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ARTICLES

Autoperception of the development of musical competencies of future generalist teachers: a diagnostic analysis.

Autopercepción del desarrollo de las competencias musicales del futuro profesorado generalista: un análisis diagnóstico

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Abstract

The study programmes of the Primary Education degree include a compulsory subject related to basic aspects of music teaching. The purpose is to provide future generalist teachers with tools to use music as another didactic resource in the classroom. The main objective of this study is to analyse the self-perception of specific musical competences of the students of this subject., specifically in the Primary Education degree of the University of Barcelona. An evaluation of programs has been carried out through an ad hoc questionnaire, applied before and after the completion of the subject, to a sample of 72 students. The results obtained indicate the acquisition of basic musical skills by the students who did not have out-of-school musical knowledge, but there are some factors that could be improved, such as the low score in musical skills that require more time for their consolidation or the little evolution of the students who did have previous musical knowledge. Based on the analysis of the results, some proposals for improvement are made that may be applicable not only to the subject analysed here but also to other subjects that work similar in other universities.

Key words: Music Education; Primary Education; teacher training; generalist teacher.

Resumen

Los planes de estudios del Grado de Maestro de Educación Primaria incluyen una asignatura obligatoria relacionada con aspectos básicos de didáctica de la música. Su finalidad es dotar al futuro profesorado generalista de herramientas para que puedan utilizar la música como un recurso didáctico más en las aulas. El presente estudio tiene como objetivo principal analizar la autopercepción de competencias específicas musicales del alumnado de dicha asignatura, concretamente, en el Grado de Maestro de la Universidad de Barcelona. Para ello, se ha llevado a cabo una evaluación de programas a través de un cuestionario *ad hoc*, aplicado antes y después de la realización de la asignatura, a una muestra de 72 estudiantes. Los resultados obtenidos indican la adquisición de unas competencias musicales básicas por parte del alumnado que no poseía conocimientos musicales previos, pero hay algunos factores mejorables como la desigual puntuación en competencias musicales que requieren más tiempo para su consolidación o la poca evolución del alumnado que poseía conocimientos musicales previos. A partir del análisis de los resultados, se plantean algunas propuestas de mejora que pueden ser aplicables no solo a la asignatura aquí analizada sino a otras asignaturas que cumplen una función parecida en otras universidades.

Palabras claves: Educación Musical; Educación Primaria; formación de profesorado; docente generalista.

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1. Introduction

Primary Education Teacher degrees in Spain are undergoing a process of reinvention and adaptation in order to provide future teachers with personal and professional skills that will enable them to effectively face the educational challenges that arise in increasingly diverse and changing classrooms (Montero *et al.*, 2017). How does this reconversion affect the musical training of future teachers?

If we focus on the music education offered in these degrees, we find, on the one hand, the basic music education that all future teachers receive, regardless of the specialization they choose, by taking one or two compulsory subjects depending on each university and, on the other hand, students who wish to specialize in music education will take, in addition to the compulsory subjects, the specialization in music. This consists of optional subjects related to music education and its didactics.

There are different studies related to the specific musical training of future music teachers (Blanco and Peñalba, 2020; Carrillo and Vilar, 2014; Fernández-Jiménez and Valdivia, 2020; Hernández-Bravo *et al.* 2014; Pellegrino, 2011; Russell-Bowie, 2009), comparative studies between the previous specialist teaching diploma and the current music degree (Berrón, 2021; Cuenca *et al.*, 2020) and research related to the basic musical training that a generalist teacher receives (Belletich *et al.*, 2017; Cremades-Andreu and García-Gil, 2017; Rosa-Napal *et al.*, 2021). In this article, we will focus on contributing to the improvement of the latter option, that is, learning a little more about the basic musical competences that are promoted in the initial training of generalist teachers, i.e., to investigate all kinds of knowledge, practical skills, attitudes and other social and behavioural components related to music and its didactic use. Therefore, our main objective is to analyse the self-perception of specific musical competences received by the students of the teaching degree, specifically, the students taking the subject "Musical Expression in Primary Education" at the University of Barcelona. This subject was taught for the first time in 2011 and has been progressively modified in aspects related to the improvement of assessment, didactic innovation and adaptation to the pandemic and post-pandemic scenario derived from Covid-19. For this reason, and after a decade since its implementation, it seems appropriate to evaluate it and rethink the contents of the subject from a broader perspective that allows us to respond to the needs of future teachers.

In order to achieve this objective, the following specific objectives are proposed:

- To establish whether there are significant differences between the self-perception of specific competences acquired by students before taking the subject (pre-test) and after completing it (post-test).
- To find out whether prior musical knowledge or the gender of the pupils influences their self-perception of these competences.

In addition to this, proposals are put forward for the improvement of this subject on the basis of the results obtained.

1.1 Music in the curricula of the Bachelor's Degree in Teacher Education

Since 2007, with the incorporation of the Spanish university system into the European Higher Education Area and following the indications of the European Qualifications Framework for lifelong learning (European Commission, 2009), the diploma of Teacher specializing in Music Education was transformed into a generalist teaching degree with a mention in music (Ministry of Education and Science, 2007); although, subsequently, the categorization was changed from generalist to specialist or qualified (Ministry of Education and Science, 2011). Regardless of the nomenclature, there was a shift from specialized musical training, structured mainly around subjects related to musical didactics (Ministry of Education and Science, 1991), to a more globalized and transversal training, leaving the specializations, currently known as mentions. As Aróstegui and Cisneros-Cohernour (2010), and Berrón (2021) state, the music teaching staff that emerges from the European convergence of university studies is a generalist teaching staff with little musical training, but with greater versatility to be able to cover the educational needs that may arise in any school, i.e., less specificity is sought in favour of greater globalism.

With regard to initial training, in the old diploma course all students had to take, in addition to the core subjects of the degree, at least one subject related to the didactics of each subject that made up the primary curriculum. For example, teachers specializing in music studied: "Mathematics and its Didactics", "Language and Literature and its Didactics", "Physical Education and its Didactics", etc., and all of this was combined with more specific music subjects, which made up the bulk of the degree. However, they did not take the subject of Artistic Education and its Didactics, related to basic music didactics, which was taken by students from other specialties (Cuenca *et al.*, 2020). At present, it is still compulsory for all students to take the subjects related to the didactics of the areas present in the Primary Education curriculum; but, unlike the diploma, in the current degree, all students take the basic didactics of all areas, regardless of the subsequent optional subjects they choose. This means that students who want to take any specialization (music, physical education, attention to diversity, foreign language, etc.), must first take a subject in the basic didactics of all areas, regardless of the subsequent optional subjects they choose later, must first take a compulsory subject in basic music didactics, which will subsequently be complemented with a high percentage of optional subjects (López *et al.*, 2017). So, what basic musical training is acquired in this subject?

If we review the syllabuses for the bachelor's degree in teaching at Spanish universities, we find that the vast majority offer a compulsory 6-credit subject related to music throughout the degree, and, exceptionally, we find some universities that offer two subjects. Their title is varied, such as "Music in primary education", "Music at school", "Music education", "Development of musical expression and its didactics" or "Didactics of musical expression in primary education". Most universities place it during the first years of the degree course and its main objective is to provide future teachers with skills so that they can use music as another didactic resource in the school context (Fernández-Jiménez and Valdivia, 2020). As in other countries, music education in primary schools often focuses on being able to educate "through" music, leaving education "for" music in the background (Russell-Bowie, 2009). There are even universities that offer such basic music education combined with other subjects, such as visual and plastic education, in order to respond to the Arts Education promoted by the Primary Education curriculum in a more cross-cutting and interdisciplinary way (Aróstegui and Kyakuwa, 2021).

About the planning of the subject, there is no uniformity between universities, as each faculty designs the syllabus for this subject depending on various factors such as: the training and experience of the university teaching staff who teach it, the Primary Education curriculum of each autonomous community, the transversal competences of the degree, the optional subjects offered, etc. Despite this, most syllabuses coincide in structuring their contents around the procedural areas of perception, expression, interpretation and creation, combined with other more conceptual areas related to Musical Language and the Primary School curriculum (Belletich *et al.*, 2017). Regarding methodologies and assessment, there is a wide variety of modalities ranging from the more traditional ones based on lectures and content exams to more innovative ones, such as project-based learning, *flipped classrooms*, gamification, collaborative and cooperative work, formative assessments, evaluation rubrics, etc.

1.2 Syllabus of the subject "Musical Expression in Primary School".

The subject "Musical Expression in Primary Education" on the bachelor's degree in Teaching at the University of Barcelona is taken by around 400 students per academic year, divided into 8 class groups. During the first four-month period of the third year of the degree, students attend two weekly sessions of 2 hours each: one with the whole class to deal with theoretical and practical aspects and the other in the form of a seminar, with half of the class group, distributed in two classrooms and two teachers, to carry out more specific and individualized work. Tutorials are also offered in case a student needs them.

The study program is made up of transversal competences of the degree such as the search for and analysis of information or showing linguistic skills; and more specific competences such as designing programming units, understanding educational action, applying formative and formative evaluation, etc. The learning objectives refer to knowledge (knowledge of the arts education curriculum in primary education, the training obtained through the arts, etc.), to skills and abilities (skills and competences) and to knowledge (knowledge of the curriculum of arts education in primary education, the training obtained through the arts, etc.).), skills and abilities (acquiring musical practice techniques, experimenting and creating resources, etc.), and attitudes, values and norms (encouraging research, initiative, plurality, etc.).

From the outset, the contents are structured around the following thematic blocks:

- Music as an educational tool in Primary Education.
- Basic concepts in music.
- Vocal education.
- Auditory education.
- Rhythmic education and dance.
- Music in the classroom: teaching resources.

We propose the use of an active methodology through a wide variety of activities, mostly practical (singing, dancing, playing instruments, listening to auditions, creating resources, experimenting, improvising, etc.) and diversified strategies such as cooperative and collaborative work, gamified activities, project creation, etc.

To demonstrate the acquisition and achievement of learning, a competency-based and formative assessment is applied in which students, throughout the four-month period in which the subject is taught, will present the following assignments, the percentages of which are the weight they have in the final grade:

- A group work of musical creation (25%).
- A group listening task (25%).
- Individual performance of songs (30%).
- Individual oral defence on didactic-musical learning (20%).

Having outlined the syllabus of the subject "Musical Expression in Primary Education", we now turn to the empirical study focused on the students' evaluation of this subject.

2. Method

The method followed in this research is based on program evaluation (Pérez, 2015; Tejada, 2004; Tejedor, 2000). It is an evaluative methodology linked to educational interventions and the analysis of training. In this way, a requirement arises in the planning of the evaluation itself that can give rise to subsequent reflections. It is usually made up of an analysis of the reality before the educational intervention, the intervention itself and a final phase in which the results obtained are analysed. Through this methodology, the aim is to establish an analysis of the benefits or lack thereof. In this research, it has been applied to a university subject, analysing the responses before and after its implementation. In this way, proposals for improvement can be offered based on the evidence obtained.

2.1. Sample

For this research, an accidental non-probabilistic sampling was used, in which the only exclusion criterion was the non-completion of the pre-test and post-test. The population of this study was 396 students of the subject "Musical Expression in Primary School" at the University of Barcelona. The designed questionnaire was answered during the first class of the course by a total of 192 people and during the last class by 109 students. Cross-checking the data and selecting only those who had answered both at the beginning and at the end, the valid sample was 72 people (83.3% were women) with an average age of 20.93 years (SD = 1.698). This represents a sampling error of 10.1%. These independent variables, sex and age, although only from the final sample, are very similar to those of the population. On the other hand, 33.3% of the sample had previous musical knowledge.

2.2. Instrument

To obtain the data, an *ad hoc* questionnaire was designed with the participation of a panel of three experts in music education. This questionnaire reflected the musical and teaching competences that the subject "Musical Expression in Primary Education" aims to develop. Thus, the final questionnaire was divided into two parts: a first socio-demographic part which included questions referring to age, gender and previous musical knowledge, as well as a control question about the last four digits of the student's identity card (the teachers do not have access to the

students' ID card numbers, so this data did not compromise anonymity); and a second part in which 10 different aspects were assessed by means of a *Likert-type* questionnaire with 6 levels. The questions referring to these 10 items (presented in Table 1) showed excellent internal consistency and reliability: Cronbach's alpha = .886 (.857 in the pre-test and .836 in the post-test).

2.3. Procedure

The *Formsite* online platform was chosen for the application of the questionnaire. The tool was distributed twice: during the first week of class in the subject "Musical Expression in Primary School" and again during the last week of class in this subject. At the beginning of the questionnaire, informed consent form was included indicating that each participant was free to leave the study at any time they wished. Students were informed that completing the questionnaire would take about 5 minutes and that their answers would not be taken into account in any way in the evaluation of the subject.

The results obtained were computed and analysed with the IBM *Statistical Package for Social Science* (SPSS), version 28.0. The statistics used were, in addition to the usual ones for a basic analysis, the Kolmogorov-Smirnov or Shapiro-Wilk tests for normality of the sample, depending on the needs, as well as the Wilcoxon test for dependent samples, in addition to the usual correlational calculations. In this sense, the Wilcoxon test was particular relevance, as it allows statistical differences to be established when the principles of normality are not met, such as notable differences between samples and between relatively small groups (Martínez *et al.*, 2014). For the factor analysis, Barlett's test of sphericity was performed, using the maximum likelihood extraction method and rotation by direct Oblimin. This rotation was chosen because, despite not being the most common, it was expected that the latent factors would correlate with each other.

3. Results

As shown in Table 1, in all the parameters analysed, an improvement was detected between the beginning and the end of the course. This improvement was also a statistical difference in all cases. However, if we separate the sample into those who already had musical knowledge and those who did not, we can see that these statistical differences were reported only in the students with no previous knowledge.

Table 1. Means, deviations and statistical differences, before and after taking the course

	Pre Mean (SD)		Post Mean (SD)		Statistical differences	
	Without*	With**	Without	With	Without*	With**
Knowledge of the curriculum	3.31 (1.307) 2.94 (.976)	4.04 (1.574)	4.61 (.943) 4.58 (.846)	4.67 (1.129)	***Z* = 5.612; *p* < .001** ***Z* = 5.670** ***p* < .001**	*Z* = 1.650 *p* = .099
Singing in front of others	2.72 (1.612) 2.23 (1.403)	3.71 (1.574)	3.87 (1.424) 3.69 (1.371)	4.25 (1.482)	***Z* = 5.744; *p* < .001** ***Z* = 5.271** ***p* < .001**	***Z* = 2.150** ***p* = .032**
Teaching songs to others	3.47 (1.394) 3.04 (1.288)	4.33 (1.204)	4.46 (1.198) 4.33 (1.173)	4.71 (1.233)	***Z* = 5.435; *p* < .001** ***Z* = 5.149** ***p* = .047**	***Z* = 1.990** ***p* = .047**
Choreographing	3.47 (1.547) 3.44 (1.500)	3.54 (1.668)	4.57 (1.220) 4.67 (1.059)	4.37 (1.527)	***Z* = 5.421; *p* < .001** ***Z* = 5.043** ***p* < .001**	***Z* = 2.032** ***p* = .021**
Teaching choreography	3.67 (1.424) 3.60 (1.349)	3.79 (1.587)	4.61 (1.145) 4.67 (1.059)	4.50 (1.319)	***Z* = 5.384; *p* < .001** ***Z* = 5.025** ***p* < .001**	***Z* = 2.257** ***p* = .024**
Knowledge of resources	3,40 (1.252) 3.25 (1.176)	3.71 (1.367)	4.64 (1.052) 4.79 (.944)	4.33 (1.204)	***Z* = 5.392; *p* < .001** ***Z* = 5.286** ***p* < .001**	*Z* = 1.750 *p* = .080
Search for resources	3.19 (1.285) 2.83 (1.038)	3.92 (1.442)	4.24 (1.250) 4.23 (1.242)	4.25 (1.294)	***Z* = 4.953; *p* < .001** ***Z* = 4.984** ***p* < .001**	*Z* = 1.214 *p* = .225
Resource design	3.62 (1.119) 3.40 (1.047)	4.08 (1.139)	4.58 (1.160) 4.81 (1.024)	4.13 (1.296)	***Z* = 5.047; *p* < .001** ***Z* = 5.213** ***p* < .001**	*Z* = .615 *p* = .539
Knowledge of the elements of music	4.07 (1.495) 3.38 (1.299)	5.42 (.881)	4.76 (1.144) 4.44 (1.128)	5.43 (.658)	***Z* = 4.430; *p* < .001** ***Z* = 4.740** ***p* < .001**	*Z* = .000 *p* = 1.00
Keeping pace	4.25 (1.275) 3.83 (1.260)	5.04 (.908)	4.67 (1.163) 4.48 (1.238)	5.08 (.830)	***Z* = 2.836; *p* = .004** ***Z* = 3.094** ***p* = .002**	*Z* = .250 *p* = .803

* No prior knowledge
*With prior knowledge

As shown in Table 1, there was also a homogenization between those who had prior knowledge and those who did not.

Table 2 shows the statistical differences according to prior knowledge in the pre-test and post-test. As can be seen, these differences existed in most of the parameters analysed (except in the performance and teaching of choreography and in the knowledge of resources), but disappeared in the post-test (except in the case of knowledge of the elements of music).

Table 2. Differences between pre and post, according to prior musical knowledge

	Differences in the pre	Differences in the post
Knowledge of the curriculum	***Z* = 3.012; *p* = .003**	*Z* = 1.000; *p* = .317
Singing in front of others	***Z* = 3.723; *p* < .001**	*Z* = 1.599; *p* = .110
Teaching songs to others	***Z* = 3.678; *p* < .001**	*Z* = 1.380; *p* = .168
Choreographing	*Z* = .322; *p* = .747	*Z* =.403; *p* = .687
Teaching choreography	*Z* = .754; *p* = .451	*Z* = .387; *p* = .698
Knowledge of resources	***Z* = 2.315; *p* = .009**	*Z* = 1.370; *p* = .171
Search for resources	***Z* = 3.018; *p* = .003**	*Z* =.025; *p* = .980
Resource design	***Z* = 2.422; *p* = .004**	***Z* = 2.135; *p* = .033**
Knowledge of the elements of music	***Z* = 5.688; *p* < .001**	***Z* = 3.665; *p* < .001**
Keeping pace	***Z* = 4.043; *p* < .001**	*Z* = 1.843; *p* = .065

There was no correlation between the moderating variable of age and the other variables ($p < .005$ in all cases).

When looking at the sample according to gender, and taking into account that the distribution in the prior knowledge variable was identical (33.3% of the total of women and 33% of the total of men did have prior knowledge), the analysis of the data separately reported that the statistical differences between pre and post referred almost entirely to women, with the latter reporting the greatest improvements in all parameters between the beginning and end of the course. Males reported no statistical differences in any of the aspects analysed.

Table 3. Statistical differences between pre and post according to gender

Knowledge of the curriculum	***Z* = 2.992; *p* = .007**	***Z* = 4.875; *p* < .001**
Singing in front of others	***Z* = 2.565; *p* = .010**	***Z* = 5.169; *p* < .001**
Teaching songs to others	***Z* = 2.810; *p* = .006**	***Z* = 4.809; *p* < .001**
Choreographing	***Z* = 2.565; *p* = .010**	***Z* = 4.835; *p* < .001**
Teaching choreography	***Z* = 2.658; *p* = .008**	***Z* = 4.705; *p* < .001**
Knowledge of resources	***Z* = 2.683; *p* = .017**	***Z* = 4.715; *p* < .001**
Search for resources	***Z* = 2.095; *p* = .036**	***Z* = 4.471; *p* < .001**
Resource design	***Z* = 2.496; *p* = .013**	***Z* = 4.401; *p* < .001**
Knowledge of the elements of music	***Z* = 2.232; *p* = .026**	***Z* = 3.805; *p* < .001**
Keeping pace	*Z* = 1.656; *p* = .098	***Z* = 2.409; *p* = .016**

In order to validate the instrument used and also to observe the evolution of the different aspects studied, a factor analysis was carried out both before and after the course. Barlett's test of sphericity was adequate, both pre ($X^2_{55} = 401.940$; $p < .001$) and post ($X^2_{55} = 351.903$, $p < .001$). As shown in Table 4, in both cases three factors were reported, explaining a total of 69.771% of the variance in the pre-test and 65.443% of the variance in the post-test.

Table 4. Factor analysis in the pre-test and post-test

	Pre			Post		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Teaching choreography	.945	.202	.305	.850	.260	-.106
Choreographing	.865	.176	.309	.871	.276	-.191
Knowledge of resources	.165	.941	.382	-.004	.999	-.001
Designing resources	.183	.716	.385	.094	.707	.028
Keeping pace	.466	.300	.799	.353	.294	.519
Knowledge of elements of music	.168	.325	.798	.219	.117	.739
Search for music resources	.152	.417	.742	.259	.549	.325
Singing in front of others	.497	.307	.657	.556	.132	.191
Teaching songs to others	.611	.406	.624	.673	.327	.295
Knowledge of the curriculum	.108	.416	.611	.056	.439	.250

The grouping in the factors varied after the completion of the course, with changes in the grouping of the different aspects. Figure 1 shows this variation.

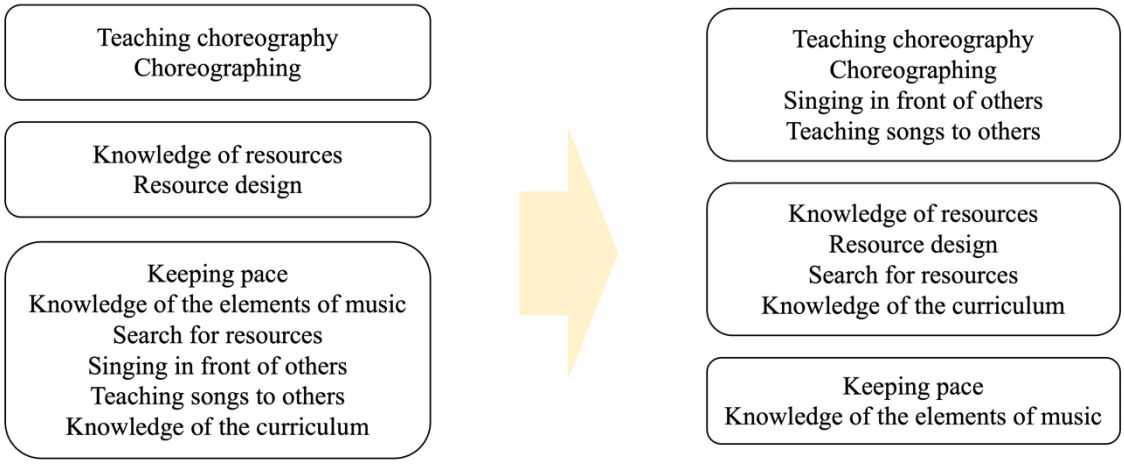

Figure 1. Factorial matrix of the pre-test and post-test

4. Discussion and conclusions

The results obtained are the result of the pupils' self-perception and refer to a limited sample and context, the subject "Musical Expression in Primary Education" at the University of Barcelona, and although they can serve as a guide for other research, they cannot be extrapolated to other universities. Bearing this premise in mind, it can be affirmed that the pupils participating in the study consider that they have acquired basic musical competences to be able to use music as a didactic resource in primary school classrooms. This coincides with other research that points out that the aim of music training for generalist teachers should be to provide them with skills and methodologies that promote the regular use of music in the classroom in order to raise pupils' awareness and favour transversal learning processes (Belletich *et al.*, 2017; Pellegrino, 2011).

Despite this, there are aspects analysed, such as knowledge of musical elements or following the rhythm, which, although they showed statistical differences between the pre-test and the post-test, were very much conditioned, for example, by previous knowledge. This situation is very common in subjects related to specific didactics, in which teachers must invest part of their classes in learning content to the detriment of didactics, since what is taught and how it is taught are an inseparable binomial (Bolívar, 2005; Hernández-Bravo *et al.,* 2014). There is no doubt that in one term it is unfeasible for students to learn many musical concepts, especially those that require substantial practice and time for their assimilation and their didactic use (time signatures, rhythm, score reading, etc.).

As other research has shown, the initial training received at university or the interest in music are not sufficient elements to achieve an effective didactic use of music by generalist teachers (Belletich *et al.*, 2017; Cremades-Andreu and García-Gil, 2017). For this reason, and with the aim of remedying this deficiency, increasing the period of initial music training would allow for more meaningful learning and, consequently, could have a positive impact on the presence of music in the classroom (Hallam *et al.*, 2009; Rosa-Napal *et al.*, 2021; Russell-Bowie, 2009). Another way to raise the level of knowledge and competences received in initial training would be through ongoing training or self-learning, which will depend on the interest and willingness of teachers (Bozu and Aránega, 2017; Esteve-Faubel *et al.*, 2009).

If we focus on the different sections of the questionnaire applied, the low score given by pupils to singing in front of other people stands out. Other studies (Cremades-Andreu and García-Gil, 2017) also highlight that singing and dancing are activities in which pupils find it more difficult to learn, while other factors related to the music curriculum, its didactic application or perception are more highly valued. This is also perceived in our research, possibly because they are more accessible to pupils with no previous knowledge of music. Singing and dancing in front of peers in the university context are activities that arouse some animosity, especially at the beginning. For this reason, more than one term would be needed to transform this attitude, which could have a positive impact on their acquisition and appreciation and, ultimately, on their training and subsequent application and involvement of music in the methodology of the Primary School area.

On the other hand, we find that students with previous musical knowledge report very little progress at the end of the subject, as indicated by the lack of statistical differences between the pre-test and the post-test. Some studies also highlight the lack of interest in music education in the teaching degree among students with previous musical knowledge, which is evident in the low enrolment of students in the music subject compared to other subjects (Cuenca *et al.*, 2020) or in the deficient musical education of students who wish to access this subject (Mateos, 2013). It is difficult to find universal formulas that can satisfy all these students and the multilevel of learning that occur in music classes, since in order to be able to use music it is essential to have a minimum musical knowledge; hence, time is devoted to acquiring this knowledge to the detriment of how to use it or teach it in the classroom.

A possible solution to alleviate this deficit would be to promote peer learning and cooperative work (Navarro *et al.*, 2019), as well as the use of the *Flipped Classroom* for the acquisition and review of musical knowledge by students who need it (Simon *et al.*, 2018). All of

this would possibly favour a greater dedication of teaching time to didactic aspects and strategies of music and not so much to their musical training, as often happens in applied didactic subjects.

Another noteworthy fact is the difference between men and women. While women report progress in almost all the categories analysed, men show no such progress. It should be noted that most of the sample were women, which coincides with the reality of teaching in Spain (Verástegui, 2019). One possible explanation for this fact, although not the only one, could be related to gender symbolism in music, which according to its postulates, many aspects of music education are still considered as feminine, so that the degree of involvement of some students is not the same as in other subjects (Green, 2001).

The organization of the contents, as can be seen in Table 4 and Figure 1, acquires greater logic once the subject has been completed, since the students distinguish the strictly musical contents from those which would be their practical expression (teaching and practicing songs and choreographies) and, finally, from those of a methodological-instrumental nature. It is noteworthy that song and dance are linked to their teaching, a fact which indicates to a large extent that, in the subject, the teaching and learning processes are linked, which facilitates their assimilation. This fact, moreover, invites us to replicate this research by unifying the aspects described in three factors. In this way, the evaluation of the program and subsequent reflection would revolve around the development of these dimensions.

Taking into account the results mentioned above, and by way of proposals for improvement, we should strive to extend the teaching time of the subject so that future generalist teachers can increase the didactic use of music in the classroom, both quantitatively and qualitatively. Aware of the difficulty that such a proposal implies for technical reasons of university curricula, we must look for alternatives such as those already described in this text. Thus, for example, encouraging the inclusion of students with previous musical knowledge not only to improve their interest and learning but also as a resource for the practice of peer learning. Another important aspect, and possibly the costliest, will be to promote the acquisition of musical concepts in students with little prior knowledge through different methodologies (reverse classes, video tutorials, etc.) in order to be able to devote more time to didactic aspects in the classroom.

In order to implement these proposals productively, it may be vital to take advantage of the close relationship between music and emotion (Oriola and Gustems, 2021). Making students aware that this relationship can make a difference with respect to other specific didactics, as the positive effects of artistic experiences can serve as a catalyst and motivating resource for musical learning and its use in the classroom.

This would offer generalist teachers the possibility of interdisciplinary work with music specialists, with greater integration of knowledge and the presence of music in the rest of the subjects, as Aróstegui and Kyakuwa (2021) point out. Perhaps this could be one of the lines of continuation of this study in which, in addition, an attempt should be made to rectify the methodological biases made by the research team, such as using competency aspects without carrying out a prior analysis of the factors that influence them or reiterating to the sample the anonymity of the answers and the use of these, despite the prior request for data that may apparently conflict with this. On the other hand, as this is a self-perception study, another future line of research would be to contrast the data reflected here with external opinions or evaluative tests on the improvements proposed here.

Finally, it is also considered prospective to ascertain the opinion, through qualitative and quantitative studies, as to whether the aspects analysed here are what is really considered necessary in the teaching profession. In this way, two parallel lines are opened up in which, on the one hand, trainee teachers and, on the other hand, practising teachers would be situated. In any case, the question remains as to how to ensure that all students have the same feeling of improvement, regardless of their starting point and prior knowledge.

Note: this text is an automatic translation from Spanish to English. Some errors may have crept into this translation. We apologise for this.

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