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Studies

The role of students in the Docentia process after ten years of evaluation: Evaluating the teacher or the subject? That is the question

El papel del alumnado en el Docentia tras diez años de evaluación: ¿Evaluar al docente o la asignatura? Esa es la cuestión

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Abstract:

This paper proposes separating the survey of students' satisfaction with their teachers from the survey of their satisfaction with the module, and presents the implementation of this process at the Universidad de La Laguna (ULL). Items linked to teacher performance were differentiated from those referring to the subject in the Docentia-ULL survey. The final teacher survey comprised 12 items. In order to compare it with the original 22-item survey, we compared the results from the overall assessment of teachers in the original survey with a simulation of the result if the reduced survey had been applied in the period 2012-2014 (n = 689), as well as with its actual application in the 2017-2019 rounds (n = 526). We observed an increase in Excellent teaching staff using the teacher survey and, to a lesser extent, Unfavourable teaching staff. We found that the teacher survey displayed a greater variance in overall student satisfaction compared to the subject survey. The results support the usefulness and validity of assessing student satisfaction through two different surveys. The two surveys would be relevant for different institutional assessment processes: the teacher survey for teacher promotion and

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the subject survey for degree accreditation. Adoption of the teacher survey by the university would have a positive impact on teachers' intrinsic motivation, in particular by satisfying the needs for autonomy and competence by associating them with skills that they are in control of improving.

Keywords: satisfaction, students, survey, university, teacher appraisal.

Resumen:

Este trabajo propone diferenciar la evaluación de la satisfacción del alumnado con el docente de la satisfacción con la asignatura, y presenta su implementación en la Universidad de La Laguna. Se diferenciaron los ítems vinculados al desempeño del docente de los referidos a la asignatura en la encuesta Docentia-ULL. La encuesta del docente quedó finalmente compuesta por 12 ítems. Para compararla con la encuesta original, de 22 ítems, contrastamos los resultados de la evaluación del profesorado en la encuesta original con una simulación del resultado si se aplicara la encuesta reducida en su lugar en el periodo 2012-2014 (n = 689), así como con su aplicación real en las convocatorias de 2017-2019 (n = 526). Observamos un incremento del profesorado Excelente empleando la encuesta enfocada al docente y, en menor medida, del profesorado Desfavorable. Encontramos que la encuesta del docente explicaba una varianza mayor de la satisfacción general del alumnado en comparación con la encuesta de la asignatura. Los resultados apoyan la utilidad y validez de la evaluación de la satisfacción de alumnado mediante dos encuestas distintas, relevantes para distintos procesos de evaluación institucional: la del docente para la promoción del profesorado y la de la asignatura para la acreditación de los títulos. La incorporación de la encuesta del docente por parte de la universidad tendría un impacto positivo en la motivación intrínseca del profesorado, en particular en la satisfacción de las necesidades de autonomía y competencia, al asociarse con habilidades cuya mejora está «bajo su control».

Descriptores: satisfacción, estudiante, encuesta, universidad, evaluación del profesor.

1. Introduction

Improving the evaluation of teaching practice in Spanish universities is necessary when the quality criteria of the European Higher Education Area (EHEA) are adopted. In this context, Docentia, the instrument Spanish universities have used to do this, is a valuable tool that should enable teachers to evaluate the strengths and weaknesses of their teaching practice (Calderón & Escalera, 2008; Isla-Díaz et al., 2018). Teacher evaluation should be a stimulus for the adoption of good practices (Pozo et al., 2011) and for encouraging the adaptation of their competences to the objectives of the European Higher Education Area (Álvarez Rojo et al., 2009; Benito & Cruz, 2005; High Group on Modernization of Higher Education, 2013; Mayor, 2009; Murillo, 2008; Perales et al., 2014). At the same time, it must be accurate and have consequences

(Alfageme & Caballero, 2010; Tejedor & García-Valcárcel, 2010).

Docentia-ULL is used at the Universidad de La Laguna (ULL) to evaluate teachers by triangulating three sources of information: the teacher, the students, and the academic directors of the courses. It comprises three information collection instruments: the teacher self-report; the academic director's report; and the student satisfaction survey (Universidad de La Laguna, 2010). The fact that Docentia is an evaluation model that focuses on continuous improvement and is closely linked to the integration of a new university teaching approach centred on student learning means that periodic review of the model is necessary, in accordance with the Deming wheel.

With this in mind, and with the objective of optimising the evaluation system, we evaluated the results of the implementation of the Docentia-ULL model in the first three rounds, between 2010 and 2013. As a result of this analysis, various changes were proposed, modifying the weightings of the indicators and the weights of the model's dimensions (see Isla-Díaz et al., 2018). The proposal to review the student satisfaction survey, one of the dimensions of the Docentia model, derives from this. In this regard, we took into account the central importance for the teaching-learning model promoted by the EHEA of teachers individually accepting their evaluation, something that is dependant on the survey being valid in direct relationship with the teacher's individual performance. Changes can only be made if they have the support of the group entrusted with implementing them (Martínez & Esteban, 2005; Pozo et al., 2011; Valcárcel, 2005).

Teachers' good performance will necessarily be reflected in the satisfaction it generates, principally among their students. Indeed, in the context of the EHEA, the basic tool for evaluating teacher performance is the satisfaction survey, which is administered to students. This is one of the most widely used quality indicators in higher-education institutions around the world (Darwin, 2017; Pozo et al., 2011). It uses a Likert-type scale (Matosas-López, 2019). In the context of the Spanish University System, the surveys follow the model of the Docentia programme of ANECA (Spain's national quality and accreditation evaluation agency), varying both in the competences included, and in the number of items they comprise. For example, Muñoz et al. (2002) developed a questionnaire of 40 items that measure 10 competences. The questionnaire developed by Casero (2008) features 92 items that measure teacher performance in competences similar to those of Muñoz et al. (2002). For its part, the questionnaire developed by Molero and Ruiz (2005) comprises 25 items for four competences. A shorter version of the questionnaire with 18 items was developed by Lizasoain-Hernández et al. (2017) for the Universidad del País Vasco.

In general, most of the surveys that follow ANECA's Docentia model, as is the case of the Docentia-ULL approved in 2010, have around 20 items measuring a set of competences relating to the three dimen-

sions of the model — planning of teaching, delivery of teaching, and results — covering capacities relating to teacher performance (Jerez et al., 2016), such as the establishment of an appropriate assessment system (Sinahuya & Sánchez-Tarazaga, 2018) or the match between the content delivered and the credits assigned to the module. The results dimension considers students' satisfaction with the teaching practice of their teachers and the satisfaction of the academic directors.

If we observe the content of the student satisfaction surveys, it is apparent that they contain two different classes of items. On the one hand, there are the items that refer to the module, such as the match between the content delivered and the credits allocated, or the establishment of an appropriate assessment system. These often involve more than one teacher and must include the requirements established in the programme approval reports. On the other hand, there are items that relate solely to the teacher's performance, such as the capacity to motivate students and the provision of appropriate tutoring, which are regarded as key elements in the profile of a good university teacher (Caballero & Bolívar, 2015; San Martín et al., 2014; Ruiz-Esteban & Santos del Cerro, 2020; Tejedor & García-Valcárcel, 2010; Zabalza, 2009) and are more important for evaluating teacher performance.

Accordingly, the Teaching Evaluation Committee of the ULL identified the objective of finding an evaluation model that is not only reliable but also valid. In this regard, the fact that the survey in use included items relating to the module and items relating to the teacher who is being evaluated was identified as a significant obstacle for achieving this objective. Obviously, evaluation of the module might involve more than one teacher and so have a positive or negative effect on the result of the evaluation of the particular teacher. As a result, it is necessary to ensure that the results of the teachers who are evaluated using the survey genuinely reflect each individual's performance, evaluated through competences that are "under his or her control" and are separated from the evaluation of the module, which is often shared by various teachers. In accordance with motivational theories, such as self-determination theory (Ryan & Deci, 2017), an evaluation of performance that is coherent with teachers' competences would, in the long term, facilitate the development of the perception of control, of agency, which is fundamental for intrinsic motivation.

The committee in question established that the appropriate strategy for achieving this objective entailed redefining evaluation and, following an objective analysis methodology, developing two different surveys: one that evaluates teachers and another that evaluates the module. Furthermore, we understand that it is important to distinguish between the purpose of each of them, and this is of great importance for the university system. The teacher evaluation survey is the one that is used by Docentia as a tool for evaluating the individual performance of teachers. In contrast, the module evaluation survey will essentially be used as evidence in the programme accreditation processes.

We can only be sure that teachers will willingly accept the results of their evaluation and make the most of the feedback received to improve their teaching practice if they identify the evaluation received with their own performance. Accordingly, the improvement process required a clear differentiation between the items from one survey and those from the other; in this article we propose a survey that comprises the items that only evaluate the performance of the teacher (the evaluation of the modules with regards to programme accreditations will be done separately). Furthermore, the improvement process also requires a reduction in the number of items (see Castro Morera et al., 2020), so that students are not overwhelmed in the surveying process, something that is also an objective of this article.

2. Method

2.1. Participants

The data are drawn from 33,349 surveys of students' satisfaction with teaching completed for 689 participating teachers in the third and fourth teaching activity evaluation call at the ULL in the 2012/2013 (n = 367) and 2013/2014 (n = 322) years. Table 1 shows the distribution of surveys and teachers evaluated by branch of knowledge.

TABLE 1. Number of surveys and teachers evaluated by branch of knowledge.

	2012/2013		2013/2014		Total	
Branch of knowledge	Surveys	Teachers	Surveys	Teachers	Surveys	Teachers
Arts and Humanities	1815	48	2086	62	3901	110
Sciences	2199	62	1524	46	3723	108
Health Sciences	3661	70	3279	76	6940	146
Social and Legal Sciences	8731	119	5633	103	14 364	222
Engineering and Architecture	3107	68	1314	35	4421	103
Total	19513	367	13836	322	33349	689

Source: Own elaboration.

2.2. Instruments

The student satisfaction survey comprises 21 items (plus one item relating to general satisfaction) and uses a five-point Likert-type answer scale (1=Strongly disagree, 5=Strongly agree). This instrument measures student satisfaction with the teaching competences of their teachers in relation to the organisation and presentation of content, methodological strategies used in the teaching-learning process, the teachers' degree of compliance with attendance and the timetable, the students' perceived level of learning, and general satisfaction, and other aspects relating to the organisation of the module. This survey was approved at the 24/06/2010 meeting of the Board of Governors of the ULL for use during the 2010/2011-2014/2015

five-year period and can be found on page 52 of the ULL's manual for evaluation of teaching activity (Universidad de La Laguna, 2010).

2.3. Procedure

The surveys of students' satisfaction with the teaching practice of the participating teachers were completed during the last two months of each term of the 2012/13 and 2013/14 years. This information collection was done in-person in class, using clickers provided by surveyors from the Technical Quality Unit of the ULL. A day and time were agreed in advance with the teachers involved to avoid potential changes in time or place and ensure an efficient data collection process.

The modification of the survey (identifying the items that relate to the module and those that relate to the teacher) with a view to implementing it in the second Docentia-ULL five year period (2015–2020) was done under the leadership of the Teaching Evaluation Committee with the participation of experts[1].

2.4. Data analysis

We calculated descriptive statistics, principal component analyses, reliability by internal consistency, correlations, Anova and Chi-squared using the SPSS v.21 (IBM, 2012) statistics package. After selecting the items, we carried out a dimensional analysis of the psychometric properties of the teacher evaluation survey using exploratory factor analysis and we examined the possible effect of the branch of knowledge. We compared the teacher scores obtained from the original survey with the scores that would have been obtained using the "simulation" of a reduced survey with the data from the 2012 to 2014 years. In addition, we compared the results from the original survey (2012-2014 rounds) with the published results from the 2017-2019 rounds, from the second five-year evaluation period, where the reduced survey was used, slightly modified by the Evaluation Committee for this five-year period (Universidad de La Laguna, 2017).

3. Results

First we performed a study of the completed surveys (33,349), analysing possible response tendencies by the students, in other words, detecting surveys where one of the options has been selected too often according to the procedure described by Correa & Camacho (1993). This left 32,297 surveys. In addition, we excluded students who reported not attending class at least "somewhat" (3). Accordingly, we eventually analysed 28,965 valid surveys. In addition, for the analyses that include items 13 ("It is easy to access the teacher in his/her tutorial times") and 14 ("The help received in tutorials is effective for learning"), we excluded students who reported not attending tutorials at least "somewhat" (3).

3.1. Cleansing and structure of the questionnaire

Next, we analysed the content of the 21 items (without taking into account item 22 on general satisfaction) to re-

move from the survey any for which the teacher is not solely responsible but which instead relate to organisational or regulatory questions regarding the modules and so will be included in the process of evaluation of programmes for their accreditation.

As a result, we eliminated 8 items (the numbering corresponds to that of the original survey from 2010), as well as item 9, as in the university context of the EHEA it is not viable to reduce the requirements established in the programme approval reports. Similarly, and to avoid highly redundant items, we calculated the Pearson correlations and observed that item 20 has a correlation of at least 0.7 with items 11, 19, and 21, and so we decided to eliminate this as well.

1. The information provided by the teacher in the module guide (or handbook) is accessible and useful.

2. The planned assignments relate to what the teacher wants us to learn in the teaching activity.

3. In the delivery of the teaching activity there is no overlap with the content of other activities.

4. The theoretical and practical classes are coordinated.

5. The credits assigned to the teaching activity are in proportion with the volume of content and proposed assignments.

6. The effort this teaching activity requires corresponds with that set out in the module guide.

16. The bibliography recommended by the teacher is useful for developing the topics.

18. The teacher applies the evaluation criteria contained in the module guide appropriately.

19. The teacher adapts the programme depending on students' prior level of knowledge.

20. The teacher has facilitated my learning. With his/her help I have been able to improve my knowledge, skills, or way of approaching particular topics.

Table 2 shows the descriptors of the 11 remaining items from the original survey, which will be subjected to principal component analysis.

To determine the internal structure of the retained items, we performed a principal component analysis. The KMO value is 0.93, and so the data are appropriate for a factorial model. The model captures 63.49% of the variance in two components with an eigenvalue greater than 1.

We carried out a varimax rotation, which showed good loadings ranging between .50 and .83 for the first component and greater than .82 for the second. Given that this second component only consists of the two items that refer to the teacher's compliance

with attendance and the timetable (items 7 and 8) and that the scree plot recommends a single factor model, we repeated the analysis limiting the model to one component.

This single factor model captures 52.42% of the variance. Table 2 shows the weights of the resulting component matrix, which range between .439 and .836.

TABLE 2. Descriptors of the selected items.

Items		Mean (*SD*)	*n* analysed (*n* excluded)	Rotated components weight
7.	The teacher complies with the set timetable.	4.11 (1.20)	28 570 (381)	.517
8.	The teacher attends class regularly.	4.62 (0.81)	28 656 (295)	.439
10.	The teacher does a good job of preparing, organising, and structuring the activities or assignments done in class (or laboratory, workshop, fieldwork, seminar, etc.).	3.56 (1.23)	28 491 (460)	.795
11.	The teacher explains clearly.	3.51 (1.35)	28 653 (298)	.813
12.	The teacher solves doubts and guides students in the completion of their assignments	3.63 (1.23)	28 422 (529)	.836
13.	It is easy to access the teacher in his/her tutorial times	3.50 (1.24)	14 724 (14 227)	.625
14.	The help received in tutorials is effective for learning	3.47 (1.20)	11 711 (17 240)	.764
15.	The teacher uses teaching resources effectively to facilitate learning	3.46 (1.20)	28 008 (943)	.803
17.	The teacher favours the participation of the student in the delivery of the teaching activity	3.61 (1.22)	28 115 (836)	.701
19.	The teacher manages to inspire interest in the different topics covered in the delivery of the teaching activity	3.27 (1.35)	28 108 (843)	.799
21.	I have improved on my starting level, with relation to the competences listed in the module guide	3.41 (1.16)	28 058 (893)	.751

Source: Own elaboration.

The internal consistency analysis gave a Cronbach's alpha of .915, increasing slightly to .916 or .918, if items 7 and 8 are eliminated. For this reason, and also because they are the items with the weakest relationship with the component and both refer to the teacher's compliance with attendance and the timetable, we suggest combining them into a single item: "The teacher attends class regularly and complies with his/her timetable".

Furthermore, we suggest reformulating the original items 10, 12, 13, 14, and 15 to facilitate their comprehension by involving the students' personal experience (see Appendix).

With the objective of supplementing the last item in the survey, regarding general satisfaction ("In general I am satisfied with this teacher's teaching work"), we suggest adding a new item "I would take another module with this teacher", but we recommend separating it spatially from the former in the presentation of the survey.

Ultimately, we propose a single factor questionnaire with 10 items as well as two items relating to general satisfaction (see Appendix).

3.2. Comparison of the structure across branches of knowledge

To confirm that the structure remains stable independently of the branch of knowledge, we performed a principal component analysis for each branch: arts and humanities (AaH), sciences (S), health sciences (HS), social and legal sciences (SaLS), and engineering and architecture (EaA).

The structure is maintained almost perfectly across the five branches of knowledge. Percentages of explained variability of between 50.37 and 55.87% are obtained. Table 3 shows the loadings of the items in the component as well as the place the component occupies as a function of this loading. The internal consistency according to Cronbach's alpha is greater than 0.9 in all cases. It is notable that item 12 is always in first place and that items 17, 13, 7, and 8 always occupy the last four places.

TABLE 3. Comparison of loadings and place across the different branches of knowledge.

Rama / **% de Varianza explicada**	**General** **52.42**		**AyH** **52.33**		**C** **51.73**		**Cdis** **55.87**		**CsyJ** **50.37**		**IyA** **54.71**	
Ítem	lugar	peso	lugar	peso	lugar	peso	lugar	peso	lugar	peso	lugar	peso
R12 solves doubts	1	.84	1	.83	1	.84	1	.85	1	.82	1	.85
R11 explains clearly	2	.82	3	.81	2	.82	2	.83	2	.81	2	.82
R15 appropriate use of teaching resources	3	.81	2	.81	6	.78	4	.82	3	.8	4	.81
R19 motivates	4	.80	4	.79	3	.81	3	.82	4	.79	5	.79
R10 prepares activities well	5	.80	5	.78	5	.80	5	.81	5	.78	3	.82
R14 tutorials help effectively	6	.77	6	.78	4	.80	6	.77	6	.75	7	.76
R21 I have improved my competences	7	.75	7	.75	7	.76	7	.75	7	.75	6	.78
R17 favours participation	8	.70	8	.70	8	.67	8	.73	8	.69	8	.74
R13 accessible tutorials	9	.63	9	.64	9	.61	9	.67	9	.61	9	.59
R7 complying with timetable	10	.52	10	.53	10	.49	10	.57	10	.45	10	.57
R8 attending class	11	.45	11	.40	11	.37	11	.51	11	.40	11	.51
Cronbach's Alpha	0.92		0.92		0.92		0.93		0.90		0.92	

Source: Own elaboration.

3.3. Comparison of teacher scores from the original survey with the "simulation" of the reduced one (2012-2014)

To compare the real scores obtained in the evaluation with the score that would have been obtained with the 11 items selected for the new survey (without combining items 7 and 8), we performed a 2 × 5 mixed Anova with the *score* factor (original score with 21 items vs simulation with the 11 selected items) and the *branch of knowledge* factor.

The principal effects of both factors are significant: the score obtained with the reduced survey (M = 3.56; SD = 0.82) is slightly higher than the original (M = 3.67; SD = 0.87) in all of the branches as a group ($F_{1, 28946}$ = 4801.27; p < .001; η_p^2 = .142) (see Table 4).

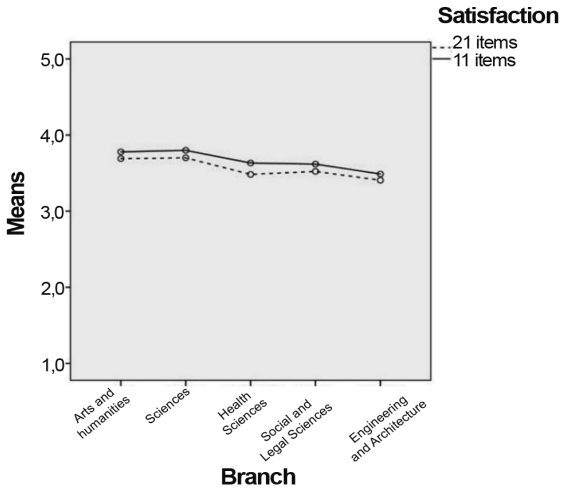
TABLE 4. Descriptive statistics for the complete 21-item survey and the simulated 11-item version, by branch and version.

Branch		21 items	11 items
Arts and Humanities	Mean	3.72	3.81
	SD	0.83	0.86
	n	3535	3535
Sciences	Mean	3.67	3.77
	SD	0.77	0.81
	n	3419	3419
Health Sciences	Mean	3.50	3.65
	SD	0.85	0.91
	n	5641	5641
Social and Legal Sciences	Mean	3.58	3.68
	SD	0.78	0.83
	n	12335	12335
Engineering and Architecture	Mean	3.34	3.42
	SD	0.88	0.94
	n	4021	4021
Total	Mean	3.56	3.67
	SD	0.82	0.87
		28951	28951

Source: Own elaboration.

By comparison, the scores differ slightly by branch ($F_{1, 28946}$ = 127.25; p < .001; η_p^2 = .017), although the mean score is greater than 3 in all branches (see Graph 1).

GRAPH 1. Comparison of the scores in the complete 21-item survey and the simulated 11-item survey by branch and version.



Source: Own elaboration.

We performed a Chi-square test of independence to compare the distributions of the teachers in the 4 possible categories of results in the 12-14 rounds (n = 598) from the complete survey (21 items — without the general satisfaction item) compared with the reduced 11-item survey. Although this is significant (χ^2_3 = 14.0; p = .003; Cramér's V = .08), Cramér's V confirms that there are no substantive differences between the two. Nonetheless, it is apparent (see Table 5) that the reduced survey has a greater percentage of teaching and research staff in the *Excellent* category (from 21.3% to 29.9%) and in the *Unfavourable* category (from 4.3% to 5.5%). This trend is repeated across all of the branches to a greater or lesser extent.

TABLE 5. Distribution of the teachers in the categories of results in the 2012-2014 rounds of the mean score of the complete 21-item survey compared with the simulated 11-item survey: % observed by columns (n).

Result category	Score	21 items	11 items
Excellent	4 o más	21.3 % (125)	29.9 % (179)
Very favourable	3.25 - 3.99	50.2 % (295)	44.1 % (264)
Favourable	2.5 - 3.24	24.3 % (143)	20.4 % (122)
Unfavourable	less than 2.5	4.3 % (25)	5.5 % (33)
	Total	100 % (588)	100 % (598)

Source: Own elaboration.

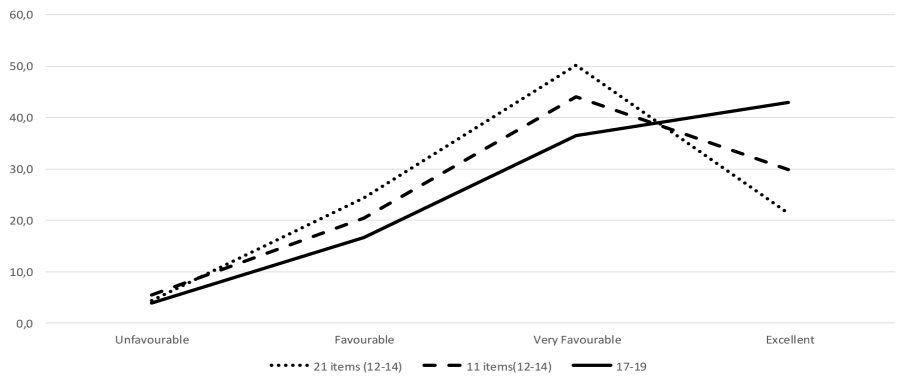
To compare the correlation between general satisfaction and mean satisfaction with the teachers (11 items) (r = .825; p< .001) and its correlation with the mean satisfaction with the module (8 items) (r = .719; p < .001), we performed Hotelling's test (t(31335) = 54.63; p < .001), with the result that the correlation between general satisfaction and mean satisfaction with the teacher is greater, sharing 68.06% of their variability compared with the 51.7% it shares with the mean module score (this difference would also be significant with just 50 participants). Furthermore, the mean score of the 8 items referring to the module and the mean score of the 11 items referring to the teacher share 63.84% of their variance (r = .799; p < .001). In other words, despite being closely related, they do not measure the same thing.

3.4. Comparison of the real results of the 2012-2014 call and the 2017-2019 call

Of the 589 teachers who participated in the 2012-2014 rounds (n = 367+322), 93.58% coincide with those evaluated again in the 2017-2019 rounds (n = 285+241) applying the reduced survey. Therefore, we compared the distribution in the different student satisfaction result categories, combining the 2012-2013 and 2013-2014 rounds (referred to as 2012–2014) with the results from the combination of the 2017-2018 and 2018-2019 rounds (referred to as 2017-2019). This comparison between the 11 items from the 2012–2014 rounds and the survey applied in the 2017–2019 rounds is significant (χ^2_3 = 20.5; p < .001), although the difference between the distributions is not substantive (V = .10). Nonetheless, an increase in the *Excellent* category can be seen (from 29.9% to 43%) (see Table 6).

Graph 2 shows the distributions of teaching and research staff in the results categories in the 2012-2014 rounds with the survey of 21 items, with the simulation

Graph 2. Distribution of teachers in the categories of results in the 2012-2014 rounds of the complete 21-item survey, the 11-item simulated survey, and the real 11-item survey applied in the 2017-2019 rounds.



Source: Own elaboration.

of 11 items referring to the teachers, and in the 2017-2019 rounds actually applying the reduced survey. It is apparent that the percentage of *Very favourable* teachers in the 2012-2014 rounds falls somewhat in the 11-item simulation and even more so in the real 11-item survey of the 2017-2019 rounds, while at the same time the percentage in the *Excellent* category increases.

Furthermore, the distribution between results from the general satisfaction items from the 2012-2014 rounds compared with the 2017-2019 rounds is significant ($\chi^2_3 = 10.8$; $p = .001$), although the difference between the distributions again is not substantive ($V = .07$). Nonetheless, an increase is also apparent in the *Excellent* category (from 41.4% to 50.8%) (see Table 6).

TABLE 6. Distribution of teachers in the categories of results of the mean score obtained in the 11 items and general satisfaction items from the reduced questionnaire by rounds: % observed by columns (*n*).

		11 items		**Satisfaction Items**	
Result category	Score	2012-2014	2017-2019	2012-2014	2017-2019
Excellent	4 or more	41.4 % (242)	50.8 % (259)	29.9 % (179)	42.9 % (219)
Very favourable	3.25 - 3.99	30.7 % (179)	26.9 % (137)	44.1 % (264)	36.5 % (186)
Favourable	2.5 - 3.24	20.4 % (119)	15.1 % (77)	20.4 % (122)	16.7 % (85)
Unfavourable	less than 2.5	7.5 % (44)	7.3 % (37)	5.5 % (33)	3.9 % (20)
	Total	100 % (581)	100 % (510)	100 % (598)	100 % (510)

Source: own elaboration

4. Discussion

In this study we have examined the survey of students' satisfaction with the teaching they receive, which is of central important in the Docentia process and for the accreditation processes of the programmes. We have proposed a change, separating evaluation of the teachers' performance from evaluation of the module. Optimal evaluation of teaching is, undoubtedly, an important issue for the quality of higher-education institutions (Álvarez Rojo et al., 2009; Benito & Cruz, 2005; High Group on Modernization of Higher Education, 2013; Mayor, 2009; Murillo, 2008; Perales et al., 2014). To the best of our knowledge, this work is an innovative proposal, as it has enabled us to fulfil the objective of separating the teaching quality survey from content that evaluates the quality of a module, without any resulting loss of relevant information with regards to the original survey of the Docentia-ULL model.

The cleansing and study of the structure of the questionnaire and its comparison across the branches of knowledge lead us to propose a version with 10 items relating to performance for which the teacher evaluated is solely responsible. We also added two items relating to students' general satisfaction with the teaching practice of the teachers. This survey uses a single-factor model with high internal consistency that captures more than half of the variance, on the same lines as what is obtained by Castro Morera et al. (2020), and which is stable across the branches of knowledge.

The three-way comparison of the scores obtained by the teachers (original 21-item survey, simulated 11-item survey, and real application of the new proposed survey) makes it possible to ensure that information has not been lost in the process of improvement. There are important differences in the evaluation of teachers depending on whether one survey or the other is used, which we believe endorses the need and opportunity to have two student satisfaction surveys: one on the teacher and one on the module. In this regard, we have found that both in the simulation carried out with the short survey with the sample of teachers from the 2012-2014 rounds, and in the one already applied in the 2017-2019 rounds, there is a substantial increase in *Excellent* teachers when the short survey is applied without the items referring to the module. This is similar to what happens when the distributions of the general satisfaction item are studied, which display a greater percentage of *Excellents* compared with the corresponding averages of items. The implementation of a short survey with indicators of personal teaching skills, which are directly controlled by the actions of the teacher being surveyed, makes it possible to increase the percentage of teaching staff in the *Excellent* category, at the cost of a reduction in the *Favourable* and *Very favourable* categories, which García Martín et al. (2020) suggested was liable to happen.

According to previous literature (Caballero & Bolívar, 2015; Ruiz-Esteban & Santos del Cerro, 2020; San Martín et al., 2014; Tejedor & García-Valcárcel, 2010; Zabalza, 2009), the items from the teacher survey actually measure competences that are of high value in teaching performance and, in particular, they measure competences that are under the teacher's control. As has been indicated, items such as the organisation of credits of the module and the evaluation system are imposed on the teacher by the programme approval reports; in contrast, items such as motivation, inspiring interest, and appropriate tutoring directly relate to the teacher's own performance. The fact a teacher has control over these competences entails, in accordance with motivational theories (Ryan & Deci, 2017), modifying the context of the teacher to give him or her more autonomy. So, a performance evaluation that is better linked to each teacher's teaching practice would, in the long term, facilitate the development of agency, which is fundamental for intrinsic motivation (Gámez & Marrero, 2006; Gámez et al. 2021). Furthermore, the fact that some colleagues obtain a high degree of student satisfaction with the teaching they provide, linked to competences that the teacher might learn and develop, increases motivation

to improve their teaching, resulting in a healthy degree of competitiveness. This could explain the higher percentage of *Excellents* obtained with the real application of the proposed survey in comparison with the simulated model. Both surveys were applied to virtually the same teachers, and so it appears that these teachers have motivated themselves between one call and the next to improve competences that are under their control, something reflected in the perception of their students. Teachers are aware that they will be periodically evaluated and seem to have made an effort to improve their performance. This supports the role of Docentia in incentivising teachers to improve their teaching quality.

Teachers deserve to be evaluated on their own individual performance merits. They should not be evaluated on the performance of the teaching team responsible for delivering the module or on the performance of other people involved in the design of the programme approval model, which the teacher might not have been involved in preparing. It is important to note that the long survey makes it possible to mask teachers with less satisfactory teaching performance, as they sometimes benefit from better organisation of the module done jointly with their colleagues. So, the simulated model also displayed an increase in the percentage of *Unfavourables*, which is in line with this. The teacher survey is, therefore, fairer and more equitable, with a greater ecological validity than the long survey given that, as noted above, the long survey masks teachers with less satisfactory performance. It is also more parsimonious as it has fewer items and these clearly relate to the object of the evaluation — the teacher — facilitating its completion by the students and, ultimately, its validity.

One important result of the division of the survey into groups of items relating to the teacher and items relating to the module is the relationship of each of them with the general satisfaction item: the correlation between general satisfaction and the mean satisfaction with the teacher is considerably greater, sharing 68.06% of variability compared with the 51.7% shared with the mean score for the module. The perception of teachers' skills and their attitude in the classroom are the most significant aspects with regards to student satisfaction (Guevara & Stewart, 2011; Leguey-Galán et al., 2018; Ruiz-Esteban & Santos del Cerro, 2020). This result supports the convergent validity of the new survey, given that the items referring to the teacher are better related to student satisfaction, which is the type of measurement we are seeking within Docentia as an evaluation model to follow. Being evaluated on what one does *individually* instead of being evaluated for what *others* do seems fairer.

Ultimately, separating the student satisfaction survey into two surveys has a noteworthy institutional value. These surveys are appropriate for particular quality evaluation process. The quality of the programmes directly relates to students' satisfaction with the modules (that is to say: what is delivered) and it is the type of measurement that should be taken into account in accreditation processes. Conversely, the survey of satisfaction with teachers is the appropriate type of

measurement to evaluate the performance of the teacher (in other words: how the module is delivered) and it is an important instrument in promotion and financial incentivisation processes.

As well as the institutional importance, it is also necessary to mention the job performance evaluation aspect, and the fact is that all workers — and university teachers are workers — have the right to fair evaluation, meaning that the evaluation is directly related to their personal performance. We do not want to say that coordination in the module is not an element to consider in the evaluation, but the fact is that, for now, the good or bad disposition of the teachers of the module as a group to deliver good teaching, does not just depend on each individual teacher. Nonetheless, we believe that this element of the cooperation of the teacher in coordinating the module deserves reflection with the object of incorporating it in the performance evaluation, albeit clearly not through the student satisfaction survey, but rather through the academic directors' reports.

In this context, we hope that the results we have obtained will contribute to the reform of evaluation of student satisfaction within the Spanish university system, linking each type of survey to the corresponding quality evaluation process. In summary, the review of the verified Docentia-ULL model offered an opportunity to guide teaching activity in line with the quality objectives that correspond to a higher-education institution, strategically incentivising the evaluation of teachers' performance in a truly individual way.

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Appendix

Final proposal for a 10-item survey plus two general satisfaction items.

Current	Original	Statement
1		***I would take another module with this teacher*
2	7 and 8	*The teacher attends class regularly and complies with his/her timetable.*
3	10	The teacher prepares, *and* organises the *teaching* activities done in class well (or in laboratories, workshops, field work, seminars, etc.).
4	11	The teacher explains clearly.
5	12	The teacher solves *my* doubts and guides *me* in the completion of my assignments.
6	13	*I find it it* easy to access the teacher *through* tutorials.
7	14	I find the help *and support I receive from the teacher useful* for learning.

8	15	*The teaching resources the teacher uses facilitate my learning.*
9	17	The teacher favours the participation of the student in the implementation of the teaching activity.
10	19	The teacher manages to inspire *my* interest in the different topics covered in the delivery of the teaching activity.
11	21	I have improved on my starting level, *in* relation to the competences listed in the module guide.
12	22	**In general I am satisfied with this teacher's teaching practice.

The changes to wording and new proposal are in italics.
**General satisfaction item.
Source: Own elaboration.

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The impact of teacher credibility and student motivation on teaching evaluations*

El impacto de la credibilidad docente y la motivación del estudiante en la evaluación de la docencia

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Abstract:

The evaluation of teaching performance is a challenge and a necessity for the university community, which confers importance to it as it reflects the quality of the teaching-learning process. Different factors influence the outcomes of the teacher-student relationship, such as teacher credibility or academic motivation. Therefore, the purpose of this study was to predict the results of the evaluation on university teachers based on student perceptions of teacher credibility, mediated by the motivation of university students. 674 students from the University of Seville participated in the study, aged between 18 and 42 years (78.2% women and 21.8% men). The Credibility Scale, the Motivated Strategies for Learning Questionnaire and the Evaluation of University Teaching Questionnaire were all applied. The data obtained were analyzed from a structural equation modeling approach using partial least squares (PLS-SEM) to predict teaching evaluation. The results highlight the direct effect of teacher credibility and motivation on teaching evaluation, as well as the mediating effect of motivation between teacher credibility and teaching evaluation. Through the predictive validity of the model, it is concluded that teaching credibility and the motivation of the university students predict the evalu-

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ation of university instructors. The findings relate to prior literature, and future research is proposed to analyse other possible methods for teachers to improve the teaching-learning process. Strategies are provided for teachers to manage their credibility in the teaching context, thus increasing the motivation of their students and improving the evaluations of their teaching.

Keywords: teacher evaluation, teacher credibility, student motivation, teacher-student relationship, higher education, structural equation modelling, predictive validity.

Resumen:

La evaluación del desempeño docente es un reto y una necesidad para la comunidad universitaria, que le atribuye importancia en tanto que refleja la calidad del proceso de enseñanza-aprendizaje. Diferentes factores influyen en los resultados de la relación profesorado-alumnado, como la credibilidad docente o la motivación académica. Por ello, el objetivo de este estudio fue predecir el resultado de la evaluación de los docentes universitarios a partir de las percepciones de los estudiantes sobre la credibilidad docente, mediada por la motivación del estudiantado universitario. En el estudio participaron 674 estudiantes de la Universidad de Sevilla con edades comprendidas entre 18 y 42 años (78.2 % mujeres y 21.8 % hombres). Se administraron la escala de credibilidad, el cuestionario de estrategias de aprendizaje y motivación y el cuestionario de evaluación de la docencia universitaria. Los datos obtenidos se analizaron desde un modelo de ecuaciones estructurales empleando el método de mínimos cuadrados parciales (PLS-SEM) para predecir la evaluación de la docencia. Los resultados destacan el efecto directo de la credibilidad docente y la motivación sobre la evaluación de la docencia, así como el efecto de mediación de la motivación entre la credibilidad docente y la evaluación de la docencia. Mediante la validez predictiva del modelo, se concluye que la credibilidad docente y la motivación del estudiantado universitario predicen la evaluación de los docentes universitarios. Se relacionan los hallazgos con la literatura previa y se proponen futuras investigaciones que indaguen en otras tácticas posibles de los docentes para mejorar el proceso de enseñanza-aprendizaje. Se proporcionan estrategias para que el profesorado gestione su credibilidad en el contexto docente, aumentando así la motivación de sus estudiantes y mejorando las evaluaciones acerca de su docencia.

Descriptores: evaluación del profesor, credibilidad docente, motivación del estudiante, relación profesor-alumno, educación superior, ecuaciones estructurales, validez predictiva.

1. Introduction

The continuous improvement of teaching quality is a challenge for all higher education institutions, even those in our country (Jiménez, 2017). The quality of higher education depends, among other factors, on teaching quality, which is significantly influenced by the quality of the teachers themselves (Moreno-Olivos, 2018). The teacher evaluation is currently a funda-

mental element in analysing the training and professional quality of education institutions (Moreno-Murcia et al., 2015) and it has become a practice used in most Spanish universities (Andrade-Abarca et al., 2018).

Currently, the teacher evaluation focuses on performance, in other words, the undertaking of their duties and responsibilities, and the output that materialises from it (Tejedor, 2012). Furthermore, it is important to state that teacher performance is an indicator closely linked to education quality, in the sense that the limitations that exist in the initial and ongoing training process of teaching personnel are visible, as well as the challenges that all teachers must overcome as part of their work in providing quality education in today's society (Escribano, 2018). The evaluation system of teacher performance is the set of mechanisms that allows us to establish the extent to which teachers contribute to meeting the standards and objectives of the institution (Tejedor, 2018). The evaluation of teacher practice is a professional improvement and development tool that provides teachers with knowledge and helps them to understand the activity undertaken and to discover ways of improving said practice (Calatayud, 2014). As Ochoa-Sierra & Moya-Pardo (2019) suggest, it entails a source of information mainly for the teachers themselves, as it helps them to measure the efficacy and relevance of their work in order to find alternatives that improve their practice. The main objectives of the teaching evaluation are therefore to provide information that facilitate and help to improve teaching, to contribute to students receiving better education and to help higher education institutions to meet their commitment to society as regards training professionals capable of meeting the demands and issues inherent to their field (Cámara et al., 2018).

Studies on the evaluation of university teacher performance suggest that questionnaires on student perception are the method most used for such purpose (Gómez & Valdés, 2019). The students themselves are the best source of information on the teaching-learning process, given that they are directly involved and can be points of reference for the performance of their teachers (Tirado et al., 2007) and judge if the teaching has helped them learn (Pascual & Gaviria, 2004). As such, the use of these instruments for improving teaching, making decisions on academic personnel and safeguarding the control of education quality is recommended (Cortés et al., 2014).

Regarding the student evaluations on teacher performance, López-Barajas & Ruiz-Carrascosa (2005) suggest that the interaction dimension with students was the one that best predicted the overall teacher rating. One of the most important elements in term of the teacher-student relationship is the credibility of the teacher (Teven, 2007) defined as the student perception of whether or not the teacher in question is credible (McCroskey, 1992). According to McCroskey & Teven (1999), it comprises three dimensions: (1) competence, which regards perception of their knowledge and/or command of the subject taught; (2) goodwill, which entails the level to which students perceive that teachers show interest in their wellbeing; and (3) trust, which

refers to the perception of their reliability and kindness. Teacher credibility has a significant influence on the teaching-learning process (Finn et al., 2009), playing a fundamental role in classroom dynamics and becoming a necessary requirement for efficient teaching (Russ et al., 2002). One of the variables linked to the teaching-learning process that are affected by teacher credibility is student motivation (Froment et al., 2020).

Katt & Condly (2009) state that, although some of the differences perceived in student motivation may be attributed to individual characteristics, others must be attributed to their reactions to circumstances within the teaching-learning process, such as, for example, teacher conduct (Millette & Gorham, 2002). In other words, the perception of students regarding the conduct of their teachers in class influences their motivation (Frymier & Shulman, 1995). Similarly, the level of motivation towards learning affects the way in which students evaluate their environment (Smimou & Dahl, 2012) and, therefore, the way in which they perceive the teaching given (Feldman, 1998), as, when they show interest in the subject, their evaluation of teacher performance is positive (Feistauer & Richter, 2018a, 2018b; Olivares, 2001).

As such, the aim of this study is to predict the results of the teaching evaluation based on the perceptions of university students regarding teacher credibility, mediated by the academic motivation of the students themselves (Graphic 1). In line with the theoretical framework developed, the following research hypotheses are established:

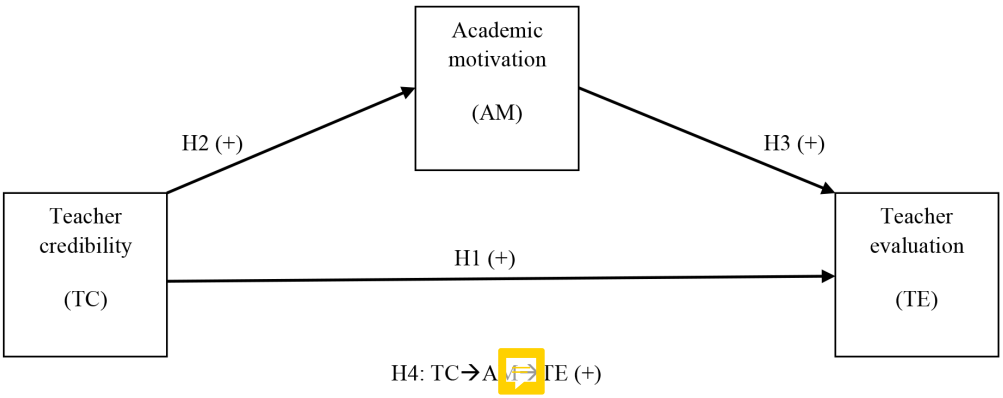
Hypothesis 1 (H1): Teacher credibility will have a positive effect on the teacher evaluation.

Hypothesis 2 (H2): Teacher credibility will have a positive effect on the academic motivation of students.

Hypothesis 3 (H3): The academic motivation of students will have a positive effect on the teacher evaluation.

Hypothesis 4 (H4): The academic motivation of students will mediate the effect of teacher credibility in the teacher evaluation.

GRAPHIC 1. Research and hypothesis model.



Source: Own elaboration.

2. Method

2.1. Participants

To select the participants, a non-probabilistic sample design was applied due to accessibility (Gil-Escudero & Martínez-Arias, 2001). The sample comprised 674 students from the Universidad de Sevilla studying the degrees of primary education (32.2%), pre-school education (17.5%), pedagogy (26.7%), physical activity and sports sciences (13.6%), psychology (2.8%) and labour relations and human resources (7.1%). The average age of the participants was 20.71 (SD=2.52) and the distribution of participation by sex was 527 women (78.2%) and 147 men (21.8%).

2.2. Instruments

To analyse student perception of teacher credibility, the Spanish version of the Credibility Scale (Froment et al., 2019) was used. This instrument has 18 bipolar adjectives, six for each dimension (competence, goodwill and trust). The students had to indicate their perception of the teacher according to values from 1 to 7, taking into account that the closer the number of the adjective, the greater the accuracy will be in the evaluation conducted.

To measure the academic motivation of students, with regard to a determined class, the Motivated Strategies for Learning Questionnaire (Martínez & Galán, 2000) was used. This instrument comprises two questionnaires, one that evaluates motivation and the other that evaluates the learning strategies of the university students. For this study, only the academic motivation questionnaire was chosen. This consists of 25 items distributed into the subscales: intrinsic orientation, extrinsic orientation, task value, control of beliefs, self-efficiency and anxiety. To respond to the items, values must be chosen that range from 1 (*It doesn't describe me at all*) to 7 (*It completely describes me*).

For the evaluation of teacher performance, the Evaluation of University Teaching Questionnaire (López-Barajas & Ruiz-Carrascosa, 2005) was used. This instrument comprises 24 items, distributed into the subscales: interaction with students, methodology, teacher obligations and evaluation, and means and resources. To respond to the items, values must be chosen that range from 1 (*Completely disagree*) to 5 (*Completely agree*).

To determine the reliability of the instruments used, they were subject to an internal consistency analysis, in line with composite reliability, as it is the most suitable measure for evaluating reliability (Peterson & Kim, 2013). Acceptable values were obtained due to being > .70 (Hair et al., 2017); .96 for teacher credibility; .89 for academic motivation and .96 for teacher evaluation.

2.3. Process

The participants voluntarily filled out the instruments and they all gave their informed consent before doing so. The objectives of the study were explained and the anonymous nature of the participation was emphasised. It was also stressed that the data collected would only be

used for the purposes of the research and they were asked to give honest responses. They were also told that there are no wrong or right answers. The instruments were provided in the class in paper and pencil format by experts in the following order: Credibility Scale, Motivation Questionnaire and Evaluation of University Teaching Questionnaire. The participants took around 25 minutes to fill out the instruments. The data collected were processed in a database for their subsequent analysis.

In conducting the study, the criteria set out by the Ethics Committee of the Universidad de Sevilla were considered in terms of ensuring respect for the dignity, integrity and identity of those participating in the study. Furthermore, said committee has stated that the study, which involves no handling of people or animals, does not require explicit permission by the institution.

2.4. Statistical analysis

To analyse the relationship between teacher credibility, academic motivation and teacher evaluation, partial least square structural equation modelling (PLS-SEM) was applied, a variance-based model that is mainly used in the education field (Ghasemy et al., 2020; Lin et al., 2020). The partial least square models are defined through two sets of linear equations: the measurement model, which describes the link between a construct and its indicators, and the structural model, which focuses on the relationship between constructs (Henseler, 2017). As such, the PLS-SEM evaluation was initially conducted in two stages (Roldán & Sánchez-Franco, 2012): the evaluation of the measurement model and that of the structural model.

Firstly, it should be noted that, in the research model, all the constructs are considered as composite measures with a reflective design approach, where all the indicators and dimensions represent different facets, although there are correlations among them (Becker et al., 2013). As such, the variables studied are estimated in A Mode, due to the presence of high correlations between indicators in each construct (Rigdon, 2016). Therefore, traditional reliability and validity measures could be used (Henseler et al., 2016). Lastly, to model the multidimensional constructs, a two-stage approach was applied (Sarstedt et al., 2019).

With regard to the evaluation of the measurement model, the indicator reliability measures of internal consistency, convergent validity and discriminant validity were applied (Hair et al., 2019). In relation to the reliability of the indicators, these have to be > .70 (Roldán & Sánchez-Franco, 2012) and the indicators with loadings between .40 and .70 are to be considered candidates for elimination should the filtering serve to increase the values of the composite reliability or of the average variance extracted above the desirable minimum values (Hair et al., 2019). In accordance with the internal consistency, the composite reliability was met due to the limitations

of Cronbach's alpha, the value of which had to be > .70 (Hair et al., 2017). In terms of the convergent validity, the average variance extracted (AVE) was used, the values of which must be > .50 (Hair et al., 2018). As regards the discriminant validity, the criteria of Fornell & Larcker (1981) was used, which establishes that the square root of the AVE of each latent variable must be greater than the correlations it has with the other latent variables of the model, and the Heterotrait-Monotrait Ratio (HTMT), the value of which must be < .90 (Henseler et al., 2015). It is worth mentioning that the point of interest of this study is not the dimensions, but rather the higher order constructs and, as such, the discriminate validity will be analysed at the level of second-order constructs.

In relation to the evaluation of the structural model, the sign, size and significance of the structural model coefficients were assessed (Roldán & Sánchez-Franco, 2012). In this regard, the bootstrapping technique (5,000 samples) was used for *t*-statistics, *p*-values and bias-corrected confidence intervals of 95% (Hair et al., 2011). Bootstrapping is a resampling process that assesses the precision of the PLS-SEM estimations (Streukens & Leroi-Werelds, 2016), allowing the statistical significance of the relationship between the variables of the structural model to be evaluated (Martínez-Caro et al., 2020). Furthermore, the values of the coefficient of determination (R^2) and the values of the effect size (f^2) were evaluated and the Q^2 predictive relevance test was conducted through the blindfolding technique (Roldán & Sánchez-Franco, 2012). As regards the coefficient of determination, R^2 values of .75, .50 and .25 for the endogenous construct can be described as significant, moderate and weak, respectively (Hair et al., 2011). As for the effect size, the f^2 values of .02, .15 and .35 indicate a small, moderate and large effect, respectively, of an exogenous over an endogenous construct (Cohen, 1988). With regard to the predictive relevance, the Q^2 values higher than 0, .25 and .50 indicate situations of small, medium and large predictive relevance, respectively, of an exogenous over an endogenous construct (Hair et al., 2019).

Subsequently, the mediation effect of academic motivation in the relationship between teacher credibility and evaluation was examined. To conduct the mediation analysis in PLS-SEM, the bootstrapping method (Streukens & Leroi-Werelds, 2016) was applied with bias-corrected reliability estimations (Hayes, 2013) and a 95% confidence interval of the indirect effects. Furthermore, the index of variance explained (VAF), which determines the indirect effect size in relation to the total effect, was calculated, the values of which that are under 20%, between 20-80% and above 80% indicate the absence of mediation, partial mediation and total mediation, respectively (Hair et al., 2017).

Subsequently, the goodness-of-fit of the structural model was evaluated in line with the standardised root mean square residual (SRMR), which is the only cri-

terion recommended for evaluating the goodness-of-fit in PLS-SEM (Henseler et al., 2016), the < .08 value of which would indicate a good goodness-of-fit model (Hu & Bentler, 1999).

Finally, an evaluation on the predictive validity of the model was conducted through a cross-validation of the holdout sample (Shmueli et al., 2016). The predictive validity of a model refers to its capacity to make precise new-observation predictions, whether of a temporary or cross-section nature (Shmueli & Koppius, 2011). The predictive validity indicates that the exogenous variables (teacher credibility and academic motivation) can predict the endogenous variable (teacher evaluation) (Straub et al., 2004). Specifically, the PLSpredict algorithm was applied in the SmartPLS program, version 3.2.7., (Ringle et al., 2015) to evaluate the predictive validity of the model for the construct and its dimensions, as, on interpreting the results of PLSpredict, focus must be on the key endogenous construct of the model (Chin et al., 2020). To undertake PLSpredict, with regard to the number of sections (folds), k = 22 was set taking into account that N = 674, thereby fulfilling the sample minimum of 30 cases per section and, in relation to the number of repetitions, r = 10 was set (Cepeda-Carrión et al., 2016). To evaluate if the model has prediction capacity, the Q^2 value was resorted to. Values of $Q^2 > 0$ indicate that the prediction errors of the results of the PLS model are lower than the prediction errors produced when only the average values are used and, therefore, the model would have predictive validity (Shmueli et al., 2019).

The main reason for using the PLS-SEM lies in the fact that this technique allows the predictive power of the exogenous variables (teacher credibility and academic motivation) over the endogenous variable (teacher evaluation) to be evaluated both inside and outside the sample (Shmueli et al., 2019). In other words, unlike other multivariate methods, PLS-SEM allows for the evaluation of whether or not the exogenous variables are capable of predicting the behaviour of the endogenous variable in samples separated from the set of data initially used to test the theoretical research model (Shmueli et al., 2016). In this regard, PLS-SEM uses the values of the holdout sample of the independent constructs by applying the parameter estimations of the model that were obtained from the training sample (portion of the overall set of data that is used to estimate the parameters of the model) to generate predictions regarding the dependent constructs (Hair et al., 2019).

Furthermore, PLS-SEM does not make any kind of assumption regarding the distribution of the data (Hair et al., 2011) and it is the method to use when the research purpose is the explanation and prediction of key constructs (Hair et al., 2017). As such, PLS-SEM helps to achieve two aims of the study (Henseler, 2018): (1) Explanatory, to understand the causal links between the variables and, (2) predictive, with the aim of predicting values for individual cases. For the evaluation of the

structural model, the Smart-PLS 3.2.7 software was used (Ringle et al., 2015).

3. Results

3.1. Measurement model

In relation to the reliability of the indicators, these entail external loading > .70, except for the items OE3, AU6, AN1, MET4, ODE1 and ODE2. As such, the reliability of the items is considered suitable. The items OE3, AU6, AN1, MET4, ODE1 and ODE2 were not ruled out, given that the constructs obtained composite reliability values > .70. As such, they are suitably reliable and the filtering of said items is not necessary as values between .40 and .70., were obtained. However, the items OE1, OE2, AN2 and AN3 were eliminated due to obtaining external loadings < .40. With regard to the convergent validity, the average variance extracted (AVE) was applied, with the constructs exceeding the suggested value of .50, indicating that the variance extracted by the factor is higher than the variance associated to the error (Table 1).

TABLE 1. Evaluation of the measurement model.

Dimensions/Indictors	M	SD	External loading	CR	AVE
Competence (COM)				.94	.72
COM1	6.23	.87	.85***		
COM2	6.40	.85	.87***		
COM3	6.23	.86	.82***		
COM4	6.30	.88	.84***		
COM5	6.10	.98	.85***		
COM6	6.26	.89	.85***		
Goodwill (GW)				.96	.81
GW1	5.24	1.53	.92***		
GW2	5.25	1.50	.93***		
GW3	5.73	1.32	.82***		
GW4	5.15	1.45	.93***		
GW5	5.33	1.30	.89***		
GW6	5.63	1.30	.89***		
Trust (TRU)				.95	.78
TRU1	5.99	1.10	.88***		
TRU2	5.87	1.10	.89***		
TRU3	5.78	1.07	.89***		
TRU4	5.96	1.05	.89***		
TRU5	5.94	1.07	.88***		
TRU6	6.09	1.01	.84***		
Intrinsic orientation (IO)				.78	.55
IO1	4.76	1.61	.77***		

IO2	5.56	1.43	.74***		
IO3	5.71	1.21	.70***		
Extrinsic orientation (EO)				.74	.60
EO3	4.73	1.68	.64***		
EO4	4.18	1.92	.89***		
Task value (TV)				.91	.71
TV1	5.00	1.66	.83***		
TV2	5.47	1.34	.74***		
TV3	5.10	1.56	.91***		
TV4	5.13	1.73	.88***		
Control of beliefs (CB)				.84	.56
CB1	5.68	1.32	.73***		
CB2	4.21	1.77	.75***		
CB3	5.78	1.19	.74***		
CB4	4.10	1.82	.77***		
Self-efficiency (SE)				.90	.61
SE1	4.45	1.47	.77***		
SE2	4.44	1.52	.78***		
SE3	5.88	1.17	.80***		
SE4	4.88	1.45	.83***		
SE5	5.20	1.34	.83***		
SE6	6.06	1.06	.66***		
Anxiety (AN)				.75	.62
AN1	2.91	1.70	.55***		
AN4	3.21	2.17	.96***		
Interaction with the student (IN)				.95	.76
IN1	4.05	1.07	.85***		
IN2	4.20	1.01	.89***		
IN3	4.14	1.08	.86***		
IN4	4.15	1.01	.86***		
IN5	3.72	1.23	.90***		
IN6	3.80	1.15	.86***		
Methodology (MET)				.91	.65
MET1	4.02	1.08	.78***		
MET2	4.01	1.17	.88***		
MET3	4.07	1.10	.84***		
MET4	4.67	0.64	.63***		
MET5	3.94	1.08	.80***		

MET6	4.17	1.04	.87***		
Teacher obligations and evaluation (TOE)				.88	.50
TOE1	4.45	0.89	.56***		
TOE2	3.88	0.95	.59***		
TOE3	4.23	0.98	.72***		
TOE4	4.46	0.84	.70***		
TOE5	4.22	0.84	.76***		
TOE6	3.86	0.94	.73***		
TOE7	4.17	0.88	.80***		
TOE8	4.15	0.93	.73***		
Mean and resources (MR)				.89	.67
MR1	4.15	0.98	.85***		
MR2	4.07	0.97	.88***		
MR3	3.88	1.01	.79***		
MR4	4.11	1.09	.75***		

Note: M= mean, SD= standard deviation, CR= composite reliability, AVE= average variance extracted. *** $p < .001$.
Source: Own elaboration.

Finally, as regards the discriminate validity, the criterion of Fornell & Larcker (1981) was applied, finding that the square root of the AVE of each latent variable is greater than the correlations that it has with the other latent variables of the model, as well as the Heterotrait-Monotrait (HTMT) ratio, obtaining a satisfactory value as it was under the suggested value of .90, thereby indicating that each variable differs from the other (Table 2).

TABLE 2. Discriminate validity.

Fornell-Larcker criterion				**Heterotrait-Monotrait (HTMT) ratio**			
	TC	AM	TE		TC	AM	TE
TC	.90			TC			
AM	.62	.75		AM	.69		
TE	.78	.69	.89	TE	.86	.76	

Note: TC= teacher credibility, AM= academic motivation; TE= teacher evaluation.
Source: Own elaboration.

The results obtained demonstrate that there was no problem with the evaluation of the measurement model in terms of its reliability and validity. As such, it is appropriate to proceed with the evaluation of the structural model to corroborate the hypotheses formulated.

3.2. Structural model

In relation to the effects among the variables of the structural model, it was found that teacher credibility has a positive effect on the teacher evaluation ($\beta = .58, p < .001$) and on academic motivation ($\beta = .62, p < .001$). As such, H1 and H2 are accepted. Similarly, academic motivation has a positive effect on the teacher evaluation ($\beta = .32, p < .001$) and, as such, the H3 is accepted (Table 3).

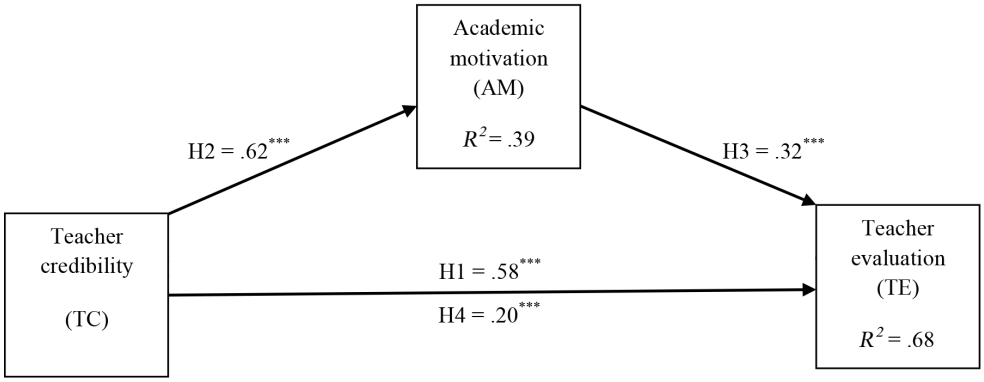
TABLE 3. Evaluation of the hypotheses.

Hypothesis	Relation	Coefficient path	*t*-statistics	95% BCCI	Conclusion
H1	TC → TE	.58***	19.38	[.53; .63]	Accepted
H2	TC → AM	.62***	23.69	[.58; .66]	Accepted
H3	AM → TE	.32***	10.20	[.27; .37]	Accepted

Note: TC= teacher credibility, TE= teacher evaluation, AM= academic motivation, BCCI= bias-corrected confidence intervals. *** $p < .001$.
Source: Own elaboration.

Similarly, the model possesses moderate predictive power on academic motivation, as an R^2 value between .25 and .50 was obtained, and significant predictive power on the teacher evaluation, as an R^2 value between .50 and .75 was obtained (Graphic 2). The size of the effect of teacher credibility on the teacher evaluation and on academic motivation had f^2 values of .64 and .63, respectively, which was large due to being > .35, while the size of the effect of academic motivation on the teacher evaluation had an f^2 value of .20, which was moderate due to being between the values of .15 and .35. Academic motivation obtained a Q^2 value of .21 and, as such, the model has small predictive relevance on academic motivation due to obtaining a Q^2 value between 0 and .25, and the teacher evaluation obtained a Q^2 value of .54 and, as such, this model has high predictive relevance on the teacher evaluation due to obtaining a Q^2 value of > .50.

GRAPHIC 2. Standardised regression and coefficients of determination for the structural model.



Source: Own elaboration.

Regarding the mediation effect of the academic motivation of students, as can be seen in Table 4, academic motivation mediates the effect of teacher credibility in the teacher evaluation (β = .20, p < .001) and, therefore, H4 is accepted. Similarly, a VAF value between 20-80% was obtained, thereby indicating that it entails partial mediation.

TABLE 4. Mediation effect.

Hypothesis	Relation	Effect	*t*-statistics	Value of *p*	95% BCCI	VAF	Conclusion
H4	TC → AM → TE	.20	8.87	.000	[.16; .25]	35.5%	Accepted

Note: TC= teacher credibility, AM= academic motivation, TE= teacher evaluation; BCCI= bias-corrected confidence intervals, VAF= index of variance explained.
Source: Own elaboration.

Finally, in relation to the evaluation of the goodness of fit of the structural model, a SRMR value of .06 was obtained, indicating a good goodness of fit due to being < .08.

3.3. Evaluation of the predictive validity of the model

In relation to the predictive validity of the model, it has satisfactory predictive validity both in terms of construct and dimensions due to obtaining Q^2 values of > 0 (Table 5). Therefore, the model considered has sufficient predictive power to predict the values for new cases as regards the endogenous variable (teacher evaluation). Furthermore, that means that teacher credibility and academic motivation may predict the teacher evaluation in additional samples that are separated from the set of data used to approve the structural model (Woodside, 2013), which entails additional support for the structural model considered in this study.

TABLE 5. Predictive validity of the model.

	Q^2 values
Construct prediction	
Teacher evaluation (TE)	.61
Dimension prediction	
Interaction with the student (IN)	.62
Methodology (MET)	.49
Teacher obligations and evaluation (TOE)	.41
Mean and resources (MR)	.42

Source: Own elaboration.

4. Discussion

The main aim of this study is to predict the results of the teaching evaluation based on student perceptions regarding teacher credibility, mediated by the academic motivation of university

students. This study found that teacher credibility had a positive effect on the teaching evaluation, coinciding with prior studies that suggest that the perception of students regarding the conduct of their teachers influences evaluations on teacher performance (Roach et al., 2005; Schrodt et al., 2006, 2008). Furthermore, this outcome supports prior studies that suggest that teacher credibility has a positive effect on the evaluation of teaching activity (Lavin et al., 2010; McCroskey et al., 2004; Nadler & Nadler, 2001). Teachers must behaviour appropriately and use positive communication skills in providing more effective teaching in the classroom (Gray et al., 2011).

Furthermore, it was found that teacher credibility has a positive influence on the academic motivation of university students, which coincides with several studies that pointed to said influence (Froment et al., 2019; Kulkarni et al., 2018; Martin et al., 1997; Pogue & AhYun, 2006). As Zhu & Anagondahalli (2018) indicate, teacher credibility is one of the most significant factors in the relationship between teacher conduct and student learning. As such, credibility is an impression transmitted that all teachers must manage to achieve beneficial and relevant results for them and their students (Myers & Martin, 2018). The more students see them as being credible, the more interest and attention they will have and, therefore, the more they will learn (Teven & McCroskey, 1997). According to Froment et al. (2020), for teachers to improve their credibility, they have to: use an argumentative verbal style, and pro-social strategies in the classroom; reveal relevant personal information; use technological teaching resources; present oral and written information in a way that pupils can understand; show support and value the implication of students responding to their questions and demonstrating interest in learning; avoid inappropriate conduct and using verbal aggressiveness, and avoid transmitting negative personal information.

Finally, it was found that the academic motivation of university students has a positive influence on the evaluation of teacher performance and mediates the effect of teacher credibility in the evaluation of teaching activity, which supports studies that highlight the existence of a positive effect of the academic motivation of university students on the teaching evaluation (Griffin, 2016; Tan et al., 2019). The mediation effect may be due to the fact that academic motivation depends in part on the perceptions of students regarding the teachers (Rodríguez et al., 1996) and, also, that students that are motivated to make more of an effort, learn more and, therefore, expect to obtain good grades, which results in positive evaluations of the teaching received (Beran & Violato, 2005). As Jones (2008) indicates, student motivation is an important link between their own learning and the conduct of their teachers. In other words, teachers can have an influence on the motivation of students by us-

ing certain strategies and conduct in their teaching (Wheeless et al., 2011). As such, to improve student motivation, they have to: be friendly; use a competent socio-communicative style; be clear in their explanations; communicate with students outside the classroom to address academic issues; share relevant personal information for the course content and avoid verbal aggressiveness and conduct that indicates burnout or exhaustion (Christensen & Menzel, 1998; Khan et al., 2015; Myers & Rocca, 2001; Zardeckaite-Matulaitiene & Paluckaite, 2013; Zhang & Sapp, 2008; Zhang & Zhang, 2005).

Furthermore, this finding supports different studies that point to the characteristics of the students themselves, such as their disposition regarding the academic year, the grades expected and even their gender and age, as having an influence on their evaluations on teacher performance (Boring, 2017; Choet al., 2015; Hatfield & Coyle, 2013; Hejase et al., 2014; Korte et al., 2013). In addition to the characteristics of students, those of the class, the academic year and of the teachers also have an effect on the evaluations of students on teacher performance (Wallace et al., 2019).

As a future study, analysing the impact of student perceptions of other teacher conduct, such as clarity, self-revelations and humour, on performance evaluations is considered. As stated by Goldman et al. (2017), by studying how students perceive the conduct of their teachers, a better understanding may be achieved of their desires, needs and expectations, and of the problems generated when said perceptions are broken. Likewise, examining the effect of other variables related to student learning, such as their involvement, satisfaction and emotional exhaustion, on teaching quality is also proposed. In this regard, Benton & Cashin (2014) recommend adopting a teacher evaluation system that statistically controls factors that could influence said evaluations.

The main limitation of this study was that the sample fundamentally comprised women. Had there been higher male participation in the study, comparisons could have been made between the two to determine if the sex of students constituted a factor that affects their teaching evaluations. Despite this limitation, the study has significant practical implications, as it suggests that if teachers are perceived to be credible, students will be more motivated and, as such, the teaching will be positively evaluated.

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Analysis of content and underlying theories in Spanish reference texts on General Didactics

Análisis de contenido y teorías subyacentes en los textos españoles de referencia sobre Didáctica General

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Abstract:

The results of the 2019 Pisa Reports confirm that the Spanish education system continues to stagnate after compulsory education has been completed. This situation calls for self-criticism on the part of all actors involved. One of the groups concerned are the university professors and lecturers who provide training for prospective teachers. Among them are those who teach General Didactics. They provide basic and multi-purpose training on teaching methods for prospective teachers. For this purpose, they usually consider traditional and recent textbooks and other reference texts on teaching theory and practice, which help to define the discipline. The aim of the study is to find out whether these works train and equip prospective teachers with teaching competences and to verify their educational and professional potential with regard to the teaching theory they convey. In order to fulfil this aim, a descriptive documentary study of 35 reference works on General Didactics was carried out, including both textbooks and texts used as sources of didactic knowledge. The content of the structure and composition of these texts was analysed. The results show a tendency to prioritise theoretical aspects over competences and to order chapters based on a technical and administrative

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tradition, rather than a conceptual and semantic approach focused on designing a meaningful learning experience. As an applied summary, recommendations are provided for the development of textbooks on General Didactics, aimed at initial teacher training, from a more competence-based and less academic approach.

Keywords: General Didactics, reference work, teacher training, competence, teaching profession.

Resumen:

Los resultados de los Informes Pisa 2019 confirman que el sistema educativo español sigue estancado al finalizar la enseñanza obligatoria. Esta situación requiere una autocrítica de todos los agentes implicados. Uno de los colectivos concernidos son los profesores universitarios que preparan a los que serán futuros docentes. Entre ellos, se encuentran los que enseñan Didáctica General, que facilitan una formación didáctica básica y polivalente a los futuros docentes. Para ello, suelen tener en cuenta manuales clásicos y recientes y otros textos de referencia sobre teoría y práctica de la enseñanza, que contribuyen a definir la disciplina. El objetivo del estudio es conocer si estas obras preparan a los futuros profesores en competencias docentes y verificar su potencial didáctico y profesionalizador de la teoría de la enseñanza que transmiten. Para dar respuesta a este objetivo, se optó por un estudio documental de carácter descriptivo, de 35 obras de referencia de Didáctica General, entre las que se incluyeron tanto manuales como textos utilizados como fuentes de conocimiento didáctico. Sobre esos textos se ha realizado un análisis de contenido de su estructura y composición. Los resultados muestran una tendencia a valorar los aspectos teóricos sobre los competenciales y a ordenar sus capítulos desde una tradición técnico-administrativa, en vez de hacerlo desde una aproximación conceptual y semántica enfocada al diseño de una experiencia de aprendizaje significativa. Como síntesis aplicada, se aportan recomendaciones para elaborar manuales de Didáctica General, orientados a la formación inicial del profesorado, desde un enfoque más competencial y menos academicista.

Descriptores: Didáctica General, obra de referencia, formación de profesores, competencia, profesión docente.

1. Introduction

Self-criticism is necessary in education and research. It can provide a basis for rectifications and improve processes and results. When it comes to those who train prospective teachers, such action is imperative, even if not done very often. This paper is, thus, in relation to this training area.

If teacher training and quality education are related (State School Council, 2015), the poor results of the 2020 PISA reports, the stagnant mediocrity of

the Spanish education system and those who train prospective teachers could be too. University professors and lecturers who are entrusted with the training of prospective teachers should reflect as observers and actors concerned. In a text on pedagogical self-criticism, Bolívar and Pérez (2019) addressed "education policies on teachers", considering credits, regulations, legislative reforms, procedures, selection, professional competences, ethics, etc. In a field as complex as education and teaching, the current initial teacher training model in Spain should also be analysed.

The syllabi are structured around theoretical subjects, where the basic knowledge of the profession is acquired, and one or more periods of teacher placement, where part of this knowledge is observed and confirmed. The assumption is that in this way — in one year, secondary school teachers — will acquire the necessary skills and competences to bring good teaching practice alive. Recent studies question this model, pointing to the need for change regarding training. The objection is that there is little connection between the theory taught in the faculty and the actual practice of teaching. The professional potential of these syllabi in terms of teaching competences is questioned, since many prospective teachers feel that the regular subjects do not offer them, despite what is promised in their teaching guides. Furthermore, they believe that teaching competences are learned during the Practicum, even though a gap is detected between the Practicum and the other subjects, along with a weakness in the training instruments that connect them. This means that they are lacking in pedagogical consistency which could be improved, if we are concerned with developing competences (Egido & López, 2016; Gairín et al., 2019).

Some variables could be identified as possible causes of this problem. There is one radical or causal variable that stands out: the type of knowledge used by trainers to prepare prospective teachers. Shulman (2005) pointed out that one type of basic teacher knowledge is the so-called "general pedagogical knowledge". This field would fit in with the corpus of General or Multipurpose Didactics. It refers to the theory and practice of teaching for training, providing, among other things, competences for the design and development of meaningful and educational learning experiences.

The reference works on General Didactics gather and summarise this knowledge for teacher training. However, are they professionally oriented and aimed at providing training in basic/key teaching competences and practices that are currently in demand, or are they approached from an academic point of view out of touch with practice? And one other essential issue: What teaching theory are they based upon? The answers to these questions form the basis for these inquiries, complementary to the work of Heredia (2015), although this researcher studies the internal organisation of textbooks comparable to the field of General Didactics from a historical and epistemological

perspective, and, in our case, they are analysed by questioning both the teaching theory that is used as a model and the academic or professional approach that underpins them.

2. Foundations for a theory of teaching

Teachers, like other professionals, need basic knowledge that can be applied. General Didactics should, on the one hand, provide the essential knowledge and competences to carry out educational teaching and, on the other hand, allow them to build, from their experience, a professional rationale and their own well-founded body of knowledge (*episteme*) in order to design and develop a curriculum.

Curriculum design, centred on planning educational experiences, requires careful thought on the curriculum components and their relationship to learning and training. Thought regarding such is not easy, given that, in an educational and relevant sense, at least the elements defined by Tyler (1949) — objectives, activity and control-evaluation —, the "commonplaces" of Schwab (1970) — teacher, learners, subject matter and social matrix — and the key competences are to be related as the backbone of education (Council of the European Union, 2018). Thus, innovative designs are possible, combining or prioritising some elements over others, to achieve meaningful, deep and relevant learning for students (Darling-Hammond & Oakes, 2019).

In order to be able to plan, it is necessary to understand the meaning of "learning", both as a concept associated with prior thought given to the nature and form of human knowledge, and on its creation and cognitive organisation. Neuroscience and cognitive psychology provide a basis for training, from a General Didactics approach, regarding human knowledge originating from an information processing system, not mechanical or objective, but subjective and reconstructive and based on the experience of each individual (Sousa, 2017; Weinstein & Sumeracki, 2019). Knowledge originates in the learning experience itself, in a process of transforming experience by means of a cycle of action/thought-experience/abstraction and becoming organised in the mind through schemas and conceptual structures that establish meaningful conceptual relationships. This conceptual knowledge enables what has been learned to be retained, recalled and transferred to problem solving. Retention and recall-identification of information is considered an essential step for the transfer of learning; the downside is when they become the ultimate goals of teaching, rather than a means for transferring what is learned to functional situations and contexts.

The search for meaningful and applicable learning, as opposed to retentive learning, has not prevailed in the history of teaching. In many contexts, Freire's observation, which saw school learning as a routine process of storing information, in which domestication and memorisation without meaning prevailed, is

still valid. Priority is still given to representational learning, or the acquisition of labels, in order to replicate what is conveyed by the teacher, rather than to the acquisition of concepts that generate structures and conceptual frameworks for transfer, thus enabling the student to reason and get by independently.

This traditionalism led to the emergence of the experimentalist approaches fostered by Dewey (1902), which considered experimentation, activity and discovery to be the basis of formative learning. This approach gave rise to methodologies in which manipulation and activity predominated as ways of discovering and learning concepts. Nevertheless, it has been demonstrated that the student's experience alone does not guarantee the discovery of concepts and meaningful learning. Appropriate circumstances and consistent teaching are required. For Novak (2010), the theory of teaching by means of action and experimentation has overlooked the learning process and the structure on which it is based. For Walter and Soltis (2004), this is the cause of the clash between progressive and traditional curriculum theorists.

Progressive theorists are opposed to the practice of non-meaningful memorisation, and produce a wide variety of proposals. For example, alternative curricula built around the interest and needs of the student, activity, experience, task completion, manual work, etc. Some expect students to produce their own curriculum based on their own interests (Walter & Soltis, 2004). In this clash, the content to be taught has been discredited to the point of disappearing as an essential element in learning designs.

In the Spanish Didactics of the 1960s, content had a certain prominence: it was considered the key element of the learning process, since the conceptual structure was important. This approach was threatened by the movement in which content was relegated due to prioritising the task or activity. In fact, it became detached from the knowledge base that defined the teaching professional, disappearing from training programmes and reference works on General Didactics, becoming diluted in objectives and evaluation. Even when the question "why teach?" was asked, the answer was given in terms of educational objectives, not content (Rodríguez-Diéguez, 1980).

Today, what is important are skills, activity and learning experience. The competences proposed by the European Commission (2004) made quite an entrance in Spain (Bolívar, 2010) and were quickly integrated. In the competence-based teaching model, the subjects contribute to their development, they are conditioned by them, and the relevance, acquisition and use of knowledge are seen as traditional.

Faced with this dual discussion, what is the purpose of education? Broadly-speaking, to make citizens happy, put an end to injustice, inequality, contribute to social development, etc. More specifically, the development of the individual through learning (Walter & Soltis, 2004),

so that every student can think, feel and act autonomously and creatively (Novak, 2010). It is, therefore, a matter of going beyond rote learning, without falling victim to the inconsistencies of learning based on competence and experience. For planning purposes, the components of teaching (students, teacher, content, climate, objectives, activity, evaluation and competence) must be combined to achieve student education in thinking, feeling and acting (Novak, 2010), drawing on the findings of neuroscience and cognitive psychology (Sousa, 2017; Weinstein & Sumeracki, 2019).

The order and organisation of the teaching components may or may not be conducive to an educational approach to learning. One way could be as follows: first, every teacher must start by considering the student and the need to foster personalised learning and education that connects and matches their emotions, interests, motivations, styles, contexts, experiences, etc. Then, what the teaching or educational content deals with (disciplinary knowledge), reflecting on its selection and organisation, regarding the key questions that make it accessible and its transferability and usability (McTighe & Willis, 2019). Thirdly, we may ask about the meaning of their learning, specifying the objectives of the action, according to the content selected and the conceptual structure identified. For this purpose, solvent taxonomies of learning objectives may be used, such as that by Anderson and Krathwohl (2001), recently assessed by Sousa from the perspective of neuroscience (2017). It progresses from recall objectives to evaluation, design and creation objectives. Fourthly, the monitoring process for the design of objectives must be specified in order to assess progression in learning, providing the necessary feedback and formative evaluation required for personalised learning (Hattie & Clarke, 2019). Fifthly, once the outline of the design has taken shape, we can then identify the system of relationships created in class and the teaching methodology for the action and recreation of students' thinking, feeling and acting (Ritchart & Church, 2020), which will be enriched by the diversity of key competences developed from the methodological proposals, tasks and classroom activities (Bolívar, 2010).

The above structure is flexible, variable and open to innovation. However, including content as the basis of the teaching planning process optimises the coordination between General and Specific Didactics. It involves transcending the exacerbated "pedagogism" of the 1980s, which was more interested in assessing how teaching was carried out than what was actually taught, to whom and when it was taught, and which was widely rejected by secondary school teachers (Bolívar, 2005). From the perspective of active and consistent teaching, it involves making sense of the student's formative learning experience, placing what the teaching and learning addresses at the centre of formative attention.

In short, current recommendations and imperatives for teacher training em-

phasise a competence-based teaching model. The knowledge regarding General Didactics that is transferred to prospective teachers should fit in with such competences. Otherwise, the knowledge transferred as a basis for action will be useless and unlikely to be put into practice or professionally oriented. In light of this doubt, the general aim of this study is to find out whether the reference works for General Didactics equip prospective teachers with teaching competences and to verify to what extent they can, in this sense, be considered to have professional potential. The specific objectives are threefold: (1) To verify the teaching theory that underpins them, checking the content they address; (2) To ascertain the structure organising the content of the texts studied; and, (3) to deduce whether the content transferred in these works maintains an internal and coordinated order.

3. Methodology

In order to meet the objectives, the study is based on documentary research, which explores the foundations of the reference texts on General Didactics, providing answers to the typical questions in descriptive research: "what, how and who of the phenomenon being studied" (Hall, 2020, p. 35). Thirty-five texts were selected according to three criteria and reviewed. Such criteria are: published from the 1980s onwards, when General Didactics began to be considered as scientific knowledge associated with curriculum studies (Bolívar, 2008); were or still are a reference in the production of Teaching Guides for the subject of General Didactics in numerous Spanish universities, or cover the specific content of General Didactics.

They will be described using the following categories of analysis:

- Type of authorship: individual or collaborative.
- Subject matter dealt with:
  a) Didactic epistemology/curriculum: Didactics as a scientific discipline, conceptualisation of Didactics/curriculum, curriculum theories, types, models, curriculum paradigms, curriculum theory-practice and curriculum reform, curriculum and school, research approaches in didactics.
  b) Curriculum design: Types of learning design, curriculum components, curriculum realisation.
  c) Teachers: Professional capital, roles, responsibilities, authenticity, identity, autonomy.
  d) Learners: Personalisation, motivation, learning styles, intelligences, autonomy, identity, metacognition, context.
  e) Content: Selection, organisation, sequencing, disciplinary and global approaches
  f) Objectives: Types and levels of generalisation, taxonomies of learning objectives, design of objectives.

g) Competences: Types of competences, function of competences, organisation of learning design around competences.

h) Mix of curriculum Elements — chapter where curriculum components, objectives, content, competences, methodology, resources and evaluation are combined.

i) Teaching methodology: How to teach, types of methodologies (direct, collaborative, inquiry-based, etc.), teaching-learning models.

j) Teaching resources: Types of resources with and without ICT, usefulness and application of teaching aids, didactics and media.

k) Pedagogical evaluation: Types of evaluation, procedures, instruments, evaluation of teaching, evaluation of learning, evaluation of the teaching-learning context, implications of evaluation.

l) Techniques: Techniques and strategies to facilitate learning.

m) Classroom climate: Classroom climate management, interaction, communication, teacher authority, conflict resolution, relationship system, management and organisation of the learning context.

n) Teacher development and educational innovation: School improvement and change processes, teacher professional development.

o) Design examples: Case studies and examples of learning designs.

- Number of chapters relating to each subject matter.

- Order of chapters.

The analysis does not go into detail regarding the content of each work, as the information given is considered sufficient to fulfil the objectives. Some were not designed as textbooks, but became reference texts generally used as sources of basic and applied pedagogical knowledge. This is the case of Gimeno (1981), Gimeno & Pérez Gómez (1992), Escudero (1999) and Bolívar (2008). Although some are broader and others more specific, they have provided the basis for pedagogical knowledge. Therefore, they can be considered reference works for teaching General Didactics to prospective teachers. Regardless of their greater or lesser use, they have shaped Didactics and continue to set the trend in Spain. A total of 35 texts and 435 chapters were analysed.

The bibliographical data of the texts studied are not included in the List of References, as they are considered to be data pertaining to the study. They can be found in Table 1:

TABLE 1. Reference texts on General Didactics reviewed.

No.	Year	Authors/ Coordinators	Title	Place of publication/Publisher
1	1980	Rodríguez-Diéguez, J. L.	*Didáctica General [General Didactics]*	Madrid: Cincel
2	1981	Gimeno, J.	*Teoría de la enseñanza y desarrollo del currículo [Teaching theory and curriculum development]*	Madrid: Anaya
3	1983	Blázquez, F. & Sáenz, Ó.	*Didáctica General [General Didactics]*	Madrid: Anaya
4	1987 1995	Zabalza, M. Á.	*Diseño y desarrollo curricular [Curriculum design and development]*	Madrid: Narcea
5	1988	Gimeno, J.	*El currículo: una reflexión sobre la práctica [The curriculum: A reflection on practice]*	Madrid: Morata
6	1989	Gimeno, J. & Pérez Gómez, Á.	*La enseñanza. Su teoría y su práctica [Teaching. Its theory and practice]*	Madrid: Akal
7	1992	Gimeno, J. & Pérez Gómez, Á.	*Comprender y transformar la enseñanza [Understanding and transforming teaching]*	Madrid: Morata
8	1993	Torre, S. de la	*Didáctica y currículo [Didactics and curriculum]*	Madrid: Dykinson
9	1994	Angulo, J. F. & Blanco, N.	*Teoría y desarrollo del currículo [Curriculum theory and development]*	Málaga: Aljibe
10	1994	Sáenz, Ó.	*Didáctica General. Un enfoque curricular [General Didactics. A curricular approach]*	Alcoy: Marfil
11	1997	Díaz-Barriga, Á.	*Didáctica y currículum [Didactics and curriculum]*	Barcelona: Paidós
12	1997	Rodríguez-Rojo, M.	*Hacia una Didáctica crítica [Towards critical Didactics]*	Madrid: La Muralla
13	1998	Escribano, A.	*Aprender a enseñar. Fundamentos de Didáctica General [Learning to teach. Foundations of General Didactics]*	Cuenca: UCLM
14	1999	Escudero, J. M.	*Diseño, desarrollo e innovación del currículum [Curriculum design, development and innovation]*	Madrid: Síntesis
15	1999	Martín-Molero, F.	*La Didáctica en el tercer milenio [Didactics in the third millennium]*	Madrid: Síntesis
16	2000	Marhuenda, F.	*Didáctica General [General Didactics]*	Madrid: De la Torre
17	2004	Rodríguez-Rojo, M.	*Didáctica General: qué y cómo enseñar en la sociedad del conocimiento [General Didactics. What and how to teach in the knowledge society]*	Madrid: Biblioteca Nueva
18	2004	Sevillano, M. L.	*La Didáctica del siglo XXI [Didactics in the 21st century]*	Madrid: Mc-Graw-Hill
19	2004	Heredia-Manrique, A.	*Curso de Didáctica General [Course on General Didactics]*	Zaragoza: Prensa Universitaria
20	2005	Tejada, J.	*Didáctica-Currículum: diseño, desarrollo y evaluación curricular [Didactics-Curriculum: Curriculum design, development and evaluation]*	Barcelona: Davinci
21	2008	de la Herrán, A. & Paredes, J.	*Didáctica General. La práctica de la enseñanza en educación infantil, primaria y secundaria [General Didactics. Teaching practice in early years, primary and secondary education]*	Madrid: Mc-Graw-Hill

22	2008	Bolívar, A.	*Didáctica y currículum: de la modernidad a la postmodernidad [Didactics and curriculum: From modernity to postmodernity]*	Málaga: Aljibe
23	2008	Sánchez-Huete, J. C.	*Compendio de Didáctica General [A compendium of General Didactics]*	Madrid: CCS
24	2009	Medina, A. & Mata, F. S.	*Didáctica General [General Didactics]*	Madrid: Printice-Hall
25	2010	Moral, C.	*Didáctica. Teoría y práctica de la enseñanza [Didactics. Theory and practice of teaching]*	Madrid: Pirámide
26	2010	Bolívar, A.	*Competencias básicas y currículo [Key competences and curriculum]*	Madrid: Síntesis
27	2011	Cantón, I. & Pino, M.	*Diseño y desarrollo del currículum [Curriculum design and development]*	Madrid: Alianza
28	2011	Navarro, R.	*Didáctica y currículum para el desarrollo profesional docente [Didactics and curriculum for teacher professional development]*	Madrid: Dykinson
29	2011	Lorenzo Delgado, M.	*Didáctica para educación infantil, primaria y secundaria [Didactics for early years, primary and secondary education*	Madrid: Universitas
30	2014	Gómez, I. & García, F. J.	*Manual de Didáctica [Manual on Didactics]*	Madrid: Pirámide
31	2015	Domingo, J. & Pérez, M.	*Aprendiendo a enseñar. Manual práctico en Didáctica [Learning to teach. A practical manual on Didactics]*	Madrid: Pirámide
32	2015	Medina, A. & Domínguez, M. C.	*Didáctica. Formación inicial para profesionales de la educación [Didactics. Initial training for education professionals]*	Madrid: UNED
33	2019	Moral, C.	*Competencias para el diseño y desarrollo de experiencias de aprendizaje en la formación del profesorado [Competences for the design and development of learning experiences in teacher training]*	Madrid: Síntesis
34	2019	Paredes, J. Esteban, R. M. & Rodrigo, M. P.	*Didáctica inclusiva y transformadora [Inclusive and transformative didactics]*	Madrid: Síntesis
35	2020	Medina, A. Herrán, A. de la & Domínguez, M. C.	*Hacia una Didáctica humanista [Towards humanist Didactics]*	Madrid: UNED–Red Iberoamericana de Pedagogía (REDIPE)

Source: Own elaboration.

4. Results and discussion

The results are collated in Tables 2 and 3, which show the type of authorship and the average and percentage of occurrence of the categories analysed. Graph 1 visually summarises the results obtained in relation to the number of chapters on each subject matter and their positioning in the texts.

TABLE 2. Type of authorship.

Authorship	Frequency	Percentage
Individual	18	51.4%
Collaborative	17	48.6%

Source: Own elaboration.

In relation to the first category considered, and to answer the first research question, the analysis shows that 17 texts (48.6%) are collaborative works and 18 (51.4%) are produced individually. Those that are collaborative include a greater diversity of approaches, vocabulary, concepts and points of view, but at the same time they can be contradictory and hinder conceptual learning. Some of them present an accumulation of chapters with no common thread or sense applied. Those coordinated by Cantón and Pino (2011), Gómez and García (2014) and Domingo and Pérez (2015) are among the few that include examples of learning designs. In the works of Gómez and García (2014) and Moral (2019), the chapters on theory are closely related to the final examples of learning designs. In some, both collaborative and individual, technical errors were detected.

TABLE 3. Average and percentage of indicators analysed.

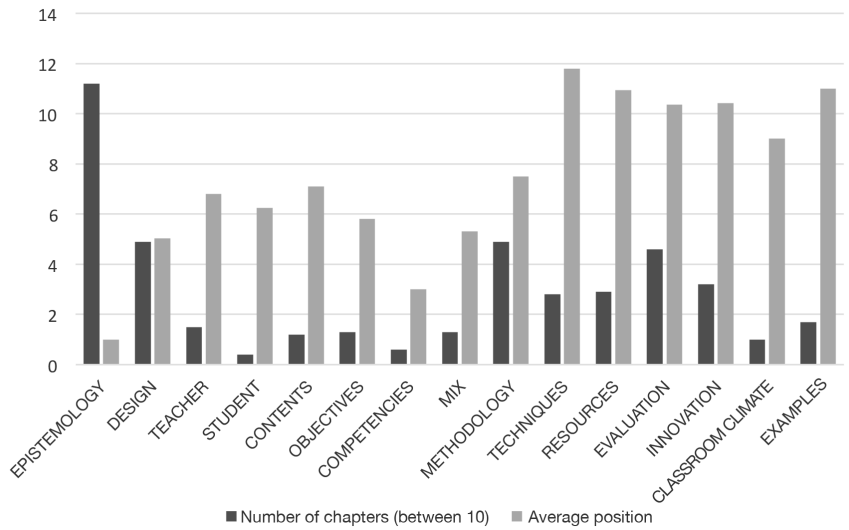
Category of analysis	**Mean**	**Percentage**
No. of chapters per book	12.8	
Epistemology	3.2	25.7%
Design	1.4	11.3%
Teachers	0.4	3.4%
Learners	0.1	0.9%
Content	0.3	2.7%
Objectives	0.4	3%
Competences	0.2	1.4%
Mix	0.4	3.4%
Methods	1.4	11.3%
Techniques	0.8	6.4%
Teaching resources	0.8	6.4%
Evaluation	1.3	10.6%
Innovation-teaching development	0.9	7.3%
Social climate of the classroom	0.2	1.4%
Examples/experiences	0.5	4.8%

Source: Own elaboration.

The subject matter with the largest number of chapters is the epistemology of Didactics (25.7%), with an average of 3/4 chapters per book. This is then followed by chapters on curriculum design (11.3%) with an average of 2 chapters per book. Evaluation is also an element of interest with a frequency of occurrence of 10.6%, and an average of 1 to 2 chapters per text. Competences appear by interrelating the curriculum elements from the textbook by Herrán and Paredes (2008), with the analytical approach of the curriculum components and the summaries of teaching-learning components disappearing. The chapters on the teacher are of little importance (3.4%). And there are even fewer devoted to learners (0.9%). The compendium by Sánchez Huete (2008) focuses on attitudes and motivation.

Those regarding teaching methodology account for 11.3%. The "didactics of creativity" is an innovative topic, comparable to teaching methodology, which appears in two chapters (De la Herrán & Paredes, 2008; Sánchez Huete, 2008). Teaching techniques and strategies begin to appear frequently after the textbook by Lorenzo-Delgado (2011). They are grouped around either teaching methodologies and principles (Lorenzo Delgado, 2011; Navarro, 2011; Gómez & García, 2014; Domingo & Pérez Ferra, 2015), or around learning processes (Moral, 2010, 2019), with a frequency of occurrence of 6.4%. This score is higher due to the textbook by Paredes, Esteban & Rodrigo (2019), which includes 23 chapters on teaching competences, to work on different aspects of professional interest typical of a teacher's day-to-day — such as emotions, motivation, exams, workshops, etc. —, with a methodological approach. Otherwise, 86% of the works analysed do not include a specific chapter on practical skills or techniques. Teaching resources, which can also be comparable to teaching methodology, continue to be very important (6.4%). The teacher-student relationship and the classroom climate are other elements that receive little attention, with a frequency of occurrence of only 1.4%. Objectives and content show a similar frequency of occurrence (3% and 2.7%), similar to those who mix curriculum components in accordance with competences (3.4%). Teacher development (professional and personal) is linked to educational innovation. Sánchez Huete (2008) and Herrán and Paredes (2008) include "personal development of the teacher" alongside professional development. Innovation is important in all texts, with a frequency of occurrence of 7.3% and an average of one chapter per book. Examples of learning designs, sometimes presented as innovation strategies, are relatively scarce: 82% have no examples at all, but Domingo & Pérez (2015) give 10 examples/experiences, which increases the average.

Graph 1. Number of chapters (between 10) and average position by subject matter.



Source: Own elaboration.

In terms of the position of the chapters, 88% of the chapters begin with background on General Didactics. The second position is usually occupied by the curriculum design, the teacher or the student. Few start with the teacher or the student. In almost all of them, the content is dealt with after the objectives. In the "mixed" chapters on curriculum elements, where curriculum elements are systematised around competences, content comes after objectives and competences. The order of the chapters on curriculum elements, as well as within the "mixed" chapters, follows the technical-administrative tradition (Tyler, 1949): objectives, content, methodology-resources and evaluation, as Bolívar (2010) states.

In light of these results, the following question arises: What teaching theory underlies and is conveyed by these texts? Theory (from the Greek, *theōreō* to see) is necessary as, without theory, there is no knowledge, no training and no established practice. However, that contained in these texts is, in general, insufficient to train students in competences. The non-competence-based theory component in said texts is very high. The chapters on epistemology, origin and foundations of Didactics and on curriculum theory are the most numerous in relation to the rest, and notably misunderstood by prospective teachers. It would seem that the priority is the justification of General Didactics and its knowledge and the reason for its existence, excessively linked to the curriculum. In addition, and not infrequently, the chapters related to the foundations of learning design go back to its theories, curriculum design models, complexities and implications, instead of facilitating its construction, in some cases occupying up to 3 or 4 chapters per book, thus shying away from applied competence training.

Unlike other disciplines, most textbooks do not seem to aim for comprehensiveness regarding the basics and, therefore, almost all of them leave important elements unaddressed, even stating that the area does not deal with them. Others are biased from the very start due to the author's ego and only deal with what matters most to him or her, without the slightest interest in getting into practice. It follows that many of these works, despite their nature, are not representative of the discipline, or are only representative of a part or approach of such. Most of them are not very innovative in terms of chapters on new epistemological developments, which contradicts the theories set out in the chapters on teacher development and educational innovation.

We ask ourselves today, as we did 30 years ago, if it is necessary for an early years, primary and secondary school teacher to know, with this degree of detail, epistemology, paradigms, foundations, the didactics-curriculum dialectic, curriculum theory, teaching and design model, etc. Today we question whether such content, addressed in this way, is really so crucial for competence-based exercise of the profession. Some of the content seems to develop a discourse that is not focused on the level of education for which it is intended. It would seem to be the remnants of teaching projects with an improper epistemology, which will do nothing to show the

usefulness of General Didactics. Some of the content includes contradictions, inconsistencies, errors, even educational errors.

The curriculum elements emphasised and addressed the most are evaluation and teaching methodology. Objectives and content are by far the least important issues. Competence-based teaching has led to the clustering of isolated curriculum elements around competences. It would seem that the didactic discourse of competences overshadows the analysis of the other elements. Nevertheless, texts such as those by Medina and Mata (2009), or Moral (2010, 2019), maintain the analysis of these elements, without the functional clustering. It is noteworthy that, in the mixed chapters, they are presented one by one, linearly, sequentially and with little interconnection with one another.

Regarding the order of the chapters, and within the aforementioned traditional (Tylerian) sequence, it is important to note that content always comes after objectives, and that evaluation closes the series, even in most of the mixed chapters. This reflects the continuing existence, whether express or latent, of the tradition regarding content in Spain. Few researchers in the area defend content, as it is understood that it undermines the identity of General Didactics, when this discipline is full of its own content. Traditionally, there has been a tendency to devalue content (Angulo and Blanco, 1994; Gimeno, 1981; Gimeno and Pérez Gómez, 1992). Rodríguez-Diéguez (1980) believed that the greatest merit of the taxonomies of objectives was "having succeeded in shifting the focus of interest in teaching from content and information to skills of different kinds", and added, "we are currently witnessing a revival of "educational formalism", a new concern for formal skills rather than content" (p. 77).

Gimeno (1981) stated that:

> Content-centred education" is the epithet of so-called "traditional" pedagogy. For us, the advantage of separating objectives from content ... is that it emphasises that content is a means to achieve something and not an end in itself ... In other words, the role of content is minimised and it is placed at the service of something. (p. 170)

Subsequently, detractors of the "Pedagogy by Objectives" approach emerged in favour of competences. Bolívar (2010) abandons planning by objectives and considers that, although the competence-based approach does not involve rejecting the importance of content, or entail a didactic planning process, it does constitute a basis for the specific development of curricula: "Competences play an integrating role, organising content in terms of what the student is expected to be able to do. As such, they reorganise the didactic elements according to what they want them to acquire" (Bolívar, 2010, p. 177).

On the contrary, Zabalza (1995) defended that priority should be given to content in learning design:

> The new primary school, both Spanish and European, must be built upon a reassessment of learning content (on a

> re-dimensionalisation of the importance of "knowledge") and teaching-learning techniques. I imagine that this statement may be controversial, and that agreement on this issue is not widespread. However, it is becoming a common principle across Europe, and not among conservative education movements, as some would like in order to dismiss it, but rather in progressive positions on education. We had reached such laxity with regard to content that, for many, what mattered least was *what* was studied, as long as it was done in a creative, free and enjoyable way for the students. (p. 296)

The above comments illustrate, in contrast, the priority trend in the reference texts on General Didactics: "learning by doing" (Dewey, 1902). Competences, action and different methodologies are the main themes in the texts reviewed. There is barely any emphasis placed on the importance of content for learning design (Zabalza, 1995). Only the textbook by Moral (2019) recognises the importance of such. From his perspective, focusing on objectives, competences and activities as the most important elements is like building a house starting with the roof. Action, without the training and conceptual structure on which to base thinking, feeling and acting, makes no educational sense (Novak, 2010).

Secondary school teachers have shown opposition and resistance to the competence-based approach, arguing that it undervalues content (Bolívar, 2005). And what about primary school teachers? They do not react in the same way. Is it that a solid knowledge base for thinking is not built at these levels? What is done at these stages? Activities, play? As González-Sanmamed and Fuentes (2011) highlight, when referring to the most deeply-rooted beliefs in the teaching culture, it is understood that: "Teaching is easy, and being trained to teach is about learning how to do things (organising games, carrying out activities)" (p. 55). Although, at the same time, it is bewildering: "given how easy it seemed to teach and how hard it is for students to learn" (González-Sanmamed, 2009. p. 71).

5. Conclusions

The complaints of prospective teachers regarding excessive teaching of theory, which does not effectively prepare them to be trained in teaching competences, seem justified given the current competence-based teaching model. This is confirmed by the fact that, in the works examined, the relative weight of epistemological content and curriculum theories is unbalanced, with a persistent tendency to place value on theoretical aspects as opposed to applied aspects. There is a prominent tendency to consider, in depth, the curriculum components of teaching methodology and evaluation over others, of at least the same importance, such as the figure of the teacher, to whom little attention is paid, or the student, who is almost entirely forgotten.

The chapters are generally ordered according to the technical-administrative tradition: epistemology and curriculum theory, objectives, content, methodology, and evaluation. This order reflects the real prioritisation of the curriculum com-

ponents, impacting on the teaching of the syllabus and, in turn, on the acquisition of competence-based learning. In this article, another flexible order open to innovation has been proposed for learning design. It places value on semantic memory and conceptual construction as the basis for meaningful learning, and the development of creative and autonomous student thinking (Novak, 2010; Sousa, 2017; Weinstein & Sumeracki, 2019). This order begins by firstly considering the student, followed by content, objectives, evaluation, methodology and competences. Placing content first does not mean going back to the traditional content model criticised by Rodríguez-Diéguez (1980) or Gimeno (1981), since content is not simply an end in itself. On the contrary, content retention should be considered a means to foster meaningful learning, as it serves as a basis for building the conceptual structure that underpins semantic memory (Sousa, 2017).

Although the limited influence of these texts on the training of university professors and lecturers in the field of General Didactics is acknowledged, they are epistemological reference works that are key and thorough for teacher training and the definition of the area. The need to find and acknowledge a common approach is important for the scientific discipline underpinning teachers' basic pedagogical knowledge (Shulman, 2005).

Knowledge regarding learning design is both technical and strategic, and requires elements to be combined harmoniously via teaching innovation. Their coordination and interdependence would help us to understand the learning design process, both at the second level of curriculum realisation and in the syllabus or class programmes and in the teaching units and other methodological proposals.

For the above reasons, the design of a General Didactics textbook must be carefully considered, in collaboration with Spanish education publishers who are well-established with a high level of accomplishment. To this end, we propose debatable guidelines to increase how educative they are and update them in accordance with the competence-based teaching model, in order to foster fruitful formative learning experiences for students:

- Effectively connect the textbooks to the list of professional competences, thus facilitating the construction of well-founded, practical and professional pedagogical knowledge.

- Eliminate any ancient, superfluous theories that are unrelated to the interest and professional practice of prospective teachers.

- Functionally link the chapters on theory and those that include examples of learning designs.

- Aim for a certain comprehensiveness regarding key aspects, balancing topics of interest to the author's ego with what is necessary for the student's practical training, and do not fail to include key areas in the field, which may give the impression of disciplinary carelessness or negligence.

- Seek epistemological harmony between chapters to avoid conceptual and vocabulary-related conflicts, especially in multi-authored works.

- Order the chapters according to a well-founded teaching theory, as the order of the factors affects the product.

- Avoid any potentially manipulative or indoctrinating ideological bias, in the interests of maximum pedagogical respect for students, teacher training and the meaning and sense of education or training.

- Dare to innovate, risk including innovative areas at the forefront of pedagogical knowledge which support the epistemological development of the area, consistent with the author's own proposals on educational innovation.

- Validate the text with experts and a suitable pilot project before publication in order to effectively contribute to competence-based training, aiding, right from the very start, the construction of scientific, self-critical, critical, practical and useful knowledge for the teaching profession.

- Propose authentic and consistent teaching, having previously put into practice what is proposed for the prospective teacher.

Building General Didactics textbooks according to these conditions could increase their professional potential and help to reduce the epistemological distance between Psychology, Neuroscience, General Didactics, Specific Didactics and the Practicum. The psychological and neuroscientific foundations of learning are prerequisites for the pedagogical training of a prospective teacher. A subject such as General Didactics cannot be taken before or at the same time as them, or in the same term as Specific Didactics. Quality training in teaching competences requires a special link between General Didactics and the Practicum. We propose strengthening this link between the General Didactics and Practicum subjects by means of valid, reliable and high-quality instruments of observation, action and evaluation, and increased coordination or unification of sections in teaching guides.

The situation described above calls for healthy pedagogical self-criticism, with a self-training, radical and causal approach. Self-criticism, far from being exceptional and a source of conflict for mediocre teachers, should be a scientific and professional habit, as it honours those who practise it. If it is a question of training, the leadership of its practice could logically lie with General Didactics teacher and/or researchers. However, it is not easy, for four reasons related to non-conventional training content, comparable to General Didactics: the difficulty in self-criticising; the fact that self-criticism only makes sense if it is followed by rectification (practice), which requires a particular professional maturity; the tendency of human beings to think in dual terms, and the fact that we are faced with a persistent didactic traditionalism, the historical roots of which end up in our training leaving room for improvement.

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The promotion of human coexistence: Personalised education from Leonardo Polo

La promoción de la coexistencia humana. La educación personalizada desde Leonardo Polo

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Abstract:

This article aims to expand the theoretical basis of personalised education with the help of Leonardo Polo's transcendental anthropology. Specifically, it addresses the difficulty of arranging learning and teaching so that they can be regarded as parts of a strict *duality*, that is to say, exercises that cannot be done without both elements. This particular mutual reference or intrinsic opening enables personalised educational growth, which is intrinsic or habitual perfecting, thus preventing learning and teaching from becoming disconnected as parallel processes that are only *coincidentally* related. Personalised education, inspired by Leonardo Polo, is understood as a perfecting *in common* of educators and learners that each of them achieves in *duality* with the other. In personalised education, teaching and learning are intersubjective or social manifestations that are peculiar to the essence of each human being, given that teaching and learning happen in living-with others, with the performance of individual tasks in a secondary position.

Keywords: transcendental anthropology, duality, essential improvement, habits, personalised education, Leonardo Polo.

Resumen:

Este artículo pretende ampliar las bases teóricas de la educación personalizada con la ayuda de la antropología trascendental de Leonardo Polo. En concreto, en este estudio se aborda la dificultad que entraña articular la enseñanza y el aprendizaje de modo que puedan considerarse miembros de una *dualidad* estricta, es decir, ejercicios que no pueden darse el uno sin el otro. Precisamente, esa referencia o apertura intrínseca mutua hace posible el crecimiento educativo en sentido personalizado, que es el perfeccionamiento intrínseco o habitual,

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evitando de esta manera que se disocien como procesos paralelos que se encuentran relacionados de una forma meramente *coincidental*. La educación personalizada inspirada en Leonardo Polo se entiende como un perfeccionamiento *en común* de educadores y educandos que cada uno de ellos alcanza en *dualidad* con el otro. En la educación personalizada, enseñar y aprender son manifestaciones intersubjetivas o sociales propias de la esencia de cada ser humano, en la medida en que se enseña y se aprende conviviendo con otros y, secundariamente, realizando tareas individuales.

Descriptores: antropología trascendental, dualidad, crecimiento esencial, educación personalizada, hábitos, Leonardo Polo.

1. Introduction

Personalised education is not an indiscriminate operation that guarantees results by following particular procedures; instead it is a dialogic task based on correspondence between teachers and students. It is precisely in this sort of *weakness* that its educational density lies.

According to this view, which was that of García Hoz who founded and promoted this pedagogical concept with Christian roots, personalised education is more than *personalised learning* done through planned experiences, such as those described by Coll, Esteban-Guitart, and Iglesias (2020), which are of undoubted methodical value. Neither is it a *marketing* strategy adapted to the new *consumer identity* (Hartley, 2007; Peters, 2009), nor is it merely individualised education. In fact, the expression "personalised education" started to be used to differentiate it from individualised education (García Hoz, 1993). Personalised education is an *effusive coming and going* typical of the personal encounter that can only come about or be fostered from its surroundings, as it is aimed at removing anonymity, something that involves a dignifying commitment: Personalisation has something of aggression about it and in some way commits and ennobles as by virtue of personalisation, someone goes from being just another person to being the point of convergence of allusions (García Hoz, 1970a).

In personalised education, the human person is "the explicit reference point of the subject of education" (García Hoz, 1997, p. 103). Personalised education is "education referring to the person" (García Hoz, 1993, p. 32), and so it is not a pedagogical method (Arancibia, 2018) but rather "a way of seeing education through the most profound reality of the individual, which is its condition as a person" (García, 1997, p. 105).

García Hoz did not devote much of his work to strictly philosophical topics (the treatise *Cuestiones de filosofía individual y social de la educación* [Questions on the individual and social philosophy of education], from 1962, stands out here), but his anthropology can be regarded as being "between the Aristotelian-scholastic tradition and contemporary Christian spiritualist thought" (Bernal Guerrero,1999, p. 219). This anthropology from the scholastic tradition is set out by various authors who are renowned authorities in the

second volume of *Tratado de Educación Personalizada. El concepto de Persona* (Treatise on personalised education: the concept of the person) (García Hoz et al., 1989).

But with his proposal for a *transcendental expansion* in anthropology, it is Polo "who best captures and expands the findings on *intersubjectivity* from the philosophical anthropologies of the 20th century" (Sellés, 2007, pp. 199-200), continuing in turn with traditional transcendental metaphysics (Polo, 2016a), without falling into what he calls the *symmetries* that characterise modern approaches. Polo elaborates on the real distinction between act of being and essence that Thomas Aquinas was unable to adapt to anthropology (Corazón, 2019). Consequently, anthropology is subordinated to metaphysics and freedom does not achieve the transcendental status that modern philosophy gives it, at the service of which we find personalised education (García Hoz, 1970a, 1993). For this reason, authors like Altarejos, who provided the prologue to *Ayudar a crecer* (Helping to grow – the only essay Polo devoted wholly to education) (2019), Izaguirre and Moros (2007), and Bernardo (2019), have attempted to incorporate his advances into personalised education.

Filosofía de la Educación (Philosophy of education) by Altarejos and Naval can be regarded as the first attempt to develop "what Polo sketched in his essay *Ayudar a crecer*" at an educational level" (Orón Semper, 2018, p. 1250). On the same lines, the present article can be linked to this effort to take the personalised concept of education García Hoz promoted and open it to the anthropology of Leonardo Polo, as done by Orón Semper (2018), Dasoy (2018), Ahedo (2018), Martínez Priego (2019), and Pérez Guerrero (2020).

This study specifically proposes that teaching and learning in personalised education can be seen as exercises that have a strict correspondence between each other or that mutually refer to one another insofar as teaching is *teaching-someone* and learning is *learning-from-someone*.

Naturally some notions can be acquired without anyone teaching them, in the same way that it is possible to *try* to teach without anyone actually learning anything. Nonetheless, "learners who do not accept the person who is educating might pick up some notions, but strictly speaking, they will not learn *personally*, that is to say, they will not come to know themselves progressively as people" (Sellés, 2007, p. 354)[1]. The key Polo provides for understanding intersubjective relationships, which are crucial for getting to know oneself as a person and, therefore, for personalised education, is *loving correspondence*. Education is radically personalised when teaching is regarded as a contribution by the teacher that pupils must accept and correspond through their learning.

Personally, *teaching* is giving something, doing a favour, and *learning* is accepting it. If we eliminate this intersubjective status of education, which ultimately depends on the *donal* structure of the person, teaching and learning do not accompany one another but instead split into parallel activities. As we will see, through synderesis, people put into operation or activate their specifically human capacities, but this subjective process is dependent on the intersubjective or social framework, in other

words, on the *being and doing with the other* on which both personalised education and Polo's anthropology are based.

To clarify this, we will very briefly explain what Polo understands by *coexistence*, "which is not the plurality of people, but rather the transcendental expansion" (2017, p. 139). Coexistence considered in this way is not *between* people but is *demanded* or possessed by each one of them (2017). Coexisting is more worthy than existing (2016a), and converts itself through a series of personal transcendentals "which are superior to metaphysical ones" (idem). Coexistence implies duality. Therefore, we will now set out the transcendental scope of the notion of *duality* in the thinking of Polo.

The person grows educationally like a complex system of interdependent dualities, and must discern between that growth or intrinsic perfection and the personal being, from which it *insurmountably* distinguishes itself and with which it forms a duality of transcendental scope. This will enable us to review personalised education understood as an extension of the *notes* or *personal radicals* in the life of students, since the status of these notes should be as transcendental as the human person or coexistent. From here we can regard personalised education as a perfecting *in common* or *with the other*, in other words, a *social manifestation of the human essence*, so that teaching and learning are connected in a duality of initiatives in mutual response.

2. Transcendental expansion

The transcendental expansion that Polo developed is methodical in the sense that, in his view, the transcendentals studied by classical metaphysics were unsuitable for reaching the personal being: "the being of man is not the being with which metaphysics concerns itself" (2016b, p. 338). But it also has a thematic sense, as transcendental expansion *is* the person itself: "while admitting that being and existing are equivalent expressions in metaphysics, transcendental anthropology is the doctrine of human co-being or of coexistence. Man does not limit himself to being but rather co-is" (2016a, p. 42). Coexistence is "accompanied being" (2016b, p. 356): "intimacy, being as scope" (2016b, p. 355).

The human person coexists with the being of metaphysics precisely as its expansion (2016a). Metaphysics, as Aristotle says, is *first philosophy* because it concerns itself with principles. But "being the principle does not mean being free" (2016a, p. 35; 2016b, p. 338). Where "freedom is discovered, or where freedom appears, is, specifically, in anthropology" (2016b, p. 339). Man is free insofar as he is a second being, in other words, it is by adding oneself to the *principial* reality or to the being as principle or as first (2016b).

Being-with also refers to beings that, in turn, coexist with one another, that is to say, to the plurality of people or coexistents (2017). In contrast, the human person lacks an intimate partner because no one knows the intimacy of the other from within (at least no one *human*). This means that the human person lacks an intimate response, which it cannot procure but also cannot stop seeking (2016a).

García Hoz identifies this *coexistential* human character insofar as it emphasises the *vocation of reality* that is characteristic of the person and its character which is *open* to dif-

ferent dimensions of reality (1993). But Polo's transcendental expansion allows us to examine this line methodically and in greater depth, understanding that this openness is an intrinsic reference of each person, and not merely a relationship between them (Polo, 2017).

Polo reduces his concept of transcendental expansion in anthropology to three fundamental theses (2011, 2016a, 2016b, 2017).

Firstly, metaphysics with classical roots does not adequately consider the free being because it does not distinguish it sufficiently from the being that metaphysics considers. Furthermore, it reduces anthropology to a secondary philosophy and freedom to a "merely categorical matter" (2016, p. 35), but "a founded freedom is contradictory" (idem). Furthermore, modern and contemporary philosophy attempt to establish this distinction by emphasising the transcendental character of the free subject, without specifying the transcendentals that would be characteristic of the free being, instead changing the order between the metaphysical transcendentals and breaking with traditional realism. In this sense, it is a poorly focussed undertaking (2016b), but a legitimate one, as by analogy one very weakly comes from the physical to the spiritual (2016a).

Secondly, both focuses are symmetrical in the sense that they understand that the central notion is that of foundation, but, while classical focusses position it beyond man, modern ones situate it within him. Nonetheless, if the being of metaphysics is transcendental foundation, the being of man is not transcendental in this way. The being of man is more than the *principial* being of metaphysics: it is being-with and this is equivalent to being free. The extramental being is the principle, cause, foundation, while the personal being is an addition, it is *second being* (García González, 2008). The person "is *in addition* to the foundation" (Polo, 2015a, p. 218). Anthropological transcendentals are the *ratification* or *affirmation* of metaphysical transcendentals.

For this reason, the definition provided by Boethius who regards the person as an individual substance with an intellectual nature, is highly problematic, because substances are separate in themselves, "but the irreducibility of the person is not isolating; it is not separation" (2016b, p. 356). The perfection or superiority of the classical substance lies in its separation, but the superiority of the personal being is found in its irreductibility (nobody can be the person of another), which is inseparable from its coexistent or open being: its *being-with* (2016b, 2017).

For its part, freedom is not simply a property of voluntary acts either (2016b): "it is not incorrect to understand freedom as command of acts, but personal freedom goes beyond the order of means" (2015a, p. 220). Apart from a practical and moral character, which belongs to the order of the essence, liberty has a transcendental character that is in the order of the human *esse* or *actus essendi* (2016b, 2017).

Polo describes personal or transcendental liberty as *the capacity not to defuturise the future* (2016a, 2017), in other words, to be free is to maintain a future that does not exhaust itself because freedom *adjusts its pace* to it. Freedom means being in step with regards to

the passage of time, so that the person is able to be-accompanying itself, to be intimately: "co-existence, the expansion of the order of the transcendentals, is the person, the irreducible intimacy insofar as it is attained: this attainment is inseparable from its being" (2016a, p. 136).

Finally, a new method is required for formulating the anthropological transcendentals, which are different from metaphysical ones and do not involve mere symmetries or changes of order. The human being-with is transcendental, not as foundation, but as free, because it performs operations through which it achieves actuality (knowing or wanting in act) and, *furthermore*, it goes beyond it, it *lets go* of it (2016a).

If the metaphysical transcendental is reached by overcoming the physical until its principles are observed, the anthropological transcendental is achieved by transcending the operation of knowing (2016a, 2016b). There is no principle beyond this operation because knowing is not causing (the thought-object is not real), except for the *trans-immanent*, that is to say, the free or spiritual (2016a). The operation imposes a limit: knowledge is only possible in action or in presence, in other words, what is *operatively* known is always that which is actual, that which is present. When noting this limitation, it abandons itself *ipso facto*: it starts from what is present but is transcended by incessantly adapting to the future "without defuturising it or anticipating it in the already of presence" (Ferrer, 2012, p. 38).

This is why the method by which transcendental expansion is done is called "abandoning the mental limit" (in one of its aspects), in other words, abandoning cognitive actuality (Polo, 2016a). The mental limit is detected and abandoned through habitual intellectual knowledge, which is superior to the operative kind (2016a). Personal reality fully escapes objective or operative knowledge because the being-with, the character that is intimate and radically open to the other is not reduced to the actuality and unity that typify the object.

Intimate coexistence and freedom are ultimately anthropological transcendentals that are not revealed by traditional philosophy, which reduces anthropology to a second or regional philosophy. These transcendentals, along with personal love and pure intellection (which is not equivalent to the operation of intelligence nor to its habits), are converted with the human personal being.

3. Two ways of confronting reductionisms

According to García Hoz, the idea of personalised education developed from immediate precedents proposed by seemingly irreconcilable rival educational concepts, such as the theoretical and experimental (1993):

> Personalised education integrates North American pragmatism with European speculative thinking, the inner life (humanism) with the external life (realism), philosophy with positive science, technical training with ethical training … What is perhaps its truest grandeur is found in this integration. (Bernardo, Javaloyes, & Calderero, 2011, p. 55)

In *Principios de Pedagogía Sistemática* (Principles of systematic pedagogy) García Hoz uses an analytic method to deconstruct and study the major common elements and

laws that govern the pedagogical universe, and a synthetic method to integrate these common elements in various stages and measurements into the particular subject of the varied phenomenon of education: the *pedagogical unit* (Bernal Guerrero, 1994). He bases his *differential pedagogy* (García Hoz, 1970b) on this integration, which is a preliminary step towards his conception of personalised education. But he also applies this method to his study of the human, family, and social aspects related to education:

> Modernity is characterised, from the epistemological perspective, by erroneously converting relationships of distinction and complementarity — like those that must exist between an organism and its surroundings, between man and woman, between reason and intuition, between mind and body, between us and others — into relationships of opposition among which only alternatives were possible. (Ballesteros cit. in García Hoz, 1993, p. 24)

This turns it into a source of reductionisms that lead to a biased vision of education and its recipient, something García Hoz tries to avoid with the *principle of difference and complementarity*, and which he uses in what has already been called personalised education.

The criterion Polo uses to overcome these opposing reductionisms and confront the human *systemic complexity* is that of *duality* (Polo, 2016a). While in García Hoz's *complementarity* of the principle, the *with* is external to its members, in the duality, these include it in their own nature (2017). Complementary things have a mutual need for one another, as García Hoz (1993) notes, but as parts that are distributed in a complete whole and require the other owing to their own partiality or limitation, which determines them. However, where there is complete or integral totality, any growth is prevented (Vargas, 2019).

Polo understands that, in duality, one member achieves greater perfection thanks to the other, precisely because *being-with-the-other* determines its own nature. This clearly involves a new concept of potency (*obediential potency*, ultimately) (Polo, 2016a) that does not imply imperfection but rather the capacity to grow or *give of oneself* thanks to the *superior* member of the duality that "does not exhaust itself in its respect for that other, but that opens itself to a new duality" (2016a, p. 192). We speak of the *superior* member since the teacher has learnt previously, has studied the great masters, or is simply from an earlier generation. In this sense, teachers open themselves to a duality that induces students to grow. Thanks to the other, to the *superior* member that does not exhaust itself with respect to its students, they are capable of new dispositions, of achieving ends they would not achieve alone.

Polo turns to several classic examples of Aristotelian inspiration to illustrate this (2019), such as the use of hand tools — which is a perfection (a technical habit) we would be incapable of without intelligence: "That which is usually called manual skill is the projection of the intellect to the hands" (2016b, p. 61) — or the use of speech which would not be within the reach of the human phonic system (lungs, throat, mouth, tongue, etc.), without the habit of language. Neither writing nor speaking English are natural ends. Instead, they require habits acquired with practice, increments that

are possible precisely thanks to the combined activity, in duality, of various factors.

These habitual growths are the true educational topics. They are not simple competences aimed at specific tasks, but habits without which the human system cannot integrate itself because "it is destined to grow" (Polo, 2019, p. 156). In this way, the integrating ambition of the different human dimensions (corporeality, affectivity, will, and intelligence) typical of personalised education is reinforced (Bernardo, 2011).

Duality has a transcendental value in Polo (Piá Tarazona, 2001) and, as such, "it is a gain: it is superior to the *monon*" (Polo, 2016a, XV, p. 45). Being one is what characterises the thought-object, as Aristotle said, given that the act of thinking is narrowly reduced to that which is thought (García González, 2019), while the personal being is not one, but rather is *in addition to the oneness and actuality* that mark or limit the thought-object.

The superior duality internal to the human being is that which is formed by the personal being and its essence, which is its growth or intrinsic perfection, truly distinct from it. This distinction should be respected to avoid the error of considering the person as the result of the process of family or social educational perfecting. It is advisable to avoid equivocal expressions that can be misinterpreted, such as stating that "the family is the natural realm and environment where the human being becomes a person" (García Hoz, 1993, p. 222). The process of educational personalisation "has its starting point in the student as personal being" (Vélez, 2003, p. 1).

Starting from Polo's anthropology, it cannot be held that "the person is made as a person, but is not completed" (Bernardo, 2019, p. 54), because the person exceeds the causal notion of the end. The personal being, the *who*, does not grow as a mere organism does, creating, in a manner of speaking, *more organism*. As has been said, intimacy transcends the notion of immanence. In anthropology and in education it is expedient to go beyond the Aristotelian *tetracausal* approach with the transcendental *personal being-growth* duality or the intrinsic perfection of the person, which is equivalent to its essence.

With regards to the essential or predicamental order, the fundamental duality is the one formed by the person's manifesting availing-of, which is the intrinsic perfection that comprises its essence (Polo, 2016a, 2017), and by what is available, that is to say, those means that are not part of it, but must be availed of *in accordance* with it. From this duality, moral deviation can be understood as the attempt to avail of one's own availing-of, in other words, to treat it as something available (2016a). For example, speech, which is part of the human availing-of, can be used duplicitously to lie or deceive.

4. Deployment of personal notes or manifestation of anthropological transcendentals

Personalised education sets out to strengthen students' personal notes and make them flourish (García Hoz, 1962), mediate their effective use so that "each person is capable, with the appropriate help, of formulating and carrying out … a personal, singular form of existence" (Bernal Guerrero, 1994, p. 254).

García Hoz offers a first list of these notes, namely singularity, openness, and autonomy (1970a), and, in a later expansion that it is more a "statement of the essential content of these characteristics" (1993, p. 172), he adds conscience and freedom as foundations of human dignity, as well as the principle being of intentional creative and unifying activity (García Hoz, 1993; García Hoz et al., 1997). These notes are regarded as spiritual qualities "that ensure that one is who one is and not another, those notes by virtue of which a human being is a person" (García Hoz, 1962, p. 81). Subsequently, this group of notes has been reorganised by authors following García Hoz who have explicitly characterised them as *foundational principles* of the person (Bernardo, 2011), or as *constituent notes* of the person (Bernardo, Javaloyes, & Calderero, 2011; Alcázar & Javaloyes, 2015).

But the person, as we have seen, cannot be founded or constituted, and is distinct from other people in strict correspondence with their coexistence. It is a person precisely because it is a *distinct person*, and not because it possesses a series of common notes. These constituting principles would be more radical than the person itself, who, in some way, would derive from them. Meanwhile, nothing created is more radical than the person if, as Polo says, it is a relationship in the order of the Origin, or "is equivalent to being born from God" (Polo, 2012, p. 21). It is only this relationship with God as its Origin that can be thought of (without abandoning the ambit of mystery) as constituent of the human person (2012, p. 23). Moreover, many of these notes do not attain the transcendental status that characterises the person.

Bernardo affirms that "the principles of the human person are, then, what gives it reason, its cause, those that make it a person" (Bernardo, 2019, p. 55).

In this he follows the position of García Hoz, who, as we have seen, sometimes regards the person as a pure perfection that can be realised more or less perfectly. On other occasions he states that each individual is in the "sad position" (García Hoz, 1970, p. 247) of being "an imperfect realisation of the person" (idem) "through the imperfect use of freedom" (García Hoz, 1970a, p. 27). Polo does not share this position, which raises doubts about the irreductibility and radicality of the person.

As we have said, in a principle, the list of these distinctive notes is reduced to singularity, autonomy, and openness. With regards to singularity, it should be said, from the approach of Polo, that it is a characteristic of the personality or of the manifesting display of the person and, therefore, is an essential property. Polo does not regard the human essence as shared (as García Hoz does, 1970a), that is to say, as being equivalent to human nature, but as the part of this nature that each person manages to make *their own*: the yield they obtain from it: "the essence of man is simply the capacity he has for self-perfection" (Polo, 2015b, p. 135).

Nonetheless, the relationship García Hoz establishes between this singularity and aspects such as originality, inner life, simplicity, solitude, or silence (Bernal Guerrero, 1994) bring this notion close to personal intimacy. Personal intimacy, which is equivalent to coexistence, manifests itself in its essence, but it is not capable of replicating itself, of *saying itself*,

and, in this sense, it is silent and, at the same time, manifestative, because it assists or supports its essential manifestation as *appeal*, and so this manifestation is not merely an aspect or external appearance (2016a). People call upon us, enjoin us with their mere presence.

García Hoz, following the traditional approach, understands freedom as autonomy or self-mastery (1970a) and positions it as an essential attribute of the will (1993). Nonetheless, for Polo, "the essence of man is freely effusive, and this means that we can refuse to be effusion, we can deny. This is where the 'yes-no' distinction appears, which is derived" (2017, p. 74). In this way, autonomy, the capacity to direct oneself thanks to that indeterminacy or alternative, derives from transcendental freedom through the habits that integrate the essence of each man and allow him a free disposition that is neither arbitrary nor unconsciously instigated. In this sense, it is true that educating people with a critical and well oriented autonomy that avoids generalisation, might be the key task of education in our time (García Hoz, 1970b): "teaching to choose or teaching to choose well is a specific objective of personalised education" (1970a, p. 28). But precisely because it depends on what is feasible and situational it is an extension or manifestation of the intimate personal freedom that should not be confused with it. Thanks to the habits acquired when acting, one is freer in the moral sense, more *complete*, and authentic autonomy is that of one who does not subordinate the ethical to other instances (Ruiz Corbella, 2012).

And, with regards to openness, which according to García Hoz claims develops at three levels — towards the world, towards others, and towards transcendence (Bernal Gerrero, 1994) — Polo offers a structure in which human people find themselves *dialogically* in the world through the essential manifestations they include in corporeal and verbal expressiveness (Polo, 2016a). At this level, this openness is not transcendental and is socially typified, with each person occupying a place that can be recognised by others in a structured *human world* that coordinates its different roles. Educating is a social perfecting in this sense, given that it perfects coexistence by initiating young people in the different channels of collaboration and free manifestation, which possess their own grammar (Pérez Guerrero, 2021) and their own limits that must be respected (Reyero & Gil Cantero, 2019).

According to Polo, openness towards the physical universe ultimately depends on an innate habit, the habit of the first principles. But openness to the *human world* is operative, it is at the predicamental level, and it is culturally and corporeally mediated. Consequently, it is possible to speak of *impaired* people, in other words, people whose physiological or psychological deficiencies are just those of *a person* who is not able to manifest itself or does so in a very limited way.

Furthermore, the person who is open or turned *outwards* is properly the I, which Polo considers as another dual innate habit (*seeing-I and willing-I*), which becomes the pinnacle of the human essence (2016a): the apex encompassing all of its acquired acts and habits and on which they depend. He sometimes calls this habit synderesis, especially when referring to its second member, the *willing-I* (2016a).

Finally, according to Polo, the person also opens itself internally as intimacy. Going deeper in this intimacy it opens itself, or rather, *orientates itself*, towards transcendence of the divine intellecting (2016a), that transcends it completely.

Therefore, in Polo's thinking, personalised education can be described as the help given *to the manifestation of personal transcendentals*. Personal love, which is transcendental, is manifested in voluntary willing and in raising good to the category of a gift, an offering, as the ultimate end of love is not the good itself, but another love (García González, 2017) or the *loving game or recreation* (Polo, 2017). Without love, good would be reduced to the final cause or order (Polo, 2011): there would be no gifts or favours. Personal love also manifests itself in the growth of ethical virtues, which are resources that increase this specific capacity to give and to achieve the moral good par excellence, which is good will, as well as friendship, which is the maximum manifestation of the *coexistent* and *donal* character of the human being.

And thanks to personal intellecting, which, like the active intellect of Aristotle, with which Polo compares it (2016a, 2017), is *unmixed*, in other words, it does not accommodate anything intelligible but rather it is pure transparency, objects are illuminated intellectually. It is this transparency of personal intellecting that manifests itself in operations of knowledge that do not mix with their objects but are hidden precisely to highlight them, and, so to speak, always *work in favour* of what is known without imposing themselves, as well as in the intellectual habits that follow them.

The extension of the personal freedom that personalised education seeks to make practical as a capacity to direct one's own life resides in this growth or habitual strengthening of specifically human potencies (García Hoz, 1953):

> The essence of man is not a fact, but rather a task of freedom that lasts for the whole life, namely: the growing conquest of dependence of the human on the personal being. This dependence is strictly the essence of the human, but it is not static. Instead, it must be conquered because the essence of the human is only such insofar as it grows (if it did not grow, it would not depend on the person, and if this growth were not free, it would not go beyond being that of a corporeal organism). (Polo, 2018, p. 200)

The person *makes human nature its own*, in principle, common, developing habits that are the outcome of its actions. It endows itself with its own essence (2015b). Habitual growth involves constantly improving the starting point of the action, in other words, overcoming the notion of immanent progress and growth. Personal freedom extends to nature through habits, and manifests itself in it as pragmatic and moral freedom (García González, 2011).

The unrestricted educational growth that is characteristic of the human being, is not only due to the peculiar *plasticity* of human nature, even though it is a necessary condition for it (Altarejos & Naval, 2011), "because the person adds the effusive, contributing dimension to nature" (Polo, 2018, p. 212). Education can be regarded as a necessary *continuatio naturae*, but, even more radically, as an essential mediation for the manifestation of the

spirit, with both of these perspectives present in the thinking of García Hoz.

5. Education as a form of perfection in community or *with-the other*

This human plasticity is especially due to the fact that its specific potencies, intelligence and will, are *passive* potencies (2016a), that is to say, that they are not spontaneously activated under particular conditions. This passivity is precisely what makes them liable to become habits, to act from ever better starting points, because another higher instance that illuminates them activates them: what Polo calls synderesis. Synderesis supports and observes the joint functioning of the potencies so that it is harmonious, and can be corrected: synderesis illuminates the human faculties because "*seeing-I* and *willing-I* are the two *eyes* that proceed from the intimacy of coexistence" (2016a, p. 356). From synderesis, personal transcendentals strengthen or have an impact on the essence of each human being, manifesting its personal, intimate, and free character, none of which would be possible without education.

For this harmony between faculties to occur, the child requires an *affective normality*, which is the first educational objective, corresponding to the parents (2019). Moreover, young people's synderesis must take an interest in or throw itself into the crucial matters of life. This requires the help of another synderesis: that of the educator, because, firstly, the situation of the human being is weakness and need, and, in this state, interests are very limited and do not enable the *personal life project* that García Hoz names as the objective of personalised education to be carried forward (1993). For this reason, for Polo interest is a *principle of education* (2019), and its *structural increase* in the student is one way to understand its principal purpose. To educate is to share the most valuable human interests with young people; helping them at the level of synderesis by helping them adopt a *global orientation* towards what is humanly valuable (Izaguire & Moros, 2007).

Understood in this way, education is a perfection *in common* that goes beyond educator and learner since neither of them can provide themselves with it without the other, or on their own account. And yet, it is also a perfection that each of them *demands* and possesses. Educators perfect themselves by helping students acquire these habits or intrinsic perfections, and students perfect themselves by acquiring them with the help of the educator. We must leave behind the view that educator and learner are subjects between which there are superimposed relationships and understand that the "intersubjective is in each subject" (Polo, 2017, p. 140). And so the educator-learner duality, insofar as they are people, "is not a sum, but instead each one is *with-whom*" (2016a, p. 139).

Therefore, we can speak of intrinsic perfections that are essential but at the same time, *in common* or *in duality*: perfections that each one has thanks to the other. Nobody participates in personalised education on his own account because each intervention opens itself to a correspondence, it must *give way* to the next one, without which it is not possible or is frustrated, and so both teaching and learning are exercised in an intersubjective space recreated *in common* by the educator and the learner,

and are not a sum of isolated processes that are *coincidentally* related.

Living-with as perfection *in common* demanded by each of the people who live-with is the area that connects learning and teaching, each of which has its own tasks or assignments, in personalised education. The intrinsic perfection of a radically coexisting being, as is the human person according to Polo, is a growth in living-with and in capacity for living-with: coexisting more and better with the others.

It is specifically by promoting the coexistence of learners from younger generations that educators perfect themselves. Teaching is oriented towards learning, but learning is also oriented towards teaching young people. Nobody should keep what they have learnt to themselves because virtues are not inherited; instead, each generation must start anew (Martínez Priego, 2019). Educator and learner integrate themselves and cooperate with an ongoing task (Polo, 2015c).

As Orón Semper (2018) notes, the teacher is not a sort of trainer who finishes work, generally fairly tired but without having gained in perfection, as the learner does. According to this author, rather than centring the educational act on the student, it is necessary to centre it "in all of the group of interpersonal relations that a school enables" (2018, p. 241) in the interest of, ultimately, learning to live together.

Personalised education is an intrinsic growth, a growth in virtue, as "the virtuous life is a sort of dialogue or conversation between friends" (Schwartz, 2007, p. 4). To educate is not just to converse, as Jover (1991) notes, since it is a task that pursues its own objectives, but it is done through dialogue, is channelled through it, and is directed towards it, given that people are educated for dialogue. Educating is a back and forth, a coming and going that only occurs in interdependence and cannot be reduced to a linear process (López Quintás, 1997).

Personalised education is a learning-with the teacher and a teaching-with the learner, that is to say, personalised education sees learning and teaching not as individual acts, but at the strictly intersubjective or social level of the essence of each coexistent:

> The personal openness of each individual is equivalent to the being that the human person is, from which social manifestations emerge, which are from the field of the human essence. At this level of manifestation, people are not individuals either, but instead social. The social in people is, then, more than the individual. When the person manifests itself at the level of its essence, it does not therefore do so individually but instead socially. (Sellés, 2007, p. 391)

The social precedes other human manifestations: without it there are no channels for manifestation (Polo, 2015c). In consistence with the coexistential character of the human person, its essential manifestation is *inevitably* social (2016a). The social is the very status of the manifest (2015c). Another way of putting this is that human self-manifestation is not self-sufficient (2015a) or singular (2015b), and yet it continues to be that of each individual.

6. Conclusions

As Altarejos states: "among intersubjective relationships, few lend themselves to existential knowledge as well as those of the educational relationship" (1999, p. 9). In García Hoz's personalised education, the teacher and learner must not be dialectically opposed, but instead must accompany one another (Altarejos, 1999), and from Polo, this accompaniment is understood as *perfecting in common* of essences of radically *co-existent* beings who are in a common world that is not merely physical, but culturally mediated (Rodriguez Sedano & Aguilera, 2011). And the accompaniment or encounter is real in each one, not a *tertium quid*. As *co-existents*, educator and learner continue one another and achieve a certain plenitude with the other, promoting the alterity, the *otherness* of the other (Romero Iribas, 2018) or, in the words of Polo, promoting the existence of *more other* in the world with whom to coexist (2016a), so that education is above all the perfecting of living-with.

Polo's pedagogy is not a pedagogy of successive isolated actions and superimposed relationships, but of culturally mediated dialogic intersubjective areas, and it considers curriculum content as a means, a *platform* for the growth of coexistence (Orón Semper, 2018) and as relatively indeterminable *a priori* (Polo, 2015c). In this sense, more than a process that is distinguished from a result, personalised education must, after Leonardo Polo, be considered as a path that gradually coincides with its destination (Orón Semper, 2018), with educated living-with between teachers and students being an end in itself, as well as a necessary initiation into society and its types as channels of personal manifestation.

Note

[1] In all of the quotations, the italics are from the originals.

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Present and future of Teachers' Information Literacy in compulsory education*

Presente y futuro de la Competencia Informacional Docente en educación obligatoria

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Abstract:

The levels of Self-Perceived and Observed Information Literacy for a sample of in-service teachers and future teachers of Primary and Secondary Education are analysed as a whole and by its components of Searching for, Evaluating, Processing and Communicating Information. To do so, two validated tools are used which enable us to obtain Self-Perceived Information Literacy levels (through a self-assessment questionnaire) and Observed Information Literacy levels (through performance measures) from 442 in-service teachers and future teachers of 7 educational institutions in 4 provinces of Castile and Leon (Spain). The results of the descriptive and inferential analyses show that the Self-Perceived Information Literacy is overestimated compared to the Observed Information Literacy for all groups, especially among future Primary Education teachers, with the in-service Secondary Education teachers showing the least difference between self-perception and performance. The Observed Information Literacy is at its best level among the Secondary Education teachers and lowest level among the future Primary Education teachers. At each educational level the performance of in-service teachers is always higher than the performance of future teachers, indicating the preponderance of experience versus the generational effect. The components of the Observed Information Literacy with the lowest

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values for all groups are Searching for and Evaluating Information and, therefore, specific training activities are recommended.

Keywords: information literacy, primary education, secondary education, teacher training, in-service teacher training, information evaluation.

Resumen:

Se analizan los niveles de Competencia Informacional Auto-percibida y Competencia Informacional Observada de una muestra de docentes en activo y futuros docentes de Educación Primaria y Educación Secundaria Obligatoria, tanto globalmente como en las componentes de Búsqueda, Evaluación, Procesamiento y Comunicación de la Información. Para ello, se emplean dos instrumentos validados que han permitido obtener los niveles de Competencia Informacional Auto-percibida (mediante un cuestionario de auto-valoración) y Competencia Informacional Observada (mediante medidas del desempeño) de 442 profesores en activo y futuros profesores en 7 centros educativos de 4 provincias de Castilla y León (España). Los resultados de los análisis descriptivos e inferenciales muestran que la Competencia Informacional Auto-percibida está sobrevalorada frente a la Competencia Informacional Observada en todos los grupos analizados, especialmente entre los futuros profesores de Educación Primaria, con los profesores en activo de Educación Secundaria Obligatoria, mostrando la menor diferencia entre la auto-percepción y el desempeño. La Competencia Informacional Observada presenta el mejor nivel en el profesorado de Educación Secundaria Obligatoria en activo y el más bajo en los futuros profesores de Educación Primaria. En cada nivel educativo el desempeño del profesorado en activo es siempre superior al del futuro profesorado, indicando la preponderancia de la experiencia frente al efecto generacional. Las componentes de Competencia Informacional Observada con valores inferiores en todos los grupos son la Búsqueda y la Evaluación de la Información, por lo que son recomendables acciones de formación específicas.

Descriptores: competencia informacional, educación primaria, educación secundaria, formación de profesores, formación continua, evaluación de la información.

1. Introduction

The use of information and communication technologies (ICT) in the compulsory stage of education has many facets that must be thoroughly analysed in order to improve the digital and information literacy of teaching staff, both in-service teachers and those training to join in the future. One of these facets is the level of competence that teachers and future teachers have in extracting, evaluating, selecting, managing and communicating information, usually from the internet, that they will then use in the classroom. These activities can be grouped into one teaching competence named Information Literacy (Area and Guarro, 2012), which, al-

though very similar to Digital Teaching Competence (INTEF, 2017), focuses more specifically on the components of Searching for Information, Evaluating Information, Processing Information and Communicating Information (Area and Guarro, 2012), and which is the approach that will be used in this article.

It is also important that this diagnosis is as realistic as possible, that is, that it accounts for actual levels of competence (based on measuring performance) rather than self-perceived levels, obtained through self-assessments or personal evaluations. Thus, we will distinguish between Observed Information Literacy and Self-Perceived Information Literacy, using validated diagnostic tools for each of them, in order to check if there are significant differences between the two levels of competence and if these differences depend on the group analysed. This distinction is important because, as we shall see, the majority of studies carried out on teaching staff in Spain are based on self-assessments and they may not reflect the reality in schools or the true performance level of these teachers. This discrepancy will be particularly important in the case of future teachers, who, for generational reasons, are assumed to have a digital literacy that does not always correspond to reality.

In order to make as comprehensive a diagnosis as possible, a total of 442 subjects were analysed from four different groups within Compulsory Education in Castile and Leon: in-service Primary Education teachers, in-service Compulsory Secondary Education teachers, future Primary Education teachers (students of the Bachelor's degree in Education) and future Compulsory Secondary Education teachers (students of the Master's Degree in Secondary Education), using data obtained in different areas and universities in the region.

Thus, the research questions that this paper addresses are: What is the Self-Perceived Information Literacy and Observed Information Literacy of in-service and future Primary Education and Compulsory Secondary Education teachers in Castile and Leon? Is the Self-Perceived Information Literacy overestimated compared to the Observed Information Literacy? Are there differences in the levels of different components of Information Literacy? How does this diagnosis affect teacher training activities?

1.1. Digital and information literacy of in-service teachers

In-service Primary Education (PE) and Compulsory Secondary Education (CSE) teachers play a very important role in the development of their students' competences, including the specific case of digital and information literacy. Evidently, teachers must acquire the competences they want to teach their students first; you cannot teach a competence correctly if you do not possess it yourself. However, the case of digital and information literacy corresponds to a societal need that, in many cases, emerged after the training period

of the in-service teachers, meaning it must be acquired through ongoing training activities and specific refresher programmes.

Several research studies in Spain have addressed the topic of assessing the digital and/or information literacy of in-service teachers at different educational levels. One group of studies focus specifically on PE level teachers with most of them showing that although this group considers itself to have a sufficient level of digital competence, it lacks certain training and is unaware of many tools and resources that could be useful. This is the case of recent studies carried out by Camacho and Esteve (2018) in 15 autonomous regions in Spain; Llamas and Macías (2018) in the region of Madrid; Lores et al. (2019) in the region of Valencia; and Rossi and Barajas (2018) in Catalonia.

Another body of work focuses specifically on CSE teachers, such as the study by Álvarez and Gisbert (2015) with teachers from all over Spain, who perceive themselves as having a good level of information literacy when in reality they show significant gaps in key aspects of evaluating, managing and transforming information. Falcó (2017), with secondary school teachers in Aragón, also shows that they consider themselves to have an average level of performance in personal ICT use but show a low level of didactic use.

A third set of studies compares the level of digital and information literacy of in-service teachers at different educational levels. For example, Area et al. (2016), with PE and CSE teachers from 15 autonomous regions in Spain, find differences in the ICT integration profile depending on the educational level, as did Suárez-Rodríguez et al. (2018) with PE, CSE and University teachers in the region of Valencia. However, Guillén-Gámez et al. (2020) find no differences in the Digital Teaching Competence of a sample of pre-school (PS), PE and CSE teachers in the region of Madrid depending on the educational level being taught.

This same situation is found outside of Spain: it is clear that a large proportion of in-service teachers still lack adequate digital and information literacy, as highlighted in recent review articles such as those by Fernández-Batanero et al. (2020) or Svoboda et al. (2019), which analyse papers focused on all educational levels in an international context and recommend starting training activities with in-service teachers, especially in the more applied and pedagogical aspects.

1.2. Digital and Information literacy of future teachers

At the same time, the digital and information literacy and ICT use of future PE teachers in Spain has also been examined, studying different cohorts of students in different universities. The general result of these studies is that future teachers perceive themselves to be competent in general aspects, especially those related to using browsers

and searching for information, but less competent in more didactic aspects, such as the creation of teaching content or processing of information.

These findings are maintained at university level in more recent research, such as that by Casillas et al. (2019) with future PS teachers in Castile and Leon; Caldeiro et al. (2019) with PS and PE students in Galicia; Girón Escudero et al. (2019) with PS and PE students in Castilla-La Mancha; or Pascual et al. (2019) and Rodríguez-García et al. (2019) with PE teachers in Asturias and Andalusia.

At an international level, the review article by Starkey (2020) also emphasises the differences between the 'general' digital literacy of future teachers, which is not specific to their profession but corresponds to the skills of the general population, and specific digital literacy which includes teaching and professional applications.

Research on the group of future CSE teachers in Spain has been carried out by surveying students of the Master's Degree in Secondary Education (MSE) at different universities. In general, this research shows that the level of digital literacy of these future teachers is that of a normal user, but their level of knowledge of specific pedagogical tools is usually very low, as indicated in recent studies by Cózar et al. (2019) with MSE students in Castilla-La Mancha; or Moreno et al. (2020) with MSE students in Ceuta; and Napal et al. (2018) with MSE teachers in Navarra. The study by Gómez-Trigueros et al. (2019) with future teachers at all levels (PS, PE and CSE) in the region of Valencia also shows very superficial knowledge of specific pedagogical tools and a low level of digital literacy.

1.3. Digital Literacy versus Information Literacy

Many of the aforementioned studies focus on digital skills and ICT use in general in schools at different levels of education, and not on Information Literacy specifically. There is also an institutional tool in Spain for diagnosing Digital Literacy, part of the Common Digital Competence Framework for Teachers (INTEF, 2017), which adapts the European Digital Competence Framework for Citizens v2.1, DIGCOM (Carretero et al., 2017; Ferrari, 2013) and the European Framework for the Digital Competence of Educators, DIGCOMPEDU (Redecker, 2017).

However, the main activity that teachers do in the classroom is to use the Internet as a tool to search for information. As shown in the study by Losada et al. (2017), more than 93% of the activities involving the use of ICT proposed by year 5 and 6 PE teachers in the Basque Country relate to searching for and/or acquiring information and these results are confirmed in the review article by Colás et al. (2018). De Aldama and Pozo (2016) also report that the majority (more than 92%) of the tasks proposed by PS and PE teachers for using ICT require searching for in-

formation, and they highlight the difference between what teachers think about their ICT use and what they actually do in the classroom. Camacho and Esteve-Mon (2018) also identify searching for information as one of the most common activities in the PE classroom.

It is within this activity of searching for, evaluating, selecting and using information that teachers' Information Literacy plays a decisive role, as an element that has a major influence on teachers' Digital Competence. As Spiteri and Rundgren (2020) point out, teachers need to know how to handle and manage information and pass these skills on to their students: this includes searching for information, evaluating the data obtained, summarising it and communicating it to others.

Therefore, we see the interest in analysing not only Information Literacy overall but also its components of Searching for, Evaluating, Processing and Communicating Information (Area and Guarro, 2012). Analysing these four components separately will provide a more accurate picture of both teachers' self-perception and performance in this competence.

1.4. Self-perception versus performance in Information Literacy

A common feature of the abovementioned studies on teachers' or future teachers' digital or information literacy is that they tend to collect data through questionnaires, surveys and tools that gather self-perceived competence from the users themselves. They are therefore self-assessments of the ability to solve different tasks related to the use of computers and the Internet. This widespread use of self-perception questionnaires in studies on teachers' digital and information literacy has been highlighted in recent review articles by Starkey (2020) or Svoboda et al. (2020).

Assessing teachers' self-perceived competence is important as many studies link self-perception and self-efficacy as decisive elements for including new technologies. Thus, Drossel et al. (2017), with CSE teachers from 5 countries, show that self-efficacy in the use of ICT is a predictor of its use in the classroom, and that this self-perceived efficacy is much more important than a positive view of the advantages of using ICT. This same importance of self-efficacy is illustrated by Svoboda et al. (2019) by analysing works from different countries.

However, the self-perceived competence study masks the diagnosis and does not provide a complete picture of the situation, as it tends to be overestimated by in-service teachers, as reported by Hatlevik (2017) and Maderick et al. (2016) with PE and CSE teachers or Dinçer (2018) with future teachers. This same gap between the subjects' self-perceived level and the actual Information Literacy acquired is shown in several recent studies in the field of education (Dolenc and Šorgo, 2020; García-Llorente et al., 2020).

Although a detailed analysis of the meaning and methods of assessing competence is beyond the scope of this article, we agree with Area and Guarro (2012) in taking an approach to competence that includes situation analysis, the use of knowledge and metacognition. It is using knowledge (or "action" according to these authors) in particular that reinforces the need to look for competence indicators in actual performance and task execution, rather than in self-assessment of such. De Pablos (2010), when talking about the development of digital and information literacy, also points out that "The development of competences, as stated above, requires their verification in practice through the fulfilment of clearly established performance criteria" (p. 10).

Therefore, the importance of assessing Information Literacy by means of tools (suitably validated) that not only analyse self-perceived literacy but also include measuring observed literacy based on the subjects' performance is clear.

2. Material and Methods

2.1. Hypothesis and research process

Based on the literature review and research questions, the following hypotheses were developed:

- H1: For all the groups analysed, the levels of Self-perceived Information Literacy will be higher than the levels of Observed Information Literacy, both overall and in each of their components.
- H2: The levels of Observed Information Literacy will be different between teachers and future teachers at each educational level (PE or CSE), with in-service teachers scoring higher.

This study is based on a quantitative approach, using a non-experimental cross-sectional research design. Consequently, a diagnostic assessment was carried out on in-service PE and CSE teachers and future teachers (students of the Bachelor's degree in PE and Master's Degree in SE). In this way, the research process consisted of evaluating and analysing the variables of interest in their natural context, without manipulating them, and identifying, thanks to this diagnosis, areas for improvement that could be a priority when training in-service and future teachers in the key competences of Information Processing and Digital Literacy.

2.2. Sample

This study is based on in-service and future PE and CSE teachers in Castile and Leon (Spain), with a convenience sample of 442 participants: 199 future PE teachers, 161 future CSE teachers, 37 PE teachers and 45 CSE teachers. Out of the total sample, 31.3% were men and 68.6% were women, with a similar distribution by sex in the 4 groups.

It is important to note, with regard to the sample assessed in this study

named *future CSE teachers*, that it is made up of students of the Master's Degree that qualifies them to teach both Compulsory Secondary Education and the Spanish Baccalaureate, Vocational Training and Official Language Teaching. Despite the high heterogeneity of this group, this conceptual simplification has been made throughout the article, taking into account that most of the future teachers will join this educational level, in order to facilitate the reading of this article.

The average age of the in-service teaching staff is 45.37 years old, with 35% of the teachers having 15 or less years of teaching experience, 40% between 16 and 25 years and the remaining 25% with more than 25 years' experience. Although the PE teachers are on average 2 years older, both groups of in-service teachers say that they have been using computers and the Internet for almost the same length of time (the former for around 22 years on average in both cases and the latter for around 17 years on average). Meanwhile, while the average age of the future CSE teachers is more than 28 years old, the average age of the PE students is less than 22. In general, the future teachers report an average of around 15 years' experience using computers and 13 using the Internet.

As for how often they use ICT for different purposes, while both the teachers and students have a similar distribution of hours per week devoted to getting information from the Internet, it is the students who report spending significantly more time scrolling through social media, playing games or watching audiovisual content (series, films, etc.).

While the Department for Education of the Regional Government of Castile and Leon gave their informed consent for data to be collected from the teaching staff, it was the coordinators of the degree programmes involved who gave their consent for data to be collected from the students.

2.3. Variables and tools

Both Observed Information Literacy (OIL) and Self-perceived Information Literacy (SIL) were included as study variables, overall and broken down into the 4 components usually evaluated when they are studied: Searching for, Evaluating, Processing and Communicating Information.

In relation to tools, those used have been previously validated and are suitable from a technical and psychometric point of view:

- Observed IL: The tool used contains 18 exercises made up of slider scale items which assess the components of Searching for (6 exercises), Evaluating (3 exercises), Processing (5 exercises) and Communicating Information (4 exercises). This tool has been validated in previous studies (Bielba et al., 2015; Bielba et al., 2017), both at a content level, using expert judges, and at a statistical level, using Item Response

Theory techniques (one-parameter Rasch models). To be specific, the 4 components have a reliability of over .75 (using the ordinal Cronbach's alpha statistic), item-total correlations over .2 for 65% of the items, acceptable Infit scores for 97% of the items and acceptable Outfit scores for 85%.

- Self-perceived IL: An adaptation of the IL-HUMASS tool (Pinto, 2010; Rodríguez-Conde et al., 2012) was used, updated based on the indicators of the European DigComp framework (Carretero et al., 2017; Redecker, 2017), which is composed of 18 Likert-scale items with 5 levels: 4 items for Information Searching, 5 for Evaluating, 4 for Processing and 5 for Communicating. This tool is statistically valid (Rodríguez-Conde et al., 2012), obtaining a reliability score of over .7 for the 4 components and .89 for the entire scale, as well as an empirical 4-component factor analysis that absorbs more than 50% of the variance and matches the theoretical distribution of the items almost perfectly.

The two tools were developed using the *Google Forms* platform, through a single questionnaire available at https://bit.ly/2JHsRIV.

2.4. Data analysis

The data analysis includes descriptive and inferential analyses and was carried out using Microsoft Excel and SPSS V.25 software, with a significance level of 5%. In order to avoid bias related to sample size, the hypothesis tests include the effect size calculation (Cohen, 1969; Tomczak and Tomczak, 2014). Since the assumptions of normality are not met, non-parametric tests are applied, calculating the effect size statistic eta squared (η^2) in the case of the Kruskal-Wallis H test, and r in the case of the post-hoc pairwise comparisons (based on the statistic obtained in the Mann-Whitney U test) (Tomczak and Tomczak, 2014). The values are interpreted according to the criteria established by Cohen (1969).

3. Results

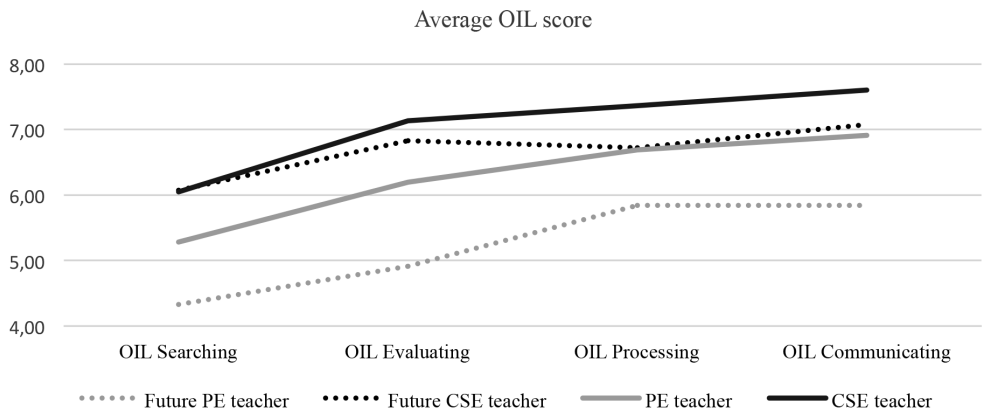
3.1. Diagnostic assessment

Let us first look at the levels of Observed IL and Self-perceived IL in the 442 subjects who participated in the diagnostic assessment.

In the case of Observed IL, Graph 1 shows that the highest score in all of the components is that of the in-service CSE teachers, while the lowest score in all of the components corresponds to the future PE teachers. The PE teachers obtained intermediate scores, slightly lower in some components than those of the future CSE teachers. One noteworthy result is that the mean is always higher for the in-service teachers than the corresponding future teachers at the same educational level.

In terms of the IL components evaluated, Graph 1 shows a low level in Searching for Information in all groups, while the highest performance scores correspond to the Processing and Communicating components.

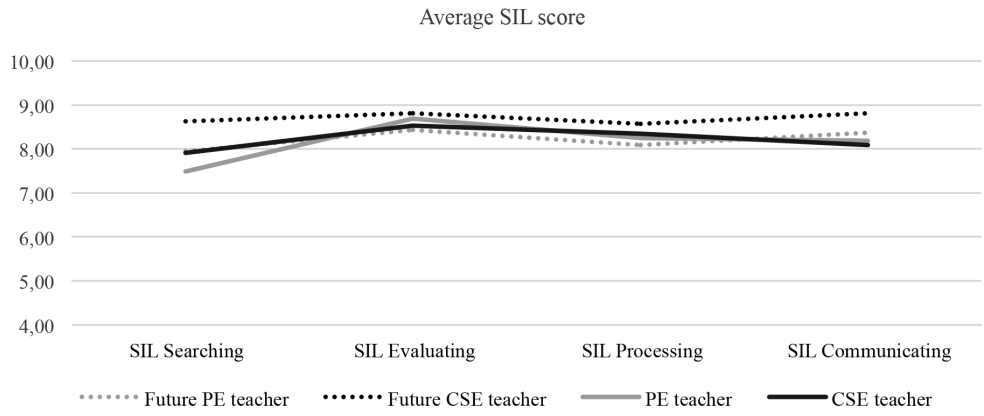
GRAPH 1. Observed IL (OIL) components for all groups.



Source: Own elaboration.

In contrast, when we look at Self-perceived IL, we can see in Graph 2 that the average scores are higher, with no major differences between the components analysed, and very similar for all the groups assessed. The group of future CSE teachers achieved slightly higher average scores than the other groups.

GRAPH 2. Self-perceived IL (SIL) components for all groups.



Source: Own elaboration.

Table 1 shows, for all of the groups, the mean scores and dispersions measured by the coefficient of variation (CV) for both Observed IL (OIL) and Self-perceived IL (SIL), overall and by component, as well as the differences between them (SIL-OIL score).

TABLE 1. Mean and dispersion of Observed IL and Self-perceived IL and SIL-OIL difference.

		Searching	Evaluating	Processing	Communicating	Overall
Future PE teacher	OIL Mean (CV)	4.33 (1.33)	4.91 (0.89)	5.84 (1.61)	5.84 (1.61)	5.24 (0.33)
	SIL Mean (CV)	7.95 (0.18)	8.43 (0.14)	8.09 (0.17)	8.37 (0.14)	8.21 (0.10)
	SIL-OIL	3.62	3.52	2.25	2.53	2.97
Future CSE teacher	OIL Mean (CV)	6.07 (0.30)	6.83 (0.35)	6.72 (0.39)	7.07 (0.30)	6.67 (0.21)
	SIL Mean (CV)	8.62 (0.16)	8.81 (0.15)	8.57 (0.10)	8.81 (0.13)	8.70 (0.11)
	SIL-OIL	2.55	1.98	1.85	1.74	2.03
PE teacher	OIL Mean (CV)	5.28 (0.39)	6.20 (0.44)	6.69 (0.34)	6.91 (0.35)	6.13 (0.20)
	SIL Mean (CV)	7.48 (0.20)	8.69 (0.11)	8.24 (0.17)	8.19 (0.18)	8.15 (0.15)
	SIL-OIL	2.20	2.49	1.55	1.28	2.02
CSE teacher	OIL Mean (CV)	6.05 (0.30)	7.14 (0.33)	7.36 (0.27)	7.60 (0.27)	7.04 (0.17)
	SIL Mean (CV)	7.91 (0.16)	8.53 (0.12)	8.34 (0.14)	8.09 (0.15)	8.22 (0.11)
	SIL-OIL	1.86	1.39	0.98	0.49	1.18

Source: Own elaboration.

The Self-perceived IL (SIL) measurements show, in addition to high and similar scores in all of the components, small and comparable dispersions in all of the groups. Therefore, at the self-perception level, only minor differences are found between the in-service PE and CSE teachers and the future teachers, all of whom consider themselves to have a good level of IL in all of the components.

However, there are noticeable differences in the performance of these groups. In the case of Observed IL (OIL), Table 1 shows that there are big differences between the groups evaluated, both in the mean value (overall and by component) and in the size of the dispersion. The best scores and lowest dispersion are obtained by the in-service CSE teachers, closely followed by the future CSE teachers, and the worst scores by the future PE teachers. The high variability of the scores obtained by the group of future PE teachers is striking and an indication of very different levels of individual performance within this group.

In terms of SIL-OIL differences, the group with the biggest differences in all of the IL components is the future PE teachers, with the biggest difference be-

tween their self-assessment and actual level of performance. The PE teachers and future CSE teachers have intermediate scores which vary according to the component evaluated, while the in-service CSE teachers' self-assessments are the most in line with their actual level of performance.

It is worth highlighting the large difference between the SIL and OIL for the in-service and future PE teachers in the Evaluating component (more than 3.5 points) and the large difference between the SIL and OIL in the Searching component for the future PE and CSE teachers (more than 2.5 points).

3.2. Inferential analysis

In order to analyse the significance of these differences overall and by component, hypothesis tests were carried out between the groups considered, taking into account the differences between subjects with the same professional status (in-service teachers or future teachers), as well as between subjects at the same educational level (PE or CSE).

Table 2 shows the significant differences obtained in the OIL (Observed IL) scale. Highly significant differences can be seen in all of the components analysed, with high overall effect sizes in the OIL. The main differences are found between the future PE and CSE teachers in all of the components, with a high effect size in the overall OIL. Similarly, significant differences are seen between the PE and CSE teachers in the overall OIL, also with high effect sizes.

TABLE 2. Hypothesis test (Kruskal-Wallis H) between groups for the OIL.

	χ^2	p. (η^2)	Groups	χ^2	p. (r)
OIL_ SEARCH	62.07	<.001 (.135)	Future PE teacher - Future CSE teacher	-101.42	<.001 (.391)
OIL_EVAL	47.57	<.001 (.102)	Future PE teacher - Future CSE teacher	-83.51	<.001 (.325)
OIL_PRO-CESS	16.59	<.001 (.031)	Future PE teacher - Future CSE teacher	-38.39	.026 (.144)
OIL_COMM	28.66	<.001 (.059)	Future PE teacher - Future CSE teacher	-58.07	<.001 (.229)
OIL_OVE-RALL	86.13	<.001 (.190)	Future PE teacher - Future CSE teacher	-108.98	<.001 (.421)
			Future PE teacher - PE teacher	-61.58	.046 (.203)
			PE teacher - CSE teacher	-79.59	.031 (.374)

Source: Own elaboration.

Table 3 shows the significant differences obtained in the SIL (Self-perceived IL) scale. Although overall significant differences are seen again in all of the components, the effect sizes in this case are moderate. In terms of the differences between groups, the differences observed between the future PE and CSE teachers are again noteworthy, although in this case the effect sizes are moderate.

TABLE 3. Hypothesis test (Kruskal-Wallis H) between groups for the SIL.

	χ^2	p. (η^2)	Groups	χ^2	p. (r)
SIL_ SEARCH	36.05	<.001 (.076)	Future PE teacher - Future CSE teacher	-67.72	<.001 (.264)
			Future CSE teacher - CSE teacher	-74.15	.003 (.252)
SIL_EVAL	9.76	.021 (.015)	Future PE teacher - Future CSE teacher	-41.19	.013 (.163)
			Future PE teacher - Future CSE teacher	-45.59	.004 (.179)
SIL_PRO-CESS	11.66	.009 (.020)	Future PE teacher - Future CSE teacher	-52.27	.001 (.208)
			Future CSE teacher - CSE teacher	-79.77	.001 (.260)
SIL_COMM	22.71	<.001 (.045)	Future PE teacher - Future CSE teacher	-80.184	<.001 (.318)
			Future CSE teacher - CSE teacher	-72.50	.004 (.236)

Source: Own elaboration.

4. Discussion

The results of the diagnostic assessment carried out have answered the research questions regarding the level of Self-perceived IL and Observed IL of in-service and future teachers in Castile and Leon, with the dimensional structure of the differences found also analysed.

Interestingly, the results differ according to whether we look at Self-perceived IL or Observed IL, an issue already reported by several studies in the field of education (Dinçer, 2018; Dolenc and Šorgo, 2020; García-Llorente et al., 2020; Hatlevik, 2017; Maderick et al., 2016). The results associated with Self-perceived IL show a high level in all of the groups, with no significant differences between them. These results are in line with those obtained in previous studies in Spain (Álvarez and Gisbert, 2015; Camacho and Esteve-Mon, 2018; Falcó, 2017; Rossi and Barajas, 2018) and internationally (Fernández-Batanero et al., 2020; Slovoboda et al., 2019), which show that teachers consider themselves competent in the use of ICT even though this is not their real level of

performance. This confirms Hypothesis H1 of the study, showing the overestimation of self-perceived IL by in-service teachers and especially future teachers. In this regard, Dinçer (2018) makes an interesting proposal when he suggests using the term *competence/literacy perception scale* instead of *competence/literacy scale* when the measurements are obtained from self-assessment questionnaires.

The case of the future teachers is particularly noteworthy because, for generational reasons, they are usually assumed to have a high level of mastery of new technologies and of the digital world, corresponding to their own self-image (SIL). However, this high self-perception is not maintained when they are given performance tasks. These results add to the lack of knowledge of teaching-specific applications by future teachers, especially PE teachers, reported in several studies in Spain (Casillas et al., 2019; Caldeiro et al., 2019; Girón Escuderoet al., 2019; Lores et al., 2019; Pascual et al., 2019; Rodríguez-García et al., 2019) and in other countries (Dinçer, 2018; Gudmundsdottir and Hatlevik, 2018), painting a bleak picture for when the time comes for these future teachers to join schools. It would therefore be advisable to review the training plans of future teachers in order to promote these essential aspects in their professional work (Dinçer, 2018; Girón Escudero et al., 2019; González-Trigueros et al., 2019, Gudmundsdottir and Hatlevik, 2018; Lores et al., 2019; Maderick et al., 2016).

The future CSE teachers performed at a higher level than the future PE teachers and closer to the in-service PE teachers, but at a lower level than the in-service CSE teachers, showing an intermediate level consistent with that reported in previous studies (Cózar et al., 2019; Gómez-Trigueros et al., 2019; Moreno et al., 2020; Napal et al., 2018).

As for hypothesis H2, it is confirmed that in-service teachers have higher levels of Observed IL than future teachers, irrespective of the educational level. These results show that experience in using computers in the classroom and in solving tasks on a regular basis improves IL levels more than the training received in the PE or MSE Degrees, and that it is greater than the mere "generational" effect. This same positive influence of professional experience on the level of ICT integration in the classroom has already been reported in Spain (Area et al., 2016) and abroad (Drossel et al., 2017; Spiteri and Rundgren, 2020).

Therefore, a number of theoretical and practical implications can be derived from this study that may be of interest. The theoretical implications include the need to use measurements based on actual performance and not on self-assessment scales when beginning to study IL in different teaching groups. Self-perceived measurements mask the true situation of in-service teachers in primary and secondary schools and do not account for the true level of future teachers (Bachelor's or Master's degree

students), showing an overestimated image that may distort the diagnosis.

The practical implications are mainly related to the need for IL training in the in-service and future teacher groups, with a special focus on Primary Education and the Searching for and Evaluating Information components. In the case of the in-service teachers, the high score they give their IL level in the self-assessment may affect teacher training initiatives: if these teachers have the (wrong) perception of having a good level of IL, they will not request specific training activities that would be highly useful for them. In the case of the future teachers, the results point to the need to reinforce training in digital and information literacy, especially within Bachelor's degrees in Education. It is highly advisable to train future teachers, especially with regard to Searching for and Evaluating Information, who have very poor results (and very different to their high self-assessment) for this group.

5. Conclusions

The sample of in-service teachers show moderate levels of Observed Information Literacy, although they are significantly lower than the levels they give in their self-assessment of their IL level.

The Searching and Evaluating components were the ones with the lowest performance scores in the in-service teacher group and those that should be specifically encouraged among in-service teaching staff, especially given that a large number of ICT-related activities carried out in the classroom involve searching for relevant information on different subjects.

The case of the future PE and CSE teachers is particularly noteworthy, with their performance always lower than that of the in-service teachers at the same educational level, disproving the supposed "generational" effect according to which young people have a higher level of internet and digital literacy. The future PE teachers, in particular, show large dispersions (that is, high variability between subjects) and a significantly lower level than the other groups and their group also has the biggest difference between self-perception and reality. All of this should inspire an in-depth debate on the IL training they receive in undergraduate degrees, focusing specifically on the skills of searching for and evaluating information, which are the components where this group showed the worst performance.

This study has several important limitations that need to be addressed. Firstly, it should be pointed out that although the study covers several schools and areas, it is limited to just one autonomous region, and that the sampling procedure applied was non-probabilistic for convenience, which may be associated with a bias in the representativeness of the sample. Thus, it would be advisable to collect data from other regions and to increase the number of subjects (in-service teachers in particular) in order to reduce

these biases and improve the generalisability of the results.

Secondly, as already mentioned in the methodology, it is important to bear in mind that the sample of future CSE teachers comes from students of the Master's Degree in Secondary Education. Consequently, this group has very heterogeneous characteristics, so it would be of interest in future work to divide this population into more homogeneous subgroups, making it possible to identify whether there are different levels of Information Literacy among these subgroups.

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Linguistic competences at schools. Comparison of students with attention deficit hyperactivity disorder, specific language impairment and typical development

Competencias lingüísticas en el contexto escolar. Comparación entre alumnado con trastorno por déficit de atención con hiperactividad, trastorno específico del lenguaje y desarrollo normotípico

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Abstract:

Research shows a high comorbidity between attention deficit hyperactivity disorder (ADHD) and language problems, similar to those seen in subjects with specific language impairment (SLI) (Helland et al., 2014; Korrel et al., 2017).

Our goal was to assess the differences in semantic and pragmatic linguistic competences between students with ADHD versus SLI and children with typical development. A total of 142 students, ages 7-12 (M=9.27; SD=1.41), from public, subsidised and private schools participated in the study: 48 (33.80%) with ADHD, 47 (33.09%) with SLI, and 47 (33.09%) with normal development. Linguistic competences were evaluated using the Objective and Criterion-referenced Language Suite

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(Batería de Lenguaje Objetiva y Criterial, or BLOC, Puyuelo et al., 1997).

We found significant differences in semantic (F (2.148)=86.99, p<.001) and pragmatic language skills (F (2.428)=83.00, p<.001) between the three study groups: ADHD, SLI and typical development.

Students with ADHD present fewer deficits in aspects of semantic language than those with SLI. However, they face greater obstacles in certain uses of pragmatic language compared with the children with SLI and typically developed students. They face significant difficulties in the use of pragmatic language in different communication situations and social interaction, and in different functions and uses.

Keywords: ADHD, SLI, student, linguistic skills, pragmatics, semantics.

Resumen:

El trastorno por déficit de atención con hiperactividad (TDAH) frecuentemente se asocia a alteraciones en el lenguaje, similares a las manifestadas por las personas con trastorno específico del lenguaje (TEL) (Helland et al., 2014; Korrel et al., 2017). Nuestro objetivo es analizar las diferencias en las competencias lingüísticas semánticas y pragmáticas, entre alumnado con TDAH, TEL y niños con desarrollo normotípico.

Incluimos 142 alumnos, de 7-12 años (M=9.27; SD=1.41), procedentes de enseñanza pública, concertada y privada: 48 (33.80 %) con TDAH, 47 (33.09 %) con TEL y 47 (33.09 %) con desarrollo normotípico. Evaluamos las competencias lingüísticas mediante el instrumento denominado, *Batería de Lenguaje Objetiva y Criterial - BLOC* (Puyuelo et al., 1997).

Encontramos diferencias significativas en las competencias lingüísticas semántica (F (2.148) =86.99, p<.001) y pragmática del lenguaje (F (2.428) =83.00, p<.001), entre los tres grupos de estudio: TDAH, TEL y desarrollo normotípico.

Los alumnos con TDAH presentan menos déficit en aspectos del lenguaje semántico que los alumnos con TEL. Sin embargo, se enfrentan a mayores obstáculos en aspectos relacionados con el uso del lenguaje pragmático que los alumnos con TEL y que los niños con desarrollo normotípico. Sus dificultades son significativas para usar el lenguaje pragmático en distintas situaciones de comunicación y de interacción social, en diferentes funciones.

Descriptores: TDAH, TEL, alumno, competencias lingüísticas, pragmática, semántica.

1. Introduction

Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder (American Psychiatric Association [APA], 2013) characterized by a persistent symptoms of inattention, hyperactivity and impulsivity. A lifelong condition, it is more common among men, occurring in 5.9% of youth and 2.5% of adults (Faraone et al., 2021).

ADHD is one of the most common neurodevelopmental and psychiatric disorders in children and adolescents, and is more prevalent in boys than girls, with a ratio of 2:1 in children and 1.6:1 in adults (APA, 2013).

Specific language impairment (SLI) is a neurodevelopmental disorder and more specifically, a communication disorder (APA, 2013). It is characterised by a delay in language acquisition and development and may affect some or all linguistic domains, including phonological, semantic, morphosyntactic and pragmatic areas (Acosta et al., 2016; Buiza et al., 2015; Mendoza, 2016; Ramirez et al., 2017; Szenkman et al., 2015).

Linguistic similarities have been noted in subjects with ADHD and SLI (Bellani et al., 2011; Hutchinson et al., 2012). However, the estimates of comorbidity between the two disorders vary widely, ranging in some cases between 8 and 90% (Brown, 2010), and in others, between 20 and 40% (Noger and Artiga, 2009), with a prevalence of between 12.4-19.5% (Ercan et al., 2021). Conversely, ADHD is reported in up to 30% of patients with language disorders (Mueller & Tomblin, 2012).

Although there are deviations, the high rate of comorbidity is mainly seen in terms of inattention (McGrath et al., 2011). Tromblin & Mueller (2012) argue that despite the fact similarities between the two cognitive systems, executive functions and procedural learning, the two disorders are phenotypically different. According to other authors, such as Mendoza (2016), these disparate results can be attributed to myriad considerations regarding the relationship between the two disorders.

People with ADHD frequently have language difficulties in tasks that require semantic organization and pragmatic skills (Uekermann et al., 2010; Ygual, 2011), revealing, in these cases, more language problems than typically developing people (Korrel et al., 2017).

In terms of semantic skills, studies show that children with ADHD have a developmental delay in the executive functions of verbal working memory, which affects semantic language competence. These children thus present working memory and language content difficulties (Moraleda et al., 2018) and develop verbal strategies at a slower pace (Sowerby et al., 2011) than healthy controls.

Children with SLI present difficulties in adding new words to their lexicons (Coady, 2013), as well as in naming (Acosta et al., 2014; McGregor et al., 2010) and definition tasks (Evans & Coady, 2010).

The deficit in verbal working memory has an effect on semantic skills, impacting one's ability to understand or explain the sequencing of concepts, which can have repercussions on memory and the learning of vocabulary words (Shaw et al., 2012).

Pragmatic deficits in children with ADHD (Ygual, 2011) sometimes present as short narratives that are poorly organised, confusing, lack coherence and a causal connection, and wherein the order of events

are changed (Lambalgen et al., 2008). This results in diminished verbal production and a delay in the detection of grammatical errors (Peets & Tannock, 2011).

Students with ADHD and SLI score lower in social narrative conversations than their typically developing peers. Children with ADHD are neither precise nor concise in selecting their answers (Staikova et al., 2013), their verbal output is excessive (Crespo-Eguílaz et al., 2016) and they provide fewer responses regarding characters and descriptive aspects such as location, time, actions, obstacles, goals, thoughts and desires (Flory et al., 2006).

According to Rodríguez-Meirinhos & Ciria-Barreiro (2018), pragmatic deficits may affect the way in which individuals with ADHD understand the structure of a dialogue or the language inferences. Subjects with SLI find it difficult to adapt the formulation of their responses to the role of a character, or to the scene or social context in which the character is involved (Buiza et al., 2015). They also omit crucial information about characters, plans, actions and the states of mind of the main characters (Andreu et al., 2011).

Students with ADHD and SLI score lower than typically developing children in pragmatic aspects of language (inappropriate initiation, stereotyped language, use of context and nonverbal communication), thus revealing the pragmatic difficulties of both groups (Helland et al., 2014). Among SLI students with ADHD, 80.7 % present limitations in their linguistic skills, mainly in terms of pragmatic competence (Helland et al., 2016).

The semantic and pragmatic impairments that students with ADHD experience could be related to a deficit in executive function. This has a negative impact on performance, attention, organisation, working memory, behavioural rigidity and impulsivity (González-Castro et al., 2013; Vaughn et al., 2011), thus generating obstacles in the conscious and temporary manipulation of information which is necessary to perform complex cognitive activities. Such activities include the comprehension and internalisation of language and the ability to analyse and synthesise verbal information (Barkley, 2011).

This study aims to investigate semantic and pragmatic linguistic competence among students with attention deficit hyperactivity disorder, students with language impairment and typically developing children. The specific objectives are:

a) To analyse linguistic competences differentiated according to diagnosis (ADHD and SLI, respectively), and to compare these competences against typically developing students.

b) To analyse and compare each of the specific areas that make up the semantic and pragmatic linguistic competence, in the three groups.

2. Method

2.1. Participants

The screening and selection of the participants was as follows.

The screening involved 170 students between the second year of primary education and the first year of secondary education

(Compulsory Secondary Education, ESO). The students were from public, subsidised and private schools in Seville and its province, and from the Seville Association of Parents and People Affected by Hyperkinetic Disorder (Asociación Sevillana de Padres y Afectados con trastorno Hipercinético, ASPATHI).

Guidance counsellors, the heads of the Educational Guidance Teams (EOE) of the different schools, and the clinical professionals of the Parents' Association provided referrals for potential research participants. The inclusion criteria at the screening stage were as follows: a) between ages 7 and 12; b) a diagnosis of ADHD, without a comorbid disorder, issued by the Child and Adolescent Mental Health Team (USM-IJ); c) a diagnosis of the communication disorder SLI, without a comorbid disorder, with a clinical diagnosis issued by a psychiatrist, paediatrician, or public or private psychologist; d) students without a diagnosis of any psychological disorder or alteration.

Finally, 67 students with ADHD were selected in the screening phase, 55 with SLI and 48 typically developing students. Among the students selected, 41 attended public schools, 89 subsidised schools and 13 private schools, with 27 from the Parents' Association.

At the selection stage, the inclusion criteria were as follows: a) a written informed consent signed by the parents/legal guardians; b) between the ages of 7 to 12; c) a diagnosis of ADHD and/or SLI without comorbid disorders; d) an intelligence quotient (IQ) > 80, according to the Kaufman Brief Intelligence Test (Kaufman & Kaufman, 2009) and e) verbal aptitude with an IQ of > 80, evaluated using the Peabody Picture Vocabulary Test (Dunn & Dunn, 2006). After these criteria were applied, 28 students were excluded.

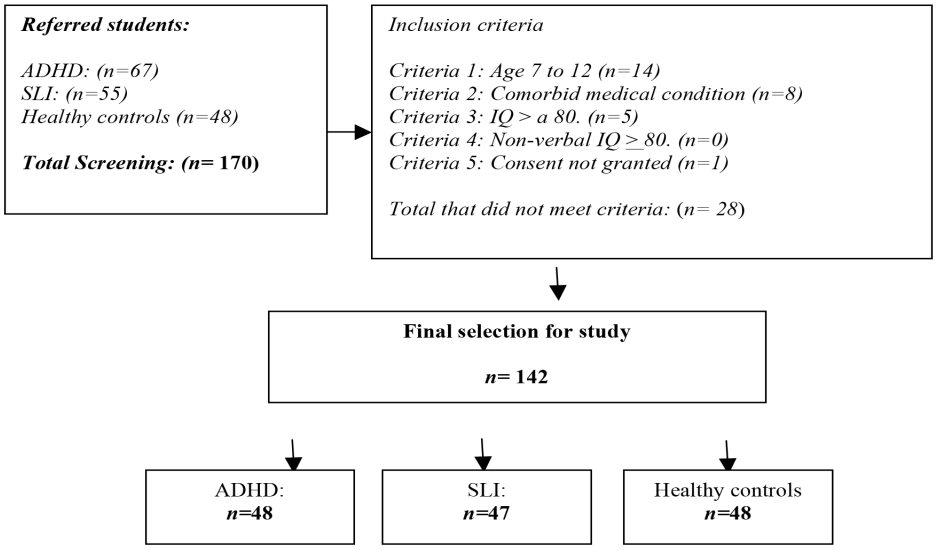
Ultimately, the sample consisted of 142 children between 7 and 12 years of age (M=9.27, SD=1.41), 64 boys (45.07%) and 78 girls (54.92%), distributed between three groups: a) students with ADHD, (n=48), b) students with SLI, (n=47) and c) typically developing students (n=48). Among the children with ADHD, 44 (91.6%) were taking medication (Table 1 and Graph 1).

TABLE 1. Demographics and origin of the final sample.

Educational Centres	**ADHD (%)**	**SLI (%)**	**Healthy controls (%)**
Public	7 (19.4 %)	15 (41.6 %)	14 (38.8 %)
Subsidised	15 (18.9 %)	31 (39.2 %)	33 (41.7 %)
Private	09 (90 %)	01 (10 %)	-
Parents' Association	17 (100 %)	-	-
Gender	**ADHD (%)**	**SLI (%)**	**Healthy controls (%)**
Female	39 (81.3 %)	20 (42.6 %)	19 (40.4 %)
Male	9 (18.8 %)	27 (57.4 %)	28 (59.6 %)

Key: ADHD: Attention deficit hyperactivity disorder; SLI: Specific language impairment.
Source: Own elaboration.

GRAPH 1. Participant selection procedure and configuration of the study groups.



ADHD: Attention deficit hyperactivity disorder; SLI: Specific language impairment.
Source: Own elaboration.

3. Assessment tools

The Objective and Criterion-referenced Language Suite (Batería de lenguaje objetiva y criterial, or BLOC, Puyuelo et al., 1997) comprehensively evaluates four basic language areas (morphology, syntax, semantics and pragmatics) in children between the ages of 5 to 14, through 580 items that simultaneously measure comprehension and expression. The test includes the following tasks to elicit a response: naming pictures, verbally completing incomplete sentences, formulating sentences and induced language.

The semantics model consists of eight blocks of ten items each, for a total of 80 items that measure agent-action, action-object, dative, instrumental, locative, modifiers: quantifiers and time and sequence modifiers. It focuses on content to assess knowledge of semantic relationships as well as spatial and temporal knowledge.

The pragmatics model consists of 13 blocks of ten items each, for a total of 130 items that measure saying hello and goodbye; getting people's attention; requesting/granting/refusing permission; demanding specific information; demanding confirmation or denial, who/what; where/when; from whom; why/how; making comments/showing approval/disapproval; directly requesting action be taken; indirectly requesting action be taken and complaining. The suite explores the use of an individual's locutionary, illocutionary and perlocutionary capacity as a speaker engaged in dialogue in different contexts, where he/she has to orally express states of mind, goals and attitudes of a set of characters appearing in different scenes.

Reliability is verified using the KR-20 coefficient; 0.90 in the semantics module and 0.97 in the pragmatics module.

The Peabody Picture Vocabulary Test (PPVT-III) (Dunn & Dunn, 2006) evaluates the level of verbal aptitude and receptive vocabulary. It is used as a screening test between the ages of 2 years 6 months and 90. It includes 192 test items (16 sets of 12 items, 8 different age groups). Reliability values range between 0.89 and 0.99, according to the author.

Brief Intelligence Test (K-BIT) (Kaufman & Kaufman, 2009) evaluates verbal and non-verbal intelligence (ages 4 to 90). It is composed of two scales: the Vocabulary subtest, which includes expressive vocabulary (45 items) and definitions (37 items), and the Matrices subtest, which is related to non-verbal and visual-spatial reasoning (48 elements). According to the authors, the reliability of the vocabulary scale ranges between 0.76 and 0.95; for the matrices, it is between 0.74 and 0.93; and the reliability of the composite IQ is between 0.90 and 0.98.

The Peabody and the K-BIT tests were also used to determine the equivalence of the IQ and verbal aptitude variables for the study groups.

4. Procedure

Information sessions were held with all of the parties involved in the study: the families, management teams, educational teams and guidance departments of the public, subsidised and private schools and of the Association of Parents with ADHD, in order to explain the research, objectives, procedure, etc.

All doubts that were raised at the sessions were discussed and families and school administrators were asked to provide consent to carry out the study.

After parents provided written informed consent, each student was evaluated individually in two 60-minute sessions (two hours total), in a quiet classroom. At the first session, the Peabody Picture Vocabulary Test (PPVT-III) (Dunn et al., 2006) and the Brief Intelligence Test (K-BIT) (Kaufman & Kaufman, 2009) were applied. The semantics and pragmatics linguistic modules were evaluated during the second session using BLOC (Puyuelo et al., 1997). Once the process was completed, each student received a personal report on his/her results.

5. Statistical Analysis

We performed a one-way ANOVA with a significance level $\alpha = .05$. Where the homoscedasticity assumption was met, ANOVA was used. When the required model was not met, we performed Welch's t-test. In order to estimate the significant differences between groups, we carried out post-hoc pairwise comparisons using Tukey's method for multiple comparisons under the assumption of homoscedasticity, and the Games-Howell multiple comparisons procedure under the assumption of heteroscedasticity. The results were thus generated by comparing and contrasting the three groups (ADHD, SLI and the control group) × two domains of language skills (semantic and pragmatic), at the global level and according to the specific areas.

6. Results

We applied the aforementioned tests to determine the equivalence of the groups for the age variable and the variables related to IQ. The results showed no significant differences between the study groups (ADHD, SLI and healthy controls) for the age, IQ and verbal aptitude variables (Table 2).

TABLE 2. Demographic and clinical characteristics of the sample consisting of 48 students with attention deficit hyperactivity disorder (ADHD), 47 with specific language impairment (SLI) and 48 healthy control subjects Ages 7 to 12 (M=9.27, SD=1.41).

	ADHD n=48		**SLI** n=47		**Healthy controls** n=48		F	p	**Total Sample** n=142	
Age (M + SD)	9.44	1.42	9.21	1.50	9.14	1.32	.575	564	9.27	1.41
IQ -K-BIT (M+SD) Cognitive IQ	97.31	11.50	96.23	8.21	98.61	8.75	.919	402	97.38	9.59
Peabody (M+SD) Verbal aptitude	103.75	13.95	97.98	9.60	98.23	15.18	3.04	051	99.95	13.33

Key: ADHD: Attention deficit hyperactivity disorder; SLI: Specific language impairment; IQ: Intelligence quotient; *p≤0.05; **p≤0.01; ***p≤0.001.
Source: Own elaboration.

We found significant differences between the study groups (ADHD, SLI and the healthy controls) in the semantic (F (2.148) =86.99; p<0.001) and pragmatic (F (2.428) =83.00; p<0.001) linguistic competences evaluated.

Following the post hoc comparisons, we found statistically significant differences between students with ADHD and SLI (p<0.001), on the one hand, and between the children with ADHD and the healthy controls (p<0.001), on the other.

According to the data, students with ADHD (M=58.0; SD=5.97) had fewer problems in semantic competence than students with SLI (M=51.2; SD=7.05). The competences measured included identifying meaning through a linguistic code and the knowledge of the way certain elements of a sentence serve to construct meaning, such as agent, patient or dative, subject or object, instrumental or locative, and spatial-temporal, qualitative and quantitative notions. However, they had more difficulties than the healthy controls (M=69.7; SD=3.91).

In terms of pragmatic skills, students with ADHD (M=64.6; SD=11.61) were less competent in using language in different communication situations and social interactions for different functions or uses (asking for information, saying hello, complaining, organizing, etc.). They also presented more problems than students with SLI (M=82.1; SD=13.20) and the healthy controls (M=116.7; SD=6.26) with respect to being able to put themselves in the communication situation of the character assigned to them and saying what that character would say in that particular situation.

In relation to the second objective, results showed significant differences between the groups investigated (ADHD, SLI and the healthy controls) in all of the specific areas related to semantic and pragmatic language skills (Table 3).

TABLE 3. Semantic and pragmatic language skills analysed in a comparison between the sample groups of the study: 48 students with attention deficit hyperactivity disorder (ADHD), 47 with specific language impairment (SLI) and 48 healthy control subjects ages 7 to 12 (*M*=9.27, *SD*=1.41).

Semantic area	***F***	***gl1***	***gl2***	***p***
AS1	12.15	2	80.15	0.001**
AS2	21.70	2	84.61	0.001**
AS3	84.22	2	79.94	0.001**
AS4	55.54	2	84.89	0.001**
AS5	102.68	2	81.81	0.001**
AS6	62.34	2	79.70	0.001**
AS7	54.14	2	82.67	0.001**
AS8	122.81	2	88.03	0.001**
Pragmatic area				
AP1	46.60	2	75.59	0.001**
AP2	240.07	2	79.23	0.001**
AP3	165.55	2	82.43	0.001**
AP4	321.44	2	85.43	0.001**
AP5	150.86	2	75.01	0.001**
AP6	109.98	2	89.47	0.001**
AP7	78.18	2	87.72	0.001**
AP8	55.80	2	77.48	0.001**
AP9	85.60	2	77.41	0.001**
AP10	150.61	2	69.66	0.001**
AP11	129.55	2	71.85	0.001**
AP12	236.75	2	87.51	0.001**
AP13	242.97	2	85.99	0.001**

Key: AS: semantic area; AS1: agent-action; AS2: action-object; AS3: dative; AS4: instrumental; AS5: locative; AS6: modifiers; AS7: quantifiers and AS8: time and sequence modifiers; AP: Pragmatic area; AP1: saying hello and goodbye; AP2: getting people's attention; AP3: requesting/granting/refusing permission; AP4: demanding specific information; AP5: demanding confirmation or denial; AP6:who/what; A7: where/when; AP8: from whom; AP9: why/how; AP10: making comments, showing approval and disapproval; AP11: directly requesting action be taken; AP12: indirectly requesting action be taken; and AP13: complaining. *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.
Source: Own elaboration.

The specific analysis, according to linguistic competence levels, revealed the following results. At the semantic level, there were significant differences between students with ADHD and SLI for the following variables: AS2 (action-object), ($p<0.035$) in the use of action and the object of the exercise; AS3 (dative), ($p<0.029$) in the use of indirect complements, the person to whom the action is directed or received; and AS6 (modifiers), ($p<0.001$) in the use of qualities that express features of the noun.

On the other hand, there were also differences for these same variables between the students with ADHD and the healthy controls (Table 4). For all variables, the children with ADHD outperformed the subjects with SLI, though they had greater difficulties than the typically developing students in using an action-object and naming an attribute through adjectives that modify or distinguish an element or object (Table 3).

We also found significant differences between the groups with ADHD and with SLI in the use of the AS4 (instrumental) variable ($p<0.001$) and in the naming of objects or instruments with which the subject or agent performs the action. Here the students with ADHD presented fewer difficulties ($M=9.04$; $SD=0.82$) than those with SLI ($M=6.06$; $SD=1.98$).

We also found significant differences between the children with ADHD and the typically developing group (Table 4). The students with ADHD scored lower than the healthy controls on AS1 (agent-action), when asked to identify the action taking place in a picture and the agent or person who performed it; AS5 (locative), when using prepositional phrases to indicate the location of an action (in, on, etc.); AS7 (quantifiers), when using adverbs of quantification (many/few) that establish quantity, number or degree; and AS8 (time and sequence modifiers), when employing knowledge of temporality and spatiality with pronouns, all, none (Table 4).

TABLE 4. Specific analysis of semantic and pragmatic areas of language in a comparison between the sample groups of the Study: 48 students with attention deficit hyperactivity disorder (ADHD), 47 with specific language impairment (SLI) and 48 healthy control subjects ages 7 to 12 ($M=9.27$, $SD=1.41$).

	ADHD		SLI		Healthy controls		ADHD SLI	ADHD Healthy controls
Semantic area	***M***	***SD***	***M***	***SD***	***M***	***SD***	***p***	***p***
AS1	9.33	0.85	8.95	1.14	9.74	0.44	0.172	0.012*
AS2	8.58	1.23	7.93	1.25	9.2	0.67	0.035*	0.004**
AS3	7.43	1.78	6.57	1.44	9.38	0.70	0.029*	0.001**
AS4	9.04	0.82	6.06	1.98	9.29	0.68	0.001**	0.232
AS5	5.66	1.73	5.87	1.31	8.44	0.71	0.791	0.001**
AS6	7.35	1.49	5.65	1.60	8.4	0.68	0.001**	0.001**

AS7	6.35	1.63	5.80	1.34	7.93	0.73	0.182	0.001**
AS8	4.27	1.36	4.42	1.29	7.23	0.83	0.838	0.001**
Pragmatic area (AP)								
AP1	7.43	1.69	8.23	1.46	9.59	5.7	0.042*	0.001**
AP2	4.16	1.54	7.04	1.48	9.29	0.65	0.001**	0.001**
AP3	4.66	1.71	6.68	1.36	9.14	0.75	0.001**	0.001**
AP4	3.18	1.36	6.21	1.71	9.01	0.85	0.001**	0.001**
AP5	5.4	1.72	6.4	1.17	8.8	0.49	0.003**	0.001**
AP6	4.95	1.97	6.17	1.38	9.17	1.14	0.002**	0.001**
AP7	5.22	1.97	6.1	1.41	8.5	1.03	0.028*	0.001**
AP8	6.95	1.96	6.21	1.41	8.4	0.65	0.091	0.001**
AP9	5.95	1.95	6.06	1.42	8.5	0.65	0.951	0.001**
AP10	5.33	2.36	5.95	1.53	9.2	0.47	0.282	0.001**
AP11	4.9	2.28	6.06	1.78	9.17	0.60	0.021*	0.001**
AP12	2.16	1.83	5.55	2.23	9.10	1.25	0.001**	0.001**
AP13	3.66	1.49	5.27	1.44	8.65	0.84	0.001**	0.001**

Key: ADHD: attention deficit hyperactivity disorder; SLI: specific language impairment; AS: semantic area; AS1: agent-action; AS2: action-object; AS3: dative; AS4: instrumental; AS5: locative; AS6: modifiers; AS7: quantifiers and AS8: time and sequence modifiers. AP: Pragmatic area; AP1: saying hello and goodbye; AP2: getting people's attention; AP3: requesting/granting/refusing permission; AP4: demanding specific information; AP5: demanding confirmation or denial; AP6: who/what; A7: where/when; AP8: from whom; AP9: why/how; AP10: making comments, showing approval and disapproval; AP11: directly requesting action be taken; AP12: indirectly requesting action be taken; and AP13: complaining. *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.
Source: Own elaboration.

The results for the pragmatic language competence variables showed significant differences between students with ADHD and SLI in terms of being able to use the following variables within a narrative discourse: AP1 (saying hello and goodbye) ($p<0.042$) in expressions of courtesy; AP2 (getting people's attention) ($p<0.001$), with the sender asking the receiver for information; AP3 (requesting/granting/refusing permission) ($p<0.001$) in asking for a favor or refusing a demand; AP4 (demanding specific information) ($p<0.001$) in expanding on or repeating information; AP5 (demanding confirmation or denial) ($p<0.003$), in the use of "yes" or "no"; AP6 (who/what) ($p<0.002$), in the use of interrogative pronouns "who" and "what"; AP7 (where/when) ($p<0.028$) in the use of the interrogative adverb "where" and establishing a time "when"; AP11 (direct requests for action) ($p<0.021$) in formulating an explicit demand or order; AP12 (indirectly requesting action be taken) ($p<0.001$) in which the sender offers a suggestion to the receiver; and AP13 (complaining) ($p<0.001$), expressing dissatisfaction with a situation.

These same variables were also significant between the students with ADHD

and those with normal development (Table 4). For all variables, the children with ADHD scored lower than students with SLI and the healthy controls in the use of language in different communication and social interaction situations, as well as in terms of the different functions or uses of pragmatic language (Table 4).

Likewise, significant differences were observed between students with ADHD and the healthy controls in the variables AP8 (from whom), where the communication interactions "from whom" and "for whom" are employed; AP9 (why/how), when using the expressions "why" or "how"; and AP10 (making comments, showing approval and disapproval), where the students with ADHD had greater difficulties using interrogatives in a context of communication and social interaction when a visual stimulus was presented (Table 4).

7. Discussion

According to our results, the students with ADHD present fewer problems in semantic-linguistic skills than the children with SLI, though the students with ADHD had greater semantic difficulties than the typically developing group when identifying and defining meaning through a linguistic code.

These results are consistent with those of Idiazábal, Guerrero & Sánchez (2006), who found that semantic errors were more common in the answers of children with ADHD than typically developing students. They are also concomitant with the findings of Sowerby et al. (2011), who observed that participants developed verbal responses at a slower pace. Furthermore, they coincide with the results obtained by Ygual (2011), who showed that children with ADHD did not perform as well in vocabulary comprehension or definition.

It is likely that the deficits found in the students with SLI and the children with ADHD are due to limitations in their capacity to process information simultaneously, their inhibitory control ability and their verbal working memory, a finding that coincides with those of Schreiber et al. (2014) and Hutchinson et al. (2012).

Consequently, a working memory deficit appears to significantly influence semantic-linguistic ability, thus affecting the ability to understand or explain the sequencing of concepts. This, in turn, has an impact on word learning (vocabulary), both in children with SLI and in students with attention deficit hyperactivity disorder.

The findings corresponding to the group of students with ADHD and those with typical development show that the children with ADHD have difficulties with pragmatic skills. This is in line with the results obtained by Staikova et al. (2013) on the use of verbal expressions among these children, and with the results of Crespo-Eguílaz et al. (2016), with respect to the production of their verbal responses.

In addition, the students with ADHD had trouble describing what was happening in visuals where different characters appear in different situations and differ-

ent communicative contexts. The results we obtained are consistent with those of Gallardo-Paúls et al. (2010). In this study, it was evident that the students with ADHD made arguments that did not contribute to the dialogue; on the contrary, they hindered dialogue and did not take into account the point of view of the characters or the possibility of the interviewer disagreeing. The students with SLI in this study presented similar issues, as also found in previous studies by Buiza et al. (2015), when asked to say what the character would have said and putting themselves in the character's shoes.

The deficits detected more predominantly in the students with ADHD than the children with SLI may well be explained as shortcomings in theory of mind, i.e., difficulties providing information on emotional responses, goals, or the thoughts and desires of characters in a story (Zegarra-Valdivial & Chino, 2017), or simply as a deficit in pragmatic social communication (APA, 2013).

On the other hand, the pragmatic difficulties affecting the students with ADHD could be due to the executive deficits evidenced in this study, which could in turn have an adverse effect on students asked to determine the communicative context of images and respond to questions posed by the interviewer. In addition, students with ADHD have difficulties in verbal working memory and in focused and sustained attention, aspects which are quite apparent in school contexts. In this sense, our findings coincide with those of Barkley (2011), who found that approximately 30% of children with ADHD present deficits in pragmatic skills. The findings are also concomitant with the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA, 2013), which indicates that children with inattention show difficulties in pragmatic language competence. Thus, it seems safe to state that the attentional deficits characteristic of students with ADHD directly influence the results obtained in this study, specifically in the pragmatic area.

In conclusion, according to these findings students with ADHD present fewer difficulties than children with SLI but face greater difficulties than the healthy controls in semantic competences (identifying meaning through a linguistic code). In addition, their performance is poorer than that of students with SLI and the healthy controls in pragmatic skills (communicative use and interaction).

This study had certain limitations. On the one hand, the sample size is small, which thus limits the extrapolation of the results. On the other hand, only semantic and pragmatic language skills were examined.

Future research should expand the sample size; extend the research to include morphological, syntactic and phonetic/phonological linguistic competences; and analyse the effect of medication on students with ADHD when performing standardised language tests. Despite these limitations, the results obtained in this study open new lines of research related to language in children with SLI and ADHD.

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Validation of an instrument to evaluate art apps that enable the development of artistic skills in digital settings*

Validación de un instrumento de evaluación de apps de arte que permiten desarrollar la competencia artística en entornos digitales

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Abstract:

Apps that help art teachers work on areas relating directly to artistic competences are a valuable digital teaching resource. In this study we call them art apps. Aims: To validate a measurement instrument for digital applications based on the results we obtained in the first design phase, and to modify the items and identify factors. Methodology: We carried out three processes in this second phase. An exploratory factorial analysis, a pre-confirmatory analysis, and a confirmatory factorial analysis adjusted by the global or absolute fit indices for all of the scales of the test. This was

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based on an evaluation battery comprising 98 items distributed in three dimensions and four scales: artistic dimension (expressive and perceptive domain), technical dimension, and pedagogical dimension. Results: We obtained a definitive model of all the scales with optimal values in all the adjustment indicators. Discussion/Conclusion: After completing this process, we designed the definitive test based on the results of the fitting. Taking into account the resulting number of items (74), the number of factors (8), and the wording of each one, we consider it to be a useful and viable tool for evaluating art apps by connecting their artistic, technical, and pedagogical dimensions according to the needs and possibilities of the educational activities.

Keywords: construct validity, reliability, artistic competence, apps, evaluation instrument.

Resumen:

En el contexto digital encontramos como recurso didáctico apps que permiten al profesorado de artes trabajar aspectos relacionados directamente con la competencia artística y a las que en este estudio hemos denominado *apps de arte*. Objetivo: validar un instrumento de medida de aplicaciones digitales a partir de los resultados obtenidos en la primera fase de su diseño para ajustar los ítems e identificar los factores. Metodología: en esta segunda fase se han seguido tres procesos. Un análisis factorial exploratorio medinet, un análisis preconfirmatorio y el análisis factorial confirmatorio ajustado mediante los índices de Ajuste Global o Absoluto en todas las escalas de la prueba. Se partió de una batería de evaluación compuesta por 98 ítems distribuidos en tres dimensiones y cuatro escalas: dimensión artística (dominio expresivo y perceptivo), dimensión técnica y dimensión pedagógica. Resultados: se consigue un modelo definitivo de todas las escalas con unos valores óptimos en todos los indicadores de ajuste. Discusión/Conclusión: una vez finalizado el proceso se diseña la prueba definitiva en base a los resultados del ajuste. Teniendo en cuenta el número de ítems resultante (74), el número de factores (8) y la redacción de cada uno, consideramos que es una herramienta útil y viable para evaluar apps de arte articulando las dimensiones artística, técnica y pedagógica conforme a las necesidades y posibilidades de las experiencias formativas.

Descriptores: validez de constructo, fiabilidad, competencia artística, apps, instrumento de evaluación.

1. Introduction

Digital innovations have changed human relations that are based around technology (Schwab, 2016) as well as ways of teaching and learning (Prensky, 2001). Art, in its drive to connect with the contemporary, has assimilated all of the technological innovations relating to teachers and learners in education (Hart, 2001; Giráldez, 2013), redesigning and identifying its own models (Escaño González, 2010; Saura Pérez, 2011; Marín García, 2011; Caeiro Rodríguez, 2015). This interrelation with the digital has opened art education up

to mobile (Iglesias, 2012; Vernet, 2014), ubiquitous (Burbules, 2014), and hybrid learning contexts (Aiello & Willem, 2004; Bajardi, 2015) creating new educational challenges and opportunities.

Digital applications (apps) designed for use on tablets and smart phones now offer teachers many options for combining the extensive use students make of these digital devices with their rapidly increasing use in class. The world of apps has become ever more important in the arts and their teaching (Navarro Martínez, 2014; Iglesias Antón, 2015; García de Rozas, 2017; Sasiain Camarero-Núñez & Aberasturi Apraiz, 2018; Mora Castro, 2018; Del-Moral et al., 2019). We identify art apps as a category within these applications: art apps are ones intended and designed to enable participation in art activities or to provide for work on art content (Caeiro Rodríguez, Ordóñez et al., 2020). This differentiates them from educational (or didactic) apps, which are principally intended to support teaching (Fombona Cadavieco et al., 2020).

Some studies relating to the world of apps have considered technical and pedagogical questions relating to the use of mobile devices such as tablets and smart phones (Sarrab et al., 2014; Camilleri & Camilleri, 2019). We have found research that focusses on the design of easy-to-use assessment tools, considering their software and interfaces (Norman, 1988; Norman & Drapper, 1988) or relating to general didactic aspects (Prieto, 2015) and heritage education (López Benito, 2013; Martín Ezama, 2016; Luna et al., 2019). In the international sphere, we have found works, such as those by Walker (2011, 2013), who has focussed on integrating technology and digital apps in the academic sphere. These studies have inspired and been the foundation of further research (Malone & Peterson, 2013; Bentrop, 2014; Cherner et al., 2014; Lee & Cherner, 2015; Lee & Kim, 2015; Bouck et al., 2016; Papadakis et al., 2017). However, there are few instruments that provide art teachers with guidance, using quality criteria and indicators, on how to make better use of apps in the educational setting, on the lines of those by Vicent (2013), Hernández (2014), Rico Rico (2017), and Kortabitarte et al. (2017), whose works form our starting point, comparing their development and design with other instrument validation processes relating to digital competence (Fernández et al., 2018; García & Córdoba, 2020).

Accordingly, it is essential to carry out research that provides academic guidance for artistic education proposals teachers create in which artistic competence must be linked to the digital universe. In the first phase of our research, we identified expressive apps (used for creating and doing art or working on artistic processes: painting, drawing, sculpting, photography, video, etc.) and perceptive apps (these allow for discovering art and artistic contexts: visiting museums, seeing works of art, exhibition spaces, etc.). This evaluation instrument, which is designed specifically for use by primary and secondary school teachers, positions itself here. This analysis corresponds to the second stage of research, where we have made progress in the validation and reliability of the instrument.

2. Methodology

2.1. Objectives

The main aim of this work is to validate a measurement instrument for digital applications on the basis of the results obtained in the first phase of its design, taking into account the three dimensions and four scales we obtained to adjust the items and identify the factors. The aim is for the evaluation matrix to combine the necessary conceptual and technical characteristics to measure, using criteria of quality, apps that help develop artistic competences in both the expressive and perceptive domains and also to connect the technical and pedagogical aspects from the perspective of the needs of primary and secondary-level art education.

2.2. Sample

The sample analysed comprised 125 apps identified in a general search of different websites and downloaded from Google Play and Apple's App Store depending on whether the devices run iOS or Android and selected in accordance with the following criteria:

- Apps designed around art activities that involve carrying out expressive processes (drawing, painting, sculpting, animating, photography) or perceptive processes (seeing, visiting, discovering, analysing, etc. work of art).
- A variety in the selection of art apps that reflects processes relating to developing artistic skills, including apps covering the whole spectrum of activities.
- A balanced sample with regards to the artistic dimension and expressive or perceptive activities in line with the number of apps found for each activity.
- Apps that can be used at the primary and/or secondary educational levels.

After the apps were selected, eight active academics from the fields of fine art, history of art, and architecture from five different universities who are experts in emerging digital technologies evaluated them. In order to evaluate the 125 apps, we distributed them among the experts in accordance with their knowledge and historical, creative, and educational profiles. The measurement used to evaluate each item was a Likert-type scale with ratings from 0 to 6, including a "Not Applicable" option for rating items that are not relevant to the dimension assessed in each part of the scale and so do not apply to the app being evaluated (it might be designed for photography and not for video, or be perceptive instead of expressive).

2.3. Instrument

2.3.1. Preparation of the evaluation matrix

To develop the evaluation matrix for the apps, we designed a system of dimensions and indicators that considers art education content for primary and secondary educational stages, as well as the technical and pedagogical aspects that the art apps should combine as they are instruments for use in educational contexts that include digital possibilities and not just creative contexts. This enabled us to set the same criteria for the items to be selected and assessed by the evaluators at all stages of the project (Muñiz & Fonse-

ca-Pedrero, 2019). Accordingly, and starting at all times from artistic competences, the instrument comprised three major dimensions that identify technical and pedagogical possibilities associated with the artistic processes themselves (expressive or perceptive) in the art apps.

2.3.2. Method

The methodology we used to establish this measurement instrument in its first phase was the attribute agreement analysis method, which determines the degree of agreement between experts (Aiken, 2003). By using this, we were able to eliminate items that did not have optimal values, and in this first phase we went from more than 500 initial items to the eventual 98. This technique enabled us to measure the degree of agreement between different experts when they evaluate the items and so reject any items that did not reach the established threshold.

In the first phase we used the kappa statistic, which is the most widely-used in the social sciences (Escobar-Pérez & Cuervo-Martínez, 2008), to determine the degree of agreement between experts. However, as we used ordinal data, it was necessary to include a coefficient of concordance, Kendall's W, which is of use when asking experts to rank items. Kappa is initially designed for nominal variables with two evaluators and a dichotomous response, and so it was necessary to use Fleiss' kappa for ordinal variables and more than two evaluators. Based on the results of the concordance analysis, we rejected items with scores lower than 2, with the final scales being as follows:

1. Artistic Dimension:
    a) Expressive Scale (28 items).
    b) Perceptive Scale (24 items).
2. Technical Dimension: Technical Scale (21 items).
3. Pedagogical Dimension: Pedagogical Scale (25 items).

2.4. Data analysis

In this second phase we analysed the consistency of the scales used for the initial and final configuration of the measurement instrument using Cronbach's α and McDonald's ω (ordinal reliability). The initial reliability of the scales in the study is included, and we can see that they have excellent values in both indices (Table 1).

TABLE 1. Analysis of initial reliability of the scales in the study (98 Items).

Dimension	Scales	McDonald's ω	Cronbach's α	95% Confidence Interval	
				Minimum	Maximum
D1: Artistic	E1 Expressive	0.953	0.956	0.949	0.970
	E2 Perceptive	0.970	0.970	0.961	0.977
D2: Technical	E3 Technical	0.887	0.883	0.859	0.916
D3: Pedagogical	E4 Pedagogical	0.893	0.887	0.868	0.921

Source: Own elaboration.

The validation process had three phases. First, we analysed all of the items in an exploratory factor analysis (IBM, 2016). This enabled us to determine the number of possible factors that comprise the different scales; following this initial analysis we carried out a first fitting through a pre-confirmatory factor analysis using the FACTOR program (Lorenzo-Seva & Ferrando, 2018). The advantage of this analysis is that it makes it possible to interpret the proportion of the variance for each of the factors, and it enables us to work with polychoric matrices which are the appropriate type for Likert-type scales (Lorenzo-Serva & Ferrando, 2013). Finally, we checked the fit of the model using confirmatory factor analysis. To do this, we used the JASP free software program (JASP, 2019).

We used the diagonally weighted least squares estimation procedure (DWLS) to analyse the indicators of the fit. We chose this because our objective was to obtain a saturation vector that reproduces the observed matrix with the best possible fit. DWLS is recommended when the linear model is inappropriate; for these models this estimator has proven to be more robust than ML and ULS (Li, 2016; Lloret, Ferreres, Hernández, & Tomás, 2017). We fitted the confirmatory factor analysis using the global or absolute fit indices (Montaño Armendáriz, 2014):

- Chi square, which tests the significance of the model (greater than 0.05).
- The root mean square error of approximation (RMSEA). In this index, scales with values below 0.05 (Steiger & Lind, 1980) are classed as valid.
- The goodness of fit index (GFI), which identifies the variability explained by the model. Values greater than 0.90 are considered to be good (Jöreskog & Sörborn, 1986).
- The normed fit index (NFI), where values close to one are recommended (Bentler & Bonett, 1980).
- We have added the incremental comparative fit index (CFI), which indicates a good fit for values close to one and greater than 0.95 (Bentler & Bonett, 1980).

3. Results

3.1. Internal consistency (reliability)

We performed the reliability calculations for the definitive scales using Cronbach's α and McDonald's ω and obtained: in Scale 1. Artistic Dimension Expressive: α= 0.958 and ω= 0.960; in Scale 2. Artistic Dimension Perceptive: α= 0.970 and ω= 0.970; in Scale 3. Technical: α= 0.889 and ω= 0.892; and in Scale 4. Pedagogical: α= 0.896 and ω= 0.900. Tables 2, 3, 4, and 5 show the results by item and the descriptive statistics (Ordóñez & González Fernández, 2021) for the definitive configuration of the different scales.

TABLE 2. Descriptive Statistics, Reliability (McDonald's ω and Cronbach's α), and Correlation by Item: Expressive Scale.

	Mean	*SD*	Item-total correlation	McDonald's ω	Cronbach's α	Skew	Kurtosis
E1	1.476	2.078	0.863	0.955	0.953	0.892	-1.006
E2	1.347	1.976	0.846	0.956	0.953	1.014	-0.686
E3	0.306	1.091	0.368	0.964	0.963	3.664	12.139
E8	1.589	2.134	0.850	0.956	0.953	0.187	-1.129
E9	1.806	2.133	0.901	0.954	0.952	0.532	-1.486
E10	1.476	2.097	0.885	0.955	0.952	0.872	-1.079
E11	0.782	1.523	0.667	0.959	0.956	1.777	1.714
E12	1.274	1.952	0.885	0.955	0.952	1.109	-0.524
E13	1.863	2.100	0.844	0.956	0.953	0.480	-1.491
E15	1.097	1.694	0.747	0.958	0.955	1.410	0.580
E17	1.831	2.140	0.892	0.954	0.952	0.535	-1.464
E18	1.048	1.812	0.745	0.958	0.956	1.315	0.005
E20	0.669	1.447	0.634	0.960	0.957	2.159	3.295
E28	0.782	1.565	0.678	0.959	0.956	1.848	1.856

SD: Standard Deviation.
Source: Own elaboration.

TABLE 3. Descriptive Statistics, Reliability (McDonald's ω and Cronbach's α), and Correlation by Item: Perceptive Scale.

	Mean	*SD*	Item-total correlation	McDonald's ω	Cronbach's α	Skew	Kurtosis
P1	1.863	1.948	0.722	0.722	0.969	0.398	-1.401
P2	1.565	1.897	0.852	0.852	0.967	0.619	-1.247
P3	1.000	1.577	0.783	0.783	0.968	1.348	0.428
P4	1.919	2.015	0.857	0.857	0.967	0.355	-1.509
P5	1.556	1.884	0.875	0.875	0.967	0.575	-1.348
P6	1.323	1.699	0.837	0.837	0.967	0.907	-0.632
P7	1.040	1.522	0.783	0.783	0.968	1.269	0.420
P8	0.702	1.487	0.595	0.595	0.969	2.028	2.676
P9	1.468	1.973	0.645	0.645	0.969	0.891	-0.889
P10	1.605	2.047	0.839	0.839	0.967	0.675	-1.271
P11	1.661	2.052	0.860	0.860	0.967	0.682	-1.277
P12	1.927	2.123	0.852	0.852	0.967	0.399	-1.599
P13	1.379	1.978	0.777	0.777	0.968	0.980	-0.794
P14	0.831	1.486	0.714	0.714	0.969	1.696	1.604
P15	1.242	1.745	0.807	0.807	0.968	0.883	-0.799
P16	1.016	1.546	0.775	0.775	0.968	1.376	0.613

P17	0.750	1.555	0.614	0.614	0.969	1.936	2.174
P18	0.540	1.315	0.587	0.587	0.970	2.483	4.923
P19	1.040	1.736	0.644	0.644	0.969	1.396	0.354
P21	1.137	1.659	0.694	0.694	0.969	1.179	-0.010
P22	0.984	1.443	0.702	0.702	0.969	1.278	0.567
P23	0.952	1.529	0.749	0.749	0.968	1.283	0.111
P24	0.895	1.475	0.715	0.715	0.969	1.644	1.615

SD: Standard Deviation.
Source: Own elaboration.

TABLE 4. Descriptive Statistics, Reliability (McDonald's ω and Cronbach's α), and Correlation by Item: Technical Scale.

	Mean	*SD*	Item-total correlation	McDonald's ω	Cronbach's α	Skew	Kurtosis
T4	1.848	1.723	0.458	0.889	0.886	0.480	-1.082
T5	2.312	1.668	0.692	0.880	0.877	0.138	-1.147
T7	2.192	1.921	0.470	0.889	0.886	0.193	-1.487
T8	1.336	1.718	0.398	0.892	0.889	0.903	-0.612
T9	1.248	1.899	0.684	0.879	0.876	1.107	-0.489
T10	0.896	1.635	0.637	0.882	0.879	1.728	1.458
T12	1.784	2.150	0.674	0.880	0.876	0.585	-1.421
T13	1.312	1.829	0.543	0.886	0.883	0.970	-0.648
T14	1.456	2.018	0.687	0.880	0.876	0.872	-0.981
T15	2.992	2.069	0.561	0.886	0.882	-0.352	-1.520
T16	1.512	1.882	0.612	0.884	0.880	0.789	-0.938
T17	1.232	1.863	0.580	0.884	0.881	1.108	-0.439
T20	0.440	1.201	0.560	0.885	0.884	2.860	6.998
T21	0.592	1.380	0.425	0.891	0.887	2.389	4.372

SD: Standard Deviation.
Source: Own elaboration.

TABLE 5. Descriptive Statistics, Reliability (McDonald's ω and Cronbach's α), and Correlation by Item: Pedagogical Scale.

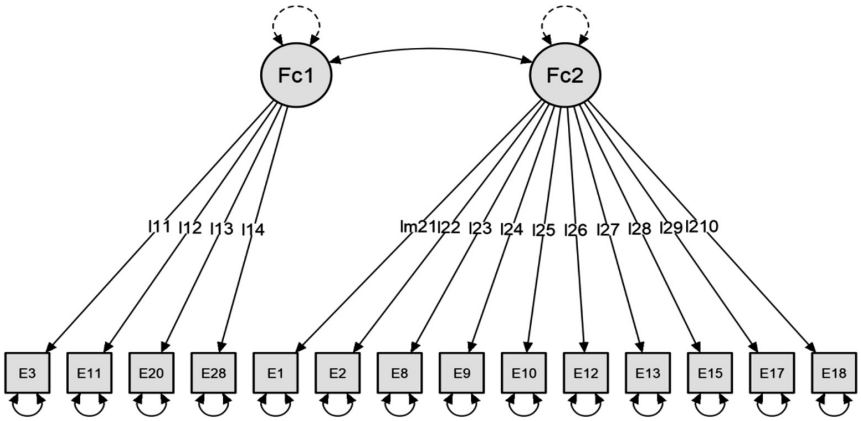
	Mean	*SD*	Item-total correlation	McDonald's ω	Cronbach's α	Skew	Kurtosis
PD1	2.200	1.976	0.567	0.895	0.890	0.204	-1,528
PD2	1.904	1.653	0.643	0.893	0.888	0,404	-0.854
PD3	2.544	1.604	0.673	0.892	0.887	-0.083	-1.023
PD4	3.064	1.324	0.687	0.892	0.888	-0.245	-0.404
PD5	2.824	1.374	0.711	0.891	0.887	-0.076	-0.489
PD6	0.824	1.350	0.574	0.894	0.890	1.505	0.976
PD7	2.184	1.902	0.315	0.901	0.898	0.060	-1.551
PD8	0.648	1.065	0.317	0.900	0.896	1.561	1.819

PD9	1.104	1.373	0.475	0.897	0.893	1.041	-0.002
PD10	1.872	1.475	0.361	0.900	0.895	0.330	-0.779
PD11	2.088	1.680	0.517	0.897	0.891	0.422	-1.009
PD12	2.208	1.643	0.565	0.895	0.890	0.217	-1.098
PD13	1.448	1.766	0.704	0.891	0.886	0.919	-0.552
PD14	0.400	1.063	0.370	0.899	0.895	2.857	7.446
PD15	0.904	1.494	0.312	0.900	0.896	1.503	1.065
PD16	1.456	1.860	0.610	0.894	0.889	0.879	-0.771
PD17	0.536	1.208	0.435	0.898	0.893	2.463	5.150
PD18	0.824	1.617	0.704	0.891	0.887	1.799	1.730
PD19	1.240	1.752	0.622	0.893	0.889	1.085	-0.290
PD20	2.704	1.814	0.349	0.900	0.896	-0.117	-1.261
PD21	0.688	1.573	0.370	0.899	0.895	2.107	2.790
PD23	2.368	1.644	0.342	0.901	0.896	0.128	-1.019
PD25	0.504	1.168	0.167	0.903	0.898	2.536	5.628

SD: Standard Deviation.
Source: Own elaboration.

The results from Scale 1. Expressive (Dimension 1: Artistic), in the initial exploratory factor analysis (EFA) show a total of 6 factors with 28 initial items (SPSS v. 24). A pre-confirmatory factor analysis (PFA) with the FACTOR program reduces the number of factors to 2 and the items to 14. With these data, we performed a confirmatory factor analysis (CFA) with the JASP program, fitting the model using the global or absolute fit indices: c2 (91) = 4209.416, p = 0.999; RMSEA = 0.000 [0.000 – 0.000]; GFI = 0.995; NFI = 0.993, and CFI = 1.000 (Graph 1).

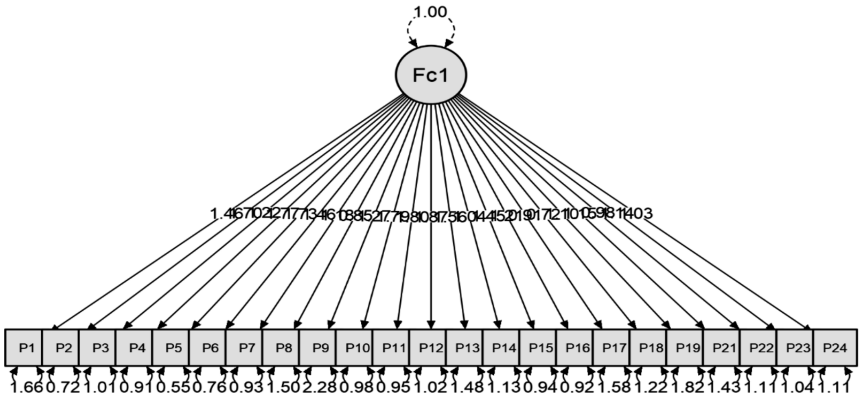
GRAPH 1. Expressive Scale Model. JASP Program.



Source: Own elaboration.

The results from Scale 2. Perceptive (Dimension 1: Artistic), in the initial exploratory factor analysis (EFA) show a total of 4 factors with 24 initial items (SPSS v. 24). A pre-confirmatory factor analysis (PFA) using FACTOR reduces the number of factors to 1 with 23 items. With these data, we performed a confirmatory factor analysis (CFA) using JASP, fitting the model using the global or absolute indices of fit: c2 (253) = 10212.851, p = 0.998; RMSEA = 0.000 [0.000 – 0.000]; GFI = 0.986; NFI = 0.983 and CFI = 1.000 (Graph 2).

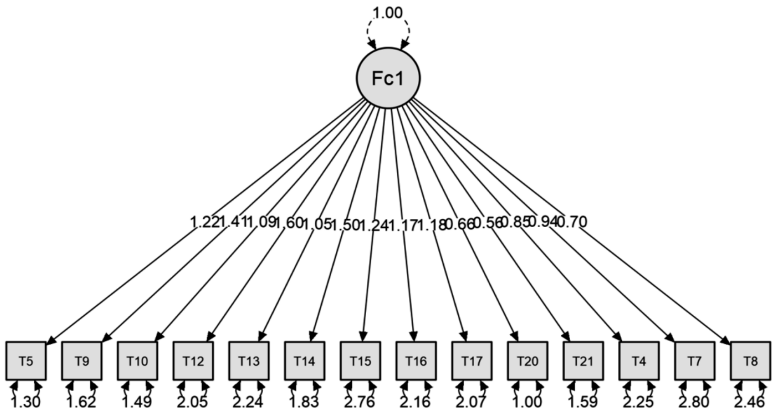
GRAPH 2. Perceptive Scale Model. JASP Program.



Source: Own elaboration.

The results from Scale 3. Technique (Dimension 2) follow the same process. We started with a total of 6 factors and 21 initial items. A pre-confirmatory factor analysis (PFA) reduced the number of factors to 1 with 14 items. We performed a confirmatory factor analysis (CFA) with JASP, fitting the model with the global or absolute indices of fit: c2 (91) = 1411.784, p = 0.184; RMSEA = 0.034 [0.000 – 0.063]; GFI = 0.972; NFI = 0.938 and CFI = 0.992 (Graph 3).

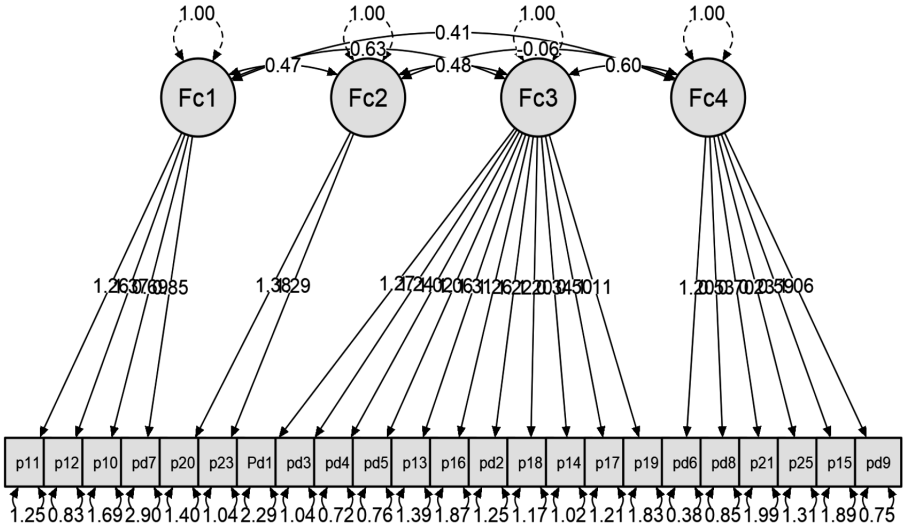
GRAPH 3. Technical Scale Model. JASP Program.



Source: Own elaboration.

The results from Scale 4. Pedagogical (Dimension 3), initially displayed a total of 7 factors and 25 items. We took the 7 factors and performed a pre-confirmatory factor analysis (PFA), reducing the number of factors to 4 with 23 items. After performing a confirmatory factor analysis (CFA), the model did not initially fit as there were 3 items that could be in more than one factor. The JASP software analyses the possibilities of the items and factors for a better fit, and so can locate these items without repetition across factors. Having made these changes, the model did fit: global or absolute fit indices of c2 (253) = 2704.131, p = 0.001; RMSEA = 0.032 [0.032 – 0.065]; GFI = 0.941; NFI = 0.900 and CFI= 0.972 (Graph 4).

GRAPH 4. Pedagogical Scale Model. JASP Program.



Source: Own elaboration.

4. Discussion

Based on the results from the different analyses, we can state that we obtained excellent levels of reliability in the different scales, both in Cronbach's α and in McDonald's ω as the values of the different scales vary between 0.889 and 0.970 in both coefficients. If we analyse the different criteria when interpreting reliability, we find that authors such as Oviedo and Campo-Arias (2005) state that values greater than 0.7 are regarded as acceptable. As for omega (ordinal alpha/McDonald's omega), a value of between 0.70 and 0.90 is regarded as acceptable reliability.

In the confirmatory factor analysis, we followed the standard steps. Firstly, exploratory factor analysis, which helps us analyse a set of data without any type of prior hypothesis about its structure, with the results of the analysis providing the model (Ondé, 2019). This initial analysis enables us to distinguish a first structural hypothesis. After this model we continued with the pre-confirmatory

FACTOR program, which enabled us to choose between a linear model and a non-linear model, which is not possible in SPSS. Taking into account the scoring used in our Likert-type model, FACTOR enabled us to use polychoric correlation matrices establishing a number of definitive factors and items. For a better fit, values > 0.50 (Ferrando & Lorenzo-Seva, 2016) are taken as the minimum item-factor load value.

This process fits the model quickly as it already has the number of factors and items that would enter into the confirmatory factor analysis. In fact, the pre-confirmatory and confirmatory models are almost identical except in the pedagogical scale as this has items that could be part of more than one factor. The definitive fitted model was prepared using the JASP open-source program. The advantage of this program is that it provides the option of using different estimation of factor models, not just the standard ML from SPSS but also ULS and DWLS. Based on the type of items that we have dealt with and the results obtained in FACTOR, the estimation model that best fits our data is DWLS. It is not currently possible to use this model in FACTOR and analyse the tetrachoric matrices that allow a better fit in non-linear models than the ULS and ML models where convergence problems can occur (Li, 2016; Lloret, Ferreres; DiStefano, Liu, Jiang, & Shi, 2018). Finally, we used the chi-square, RMSEA, GFI, and NFI goodness of fit indices grouped into global and absolute indices of fit as well as CFI which is an incremental or comparative index of fit that makes it possible to determine the definitive model with the independence model, or model with no relation among the variables (Montaño Armendaríz, 2014; Rojas-Torres, 2020).

After the evaluators had studied and analysed the resulting items (74), we decided to improve the wording of some items, given that they might cause confusion for end users of the instrument. The fitted and revised model incorporating the name of each of the eight factors is as follows:

- Artistic Dimension.
  - Expressive Scale with two factors and 14 items.
    - Two-dimensionality and movement factor (10).
    - Multi-dimensionality factor (4).
  - Perceptive Scale with one factor and 23 items.
    - Perceptive factor.

- Technical Dimension.
  - Technical Scale with one factor and 14 items.
    - Technical factor.

- Pedagogical Dimension.
  - Pedagogical Scale with four factors and 23 items.
    - Didactic factor.
    - Applicability factor.
    - Transdisciplinarity and complementarity Factor.
    - Activities and self-evaluation factor.

This definitive structure for the instrument is the response to the logical

phases expected for a validation process. We completed Phase I, starting from the objectives and theories that initially gave the instrument its basic shape. Validation through expert opinions and concordance analyses finalised phase II (Fleiss' Kappa and Kendall's W). In phase III we moved on to the final wording of the items and the selection of the sample of apps to analyse, and ended with Phase IV, data processing and analysis (classical test theory), testing internal consistency through Cronbach's alpha and McDonald's omega, and configuring the definitive scale through confirmatory factor analysis, with the final wording (Soriano, 2014).

Artistic competence being a benchmark and being at the heart of the configuration of the instrument means that the items and their grouping into factors are not affected by digital competences or by technical aspects of using the apps that might overshadow artistic processes, something that often occurs in the design of these instruments (Rico, 2017). The three dimensions are located in and at all times take shape in the experiences demanded by the development of artistic competence through digital means. Using this instrument does not mean there will be no variance in the scores between different teachers, as this is inevitable in the context of artistic education. The objective of the instrument is not to harmonise scores across evaluators, but to have criteria and items that offer an academic and artistic perspective on the selection and use of art apps, making it possible to compare them.

5. Conclusions

The definitive instrument (Table 6, Appendix) after the validation phase comprises 74 items and is effective and reliable for selecting and evaluating art apps, and it enables the most suitable ones to be identified in accordance with the artistic activities to be covered, both in primary education and in secondary education (Caeiro Rodríguez & Navarrete, 2020). Accordingly, the instrument, dimensions, scales, and factors contribute to a better perception of what this type of digital apps must provide to make educational experiences more effective. In order to evaluate these apps, we recommend the use of a comprehensive evaluation (Stake, 2006) in which teachers are guided by their experience, based to a large extent on personal interpretation. Our instrument provides a foundation for choosing art apps by identifying expressive, perceptive, pedagogical, and technical aspects that come into play during artistic learning, and it makes it possible to compare them and identify which ones are most appropriate for use in class and offer the most options. Our research is situated within the educational context of art, and comes as close as possible to teachers in the field of art — the final users of the instrument — and to students — the users of the art apps who will create or perceive art with them, applying them to their artistic processes. Accordingly, designing instruments that are directly related to expressive and perceptive art apps is necessary in order to implement digital apps and make progress in pedagogical and didactic knowledge of them (Caeiro Rodríguez, 2020).

Finally, it is expected that the rapidly growing use of digital devices in classrooms and activities that use art apps will favour the use of this evaluation instrument, enabling further research on the same line. We believe that identifying percentiles for each action and type of app would be the next step, as well as adapting it to the context of other artistic areas, such as musical competence.

Appendix

TABLE 6. Dimensions, domains, and factors with the final items of the art apps evaluation instrument.

DIMENSION 1. ARTISTIC							
Expressive Domain							
Items							
Factor1	*Two-dimensionality and movement*	*N/A*	*1*	*2*	*3*	*4*	*5*
E1	Drawing process.						
E2	Painting process.						
E8	Process of creating own images: posters, photographs, videos, animations, etc.						
E9	Process of visual and/or audiovisual composition.						
E10	Process of doing illustrations.						
E12	Personalising the stroke.						
E13	Degree of experimentation it allows: testing ideas, compositions, forms, etc.						
E15	Allows creation of visual or audiovisual adverts.						
E17	Allows erasure during the creative process.						
E18	Allows work in different artistic techniques: oil, watercolour, etc.						
Factor2	*Multidimensionality*						
E3	Process of sculpting in three dimensions in virtual space.						
E11	Process of creation in perspective.						
E20	Enables creation in various spatial dimensions: planes, three dimensions, etc.						
E28	Process of working on volume using various graphic-plastic resources.						

Perceptive Domain							
Items							
Factor3	*Perceptive*	*N/A*	*1*	*2*	*3*	*4*	*5*
P1	Perceptive technical process in the art work: lines of interest, forms, colours, textures, representing volume, depth, perspective, etc.						

P2	Perceptive critical process in the art work: knowledge of and connecting works, artists, personal, social, and political contexts, etc.						
P3	Immersive process with the virtual exhibition space.						
P4	Range of works, artists, and styles offered.						
P5	Process of comprehension of works in relation to their place in the history of art.						
P6	Process of knowledge of artistic techniques: traditional, contemporary, etc.						
P7	General process of interaction it allows with each work.						
P8	Allows virtual guided tours of the space.						
P9	Allows different views of the works: zoom, pull out, etc.						
P10	Textual or auditory information about the work: artist's life, history of the work, stories, etc.						
P11	Enables familiarisation with more than one type of art work: painting, sculpture, photographs, installations, videos, etc.						
P12	Eanbles viewing works from different periods.						
P13	Eanbles viewing works from different cultures.						
P14	Enables discovering visual and audiovisual works.						
P15	Links the history of art to other contexts from the period: social, political, scientific, etc.						
P16	Makes it possible to discover creative processes used by artists in their works.						
P17	Enables viewing museum-based works and works in public spaces: art in nature, public art, etc.						
P18	Enables viewing contemporary art works such as: art installations, happenings, performance art, etc.						
P19	Links works to related information and external spaces: texts, blogs, etc.						
P21	Enables users to select the information they want to see: artists, periods, styles, etc.						
P22	Enables comparison of works from different artists, periods, and styles.						
P23	Makes it possible to analyse the art works in depth within the app.						
P24	Makes it possible to understand how artists solve problems in their works: colour, perspective, etc.						

DIMENSION 2. TECHNICAL							
Items							
Factor4	*Technical*	*N/A*	*1*	*2*	*3*	*4*	*5*
T4	Ability to adapt to different user needs: formats, text size, age, etc.						
T5	Quality of the tool box: levels, configuration, range of resources, areas of work, etc.						
T7	Quality of communication: input and/or output peripherals (printer, scanner, camera, microphone, speakers), email, etc.						
T8	Quality of editing materials available to the user: effects, transitions, filters, image and audio archives, etc.						
T9	Quality of layered work.						
T10	Scope for personalisation: tool box, elements, resources, interface, etc.						
T12	Allows work to be saved and continued in stages, creating without interruption.						
T13	Enables various ways of saving: autosave, saving when wanted, etc.						
T14	Allows copying and pasting.						
T15	Allows various ways of sharing work: email, social media, etc.						
T16	Allows more than one type of file to be created and worked on: photo, video, audio, image, etc.						
T17	Allows configuration of tools: paintbrushes, pencils, etc.						
T20	Allows different colour profiles to be selected and worked with: RGB, CMYK, etc.						
T21	Allows integration of still and/or moving images and audio.						

DIMENSION 3. PEDAGOGICAL							
Items							
Factor5	*Didactic*	*N/A*	*1*	*2*	*3*	*4*	*5*
PD1	Quality of complementary materials: tutorials, summary tables, instructions, etc.						
PD2	Adaptable to users' age and educational stage.						
PD3	Capacity for connecting didactics and art: methodological strategies, etc.						
PD4	Capacity for working on a range of content and artistic objectives.						
PD5	Capacity to work on art concepts and processes.						

PD13	Capacity to respond to the needs of the art educator: levels of complexity of use, directing artistic learning, collaborative online work, etc.						
PD14	Option to create educational profiles: teacher, student, etc.						
PD16	Includes examples of the app's possibilities.						
PD17	Intended for functional diversity of users: motor, visual, special educational needs, etc.						
PD18	Enables teacher to do different types of evaluation based on learners' work: initial, formative, summative, etc.						
PD19	Linked to art education communities or networks.						
Factor6	*Transdisciplinarity and Complementarity*						
PD20	Enables work on non-artistic competences.						
PD23	Complements physical artistic processes adding value to learning.						
Factor7	*Applicability*						
PD7	Implementation of artistic content.						
PD10	App's capacity to allow users to focus on artistic aspects rather than the technical aspects of using it.						
PD11	Capacity to guide the user through the materials it contains: index of content, categories, etc.						
PD12	Ability to work on artistic thinking: artistic concepts, terminology, etc.						
Factor8	*Activities and Self-Evaluation*						
PD6	Student self-evaluation of the art they create: online, summative, progress, etc.						
PD8	Range of activities contained: initial, developmental, expansion, etc.						
PD9	Degree of pedagogical interaction with the learner: feedback on learning, encouraging independent and personalised learning, free discovery, etc.						
PD15	Templates to work from.						
PD21	Enables creation of original artistic content and adding it to the app.						
PD25	Includes activities relating to works of art.						
Total Score for the Art App							

N/A (does not apply to this app); 1 (least value); 5 (most value).
Source: Own elaboration.

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Design and validation of a rubric to evaluate educational actions and projects on youth empowerment*

Diseño y validación de una rúbrica para evaluar acciones y proyectos educativos de empoderamiento juvenil

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Abstract:

In recent years, there has been a significant increase in international debates, research and socio-educational programmes focusing on youth empowerment. One of the main issues with this concept is related to how it is measured and evaluated. Evaluating socio-educational actions and projects is crucial in order to design, implement and improve educational practices that help young people to empower themselves. This article presents the process of building and validating a rubric, within the framework of the HEBE Project, for the evaluation of youth empowerment actions and projects. The methodological process consists of three phases: (1) Design of the rubric; (2) Expert validation by 17 practitioners from different fields, 3 experts in evaluation and 5 young people; (3) And a comparison by means of a pilot test with 20 projects or socio-educational services aimed at youth empowerment, in which 63 professionals participate. The results show evidence of validity and reliability of the rubric in order to evalu-

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ate the quality of socio-educational practices, and also to design and implement actions that focus on youth empowerment. It is noted for being a validated and useful instrument for making educational assessments related to youth empowerment, and for its usefulness in generating processes of reflection that become the basis for rethinking and improving pedagogical practices.

Keywords: youth, empowerment, programme evaluation, social pedagogy, educational assessment, reflection on practice.

Resumen:

En los últimos años ha habido un aumento significativo de los debates internacionales, las investigaciones y los programas socioeducativos centrados en el empoderamiento juvenil. Uno de los principales problemas de este concepto está relacionado con las formas de medirlo y evaluarlo. Evaluar las acciones y proyectos socioeducativos es clave para el diseño, la implementación y la mejora de prácticas educativas que ayuden a la juventud a empoderarse. Este artículo presenta el proceso de construcción y validación de una rúbrica para la evaluación de acciones y proyectos educativos de empoderamiento juvenil desarrollada en el marco del Proyecto HEBE. El proceso metodológico consta de tres fases: (1) el diseño del instrumento; (2) la validación por juicio de expertos de 17 profesionales de diferentes ámbitos, 3 expertos en evaluación y 5 jóvenes; (3) y el contraste que se realiza a través de una prueba piloto con 20 proyectos o servicios socioeducativos de empoderamiento juvenil en los que participan 63 profesionales. Los resultados denotan la validez y fiabilidad de la rúbrica para evaluar la calidad de las prácticas socioeducativas y para diseñar e implementar acciones que apuesten por el empoderamiento juvenil. Destaca por ser un instrumento validado y útil para la realización de diagnósticos educativos relacionados con el empoderamiento juvenil y por su utilidad para generar procesos reflexivos que se convierten en puntos de partida para repensar y mejorar la práctica pedagógica.

Descriptores: juventud, empoderamiento, evaluación de programas, pedagogía social, diagnóstico educativo, reflexión de la práctica.

1. Introduction

In the 1970s, the concept of empowerment began to be used within the social sciences. Since then, it has gradually permeated the language of everyday life and that of the different sciences.

Despite the versatility and popularity of the term, empowerment today remains a complex, ambiguous and ill-defined concept that is applied to very different situations and processes in very different ways (Soler, 2017; Úcar et al., 2016a; Morton and Montgomery, 2013). The range and diversity of perspectives when analysing it, the fact that it can be applied in very different fields (psychological, educational, political, economic, social, cultural, etc.) and, finally, the difficulties posed by its translation into

other languages (Bacqué and Biewener, 2016; Richez et al., 2012; Luttrell et al., 2009), undoubtedly do not make it easy to find a homogeneous and consensual definition of empowerment.

Over the years, research has mostly focused on adult empowerment processes. In recent decades, however, it has also started to be used in education with young people, especially with those who are at risk or socially vulnerable. Recent years show that there has been a significant increase in international debates relating to youth policies and youth empowerment (Soler, 2017). And also in research on youth empowerment and in the number of intervention programmes with youth empowerment as their goal (Zimmerman et al., 2018).

One of the main problems of empowerment, to a large extent stemming from the aforementioned imprecision, is related to the ways of measuring or evaluating it. At present, there are still very few research papers that have specifically addressed this issue. This is likely to be because, as Wagaman (2011) notes, there are few studies that present operational definitions of youth empowerment that allow for a logical and clear interpretation of the results obtained.

Over the course of three consecutive Spanish research projects (2010-2020), the HEBE Project has led to new knowledge on youth empowerment. Firstly, among other products, we created a set of personal and community empowerment indicators (Soler et al., 2014).

Secondly, we carried out a *systematic review* of the research published on youth empowerment since the beginning of this millennium (Úcar et al., 2016b) and, based on this systematic review of the academic literature, we constructed a pedagogical model of youth empowerment (Soler et al., 2017). Within the framework of the same project, we adapted the initial set of personal and community empowerment indicators, specifically for youth empowerment (Planas et al., 2016a; Planas et al., 2016b; Cevallos and Paladines, 2016).

Once adapted, we wanted to test the extent to which the set of indicators was valid for analysing and evaluating youth empowerment. For this purpose, a validation process was designed in three phases: an academic validation through a systematic review of the literature (Úcar et al., 2016a), a validation by experts in the field of youth work and a validation of practice with young people (Llena-Berñe et al., 2017; Úcar et al., 2016b). The set resulting from the three phases of the validation process is made up of 9 dimensions and 27 indicators of youth empowerment (Planas et al., 2016a; Soler-Masó, 2020).

We have arranged the text into four sections. The first section shows the theoretical foundations of the set of youth empowerment dimensions and indicators and their applicability to the design of the evaluation rubric. The second section develops the methodology followed in the design and validation of the youth empowerment evaluation rubric. The third section presents the results obtained in the validation. Finally, the fourth section contains the conclusions of the process.

1.1. Youth empowerment, empowerment indicators and evaluation rubrics

It should be noted that the theoretical perspective that frames the research work of our team is that of social pedagogy (Soler, 2017). It is well known that the field of social pedagogy is diverse, heterogeneous and very wide-ranging. And also that there is no general consensus on its specific areas of action and professional development, which is why it has developed differently in different countries around the world (Janer and Úcar 2019). In the context of this research, we will understand social pedagogy as referring to education in a broad sense (Petrie, 2005). Following the classifications that have been developed in our country, we chose to operationalise the field of action of social pedagogy in socio-educational work with young people, in four specific subfields of social action, which we use instrumentally for this study. They are: socio-cultural animation, specialised education, formal education and occupational training (Froufe, 1997).

The concept of empowerment underpinning this paper is that developed by Soler et al. (2017). According to these authors,

> empowerment is a process that increases the possibilities for a person to decide and act consistently on everything affecting his or her own life, participate in decision-making and intervene in a shared and responsible way regarding anything affecting the community of which he or she forms part. This requires two conditions: that the person acquires and develops a series of personal skills (knowledge, attitudes, aptitudes, abilities, etc.) and that the environment facilitates the effective exercise of these skills (p. 22).

Empowerment, as a process or result, is always the effect or consequence of a more or less intentional interaction between the skills that a person possesses and the possibilities offered by the environment in which he or she lives to develop or put them into practice.

Úcar et al. (2016a) note that there is unanimity that the term generally refers to the efficient growth of the young person by means of overcoming certain situations through the acquisition of skills. These same authors set out the main elements that make up or are associated with the concept of empowerment with regards to young people. They are: a) growth and well-being; b) relationships; c) training; d) politics; e) transformation; and finally d) emancipation. Based on these ideas, we understand youth empowerment as a process that increases the possibilities for a young person to decide and act consistently on everything affecting his or her own life; and, in addition, to participate and intervene in a shared and responsible way regarding anything affecting the community of which he or she forms part.

Based on all of these studies, in Table 1 we present the validated set of dimensions and indicators. This set of dimensions and indicators is the basis on which the evaluation rubric for youth empowerment actions and projects is designed.

TABLE 1. Set of youth empowerment dimensions and indicators.

Dimensions	Indicators
1. Self-esteem	1.1- Being able to cope with difficult or adverse situations. 1.2- Knowing one's own capabilities and recognising one's limits. 1.3- Being satisfied with oneself. 1.4- Feeling self-confident. 1.5- Being able to express oneself to others. 1.6- Feeling recognised by others.
2. Responsibility	2.1- Undertaking commitments and tasks voluntarily and in a realistic manner. 2.2- Taking responsibility for the consequences of one's decisions and actions.
3. Efficacy	3.1- Being able to make decisions to achieve objectives. 3.2- Being methodical and consistent in the performance of tasks. 3.3- Achieving the objectives set.
4. Critical capacity	4.1- Being able to analyse problems or situations. 4.2- Having one's own viewpoint in relation to problems or situations.
5. Autonomy	5.1- Showing initiative. 5.2- Ability to choose and act according to one's own convictions.
6. Teamwork	6.1- Getting involved in teamwork. 6.2- Being able to exercise leadership roles when working in a team. 6.3- Being able to communicate. 6.4- Being able to negotiate and reach a consensus.
7. Community identity	7.1- Sharing the socio-cultural heritage of the community. 7.2- Actively identifying with the civic and associative processes that take place in the community. 7.3- Identifying public space as one's own and making use of it.
8. Meta-learning	8.1- Being aware of having acquired or improved one's knowledge and skills. 8.2- Having developed the ability to learn how to learn. 8.3- Being aware of the power acquired to act.
9. Participation	9.1- Getting involved in collective actions or projects. 9.2- Being able to influence your environment.

Source: Adapted from Planas et al. (2016a), and Soler-Masó (2020).

The decision to transform the set into an evaluation rubric is justified by the versatility, ease of use and formative usefulness of this tool (Cubillos-Veja and Ferrán-Aranaz, 2018). In fact, it is these characteristics that have led to the widespread use of evaluation rubrics in recent decades, especially in education.

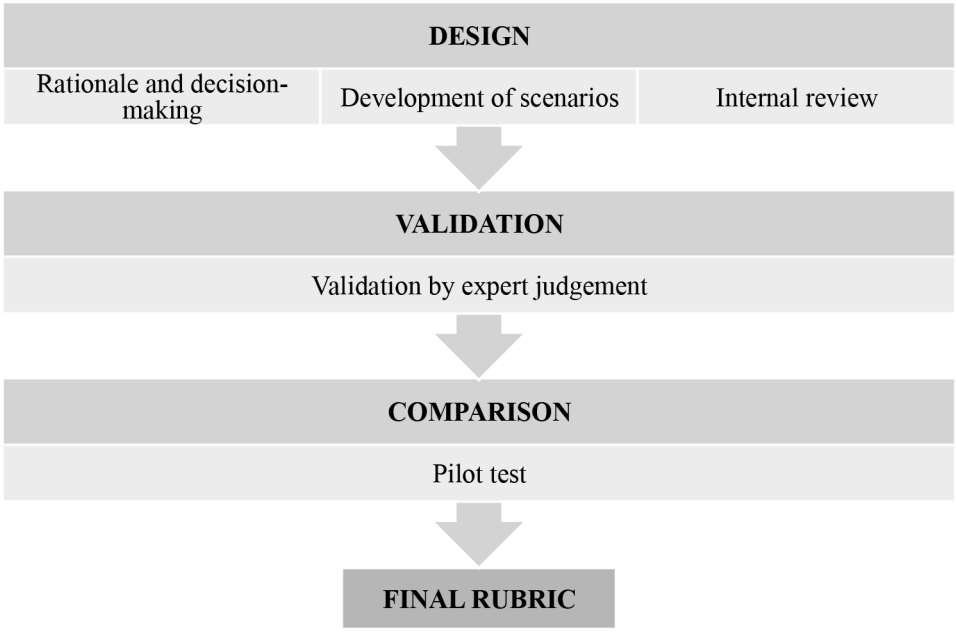
The concept of rubric has been used in education to describe instruments where criteria and standards are defined that correspond to progressive levels of task performance (Gil, 2007). A rubric could be said to be a standardised guide for the assessment or self-assessment of certain behaviours, actions or situations. The great formative

potential of rubrics lies in the fact that they can generate processes of reflection regarding self-analysis in the people who answer them; processes that have a high educational and personal transformation value. In this sense, Panadero and Jonsson (2013) state that rubrics are a type of formative assessment, which have an effect on performance as they provide information on the ways to achieve the objective set, meet expectations and obtain the desired results. Using the rubric not only assesses the performance of the empowerment action or programme, but also trains and makes educators reflect on youth empowerment.

2. Method

Graph 1 shows the methodological process followed for the design and validation of the evaluation rubric for youth empowerment actions and projects. From now on, the term rubric is used to refer to the "evaluation rubric for youth empowerment actions and projects". The process has been divided into three phases: 1) design phase; 2) validation phase and 3) comparison phase. In all phases, informed consent is obtained from all participating individuals and institutions and ethical criteria regarding data protection and confidentiality are ensured.

Graph 1. Rubric design and validation process.



Source: Own elaboration.

2.1. Design of the evaluation rubric for youth empowerment programmes

The design process has three aspects: a) rationale and decision-making, b) development of scenarios, and c) review of the rubric by HEBE project researchers who were not involved in designing the instrument.

a) A search is conducted on academic literature to provide the foundation for the format, design and layout of the rubric. It is established that the objective of the rubric is to evaluate actions and projects that promote youth empowerment at both individual and group level and it is constructed based on the set of 9 dimensions and 27 indicators, previously validated. A self-applicable analytic rubric is chosen.

Three criteria are taken into account to ensure the quality of the rubric: specific definitions of each dimension, definition of the indicators and definition of the scoring and graded-category strategies (Doğan and Uluman, 2017; Gatica-Lara and Uribarren-Berrueta, 2012; Reddy and Andrade, 2010). In order to meet these criteria, a clear and unambiguous definition for each dimension is first produced and an application guide added to the rubric where the project, the youth empowerment dimensions and indicators, the objective of the rubric, its usefulness and the instructions for application are contextualised.

b) The content of the scenarios is produced. A graded-category scale according to performance is established with four scenarios of actions or behaviours of increasing complexity. Performance, in this case, refers to the level, in relation to youth empowerment, on which the action of the educators or the project being evaluated is found.

For each scenario, the signs "-, =, +" are added in order to more precisely understand the extent to which the educators or the project are placed in the chosen scenario. If a given scenario is not fulfilled, but does not fit into the previous scenario either, this can be indicated by placing a "-" sign. If the assessed behaviours or project exactly match a scenario, this can be indicated by placing "=". And finally, if the given scenario is exceeded, but the next is not quite reached, this can be indicated with a "+" sign.

Finally, below each indicator there is a space to add any evidence that explains and justifies the reasons for being placed in one scenario or another, as well as any observations that one wishes to add.

c) The initial version of the instrument is sent to the members of the HEBE project (professionals and academics in the field of social pedagogy) who did not participate in the instrument design process. The aim is to conduct a first review of the rubric and receive feedback from the team before starting the validation phase.

2.2. Validation of the instrument through expert judgement

Validation of the rubric is done through expert judgement. As can be seen in Table 2, 25 intentionally selected validators took part. Their profiles range from educators of youth projects and services, in which work is carried out on youth empowerment in the four defined subfields of social action, to evaluation experts and young people.

TABLE 2. Profile of validators.

Professional field	No.
Socio-cultural animation	4
Specialised education	4
Formal education	6
Occupational training	3
Evaluation experts	3
Young people	5
Total	25

Source: Own elaboration.

They are asked via an electronic form to evaluate the indicator scenarios of the rubric using a Likert scale (not at all, a little, to some extent, very much) according to the following criteria:

1) Comprehensibility: it is a clear and intelligible definition that allows for easy interpretation.

2) Relevance: it is sound information about the indicator; it captures or represents key aspects and is important.

3) Progression: this refers to the graded categories of the scenarios, that is, whether or not they follow a good sequence and are appropriate.

In addition, it is requested that they make comments or observations on the instrument and the indicators in the rubric.

The analysis strategy is as follows: Following the procedure shown in other studies for the validation of instruments (León and Fernández, 2019; Miranda et al., 2019), the validity (Aiken's V) and reliability (Cronbach's Alpha) of the rubric are calculated. The means and the percentage rating of the scenarios are also calculated to detect the existence of conflicting scenarios (rating between "to some extent" and "very much" below 90%). Finally, the comments and observations made are analysed.

2.3. Pilot testing of youth empowerment projects or services

In this phase, a pilot test of the rubric, already validated by judges, is carried out in socio-educational projects and services working on youth empowerment. The pilot test process is carried out in three stages:

a) Initial contact, by a facilitator from the research team, with the professional/team that is going to carry out the application, in order to present them with the rubric and the application guide.

b) Self-application of the rubric. Each participating professional/team self-applies the rubric without the presence of the facilitator.

c) A cognitive interview (Beatty y Willis, 2007; Hilton, 2015; Neuert y Lenzner, 2015), conducted by the research team facilitator with the professional/team after the rubric application process has been completed.

As shown in Table 3, the rubric was piloted in 20 projects falling within the four subfields of social action set out, with a total of 63 professionals participating.

TABLE 3. Profile of projects and services participating in the comparison phase.

Professional field	No. of pilot projects and services	No. of professionals participating
Socio-cultural animation	5	17
Specialised education	5	17
Formal education	5	15
Occupational training	5	14
Total	20	63

Source: Own elaboration.

Regarding the profile of the participants, there is a majority participation of youth workers or counsellors, social educators and teachers. The other profiles relate to project or pilot service managers or coordinators; youth specialists; leisure time managers or monitors; social workers; psychologists; occupational therapists; and pedagogues.

3. Results

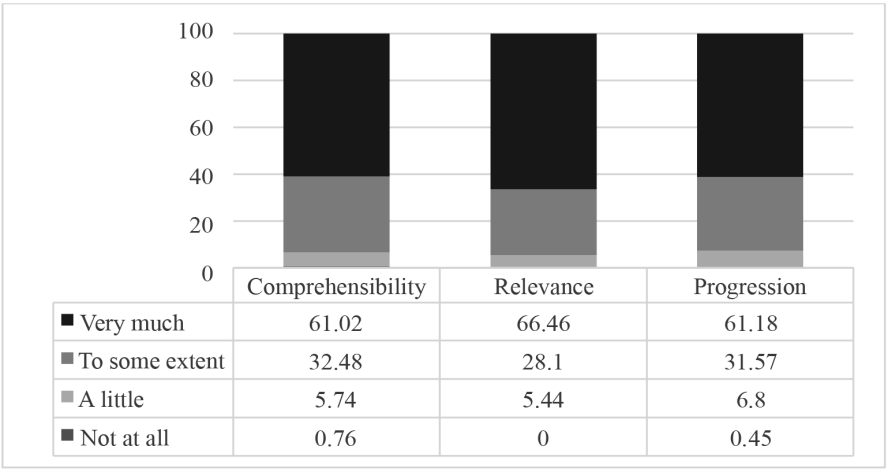
This section presents the results of the validation phase and comparison phase.

3.1. Results of the rubric validation phase

As can be seen in Graph 2, the validators consider the indicator scenarios in the rubric to be comprehensible, relevant and progressive. Most of the answers given to the three criteria in the indicators are above 90% in "to some extent" or "very much" (comprehensible, 93.5%; relevant, 94.6%; and progressive, 92.7%).

We analysed Aiken's V by criterion in order to establish the validity of the rubric by means of the level of agreement among validators and the result is positive, with a total Aiken's V of .85, which shows a high

GRAPH 2. Percentage rating regarding comprehensibility, relevance and progression.



	Comprehensibility	Relevance	Progression
Very much	61.02	66.46	61.18
To some extent	32.48	28.1	31.57
A little	5.74	5.44	6.8
Not at all	0.76	0	0.45

Source: Own elaboration.

level of agreement among validators in relation to comprehension (.85), relevance (.84) and progression of the indicators (.87), specifically.

We observed positive results when measuring the reliability of the instrument by applying Cronbach's alpha (α) for the criteria of comprehensibility, relevance and progression, and for all of the criteria, as shown in Table 4. Based on the same coefficient, the reliability of the instrument is further examined if one item is removed, however the results are similar, which indicates agreement among the validators and that all variables are important for the reliability of the instrument.

TABLE 4. Cronbach's alpha according to the criteria of comprehensibility, relevance, progression and total.

Exclusion	**Cronbach's alpha (α)**
Comprehensibility	0.915
Relevance	0.944
Progression	0.942
Total	0.973

Source: Own elaboration.

If we take a closer look at the statistical data on the ratings given by the validators, the means are all above 3 ("to some extent"). For most of the indicators, the percentage ratings between 3 and 4 ("to some extent" and "very much") are above 90% for all three criteria evaluated, and none of them fall below 75%. Table 5 shows the mean, standard deviation and percentage ratings between 3 and 4 ("to some extent" and "very much") for all indicators. Eleven of them are below 90%. Criteria with a percentage rating between 3 and 4 below 90% are marked in grey and are, therefore, considered to be conflicting.

TABLE 5. Statistical data on ratings by indicator and evaluation criterion. Dimension (dim), Indicator (ind), Standard deviation (SD), Percentage ratings between 3 and 4 (%3-4)

Dim/ind	**Comprehensibility**			**Relevance**			**Progression**		
	Mean	**SD**	**%3-4**	**Mean**	**SD**	**%3-4**	**Mean**	**SD**	**%3-4**
1.1	3.3	.676	87.5 %	3.5	.588	95.8 %	3.5	.721	87.5 %
1.2	3.5	.511	100.0 %	3.7	.565	95.8 %	3.6	.576	95.8 %
1.3	3.4	.647	91.7 %	3.5	.659	91.7 %	3.5	.722	87.5 %
1.4	3.7	.464	100.0 %	3.7	.637	91.7 %	3.5	.722	87.5 %

1.5	3.5	.511	100.0 %	3.6	.495	100.0 %	3.4	.504	100.0 %
1.6	3.2	.779	79.2 %	3.5	.658	91.7 %	3.3	.751	83.3 %
2.1	3.7	.637	91.7 %	3.6	.576	95.8 %	3.7	.482	100.0 %
2.2	3.8	.442	100.0 %	3.8	.415	100.0 %	3.6	.654	91.7 %
3.1	3.7	.565	95.8 %	3.8	.415	100.0 %	3.6	.584	95.8 %
3.2	3.6	.654	91.7 %	3.4	.654	91.7 %	3.5	.509	100.0 %
3.3	3.5	.659	91.7 %	3.4	.711	87.5 %	3.6	.576	95.8 %
4.1	3.7	.482	100.0 %	3.8	.532	95.8 %	3.8	.532	95.8 %
4.2	3.5	.590	95.8 %	3.6	.584	95.8 %	3.5	.658	91.7 %
5.1	3.5	.823	88.0 %	3.7	.476	100.0 %	3.6	.638	92.0 %
5.2	3.2	.926	76.0 %	3.4	.757	84.0 %	3.1	.971	76.0 %
6.1	3.6	.707	96.0 %	3.8	.436	100.0 %	3.6	.569	96.0 %
6.2	3.6	.583	96.0 %	3.5	.510	100.0 %	3.5	.586	96.0 %
6.3	3.6	.645	92.0 %	3.7	.542	96.0 %	3.6	.645	92.0 %
6.4	3.6	.569	96.0 %	3.7	.542	96.0 %	3.6	.569	96.0 %
7.1	3.6	.577	96.0 %	3.6	.651	92.0 %	3.6	.569	96.0 %
7.2	3.6	.638	92.0 %	3.7	.557	96.0 %	3.6	.569	96.0 %
7.3	3.7	.458	100.0 %	3.6	.707	88.0 %	3.6	.583	96.0 %
8.1	3.6	.577	96.0 %	3.7	.557	96.0 %	3.5	.586	96.0 %
8.2	3.5	.714	88.0 %	3.6	.577	96.0 %	3.4	.707	88.0 %
8.3	3.4	.764	92.0 %	3.4	.768	84.0 %	3.4	.707	88.0 %
9.1	3.7	.557	96.0 %	3.8	.374	100.0 %	3.7	.557	96.0 %
9.2	3.4	.707	96.0 %	3.6	.651	92.0 %	3.4	.821	88.0 %

Source: Own elaboration.

Based on the comments and observations made by the validators and taking into account the statistical information presented, changes are made to thirteen indicators of the rubric. The greatest difficulty is identified with regard to the "comprehensibility" criterion. 73% of their comments point out the difficulties in understanding the use of the term "spaces" in the indicators. The semantic versatility of the concept creates problems of clarity. We decided to replace it with the term "activities" as this includes the previous term, provides greater clarity and is more accurately aligned with the wording of the scenarios.

"Scenario" is also replaced with "activities". Other wording is also replaced, for example, in scenarios 1, 2 and 3 of indicator 1.3. *Being able to express oneself to others* where "express oneself to others" is replaced with "express one's emotions, feelings and ideas to others" equating these scenarios to the expression in scenario 4.

Another proposed improvement is resolved by adding a specific term such as "viable" to clarify scenario 4 of indicator 4.1. *Being able to analyse problems or situations*; and "other settings" in scenario 4 of indicator 6.4. *Being able to negotiate and reach a consensus*. In other cases, confusing wording is removed, such as "or is allowed when it occurs spontaneously" in scenario 1 of indicator 6.1. *Getting involved in teamwork* to promote comprehensibility of the other scenarios.

Regarding the relevance criterion, there were no comments or observations made necessitating any change in the relevance of the scenarios. However, the ratings analysed in these indicators lead to the interpretation that there was confusion regarding rating the relevance of the indicator as opposed to the relevance of the scenario.

In terms of improving the progression of the indicators, the four scenarios of the following indicators are completely modified: 3.3. *Achieving the objectives set* and 5.2. *Ability to choose and act according to one's own convictions*. Terms such as "take responsibility for" are replaced by "reflect and assess" in scenario 2 of indicator 2.2. *Take responsibility for the consequences of one's own decisions and actions*; "can carry out" by "carry out" in scenario 3 of indicator 8.2. *Having developed the ability to learn how to learn*.

The addition of terms such as "voluntarily" is also used in scenario 4 of indicator 2.1. *Undertaking commitments and tasks voluntarily and in a realistic manner*; "accompanied by the educational team" in scenario 2 of indicator 8.2. *Having developed the ability to learn how to learn*; or adjusting the scale between scenarios, such as adding "it is the educational team who" in scenario 2 of indicator 3.2. *Being methodical and consistent in the performance of tasks* to clarify who monitors the completion of tasks.

Furthermore, in order to improve the progression of the scenarios, the expressions "occasionally" in scenario 2, or "specifically" in scenario 3 of the following indicators have been removed: 8.2 *Having developed the ability to learn how to learn*, 8.3. *Being aware of the power acquired to act* and 9.1. *Getting involved in collective actions or projects*.

3.2. Pilot testing of youth empowerment projects or services

100% of participants consider the tool to be useful in the present and in the future, especially due to the fact that it is useful for reflecting on professional practice. 90% say that the rubric is the right length and goes into sufficient detail regarding empowerment work. It is easy for 85% to apply.

The comments, moreover, confirm their interest in the rubric for their work as educators. They value it as a tool for self-assessment and reflection that creates awareness of the strengths and weaknesses of their socio-educational actions. It enables learning to be equipped with functionality and changes and pro-

posals for improvement to be created in interventions and programmes focused on youth empowerment.

80% of professionals say that they had no problems filling in the rubric. 85% of professionals understand all scenarios and 70% provide evidence for all indicators. Even so, 45% consider that some aspects need to be added to the rubric or simplified. In order to streamline the use of the instrument, they generally recommend simplifying dimensions such as "self-esteem" and grouping together indicators or dimensions such as "participation" and "community identity". Although the research team analyses these comments, it decides not to make any changes to the instrument, as the set of dimensions and indicators has been previously validated and is not subject to assessment in the pilot test.

However, 70% of professionals find it difficult to respond to one or more dimensions or indicators. The difficulty regarding the "self-esteem" dimension is particularly noteworthy, as it is considered too vast and complex to be the first variable in the instrument to be answered. They also express difficulties in responding to indicators that are not explicitly being worked on in the project or service that self-applies the rubric. This is mainly the case for indicators related to the dimensions of "efficacy" and "meta-learning".

In order to compensate for these difficulties and to facilitate the reading and application of the rubric, the order of the dimensions was changed. The more complex dimensions ("self-esteem", "efficacy" and "meta-learning") are moved to the middle of the rubric, while the simpler ones ("participation", "responsibility", "community identity" and "teamwork") are placed at the beginning and end. In addition, the application guide adds that scenario 1 includes the possibility of not working specifically on the indicator in question.

The final contributions highlight the usefulness and necessity of this instrument and make proposals for improvement. Along these lines, two changes are implemented.

Firstly, it was recommended to add a heading in the rubric where the identifying characteristics of the project can be detailed. Many services carry out several projects at the same time or implement the same project for several consecutive years. This improvement makes it possible to identify in which project or period the rubric has been applied and to compare its results over time. From this point onwards, a new section was added at the beginning of the rubric, where data are requested on the name of the project/programme; the entity/institution; the educational field; and, finally, the duration of the project.

Secondly, different professionals point out that it is the very process of filling in the rubric that increases awareness regarding the degree of compliance with the proposed objectives and the

need to redirect actions. For all of these reasons, a section was included so as to be able to add thoughts and proposals for improvement, during the process of applying the rubric, that are useful for learning and improving decision-making regarding planning and developing actions that help to empower young people.

4. Discussion

Despite the rapid popularisation of empowerment in everyday language, in politics and in a good deal of the social sciences, it is a very complex concept that requires further research and application in specific situations and processes. Over recent years, the research conducted as part of the HEBE project has generated a whole series of reflections and instruments specifically in relation to youth empowerment, from a socio-educational approach and taking into account social pedagogy (Soler, 2017). This article has shown how the transformation of a set of youth empowerment indicators into a rubric is a process characterised by its richness, but also by its complexity (Cubillos-Veja & Ferrán-Aranaz, 2018; García-Sanz, 2014).

The process followed made it possible for us to present the rubric as a valid and reliable tool for evaluating the quality of socio-educational practices and for designing and implementing new actions committed to youth empowerment (Soler et al., 2019). In line with Wagaman (2011), it aids the evaluation of empowerment based on a concept that is operationalised in dimensions, indicators and scenarios, which allow for a logical and clear interpretation of the expected results. It is also a tool for learning, capable of providing feedback that helps socio-educational action professionals to self-assess and refine their practices (Bharuthram & Patel, 2017).

The validity and reliability of the content of the instrument is ensured by confirming the comprehensibility, relevance and progression of the indicator scenarios in the rubric. As Fernández-Cruz et al. (2018) correctly point out, paying attention to the validity and reliability of the instrument designed contributes to the development of the scientific field of study. It is a process that provides sufficient evidence to prove the quality of the tool obtained (Tourón et al., 2018).

As is shown in Murphy and Ermeling's (2016) study, structured instruments that guide educators' responses in order to assess their practice, such as the evaluation rubric presented, facilitate reflection and feedback so as to improve educational processes. In addition to evaluating the empowerment action or programme, the rubric also creates a process of reflection that helps educators think thoroughly and critically about how they work on the dimensions of youth empowerment and, moreover, sets expectations and standards regarding how to put them into practice. It is an instrument to verify the efficacy of socio-educational actions, which can be used to evaluate the objectives of youth services or projects, and also the empowerment

needs of young people (Andueza, 2019). The rubric can serve as a basis for reflection on pedagogical practice, which is grounded in experience and oriented towards change (Dimova and Loughran, 2009). Based on this practice, it is possible to design and develop new quality educational processes that focus on the empowerment of young people. The fact that the rubric can be used by the team of educators as a group produces dialogical conversations that enhance the richness of the reflections and increase their potential to create change (Tinsley and Sheats, 2020).

Some of the difficulties encountered both in the process of developing the rubric and in its subsequent validation should be noted. Firstly, working with a concept as elusive and under-researched as youth empowerment. An example of this is the criticism of the relevance of some dimensions characterising youth empowerment, both in the expert judgement and in the pilot test. However, the fact that all dimensions of youth empowerment are included in the rubric, even those less known or recognised, such as *efficacy* or *meta-learning*, provides a space for reflection for educators that can direct them towards other lines of youth empowerment that have not been as explored in socio-educational work, but which are just as necessary. Therefore, we understand that further research is needed, either separately or collectively, on each of the indicators of youth empowerment making up the current rubric.

Secondly, the difficulty of constructing qualitative evaluation processes using rubrics was proven throughout the validation process. The denotative and connotative properties of language and their connection to local contexts often make it difficult to equate the scenario constructed in the rubric with the characteristic feature of the behaviours or projects to be evaluated.

By way of conclusion, the rubric is not only a tool aimed at encouraging reflection and improvement of socio-educational practices as mentioned above, rather it also becomes an open access instrument[1] that is validated (HEBE Project, 2019), capable of collecting reliable data on the kind of socio-educational practices aimed at empowering young people and educators' thoughts on said practices. In this way, new areas of research come to light, aimed at performing educational assessments, analysing the evolution of youth-related practices or the perspectives and reflections of educators on their own practice. Possible future areas of interest in the field of study of youth empowerment from the perspective of socio-educational action.

Note

[1] Link to the rubric: http://rubrica.projectehebe.com/es

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Book reviews

Santos Rego, M. A. (Ed.) (2020).
La transferencia de conocimiento en educación. Un desafío estratégico [Knowledge transfer in education: A strategic challenge]
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Bernal-Guerrero, A. (Ed.) (2021).
Educación emprendedora. Fundamentos y elementos para la transferencia e innovación pedagógica [Entrepreneurship education: Foundations and elements for pedagogical transfer and innovation]
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De la teoría a la práctica en el compromiso cívico [From theory to practice in civic engagement]
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Garrido Gallardo, M. A. (Ed.) (2021).
Una hoja de ruta. La pretensión cristiana en la época posmoderna [A Road Map. The Christian aspiration in the postmodern era]
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Book reviews

Santos Rego, M. A. (Ed.) (2020).
La transferencia de conocimiento en educación. Un desafío estratégico [Knowledge transfer in education: A strategic challenge].
Narcea. 229 pp.

Academic institutions of different types have endeavoured to occupy themselves with the conceptual and pragmatic meaning of the notion of knowledge transfer, especially given the vital importance of an increased focus the needs of a society that is ever more complex. These outlooks, which are relevant to academia and its third mission, favour a conception of knowledge based on its liberatory aspect that should be a source of social innovation and well-being in the state-industry-society triad.

It is with this laudable objective that Miguel A. Santos Rego has edited this work, which derives from the fruitful meeting organised by the "University, Innovation, and Learning in the Knowledge Society" excellence network (Spanish Ministry of Economy, Industry, and Competitiveness), a network made up of scientific experts from eight university institutions in Spain. The result is an exemplary formal recognition of the strategic challenge of knowledge transfer in education when it is treated as an organisational instrument intended to spread actions, good practices, and research throughout the community, culminating in the establishment of a true "learning society", which has been a priority for national and international authorities since the end of the last century.

Indeed, the vision of learning that permeates the landmark Faure report (1972) is the same one that the future projection of knowledge transfer must follow, and even in the current situation it must set out to ensure that "education had to adapt more to social and economic demands and to learners' wishes and aptitudes. At the same time, it had to provide more equal opportunities" (p. 14).

Starting from the basic principle of reciprocity, there is no doubt that university

and community must be close partners to attain a knowledge transfer perspective that, in some way, avoids merely becoming a political declaration based on predetermined interests. Consequently, their aim as social and administrative organisations is to achieve optimum development of human capacities through knowledge pathways that act as a catalyst for social transformation while simultaneously being aimed at promoting a value chain with high levels of validity and utility for individuals, institutions, and communities. As a result, this must be positioned far from outlooks that understand knowledge transfer on the basis of instrumentalist reasoning and it must move towards its potential impact by achieving broad benefits in the economic, technological, social, and cultural universe.

In a thorough reading of the quality of this one, what matters most, as Santos Rego notes in the opening pages, is to bear in mind that knowledge transfer is a very different concept than mere transmission of knowledge. The most important difference is that knowledge transfer includes a value chain with options for a beneficial return in economic, social, and, in particular, cultural areas. Accordingly, "what truly matters is how a piece of knowledge will be used in practice in order to improve and/or transform it through added value processes" (p. 10), or, in other words, its sense is to achieve educational innovation as a shelter that is of social utility and, ultimately, as training for future professionals that is also of economic and community return and/or benefit.

We can, therefore, undoubtedly state that this book lays the foundations for further work on a subject that is crucial for society in general and for political, social, and economic agents in particular, with clear and well-founded contributions to the construct in its pages. Consequently, this work's contribution is none other than to cast light on knowledge transfer in education, understood as transversal support for action in any academic and/or professional dynamic at a variety of educational levels and modalities. Within this conceptual framework, its pages contain noteworthy theoretical and practical approaches to knowledge transfer that make it clear that, far from being a topic that falls outside scientific interest, academic, political, and social agents have a strong focus on it.

In this respect, we could note the controversy that arose around the recent approval of the six-year transfer research cycle, which, as was to be expected, has resulted in disenchantment with the administrative interest in knowledge transfer, especially in areas such as educational sciences. In this vein, as José Manuel Touriñán states in one of his chapters, it is apparent that "knowledge transfer requires a more appropriate and targeted treatment, given the importance of the university's mission of productive and critical, social, cultural, and economic development, which is the mission of which transfer is an element" (p. 63).

Starting with the disputes that have arisen in academia about the political —

and we would even say social — outlook on this subject, this pioneering work brings together a large number and variety of focuses, models, and proposals developed by academic experts, culminating in the construction of a clear image of knowledge transfer in education. In the opening pages of this book the editor describes its process of development and clarifies its potential, which derives from the need to work towards maintaining knowledge transfer in education on the basis of criteria agreed within the academic and scientific community. In particular, we should not forget the notable interest that the policy programmes have directed towards this question, the most important example of which is Spain's Action Plan for the Implementation of Agenda 2030 in which knowledge transfer is identified as a priority area for attention in the achievement of the Sustainable Development Goals (SDG).

With regards to the structure of this work, the studies are organised in two sections with well-defined characteristics and which make substantial contributions to the research topic. The first part sets out the theoretical foundation and provides context while at the same time delineating models and proposals intended to give an understanding of the meaning and implications of knowledge transfer in education. Ultimately, it is a matter of determining the conceptual origins, legislative considerations, and development of knowledge transfer in order to avoid reductionisms and encourage the clarification of indicators that favour the establishment of a route map that can be followed to improve the impact and quality of education within the social framework.

The second part of the work considers in greater depth the pragmatics of knowledge transfer on the basis of far-reaching projects and good practices in research and/or the educational community. The product of this second part is a collection of different academic positions regarding the conception and influence of knowledge transfer in different lines of evaluation that are of broad social relevance in educational practice, among which it is worth noting: civic knowledge; diversity and social inclusion; the learning to learn competence; community development; and/or the innovation and transfer strategies of public universities.

This is an excellent work that derives from the scientific encounter between contrasting perspectives for intellectual forays but also from the consensus of experts in this field. The conclusions deriving from this make it possible to uphold that the future of knowledge transfer will have to take root on the basis of its countless possibilities, and not just as a channel for all-round education that has impacts in the community — the need for greater employability and social inclusion of university graduates in circumstances of social and employment uncertainty is clearly pressing. It will also have to take root in terms of its connection with other institutions where knowledge is an indispensable medium for cooperation in order to favour the formation of ties and interconnections between cultures with

singular and plural outlooks, as well as improving and promoting economic development at different levels and the creation of social value.

As a result, in this work, edited by Professor Miguel A. Santos Rego, the reader will find an excellent instructive contribution on knowledge transfer, which is often subordinated to the perspective of political and/or economic agents that are far removed from its beneficial impact on innovation and social well-being. This work therefore takes on a special place, and is a pioneering manual for illustrating optimal focuses on transfer as an excellent instrument for improving the life of communities that has solid evaluation indicators.

As Professor Santos Rego notes, knowledge transfer must be based on criteria capable of distinguishing between knowledge that can foster routes for innovation and solid progress and knowledge that, despite appearing to have a vision, barely stands up in its consistency or logical rigour. It is in this indispensable encounter that, on the basis of firm criteria for comparison, transfer will be able to adapt its societal impact, promoting actions worthy of the task that has been entrusted to academia since ancient times, namely, transmitting knowledge as a source of collective existence and improving societies. The aim this book supports is none other than to allow for scientific study of knowledge transfer from perspectives that have a firm belief in the improvement and optimisation of education when confronted with the challenges the near future offers in a 'liquid modernity' in which change in the being, thinking, and feeling of members of the social universe is constant and unstoppable.

Ana Vázquez Rodríguez ■

Bernal-Guerrero, A. (Ed.) (2021).
Educación emprendedora. Fundamentos y elementos para la transferencia e innovación pedagógica [Entrepreneurship education: Foundations and elements for pedagogical transfer and innovation].
Síntesis. 230 pp.

Contemporary society is characterised by volatility, uncertainty, complexity, and ambiguity (VUCA), as defined by Zygmunt Bauman, and requires citizens to possess a collection of requisite skills, knowledge, attitudes, and behaviour in order to confront the problems, challenges, and obstacles of the twenty-first century and so be able to interpret, comprehend, and transform social reality. Accordingly, from the Lisbon European Council (2000) to the present day, a series of policies, conventions, regulations, and programmes have been implemented and delivered both nationally and internationally, in which entrepreneurial culture is promoted as one possible response to this set of challenges posed by the knowledge society. The need to implement entrepreneurship education is a result of these initiatives. At the level of education in Spain, this need is embodied in the inclusion of the entrepreneurial competence in Spain's most recent education acts (the Organic Education Act [LOE, 2006] and the Organic Education Im-

provement Act [LOMCE, 2013]), which display a growing concern with the introduction of this practice in the basic and obligatory education of all students.

The authors of this work present an understanding of the entrepreneurial competence as something broader than mere development of the economic and/or business dimensions. It is a new theoretical educational focus approached from a humanist perspective. Therefore, this vision also considers the development of a series of personal and social values directed at the construction of life projects, values that enable the construction of a true entrepreneurial identity. It is a matter of bringing school and educational practice closer to entrepreneurial culture, the world of trade and business, by creating joint learning communities where certain personal qualities are developed in students: self-confidence, leadership, handling failure, creativity, innovation, optimism, initiative, autonomy, responsibility, and personal maturity. Qualities that indicate a clear concern for entrepreneurship education understood as a project of humanising education.

In this work, the phenomenon of entrepreneurship is approached from a holistic perspective in which the aim is not just to develop a repertoire of skills and a body of knowledge around the subject, as noted above. Instead, it pursues the implementation of an ethical, civic, cultural, social, and personal vision of the entrepreneurial phenomenon, taking education at non-university levels as a foundation and springboard for the construction of an entrepreneurial culture. Therefore, an education that improves students' personal development and has an impact in the social sphere is pursued.

To put this entrepreneurship education in place, the authors note the importance of teachers having training in entrepreneurship, taking four fundamental principles as a basis: applicability, the constructivist view of learning, interdisciplinarity, and transferability. In addition, a methodological training is required for undertaking this type of teaching. A teaching that is practical, active, experiential, and close to experience. One where students undertake the fundamental role in their own learning process, becoming the main figure and centre of the educational process. The teacher training that the authors call for is a response to two aspects: on the one hand, there is a need to provide teachers with suitable pedagogical and methodological resources for teaching the entrepreneurial competence, and on the other hand, there is a need to turn them into educational entrepreneurs. A training, both theoretical–conceptual and practical–methodological, that takes into account methodological principles that are close to observational learning, cooperative learning, project-based learning, experiential and exploratory learning, and problem-based learning, among other types.

To carry out all of these initiatives and tackle the topics listed, this book, edited by Professor Antonio Bernal, contains a

number of chapters written by a varied group of academics from public and private universities in Spain (Universidad de Sevilla, Universidad Internacional de la Rioja, Universidad de Burgos, Universidad Complutense de Madrid, ESIC [Business & Marketing School], and Universidad de Castilla-La Mancha). In these chapters, the topic of entrepreneurship education is analysed from a variety of different perspectives. Consequently, the aim of this work is clearly holistic. The chapters and authors are distributed as follows: *Chapter 1*, by Antonio Bernal, provides an extensive conceptual foundation for the meaning and scope of entrepreneurship education, defining the concept of entrepreneurial identity as the basis of educational activity. *Chapter 2*, by Arantxa Azqueta, presents an analysis of the different policies and measures from different international institutions, locating entrepreneurship education in the framework of an international perspective. *Chapter 3*, by Margarita Núñez, describes the future of entrepreneurial competence in a society marked by a digital economy and the role schools and teachers must play in this new educational focus. *Chapter 4*, by Inmaculada Jaén, Joaquín Obando, and Francisco Liñán, examines the impact of local sociocultural context on economic development and on entrepreneurial capacity. This situation leads the authors to reconsider the usefulness of entrepreneurship education as a tool for the development and growth of the youth population. *Chapter 5*, by Carolina Fernández-Salinero, considers the curricular dimension of entrepreneurship education, its role in Spain's educational system, and the need to implement active and participatory methodologies as a mechanism for social, personal, and economic development. *Chapter 6*, by Antonio Cárdenas and Elisabet Montoro, examines the complex world of teacher training. It considers the need for specific training for teachers in entrepreneurship education, analysing the areas associated with training and the principles that should govern it. *Chapter 7*, by Isabel Rico, Tamara de la Torre, Camino Escolar, Ascensión Palomares, Diego Jiménez, and Alfredo Jiménez-Eguizabal, considers the concept of social entrepreneurship for what it describes as the changemaker concept. It proposes an education that develops a new citizenship, developing a citizen *ethos* among students that can promote transformation, turning the citizen into an agent of social change. *Chapter 8*, by Antonio Bernal and Antonio Cárdenas, evaluates entrepreneurship education taking the opinions of students and teachers, obtained in research carried out in secondary schools as its reference. It also analyses entrepreneurship education programmes in the opinion of the teachers of this subject. Finally, *Chapter 9*, again by Antonio Bernal and Antonio Cárdenas, sets out a series of instruments for evaluating entrepreneurship education in secondary students and analyses the pertinence and relevance of each of them. Ultimately, this work has a clear pedagogical character and a new theoretical focus on education approached from a humanist perspective that can become a key element for researchers and teachers in the field of education who are interested in a new

educational outlook that can combine realism and humanism, two approaches that are sadly all too often in opposition.

Roberto Sanz Ponce ■

Fuentes, J. L. (Ed.) (2020).

De la teoría a la práctica en el compromiso cívico [From theory to practice in civic engagement].
Octaedro. 198 pp.

The idea that universities should be flagship institutions requiring a strong commitment to their social setting is a position about which people there is increasing awareness. Therefore, it is vitally important to reflect on strategies and methodologies for strengthening the role of the university in relation to social factors, depending on the specific context. Service-learning is probably one of the most suitable methodologies for achieving these objectives, and the book *De la teoría a la práctica en el compromiso cívico*, edited by Juan Luis Fuentes, provides an exhaustive analysis of this strategy and its possible applications in the social sphere.

This book is structured around three strands, thus allowing service-learning to be considered from different perspectives in order to understand the methodology as a whole. The first part comprises two introductory chapters that provide a historical overview of its emergence and origin and its main reference points and reflect on its possible implementation, adapting it to current circumstances. The second part consists of the next three chapters. These consider in depth the theoretical foundations that underpin this strategy and the most important reasons for which it is necessary to implement service-learning in the field of education, in particular higher education. The third part contains the last chapters, which focus on the practical application of service learning, based on experiences that aim to develop innovation and creativity, as well as proposals implemented in institutions to consolidate it in the educational and social sphere.

The first chapter is divided into several sections that set out to illustrate and reflect on Jane Addams, one of the leading figures in social work, civic engagement, feminism, and pacifism. It comprises: a brief introduction; a basic literature review covering essential areas for understanding her life and thought, the historical context of her time in the USA, the influences created by Hull House (the first settlement house she created to help the most disadvantaged members of society); and a final part reflecting on her engagement and efforts in relation to social work and its possible applications and modifications in the current and future context.

The second chapter covers the development of Marian congregations up to the emergence of service-learning in Jesuit universities. It starts by providing a chronological description that covers everything from philanthropic education in these organisations to their social and educational influences in the second half

of the 20th century, and it offers an explanation of the origin of service-learning. Finally, this technique is illustrated with the example of the Universidad de Deusto, one of the first to introduce this technique in Spain.

The third chapter centres on citizenship and character and their relationship to service-learning. On the one hand, it introduces a series of key points and reflections that are necessary for becoming a good citizen, and it follows these with an assessment of the influences service-learning could potentially have on the achievement of this social and educational goal. The authors also analyse a series of values or virtues that are inherent to the development of this methodology and can provide guidance for educators who are interested in discovering the ultimate meaning of this type of project.

The fourth chapter contains a series of interrelated theoretical, pragmatic and teleological reflections, aimed at analysing the role the university must fulfil to meet social demands. Consequently, it focusses on the importance of implementing this methodology in higher education to enable the development of critical thinking on the basis of eminently pragmatic and pedagogical principles in students.

The fifth chapter continues along the same lines as the previous one, considering the theoretical aspects of service-learning in greater depth. On the one hand, it explains the concept underlining its connection with critical thinking. On the other, it analyses the specific keys and contextual determinants that motivate the implementation of this strategy at university. Finally, it considers possible emerging issues in teaching, both theoretical and practical, that service-learning involves, albeit leaving the door open to questioning and dialogue between them in order for the results to be better consolidated.

Next, chapter six analyses the implementation of service-learning with regards to the framework provided by the European Higher Education Area from a pragmatic perspective. The first part is a study of concepts, giving important data about their interconnections and displaying a sharp focus based on educational competences to comply with what has been established. The second part provides a critical explanation of the ECTS, the instructional time required, its competences, and the possible pragmatic implementations of service-learning.

Chapter seven focusses on the training in service-learning students require. Firstly, the authors provide clarifications, experiences, and examples of the application of this methodology at various Spanish universities, while at the same time recognising that it is still far from widespread. Secondly, they set out the results of an in-depth analysis of the last two levels of obligatory secondary education, the Baccalaureate (which emphasises the teaching of philosophy and ethics), and the first year of university with the aim of establishing the students' knowledge of service-learning. It also includes an analysis of the aspects of Spain's Organic

Education Act (LOE) and Organic Education Improvement Act (LOMCE) that relate to this methodology. Proposals for achieving a better education at university are also included.

Towards the end of the book, chapter eight, complementing the previous one, reflects on the importance of service-learning in teacher training. To do this, it described a project implemented by the Universidad de Castilla-La Mancha in collaboration with other educational centres in which this methodology was implemented with the aim of fulfilling clear objectives and adapting to the specific social needs of the contexts of each centre. Although the evaluation carried out had some difficulties owing to bureaucratic limitations, on the whole this experience clearly points to the positive social impact of implementing this type of project.

Chapter nine is more specific as it focuses on service-learning in Madrid's council, a rationale for implementing it, the implications and essential objectives for coordination by the institution, the principal projects and activities carried out in this field, and the agreement approved with the public universities of Madrid and the corresponding specific subsidies for its implementation.

There is no doubt that this book is almost essential reading for any teacher or educator (or indeed any other citizen) who is looking for innovative ideas in the field of education and greater social engagement. It directly and precisely analyses, explains, contextualises, and gives examples of service-learning relating to its influences on universities and society as a whole, as well as the urgency of implementing it, especially in higher education to ensure that this sector is committed with the needs of its surroundings and so plays a key role. Thanks to its clear organisation, it achieves full cohesion and coherence and invites the reader to reflect profoundly and consistently on both the theoretical and practical spheres.

Paula Álvarez Urda ■

Garrido Gallardo, M. A. (Ed.) (2021).

Una hoja de ruta. La pretensión cristiana en la época posmoderna [A Road Map. The Christian aspiration in the postmodern era]. Rialp. 164 pp.

Volume comprising eight collaborations published in different editions of *Nueva Revista de Política, Arte y Cultura* brought together here by the editor of the journal and of this publication to form an essay on the question of how in Europe (and outside of Europe) we have gone from the Christian and Western civilisation to a postmodern culture, and how the traditional culture revindicates its grounds for being the dictatorship of relativism in the new context.

The editor, Miguel Ángel Garrido Gallardo, professor of research in the Discourse Analysis Group of the Spanish National Research Council (CSIC), starts the book with a chapter called *What is happening?* (pp. 13-26), in which

he analyses the occurrence of three successive dominant accounts in Western culture over the last century: the Christian account, the Marxist account and the postmodern account.

He suggests that we have fallen into absolute relativism: "we live in a fair ground, in a bumper-car enclosure where everyone can drive as they wish, provided they don't hit the person next to them". He also, however, establishes a paradox:

> in a society of absolute relativism, there should be a place for those who accept that truth exists, those who search for the truth (another fixation); however, in the postmodern society, the account with foundations is the only one that is not accepted and that is due to the thought that such persons who believe in the truth are potentially violent, given that those who are convinced of the truth would tend to impose it, even by force (...). A degree of ancient inquisition arises. In ancient times, daring to utter discrepancies with the law of God, saw one burned at the stake. Nowadays, daring to show conformity, leads, at least, to civil death. (p. 23)

And therein lies the difficulty.

Rob Riemen, the Dutch thinker and founder of the Nexus Institute, refers in his contribution (pp. 27-38) to a discussion on the limits of science that he observed at a symposium held in Hannover. In a literary and very intriguing style, he sides with one of the participants in the perception that Wittgenstein, who was a philosopher, engineer and architect, provides at the end of his *Tractatus Logico-Philosophicus*: "We feel that even if all possible scientific questions be answered,the problems of life have still not been touched at all. Please, think a little about what Wittgenstein wants us to understand" (p. 32).

With the title, *Truth, Beauty and Good in Roger Scruton* (pp. 39-54), the author, Enrique García Máiquez, offers a vigorous biographical sketch of the great conqueror of postmodern culture, of today's political correctness. In García Máiquez's words:

> This recap is a poem of epic tones that reminds us that we cannot conclude the biographical sketch of Roger Scruton without mentioning that his figure has taken on quixotic dimensions. He placed wind turbines in the scope of nihilism and has demonstrated that they were not phantasmagorias, but rather powerful systems of thought, with collusion in subjective commodities and shared laziness, that could casually grind down the Western values. Scruton has refused nihilism and rebelled against reductionism, turning the postulates of postmodernism upside down.

The chapter brings together the synthesis of Scruton's thinking, a complete amendment, from a metaphysical perspective, that will attract everyone's interest.

The next chapter (pp. 55-66) has the ironic title, *The monkey descends from man*, and it is a review by Garrido Gallardo of Tom Wolfe's posthumous book, *The Kingdom of Speech* (2016). Speech is where the boundary lies between human beings and animals. While the ideology of Darwin's Origin of the Species is well known, Tom Wolfe harshly criticises

Chomsky for surrendering to the political correctness that allows for such ideological understanding. There's no doubt that Noam Chomsky is the linguist par excellence of the second half of the twentieth century, discoverer of an approach that has invigorated —one step further— the linguistic research of the last seventy years. But, what of language itself? In the opinion of the author of the article, the documented diatribe of Wolfe against scientism entails a clear lesson: after so much bickering about whether man descended from the monkey, is it going to turn out that the monkey descends from man and has to develop abilities that man, due to his intelligence, didn't have the need for?

The piece by the philosopher Juan Arana, *Posthumanism and transhumanism* (pp. 66-94) examines the transformations of the classical metaphysical questions of human beings (where am I from?, where am I going?, who am I?) that have arisen on the back of the relativistic embrace of new technologies: transhumanism (where are we going?) and posthumanism (what will we be?). Radical transhumanism affirms that there are no transformation limits other than those imposed by technoscience, while posthumanism envisages, consequently, as an end, a category of beings that are no longer human, but rather their legitimate heirs. Transhumanism and posthumanism entail attempts to reduce the metaphysical to physical, and annul the work of philosophy and religion.

With good reason, recalls Arana, Roger Penrose has thwarted, among many others cited, the claims of all non-biologistic humanisms. These need, as a first step, to reduce the human mind to a logical complex algorithm. The human mind simply doesn't work like that. It is not an IT program that can be activated in the most wide-ranging of formats. The union between the body and soul is much more intimate than what Plato, Descartes and cyber-transhumanists claim. As such, it regards the psychological pole of man, and does not boil down to a mere physiological or biochemical functionality.

The fantasy, says Arana, is gradually turning into a nightmare, "the promised paradise takes on a hellish appearance and, finally, we can only take comfort in that, like a bad dream, it will at some point pop like a soap bubble" (p. 93).

The chapter signed by the Professor of Philosophy of Law, Andrés Ollero, *Faith and reason* (pp. 95-104), extensively reflects the thinking of Joseph Ratzinger (Pope Benedict XVI). In accordance with the academic structure of this text, perhaps the most effective method, for the purpose of this review, is to encourage you to read it carefully and to offer a snippet of the final page:

> [Pope Benedict XVI evoked in Regensburg that] "the absence in the acceptance of a natural law, rationally accessible, would inevitably delay the possibility of dialogue with modernity. Only that rationally shared natural law would be able to open the way for 'dialogue of cultures', inviting pos-

> sible partners to access 'this great *logos*, to this breadth of reason". Not far from this capacity of dialogue are, in the opinion of Habermas, the secularists who forget that the liberal State: "cannot discourage believers and religious communities so that they abstain from expressing themselves as such and in a political manner, as it cannot be known, conversely, whether or not the secular society is disconnecting and taking away important reserves for the creation of sense." Indeed, it was suggested, in parallel, that: "the deeply religious cultures of the world believe that that very exclusion of the divine from the universality of reason is an attack on their most profound convictions; a reasoning that is deaf to the divine, and that relegates religion to the category of subcultures is uncapable of entering into the dialogue of cultures". Just as grave as the lack of faith of those who seek to monopolise reasoning, it may result in a shortness of fondness for reflection and rational discussion of many believers. Therefore, having the guidance of a pope who acted as Defender of *rationis*, is a true gift. (p. 104)

Today's woman (pp. 105-117) by the lecturer at Universidad Carlos III María Calvo Charro addresses the issue of feminism. Let's remember that feminism has diverse meanings: (1) universal feminism that defends the essential equality of people and fights against the historic constraints that discriminate against women; (2) feminism that proclaims the identity of both sexes, beyond the consideration of data that are accepted on the existence of an innate sexual dysmorphism; (3), among others, feminism embedded in gender ideology (not explicitly covered in this book) which considers gender as a condition or an option and inevitably clashes with those who postulate the previous meaning.

Here, the author defends the stance that many women want to be themselves, contributing their values and qualities, and that they are willing to fight against social roles that impose upon them jobs according to masculine standards that entail renouncing maternity and disconnecting from family. It is a position that conflicts not only with the third, but also the second meaning provided. In other words, more politically incorrect, impossible.

The excellent analysis of the postmodern discourse the book provides us with is completed by the text called *It's worth living* (pp. 117-160), which contains an extensive interview with the recently deceased Cervantes award-winner, José Jiménez Lozano (1930-2020), carried out by Guadalupe Arbona Abascal and Juan José Gómez Cadenas, and a short story by the author, also published in *Nueva Revista*. In a wonderful conversational tone, he concludes through a key testimonial, beyond any explicitly intentionality, the big question that the volume addresses on political correctness and postmodern culture in general.

After its reading, we remember that the editor suggests at the beginning of the book that it infers a dual outcome: the value of affability and the primacy of the testimony at the service of the humanist tradition. As with the existence of the prejudice that those who believe truth will be imposed (if possible) by force are violent people, giving an opportunity (or even pretext) to think

that that is the case must be avoided. As every model is coherent, attempts to understand them must not focus on the weakness of this or other details of one model or another, but rather the message sought to be conveyed. In short, affability, the lesser result of goodwill (unconditional love), acquires rare importance, and the primacy of praxis ("actions speak louder than words") is the apologetic argument par excellence, and nothing comes close to it.

In the context of the educational journal in which these works are published, *A Road Map* teaches us, in conclusion, that educating values requires, today more than ever, special focus on affability and coherence.

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