

Analysis of generic competencies of the undergraduate education degree: a study from the student perspective of the University of Girona.

Análisis de las competencias genéricas en los Grados de Maestro: un estudio desde la perspectiva del alumnado de la Universidad de Girona

Análise das competências genéricas nos Cursos de Docência: um estudo desde a perspetiva dos estudantes da Universidade de Girona

师范学位里的通用技能分析：从赫罗纳大学学生角度出发进行研究

تحليل الكفايات العامة في درجة الماجستير: دراسة من وجهة نظر الطلاب في جامعة جirona

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Abstract

The aim of this study was to determine the degree to which generic teaching competences (instrumental, interpersonal and systemic) are developed on an Education degree course, the importance given to them by students, and which subjects develop them most. An electronic questionnaire based on teaching competences was developed in accordance with the Tuning Project. It was validated by experts and showed appropriate internal consistency. The sample consisted of 285 of the 956 students on Education degrees at the University of Girona. The results revealed that students always rated the importance given to the various competences higher than the extent to which they are developed. Interpersonal competences are the ones most valued, while instrumental ones are the least valued. Teamwork is the most developed competence, while the ability to work in an international context is the least. Competences were found to be developed most in Teaching Practice and the Final Project, among other subjects. The speciality of Early Childhood Education presented the most significant relationships and was the speciality that most valued the importance of competences and the extent to which they are developed. It was concluded that there is a need to give greater importance to generic competences in the teacher training process and to further develop international competences together with knowledge of other countries' cultures and customs.

Keywords: skills; teacher education, students, curricula

Resumen

El presente estudio pretende conocer el grado en que se trabajan las competencias docentes genéricas (instrumentales, interpersonales y sistémicas) en los Grados de Maestro, la importancia que le otorga el estudiantado y en qué asignaturas se trabajan más. Se elaboró un cuestionario electrónico que partió de las competencias que debería tener todo docente, según el proyecto Tuning. Fue validado por expertos y presentó una consistencia interna adecuada. La muestra fue de 285 de los 956 estudiantes de los Grados de Maestro de la Universidad de Girona. En los resultados se observó que el estudiantado siempre puntuaba más alta la importancia otorgada a las diferentes competencias que el grado en que se trabajan. Las más valoradas son las interpersonales mientras que las menos valoradas son las instrumentales. La competencia que más se trabaja es el *Trabajo en equipo* y la que menos es la *Habilidad de trabajar en un contexto internacional*. También se constató que en las asignaturas donde más se trabajan las competencias son en el Prácticum y en el Trabajo de Final de Grado, entre otras. La especialidad de Educación Infantil es la que presentó la mayoría de las relaciones significativas y fue la especialidad que más valoró la importancia de las competencias y el grado en que se trabajan. Se concluye que es necesario dar una mayor importancia a las competencias genéricas en el proceso formativo del profesorado y trabajar más las competencias internacionales juntamente con el conocimiento de culturas y las costumbres de otros países.

Palabras clave: competencias, formación de docentes, estudiantes, planes de estudios.

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Resumo

O presente estudo pretende saber em que medida as competências docentes genéricas (instrumentais, interpessoais e sistêmicas) são trabalhadas nos Cursos de Docência, a importância que lhes é dada pelos estudantes e em que disciplinas de cada curso são mais trabalhadas. Elaborou-se um questionário eletrônico com base nas competências que todos os professores deveriam ter, de acordo com o projeto Tuning. Foi validado por peritos e revelou uma consistência interna adequada. A amostra foi constituída por 285 dos 956 estudantes dos Cursos de Docência da Universidade de Girona. Os resultados demonstraram que os estudantes atribuíam sempre uma pontuação mais elevada à importância dada às diferentes competências do que a medida em que são trabalhadas. As mais valorizadas são as interpessoais, enquanto as menos valorizadas são as instrumentais. A competência mais trabalhada é o *Trabalho em equipa* e a menos trabalhada é *Capacidade de trabalhar num contexto internacional*. Também se constatou que as disciplinas em que as competências são mais trabalhadas são no Estágio e no Projeto Final de Curso, entre outras. A especialidade de Ensino Infantil foi a que apresentou a maioria das relações significativas e foi a especialidade que mais valorizou a importância das competências e a medida em que são trabalhadas. Conclui-se que é necessário dar maior importância às competências genéricas no processo formativo dos professores e trabalhar mais as competências internacionais, juntamente com o conhecimento das culturas e dos costumes de outros países.

Palavras-chave: competências, formação de professores, estudantes, planos de estudos.

摘要

该研究试图了解教师通用技能（工具技能、人际交往技能、系统性技能）在师范学位的涉及程度，学生的重视度以及哪个年级的哪门课程涉及更多的通用技能这三个方面。根据调优项目，我们设计了一项包含所有教师应具备技能的电子问卷。该问卷经过多名专家验证，呈现出适当的内部一致性。问卷样本来自赫罗纳大学师范学位 956 名学生中的 285 名。研究结果发现学生对不同通用技能的重视程度评分比学位所涉及的程度还要高。学生认为人际交往技能最重要，而认为工具技能最不重要。在学位里涉及最多的是小组合作技能，涉及最少的是在国际背景下的工作技能。研究还发现涉及技能最多的课程是实习课和本科论文课。幼儿教育专业的数据显示出最高的显著性关联。这个专业也是师范学位里涉及最多技能、给予技能最高重视程度的专业。研究结论显示在教师培养过程中需要给予通用技能更多的注重，也要更多地涉及包含其他国家文化习俗内容的国际技能。

关键词: 技能、教师培养、学生、学习计划

ملخص

تهدف الدراسة الحالية إلى معرفة الدرجة التي يتم بها العمل على كفاءات التدريس العامة (الفعالة، والشخصية، والنظامية) (في درجات المعلم والأهمية التي يوليها لها الطلاب وفي أي مواضيع من كل دورة يعملون أكثر من غيرها). تم تطوير استبيان إلكتروني حول الكفايات التي وقد تم التحقق من صحتها من قبل الخبراء وقدمت اتساقاً داخلياً كافياً. وكانت العينة 285 Tuning. يجب أن يتمتع بها كل معلم، وفق مشروع من أصل 956 طالباً في مرحلة الماجستير في جامعة جبرونا. وفي النتائج، لوحظ أن الطلاب قيموا دائماً الأهمية المعطاة للكفاءات المختلفة بدرجة أعلى من الدرجة التي تم العمل عليها. الأكثر قيمة هي العلاقات بين الأشخاص بينما الأقل قيمة هي الفعالة. المهارة التي يتم العمل عليها كثيراً هي العمل الجماعي والمهارة الأقل العمل عليها هي القدرة على العمل في سياق دولي. وتم التأكيد أيضاً على أن المواضيع التي يتم فيها العمل على المهارات بشكل أكبر هي التدريب العملي ومشروع الدرجة النهائية، من بين أمور أخرى. إن تخصص التربية في مرحلة الطفولة المبكرة هو الذي قدم أهم العلاقات وكان التخصص الأكثر تقديراً لأهمية الكفايات ودرجة العمل عليها. ويخلص إلى أنه من الضروري إعطاء أهمية أكبر للكفاءات العامة في عملية تدريب المعلمين والعمل بشكل أكبر على الكفاءات الدولية جنباً إلى جنب مع معرفة ثقافات وعادات البلدان الأخرى

الكلمات الدالة: المهارات، تدريب المعلمين، الطلاب، المناهج

Introduction

Generic competences

As indicated by the OECD (2018), we are immersed in a complex and changing society; therefore, responding to labour demands is one of the greatest challenges of our society and of university curricula. It is thus necessary to create more bridges between the university and the labour market to ensure that when students graduate, they have the appropriate training to successfully find a job that suits them (Vogler *et al.*, 2018, Martínez *et al.*, 2019). This requires greater preparation and that university education, in addition to imparting knowledge in the corresponding field, provides attitudes and skills that allow the knowledge acquired to be adapted and applied to a range of variable circumstances (Ruiz *et al.*, 2017 & Van Laar *et al.*, 2017).

These skills, which are required for the performance of tasks both individually and collectively, can be differentiated between hard skills (Laker & Powell, 2011) and soft skills (Putra *et al.*, 2020 and Patacsil & Tablatin, 2017). On the one hand, hard skills are skills provided by the knowledge acquired and memorized throughout our years of training (Purwanto, 2020 and Lombardi, 2019), i.e., they are the skills required to carry out a certain task or tasks. Soft skills, on the other hand, are subjective, behavioural and socio-emotional competences. They are also called '21st Century Skills', 'Key Competences', 'Generic Competences' and 'Core Competences' (Cinque, 2016). Hard skills refer to the ability to perform a specific type of task or activity while soft skills are intra- and interpersonal socioemotional skills, which are fundamental for personal development, social participation, and professional and academic success. It should be noted that the present study was carried out with students on the University of Girona's Education degree and focused on the latter.

As indicated by López *et al.* (2018), the incorporation of competences into university education can help students to apply theory to practise and improve their professional

performance in the workplace. This requires the acquisition of academic, social and interpersonal competences and skills for their functioning and socio-occupational integration. These competences become a key element of university learning and, according to Chondekar (2019) and Sultanova *et al.* (2021), among others, allow them to lead the training process. In addition to mastering the academic speciality, students develop a wide range of competences that enrich them as human beings and future professionals (Villa & Poblete, 2011). Therefore, Ojeda *et al.* (2022) define generic competences as 'those that enable the integral development of people, both in their intrapersonal dimension and in their interaction with others' (p.522). After analysing different definitions, other authors such as Zabala and Arnau (2007) proposed one designed to summarize all of them: 'It is the capacity or ability to carry out tasks or deal with different situations effectively in a given context. This requires mobilising attitudes, skills and knowledge at the same time and in an interrelated manner' (p.36). Ruiz *et al.* (2017) also commented that these competences are linked to adaptation to environments and, in turn, to the disposition to lifelong learning.

Along these same lines, Gairín (2011) specified that competences highlight the applicable nature of learning (a person is competent when they can solve problems in their field of action) and their dynamic nature (they are acquired and developed in action and are also perfected thanks to the action itself).

Classification of generic competences

There are many classifications of generic competences, but this article focuses on that proposed by the Tuning Project (González & Wagenaar, 2003), which had its beginnings in a broad context of reflection on Higher Education. Tuning divides competences into specific and generic competences. It further subdivides the latter into:

a) Instrumental competences

These are cognitive skills related to the ability to know, understand and operate with ideas and thoughts; methodological skills, related to the transformation of the environment; application of acquired knowledge and skills related to the organization of time and learning strategies, decision making or problem solving; technical skills related to the use of technical, computer or information management devices and linguistic skills of oral and written communication or mastery of a foreign language.

b) Interpersonal skills

They refer to individual skills, such as the ability to express one's own feelings, the capacity for criticism and self-criticism, or to social skills related to interpersonal skills or teamwork or the expression of ethical and social commitment and those which tend to favour processes of social interaction and cooperation.

c) Systemic competences

They are those that enable the analysis of professional problems and situations in a global way. They involve a combination of understanding, sensitivity and knowledge. As indicated by Amor and Serrano (2018) and Fraile *et al.* (2018), they include, for example, the ability to plan changes and improve the whole system and to design new systems, the ability to lead and to show initiative and entrepreneurship.

Systemic competences require a basis of prior acquisition of instrumental and interpersonal competences because they require the ability to apply knowledge in practice. This classification of competences is in line with the results obtained by Serrano *et al.* (2018), who grouped the set of generic competences into four dimensions: academic competences, social competences, interpersonal competences and instrumental competences.

In this same sense, Crespí (2019) included the typology of competences, integrating the

educational and occupational focus. Thus, we can speak of two types of competences: technical or specific competences, those specific to a subject, qualification, field of knowledge or profession; and generic competences, those common to different subjects, qualifications or professions and necessary, in general, for life.

The Tuning Report itself underlined the vital importance of teaching and developing generic competences, which are critical for university students' future responsibilities as citizens and professionals. Despite this necessity, universities generally do not have specific compulsory subjects for their development (Corominas *et al.*, 2006).

Generic teaching competences

The optimal competence profile for teachers should include all the professional competences that they need to acquire in order to carry out the various functions that they may be responsible for in an educational institution. For this reason, teaching competences is a complex, multidisciplinary and multifaceted field of study (Fernández & Malvar, 2020). Consequently, defining the concept of competence is not simple, and the strategies that higher education institutions can use to promote these competences are diverse and may incorporate different levels of commitment and scope of interventions (Jääskelä *et al.*, 2018).

It is also important to develop teaching competences in all areas in order to break the idea conveyed by Martínez *et al.* (2022) that initial teacher education develops more cognitive skills such as memorizing and recalling than applying or analysing in authentic professional settings. Mukhamadovna *et al.* (2020) added that the development of the skills and abilities of future teachers will be useful for them in order to encourage autonomous professional development, and will be an important condition for resilience and dedication to their profession.

Studies such as those conducted by Brachem and Braun (2018), with graduates in educational sciences, observed that generic competences (systemic, social and personal competences) were valued as more important than knowledge processing. This is because generic competences are essential for functioning in both the social environment and the professional field (Gruzdev *et al.*, 2018 and Serrano *et al.*, 2019).

An in-depth analysis of the definition of teaching competence shows that the four pillars established by Delors (1996) continue to be valid: learning to do, learning to know, learning to live together and learning to be. Therefore, the importance of learning skills, abilities and competences to do, to be and to live together, beyond traditional cognitive learning, is clear.

The classification of teaching competences has been extensively described. Perrenoud (2004) proposed the establishment of ten competences:

1. Organizing and animating learning situations.
2. Managing the progression of learning.
3. Devising and promoting measures to cater for diversity.
4. Involving students in their learning and work.
5. Teamwork.
6. Participating in the management of the centre.
7. Informing and involving the family.
8. Using new technologies.
9. Addressing the ethical duties and dilemmas of the profession.
10. Managing one's own continuous training.

Cano (2007) talks about seven competences that any teacher should have, which are as follows:

1. Ability to plan and organize one's own work.

2. Communication skills.
3. Ability to work in a team.
4. Ability to establish satisfactory interpersonal relationships and resolve conflicts.
5. Ability to use new information and communication technologies.
6. Having a positive and well-adjusted self-concept.
7. Ability to self-evaluate one's own actions.

Today, as Schleicher (2016) pointed out, a new scenario is unfolding which requires the knowledge society to replace existing basic skills and knowledge expectations with new competences. These must be adapted to life and work in the 21st century. In this sense, the results obtained by Almerich *et al.* (2018) indicated that competences are composed of two subsets: high thinking skills and ICT. The Delors report gives us an indication about teaching in the 21st century in order to reach the four pillars mentioned above:

- It is necessary to reevaluate the social role that teachers play in the education of future generations, recognizing their work and giving them the necessary authority.
- Lifelong education leads directly to the notion of a learning society. The concept of education must go beyond the walls of the school and it must be clear that it lasts a lifetime.
- Teachers need to organize their professional life in such a way that they are in a position, and even have an obligation, to train continuously.
- The teaching profession is primarily a solitary activity. However, it is essential for educators to be willing and able to work in teams in order to improve the quality of education.
- It is also necessary to promote the exchange amongst teachers in order to improve educational practices and the quality of education.

Finally, it is worth highlighting that Capell *et al.* (2014) indicated that a fundamental part of learning in the teaching profession takes place during the first years in practice and, therefore, it is essential to establish connections between initial and continuing teacher training. Likewise, Ferrada (2019) warned of the need to recognize the accumulated knowledge of teachers who work in complex situations (known in Catalonia as highly complex schools), as this is where the difficulty of teachers' work increases and where they need to have the greatest multiplicity of skills in order to perform the role that society has entrusted to them.

Therefore, the aim of this research is to discern the opinion of students on the University of Girona's Education degree programme.

Objectives

The general objective is to determine the extent to which the generic competences (instrumental, interpersonal and systemic) are developed in the various subjects on the Bachelor's Degrees in Education and the importance given to them by the students.

The specific objectives are:

1. To compare the extent to which the generic competences are developed and the importance given to them by students on the Bachelor's Degrees in Education.
2. To ascertain in which subjects in each year students consider that the generic competences are developed most on Education degrees.
3. To discover relationships between the specializations on Education degrees and the generic competences.
4. To propose guidelines to better develop generic competences.

Method

The methodology used was quantitative and non-experimental, as an instrument with

closed questions was applied and the sample was not manipulated.

Population and Sample

This research was carried out in March 2022 and its population was made up of 956 students enrolled in Bachelor's Degrees in Education (Primary, Early Childhood and Double Degree) in the academic year 2021-22 at the University of Girona.

Cluster sampling was used as all students from the different specializations were invited to participate. After three reminders, the data-producing sample was 285 students. 89.5 % were female and the remaining 10.5 % were male. It should be noted that these percentages are in line with the population. By speciality 43.2 % were studying Early Childhood Education, 15.8 % Primary Education and 41.1 % Double Degree (Early Childhood and Primary Education).

It should be noted that the sample is representative with a confidence level of 95.5% and a margin of error of 5%.

Instrument

The questionnaire was based on the generic teaching competences that all teachers should have according to the Tuning Project (González & Wagenaar, 2003).

Consequently, the questionnaire consists of four sections:

- Demographic data (gender, course, age and speciality).
- 10 instrumental competences.
- Eight interpersonal skills.
- Systemic competences.

In the last three sections, corresponding to the competences, students were asked to rate numerically (from 1 to 10) the importance they attached to the different competences and the extent to which they had developed them. At the end of each block, they were also asked to indicate in which subject of each year they had developed each group of competences most, and how they thought they could further

improve them. It should be noted that they only had to answer in relation to the subjects of the courses they had passed or were currently studying.

The instrument was validated by experts and an analysis of its internal consistency (Cronbach's Alpha) was carried out, both for the assessment of the competencies and the extent to which they are developed, and in both cases, a very high consistency was obtained (.915 and .942, respectively). Internal consistency was above .80 in all the subgroups of competencies, (Table 1), which, as George and Mallery (2003) indicate, is favourable.

Table 1. Internal consistency of the instrument (Cronbach's Alpha)

| Skills | Importance attached | Extent to which they are developed |
|---------------|---------------------|------------------------------------|
| Instrumental | .80 | .84 |
| Interpersonal | .81 | .85 |
| Systemic | .83 | .91 |

Data collection and analysis procedure

The questionnaire was designed using Google Forms and was distributed, as noted above, via email to students doing the Bachelor's Degrees in Education. Ethical considerations were respected: the questionnaire was anonymous and, subsequently, those who so wished would be informed of the results.

The data obtained were analysed descriptively using Excel version 365 and inferentially using SPSS version 27.

Data analysis

Table 2. Descriptive statistics on the importance and extent to which the three blocks of competences are developed

| Competences | Importance attached | | | | Extent to which they are developed | | | |
|---------------|---------------------|-------------------|----------|-----------|------------------------------------|-------------------|----------|-----------|
| | Media (M) | Deviation Typical | Kurtosis | Asymmetry | Media (M) | Deviation Typical | Kurtosis | Asymmetry |
| Instrumental | 8.60 | 0.66 | 0.20 | -0.62 | 6.61 | 1.16 | 1.74 | -1.30 |
| Interpersonal | 9.03 | 0.65 | 0.09 | -0.60 | 6.60 | 1.30 | 1.41 | -1.04 |
| Systemic | 9.00 | 0.64 | -0.49 | -0.36 | 6.49 | 1.38 | 1.12 | -0.94 |

Descriptive analyses of the competences were carried out, calculating means, standard deviations, kurtosis, skewness and percentages.

Before performing the inferential analyses of the data, a prior data screening study was carried out and no multivariate outliers were detected. The normality of the variables was also checked using the Kolmogorov-Smirnov test (factors with more than 50 cases), and in all of them the significance was less than .01, indicating that they did not have a normal distribution.

Consequently, the non-parametric Kruskal-Wallis test was used to relate a quantitative variable to a categorized variable, Spearman's Correlation was used to relate 2 quantitative variables and the Wilcoxon test was used to compare two related samples.

Results

Table 2 shows the averages of the different competences in the three blocks, and it can be seen that in all three there is a difference of more than 2 points in favour of the importance given to the competences in relation to the extent to which they are developed. It can also be seen that the standard deviation is very small in all the cases, which indicates little dispersion in the responses and representative averages. All but one of the kurtosis values are positive, indicating that the data are concentrated, except in the importance given to systemic competences where there is a slight dispersion with respect to the mean. The skewness values are all negative, i.e. all competences (in terms of importance and extent to which they are developed) have been scored high.

Spearman's correlation coefficient was applied between the groups of competences (instrumental, interpersonal and systemic), considering both the importance given to the competences (Table 3) and the extent to which they are developed (Table 4), and it is observed that the correlations are positive and

significant ($p < .05$) and most of the values present an intensity between .51 and 0.75. According to Mondragón (2014) this would correspond to a moderate to strong intensity of relationship and indicates that students who score high in one competence tend to do the same in the rest of the competences.

Table 3. Correlations between the ratings of the three blocks of competences

| | | | Instrumentals | Interpersonal | Systemic |
|-----------------|---------------|-------------------------|----------------------|----------------------|-----------------|
| Rho de Spearman | Instrumental | Correlation coefficient | 1.000 | .649** | .671** |
| | | Sig. (bilateral) | . | <.001 | <.001 |
| | | N | 285 | 285 | 285 |
| | Interpersonal | Correlation coefficient | .649** | 1.000 | .686** |
| | | Sig. (bilateral) | <.001 | . | <.001 |
| | | N | 285 | 285 | 285 |
| | Systemic | Correlation coefficient | .671** | .686** | 1.000 |
| | | Sig. (bilateral) | <.001 | <.001 | . |
| | | N | 285 | 285 | 285 |

** Correlation is significant at the 0.01 level (bilateral).

Table 4. Correlations between the extent to which the three blocks of competences are developed

| | | | Instrumentals | Interpersonal | Systemic |
|-----------------|---------------|-------------------------|----------------------|----------------------|-----------------|
| Rho de Spearman | Instrumental | Correlation coefficient | 1 | .641** | .715** |
| | | Sig. (bilateral) | | <.001 | <.001 |
| | | N | 285 | 285 | 285 |
| | Interpersonal | Correlation coefficient | .641** | 1 | .742** |
| | | Sig. (bilateral) | <.001 | | <.001 |
| | | N | 285 | 285 | 285 |
| | Systemic | Correlation coefficient | .715** | .742** | 1 |
| | | Sig. (bilateral) | <.001 | <.001 | |
| | | N | 285 | 285 | 285 |

** Correlation is significant at the 0.01 level (bilateral).

The Wilcoxon test was also applied between the assessment of importance and the extent to which the competences were developed (Table 5). There are differences between the valuations of the competences

and the extent to which they are developed, with the valuations of importance always being higher than the extent to which they are developed ($p < .001$).

Table 5. Correlations between the differences between valuation and the extent to which they are developed.

| | Instrumental | Interpersonal | Systemic |
|------------------------|----------------------|----------------------|----------------------|
| Z | -14,582 ^b | -14,601 ^b | -14,604 ^b |
| Sig. asin. (bilateral) | <.001 | <.001 | <.001 |

a. Wilcoxon signed-rank test

b. Based on positive ranges.

The results obtained in each of the three competence blocks were then analysed.

Instrumental competences

Regarding the importance given by students to the instrumental competences (table 6), it can be seen, on the one hand, that the most highly valued competences are *Problem solving* (M=9.39) followed by *Basic knowledge of the profession* (M=9.25). On the other hand, the least valued competences are *Capacity for analysis and synthesis* (M=8.32) and *Knowledge of a second language* (M=8.41).

The two most developed competences are: *Oral and written communication in their own language* (M=7.70) and *Basic general knowledge* (M=7.08) while the two least developed are *Decision-making* (M=5.97) and *Problem-solving* (M=6.05).

The differences between the importance and the extent to which the instrumental competences are developed are all positive, therefore, the students give more value to the importance than to the extent to which they are developed. It is worth noting that the greatest difference is found in *Problem solving* (3.34) and *Decision making* (3.24) and the smallest in *Oral and written communication in their own*

language (1.44) and *Basic general knowledge* (1.72).

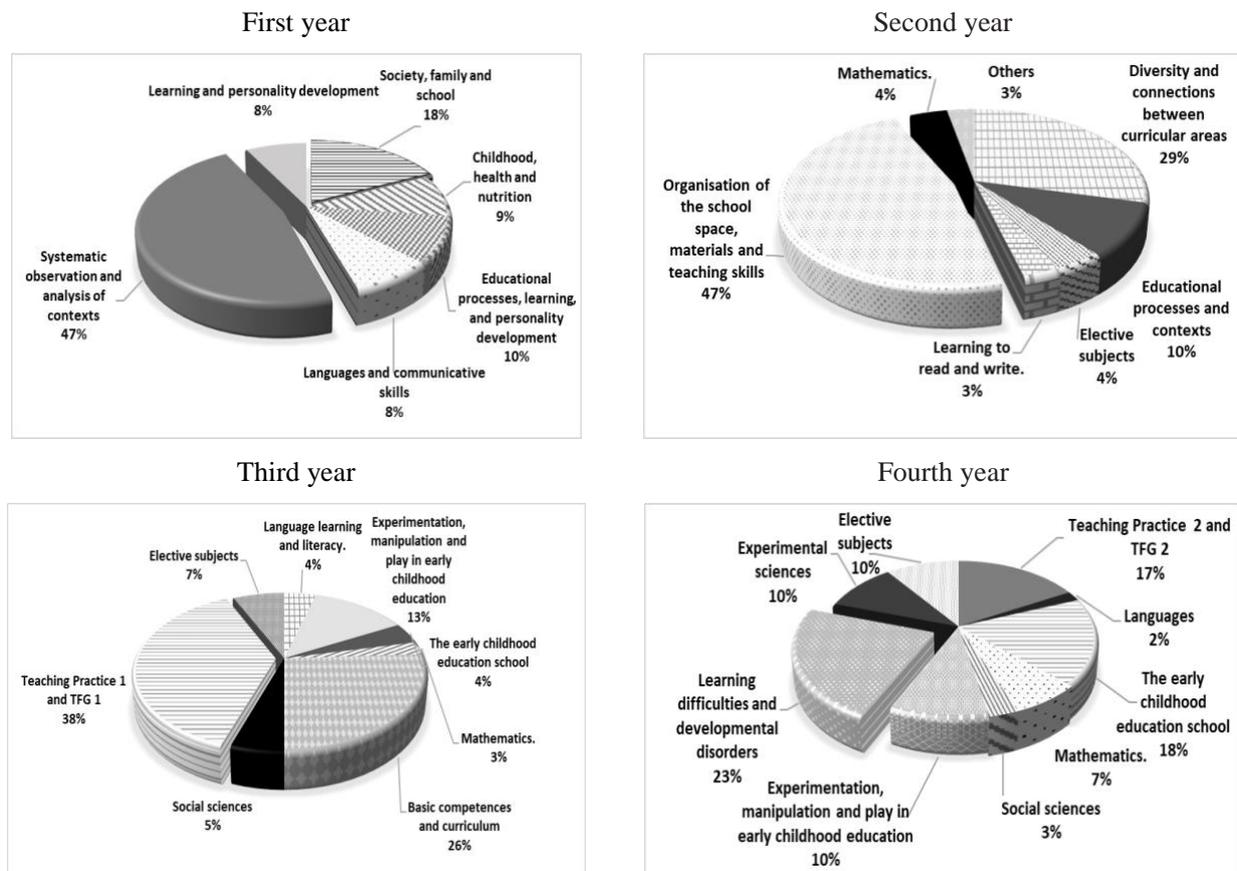
A Kruskal-Wallis inferential analysis was carried out between the three specializations (Early Childhood Education, Primary Education and Dual Degree) and the instrumental competences. It is observed that in Early Childhood Education, more importance is given to *Basic general knowledge* ($p=.048$) ($h=6.41$) and *Problem solving* ($p=.034$) ($h=8.77$) and in the extent to which they have been developed: *Ability to plan and organize* ($p=.010$) ($h=9.29$), *Basic knowledge of the profession* ($p=.021$) ($h=8.76$), *Problem solving* ($p=.003$) ($h=20.51$) and *Decision making* ($p=.028$) ($h=7.96$).

The subjects in which the instrumental competences are developed most (Figure 1), in the first year are *Systematic observation and analysis of contexts* (47%) and *Society, family and school* (18%); in the second year *Organization of the school space, materials and teaching skills* (47%) and *Diversity and connections between curricular areas* (29%); in the third year *Teaching Practice I* and *TFGI* (38%) and *Basic competences and curriculum* (26%) and in the fourth year *Learning difficulties and developmental disorders* (23%) and *The early childhood education school* (18%).

Table 6. Importance attached, extent to which instrumental competences are developed and difference between means.

| | Importance attached | | Extent to which instrumental competences are developed | | Difference of Means |
|--|---------------------|--------------------|--|--------------------|---------------------|
| | Mean (M) | Standard Deviation | Mean (M) | Standard Deviation | |
| Troubleshooting | 9.39 | 0.81 | 6.05 | 2.03 | 3.34 |
| Basic knowledge of the profession | 9.25 | 0.98 | 6.90 | 1.68 | 2.35 |
| Decision-making | 9.21 | 0.89 | 5.97 | 1.94 | 3.24 |
| Oral and written communication in their own language | 9.14 | 1.00 | 7.70 | 1.53 | 1.44 |
| Capacity to organize and plan | 9.12 | 0.98 | 6.75 | 1.90 | 2.37 |
| Basic general knowledge | 8.80 | 1.21 | 7.08 | 1.62 | 1.72 |
| Information management skills | 8.55 | 1.10 | 6.80 | 1.73 | 1.75 |
| Basic computer skills | 8.44 | 1.25 | 6.29 | 2.06 | 2.15 |
| Knowledge of a second language | 8.41 | 1.48 | 6.19 | 1.95 | 2.22 |
| Capacity for analysis and synthesis | 8.32 | 1.25 | 6.35 | 1.65 | 1.97 |

Figure 1. Subjects in which instrumental competences are developed most in...



Interpersonal competences

The competences rated most important (Table 7) are *Appreciation of diversity and multiculturalism* ($M=9.47$) and *Teamwork* ($M=9.30$), while those rated least important are *Ability to work in an international context* ($M=8.31$) and *Ability to communicate with experts from other areas* ($M=8.72$).

It is observed that the two developed most are *Teamwork* ($M=8.93$) and *Ability to work in an interdisciplinary team* ($M=7.19$) while the least developed are *Ability to work in an international context* ($M=4.71$) and *Ability to communicate with experts from other areas* ($M=5.40$).

If we compare the existing differences between the importance and the extent to which the interpersonal competences are developed, we also observe that all of them are positive, therefore, the students give more value to the importance than to the extent to

which they are developed. The greatest difference is found in *Ability to work in an international context* ($M=3.60$) and *Ability to communicate with experts from other areas* ($M=3.32$) and the smallest difference in *Teamwork* ($M=0.37$) and *Ability to work in an interdisciplinary team* ($M=1.82$).

Kruskal-Wallis was applied between the three specialities (Early Childhood Education, Primary Education and Double Degree) and the interpersonal competences and, it was observed that in the speciality of Early Childhood Education the most importance was given to *Ability to communicate with experts from other areas* ($p=.025$) ($h=8.40$) and *Appreciation of diversity and multiculturalism* ($p=.039$) ($h=7.38$).

In the Primary School specialization, *Ability to communicate with experts from other areas* ($p=.046$) ($h=8.40$) was rated the most important.

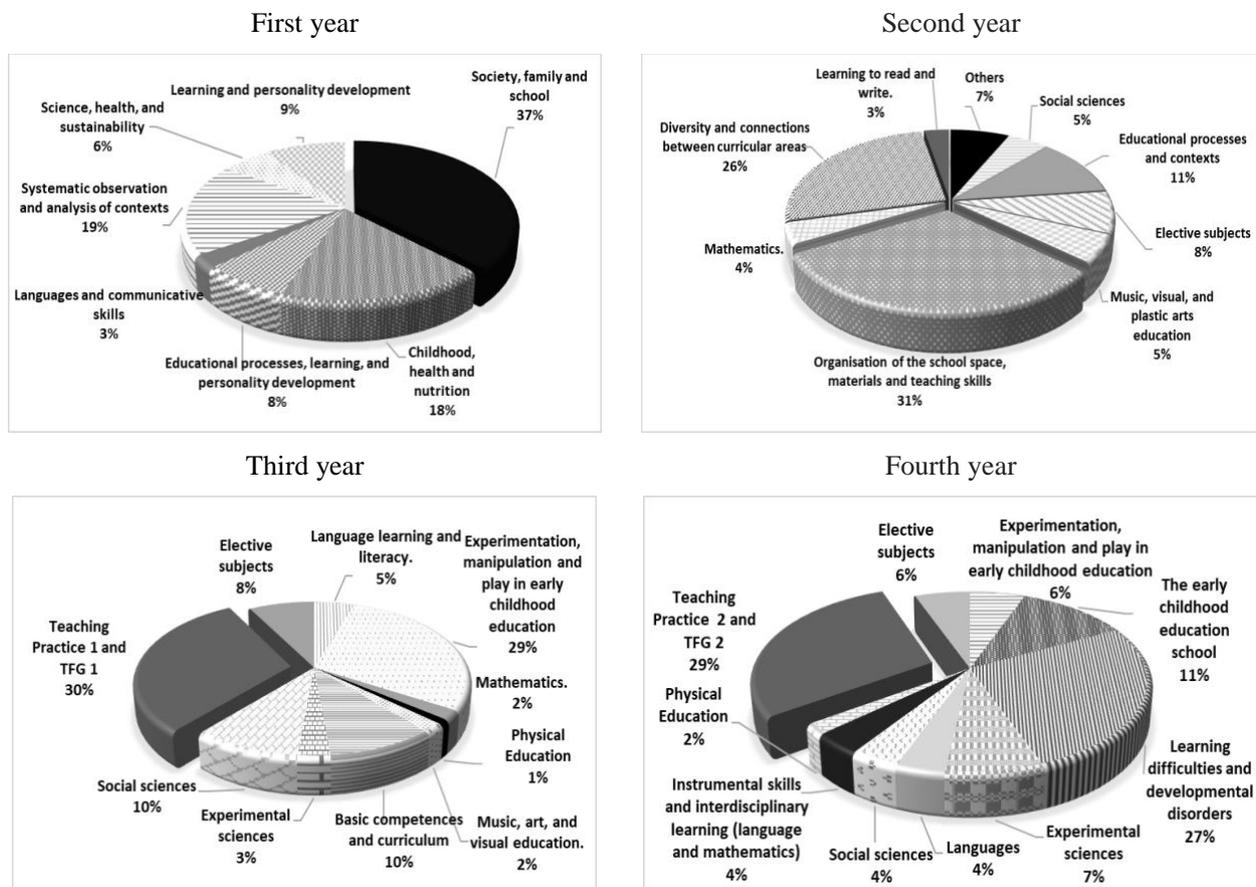
Table 7. Importance attached, extent to which interpersonal competences are developed and difference between means.

| | Importance attached | | Extent to which interpersonal competences are developed | | Difference of Means |
|--|---------------------|--------------------|---|--------------------|---------------------|
| | Mean (M) | Standard Deviation | Mean (M) | Standard Deviation | |
| Appreciation of diversity and multiculturalism | 9.47 | 0.80 | 6.70 | 1.89 | 2.77 |
| Teamwork | 9.30 | 1.02 | 8.93 | 1.38 | 0.37 |
| Ethical commitment | 9.20 | 0.92 | 6.31 | 2.04 | 2.89 |
| Critical and self-critical skills | 9.15 | 0.92 | 6.57 | 1.94 | 2.58 |
| Interpersonal skills | 9.06 | 0.93 | 6.99 | 1.76 | 2.07 |
| Ability to work in an interdisciplinary team | 9.01 | 0.98 | 7.19 | 1.80 | 1.82 |
| Ability to communicate with experts from other areas | 8.72 | 1.00 | 5.40 | 1.92 | 3.32 |
| Ability to work in an international context | 8.31 | 1.33 | 4.71 | 2.01 | 3.60 |

The subjects where interpersonal competences were developed most (Figure 2) in the first year are *Society, family and school* (37%) and *Systematic observation and analysis of contexts* (19%); in the second year *Organization of the school space, materials and teaching skills* (31%) and *Diversity and*

connections between curricular areas (26%); in the third year *Teaching Practice 1 and TFG1* (30%) and *Experimentation, manipulation and play in early childhood education* (29%) and in the fourth year *Teaching Practice 2 and TFG2* (29%) and *Learning difficulties and developmental disorders* (27%).

Figure 2. Subjects in which interpersonal competences are developed most in...



Systemic competences

The student body gives the greatest importance (Table 8) to *Critical and self-critical ability* (M=9.58) and *Ability to adapt to new situations* (M=9.48) while the least important competences are *Concern for quality* (M=8.92) and *Motivation for success* (M=8.94). It is observed that the two developed most are *Project design and management* (M=7.30) and *Ability to learn* (M=7.22) while the two least developed are *Knowledge of cultures and customs of other countries* (M=4.78) and *Leadership* (M=5.25). As observed in the instrumental and interpersonal competences, the students give more value to the importance than to the extent to which they are developed, as they are all positive. The greatest differences are found in *Knowledge of cultures and customs of other countries* (M=4.03) and *Ability to adapt to new situations* (M=3.06) and the smallest

differences in *Project design and management* (M=1.64) and *Research skills* (M=1.76).

Kruskal-Wallis was applied between the three specialities (Early Childhood Education, Primary Education and Double Degree) and the systemic competences. On the one hand, in Early Childhood Education they attach more importance to *Creativity* ($p=.000$) ($h=17.28$), *Knowledge of cultures and customs of other countries* ($p=.000$) ($h=30.01$), *Ability to work autonomously* ($p=.016$) ($h=7.95$) and *Motivation to succeed* ($p=.008$) ($h=9.60$). On the other hand, Early Childhood Education is the one that rates *Ability to adapt to new situations* ($p=.019$) ($h=7.79$), *Creativity* ($p=.019$) ($h=7.96$) and *Knowledge of cultures and customs of other countries* ($p=.027$) ($h=7.24$) as the competences developed most. The Dual Degree and Primary School specializations most value *Ability to learn* ($p=.010$) ($h=8.27$).

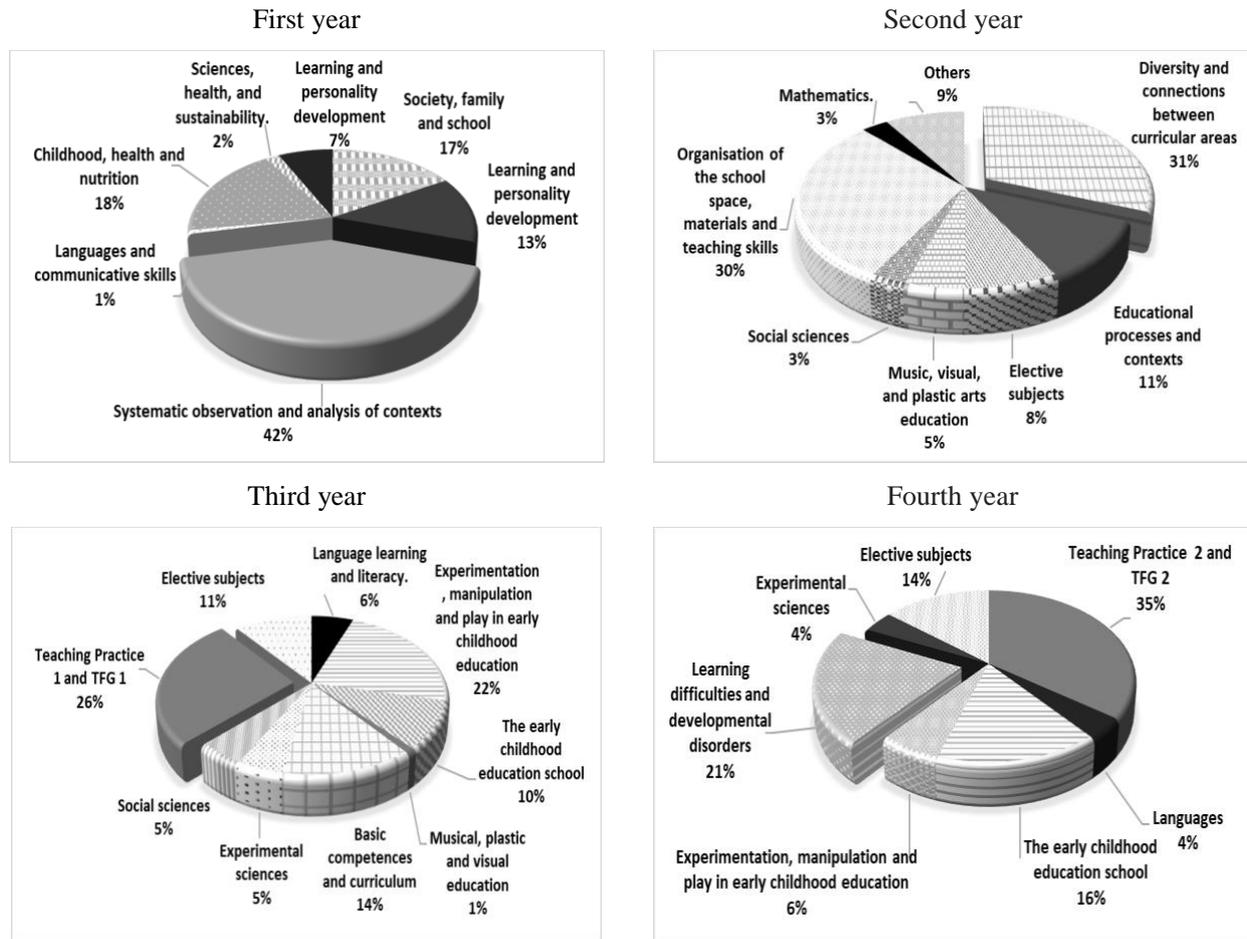
Table 8. Importance attached, extent to which systemic competences are developed and difference between means.

| | Importance attached | | Extent to which systemic competences are developed | | Difference of Means |
|--|---------------------|--------------------|--|--------------------|---------------------|
| | Mean (M) | Standard Deviation | Mean (M) | Standard Deviation | |
| Critical and self-critical skills | 9.58 | 0.72 | 6.90 | 1.97 | 2.68 |
| Ability to adapt to new situations | 9.48 | 0.90 | 6.42 | 2.00 | 3.06 |
| Ability to learn | 9.44 | 0.80 | 7.22 | 1.91 | 2.22 |
| Knowledge of cultures and customs of other countries | 8.81 | 1.50 | 4.78 | 2.10 | 4.03 |
| Creativity | 9.05 | 1.05 | 6.86 | 1.95 | 2.19 |
| Project design and management | 8.94 | 1.09 | 7.30 | 1.75 | 1.64 |
| Ability to work autonomously | 9.21 | 0.95 | 7.20 | 1.88 | 2.01 |
| Research skills | 8.83 | 0.99 | 7.07 | 1.72 | 1.76 |
| Initiative and entrepreneurship | 8.67 | 1.35 | 5.99 | 1.99 | 2.68 |
| Leadership | 8.13 | 1.24 | 5.25 | 2.05 | 2.88 |
| Motivation for success | 8.94 | 1.28 | 6.14 | 2.11 | 2.80 |
| Concern for quality | 8.92 | 1.15 | 6.80 | 2.10 | 2.12 |

The subjects in which the systemic competences are developed most (Figure 3) in the first year, the systemic competences that are developed most are *Systematic observation and analysis of contexts* (42%) and *Childhood, health and nutrition* (18%); in the second year *Diversity and connections between curricular areas* (31%) and *Organization of the school*

space, materials and teaching skills (30%); in the third year *Teaching Practice 1* and *TFG1* (26%) and *Experimentation, manipulation and play in early childhood education* (22%) and in the fourth year *Teaching Practice 2* and *TFG2* (35%) and *Learning difficulties and developmental disorders* (21%).

Figure 3. Subjects in which systemic competences are developed most in...



Discussion and conclusions

In relation to the first specific objective, comparing the extent to which the generic competences are developed and the importance given to them by students in the Bachelor's Degrees in Education, it can be seen that the importance given to the competences is high, and consistently higher than the extent to which they are developed, as the difference in the means is more than two points, which is significant. These results agree with those obtained by Ojeda *et al.* (2022) and Cañadas (2022). Also, Al Mallak, *et al.* (2020), Kavanagh and Drennan (2008) found that students considered it important to acquire a high level of generic competences as part of their education, yet they failed to reach the desirable level.

This difference between the importance given and extent of development of

competences is fundamentally due to the way competences are addressed in the teaching plans. In this sense, in their research, Pérez *et al.* (2013) found that generic competences have taken a back seat in the curricula, and that specific competences have been developed more in the curricula. Jauregui (2018) and Gijón (2016) also recommended greater inclusion of competences in both core and elective subjects, while other studies such as those by Crespí and García (2021) have advocated for the introduction of specific subjects dealing with competences.

Comparing the three groups of competences, we can see that the most highly valued are interpersonal competences, while the least valued are instrumental competences. Amor and Serrano (2018) obtained similar results and indicated that in order to develop

instrumental competences, greater attention is required in training.

It is also interesting to note, from the inferential analysis, that all students follow the same pattern in the assessment of all competences; when they score high in one competence, they tend to do the same in the remaining competences of the same group.

In the instrumental competences, the results obtained in the present study are closely in line with those of Vera *et al.* (2022), from the students' perspective, and with those of Cabrera *et al.* (2016), from the employers' point of view.

It is worth noting that *problem solving* is one of the most highly valued, but, at the same time, it was considered one of the least developed. This is due, as Pathak (2015) indicated, to the fact that it is at the top of the learning pyramid and, in addition, as with thinking strategies, it allows students to regulate their own thought processes and acts as a model for processing the information they receive (Rajkumar & Nachimuthu, 2019). This leads students to perceive that this competence is not being developed as much as they would like it to be.

It is also worth noting that decision making is another area considered to be the least developed, with the greatest difference between the extent to which it is developed and the importance given to it.

One solution to remedy this deficit would be the introduction of methodologies such as Problem-Based Learning (PBL) (Bueno, 2018) in the programming of subjects. Through this methodology, future teachers could be presented with problems or situations to solve and, after collecting and analysing a large amount of information, choose the correct answer. In PBL methodology, after analysing all the information, decisions must also be made to solve the problem posed and consequently this competence is developed.

Also noteworthy is the perception of the lack of development of *second language proficiency*, which coincides with the results of

Castro *et al.* (2023) and Muñoz *et al.* (2014). To improve this competence, it would be very important to start with the initial training of both teachers and students and, as Amor & Serrano (2018) pointed out, future teachers should not only be trained linguistically in this second language, but also pedagogically and didactically.

The importance given by students to *Teamwork* stands out in interpersonal competences (the second most valued and the first in the extent to which it is developed). These results are like those obtained by Cañadas and Zubillaga (2023), Ojeda *et al.* (2022) and Gutiérrez *et al.* (2018). As can be seen in the programming of subjects, more and more group work is carried out and thus it is perceived that 'the competences considered to be most important are at the same time those which the university has contributed most to their development' (Lluch *et al.*, 2017, p.57).

It should be noted that *Ability to work in an international context* is the least valued and, at the same time, the least developed of the interpersonal competences. In this sense, as already indicated by González & Wagenaar (2003), 'international' competences are the least developed within their category (*Knowledge of cultures and customs of other countries, Ability to work in an international context and Knowledge of a second language*). This is because these are emerging competences and are not yet sufficiently valued by either students or teachers. This deficit should be remedied in curricula because of the increasing number of students from different cultures in schools and institutes today. Therefore, future teachers should be better able to cope with this environment in their classrooms, as differences are enriching and help to gain new perspectives and discover other ways of solving problems.

The systemic competences considered most important are *Critical and self-critical ability* and *Ability to adapt to new situations*. This result is because students consider it important to implement processes in which, by using logic, they can see their shortcomings and self-

correct by adapting to the problems they may encounter while teaching in the future (Sáez, 2018). *Motivation to succeed* and *Concern for quality* were also found to be the least valued.

Concerning the second specific objective, ascertaining in which subjects the competences are developed most according to the year, in all the years there is a polarization around specific subjects.

In the first year, *Systematic observation and analysis of contexts* is by far the most chosen subject in both instrumental and systemic competences, while *Society, family and school* is the most chosen subject in interpersonal competences. This result was expected due to the characteristics of both subjects: the former is based on the development and application of an observation instrument with the corresponding analysis of results, while the latter deals with different sociological perspectives in education.

In the second year, *Organization of the school space, materials and teaching skills* is chosen for instrumental and interpersonal competences and *Diversity and connections between curricular areas* for systemic competences. In this case, the result is not surprising either, given the cross-disciplinary nature of the two subjects.

In the third and fourth years, *Teaching Practice* and *TFG* are the most selected subjects in the three groups and this is due to the fact that the different competences acquired throughout the Bachelor's Degree are put into practice in them. This assessment coincides with that obtained by Cabeza *et al.* (2017) who observed a high assessment by students in the acquisition and perception of the development of competences, both general and specific, after completing external placements. In this sense, as highlighted by Gómez *et al.* (2017), although many competences are developed and internalized during the periods of curricular placements in educational centres, it is important to be certain that, at the end of their academic training, all students have acquired the maximum number of teaching competences that will help them in

the performance of their duties. As Podestá *et al.* (2022) pointed out, students consider that, because they work in a context of great cultural diversity and high complexity, placements provide them with learning that is essential for the acquisition of intercultural competences.

In reference to the third objective, relating specialities with competences, it is observed that most of the significant relationships found show that Early Childhood Education most values competences, as well as considering that they are developed more.

As proposals for improvement, many studies carried out on teacher training students from different subjects in different countries have found the need to give generic competences a high importance in the teacher training process (Ojeda, *et al.* 2022). As Loup *et al.* (2017) pointed out, there are universities that offer opportunities to develop competences, either through individual sessions or small group workshops, often involving coaching experts and professional groups, among others.

It would also be important to strengthen instrumental competences, which are the least valued, by introducing them more in training plans (Amor & Serrano, 2018) and to strengthen, within interpersonal competences, those of an international scope, which are the least developed.

Furthermore, as Pugh and Lozano (2019) pointed out, teaching staff need to update their teaching and assessment methodologies in order to incorporate generic competences in higher education. To this end, more practical activities should be incorporated into the subject syllabuses that allow for observing how the competences programmed in the subject are deployed and for building assessment tools so as to be able to provide feedback to students.

In order to improve the present research, we propose expanding the sample with students from different Spanish universities in order to compare the results obtained and see if they follow the same pattern. Similarly, it would also be interesting to apply the questionnaire to

graduate students who are currently teaching in different educational centres so as to compare their opinions with those of the students.

Finally, it would also be important to carry out a longitudinal study in order to observe whether the results obtained are the same at the beginning of the degree or whether they change over the years within the same sample.

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