2016), Hutchinson, (2017), Sharma and Sokal (2016). In our study, this situation was more evident in state schools than in private or state subsidised schools, in non-specialist teachers, in those who work full time and in the Primary Education stage.

Therefore, over half of teachers are aware of the need for training in order to educationally meet the needs of PEGS, and this is even more

striking in the training of non-specialist teachers and those with more experience. This suggests that they have less knowledge on inclusive education and that they lean towards a more traditional approach to special needs education. Navarro et al., (2021) describe this lack of training by teachers to cater to the needs of inclusion, which on many occasions means that palliative solutions or traditional approaches to integration are applied, which are not representative of inclusion. Therefore, along with Friesen and Cunning (2020) and Echeita and Simón (2020), they lobby for permanent training on inclusion in order to build flexible, open syllabuses, taking into account the Universal Learning Design to promote more inclusive, equitable and democratic teaching practices.

This discussion is brought to a close by making reference to whether or not teachers' perception on training is an obstacle to cater to the needs of PEGS. In our study, teachers claimed that they were familiar with the organisation and functioning of open classrooms, but it is the tutors of the reference classrooms who have least knowledge about these classrooms, since they are not always the teachers of those pupils.

In this sense, there are studies that support the need for cooperation between teachers to develop and implement change and improvement processes at schools to help with an approach to inclusive education, and training in accordance with their needs and contexts (Buch, 2015; Krichesky and Murillo, 2018; Muntaner et al., 2015).

The correlation between the perception on the training they are given, knowledge on open classrooms and developing capabilities has been positive in our research. Therefore, the more adequate the training, the higher the possibilities are of implementing planning and syllabus adaptations responding to the needs of PEGS (European Agency, 2011; Leiva, 2012; Rodríguez, 2019). In this respect, attention must be brought to generating positive attitudes towards the development of inclusive education in teacher training programmes. Indeed, positive attitudes towards inclusion lead to more inclusive educational practices if we consider the perceptions that teachers have (Bawa et al., 2020; Savolainen et al., 2012; Woodcock and Faith, 2021; Yada and Savolainen, 2017).

We can conclude this study by highlighting the evident lack of initial training by the participating teachers to cater to PEGS needs, although this is less in the case of teachers who are specifically trained on diversity (TP and HS). This same argument is put forward in the study by Desombre et al., (2019) shedding light on the fact that specialist diversity

teachers have more positive attitudes towards inclusion, whilst at the same time implementing more inclusive teaching practices compared to their colleagues with more general training.

Likewise, there are statistically significant differences in the initial training given depending on the variables: dedication, ownership of the schools, professional profile associated with diversity and professional experience at the centre.

It is likewise worth mentioning the ability that teachers state they lack in order to meet the educational needs of PEGS. In this respect, emphasis is placed on the ineffectiveness of ongoing training to update teachers' knowledge, which is more significant in the case of non-specialist teaching staff with more years of experience.

In general terms, teachers claim that they are aware of open classrooms but specific knowledge is limited to the teachers and other professionals who work in them. An example of this can be found with the reference classroom tutors, who claim to have little knowledge on or links to these classrooms. We therefore believe that teacher training is essential and is a lever for change and improvement if we want to improve the response to meeting the educational needs of pupils in open classrooms in inclusive contexts.

This paper could not be ended without pointing out its limitations. The data presented in this paper could be backed up with qualitative data such as interviews or focal groups, conducted with teachers and other professionals. Likewise, we could have taken other parties into account (families, pupils, guidance services) who participate in open classrooms. These limitations invite us to conduct new studies to delve further into the tackled subject, which would contribute to guaranteeing a more inclusive, equitable response for PEGS.

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