



Studying the professional identity of pre-service teachers of primary education in CLIL: Design and validation of a questionnaire

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ABSTRACT

Within the bilingual education context, the role of professional identity, widely studied across several areas of educational research, is scarcely explored in Content and Language Integrated Learning (CLIL). According to the literature, few studies address the analysis of the pre-service teachers' professional identity in CLIL. Understanding the role of professional identity is vital for teachers' professional development and even to adapt training programmes for CLIL teacher education. Thus, this study presents the design of a questionnaire aiming at analysing the professional identity of pre-service teachers in CLIL. The questionnaire was validated through a panel of experts and applied to 73 pre-service language teachers of primary education. Results demonstrated a valid and reliable instrument. Differences in tests administered to participants were statistically significant. Hence, the designed instrument serves as a starting point to evaluate the pre-service teachers' professional identity.

Keywords: Content and Language Integrated Learning (CLIL), pre-service language teachers, primary education, professional identity, questionnaire

Estudiando la identidad profesional de docentes en formación de educación primaria en AICLE: diseño y validez de un cuestionario

RESUMEN

Dentro del contexto bilingüe, el rol de la identidad profesional, ampliamente estudiada desde varias áreas de la investigación educativa, es escasamente explorada en el Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE). De acuerdo con la literatura, pocos estudios abordan el análisis de la identidad profesional de docentes en formación en AICLE. Entender el rol de la identidad profesional es vital para el desarrollo profesional de los docentes e incluso para adaptar programas de formación docente para AICLE. Por lo tanto, este estudio presenta el diseño de un cuestionario para analizar la identidad profesional de los docentes en formación en AICLE. El cuestionario se validó mediante un panel de expertos y se administró a 73 docentes de lengua en formación de educación primaria. Los resultados demostraron que se trata de un instrumento válido y fiable. Las diferencias entre los tests administrados a los participantes fueron estadísticamente significativas. Así, el instrumento sirve como punto de partida para evaluar la identidad profesional de docentes en formación.

Palabras clave: Aprendizaje Integrado de Contenidos y Lenguas Extranjeras (AICLE), cuestionario, docentes de lengua en formación, educación primaria, identidad profesional

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1. Introduction

The role of the teacher is continuously evolving in educational institutions. Particularly, in the European context, the implementation of Content and Language Integrated Learning (CLIL) has brought a new teaching position: the CLIL teacher. Becoming a content and language teacher seems challenging for constructing identity (Cammarata & Tedick, 2012; Martel, 2020) as they need to consider an additional aspect when teaching: the language. Morton (2016), in a study on CLIL teacher identity, concluded that “being a CLIL teacher means a struggle to establish a new identity” (p. 383). Under such circumstances, teachers are required to adapt themselves to this emergent position, which implies mastering both content knowledge and the foreign language (Lo, 2020). Being a CLIL teacher means understanding teachers’ position, especially the professional identity in a bilingual approach, by considering both aspects. The emergent CLIL teacher’s position necessarily impacts the professional identity (Martel, 2020; Morton, 2016) and, importantly, defines the designing of professional development (PD) programs for future teachers (Lo, 2020).

Teachers’ professional identity under CLIL has received little attention (Moate & Ruohotie-Lyhty, 2020). While few researchers have addressed the process of identity construction of CLIL teachers (De Mesmaeker & Lochtman, 2014; Hüttner et al., 2013; Lo, 2020; Martel, 2020; Morton, 2016; Pappa et al., 2017), only Escobar (2013) and Moate and Ruohotie-Lyhty (2020) analysed pre-service teachers’ (PSTs hereinafter) identity based on the literature review. It is relevant to focus further on PSTs, given that professional identity formation is influenced by initial training and crucial for its construction (Cuadra-Martínez et al., 2021). The study of teachers’ professional identity, which is fundamental within the area of educational research, therefore, remains hardly explored to some extent. Few studies have addressed the professional identity of PSTs in primary education quantitatively. Particularly, De Mesmaeker and Lochtman (2014) studied the term having CLIL secondary teachers as participants. Thus, to bridge the gap, the aim of this paper is to study the professional identity of PSTs of primary education within CLIL by designing and validating a new quantitative instrument. Therefore, the new instrument may act as a starting point for gathering information to understand PSTs’ professional identity.

Studying the professional identity of PSTs in CLIL is significant as it is linked to professional development (Lo, 2020). However, looking for a definition of the CLIL teacher in Spain is still complex. CLIL training is not offered to undergraduate students (Custodio & García, 2020), and teacher education programmes at universities separate teachers through specializations (i.e., general primary teachers and foreign language teachers) (Jover et al., 2016). The lack of training on bilingual education in undergraduate programmes of primary education (Custodio & García, 2020; Pérez-Cañado, 2016) may create struggles in the professional identity of PSTs in CLIL contexts. Therefore, studying the pre-service teachers’ professional identity may impact their future teaching practice and also the prospective students learning at schools.

2. Literature review

2.1. Being a CLIL teacher: What does this mean?

Being a CLIL teacher means understanding the teachers’ position in a bilingual approach where teachers teach both aspects integrated. Coyle et al. (2010) stated that CLIL “is a dual-focused

educational approach in which an additional language is used for the learning and teaching of both content and language” (p. 1). This CLIL approach integrates the 4Cs framework as a planning tool to improve the students’ learning process by focusing on different dimensions: content, cognition, communication, and culture (Coyle & Meyer, 2021). In this sense, this approach is considered as a new way of learning for students and teachers. It is important to have teachers who are pedagogically well-trained and competent in the language as well as capable of identifying CLIL effective teaching practices (De Graaff et al., 2007). Therefore, the emergent CLIL teacher position aims at fostering students’ learning of both the content and the language.

Understanding CLIL teachers means considering the language factor in their teaching. Moreover, integrating both aspects influences the professional identity construction (Morton, 2019), as teacher identities are “strongly shaped by the subject they teach” (Nikula et al., 2016, p. 14). Being in this position implies changes not only in the way the content is taught but also in how the language impacts the identity process. In this vein, the language might influence teachers’ professional identity - as content does. Notably, this may cause identity struggles when non-native speakers deal with the language of instruction (Skinnari & Bovellan, 2016). Furthermore, the linguistic background of teachers influences their beliefs (Portolés & Martí, 2018) and, consequently, their perceived identity. Hence, language as an essential factor in CLIL could influence teachers’ professional identity.

A clear definition of the CLIL teacher’s professional identity is required. Scant work has been done on the study of the identity of content and language teachers and even less in pre-service teachers in CLIL settings (Moate & Ruohotie-Lyhty, 2020). Studying the professional identity of CLIL teachers should begin not only during teaching but also during their training as students who will become teachers in the near future. Moreover, describing teachers’ professional identity could help to define their self-image, beliefs, and influence on the community in the process of building their identity. In this sense, clarifying how the professional identity is defined and constructed by pre-service teachers is of the utmost importance as research has not dealt enough with such identity up to the present.

2.2. Defining the professional identity of the CLIL teacher

The professional identity has been defined through different characteristics and fields in the literature, for example, bilingual education (Martel, 2020), pre-service teacher education (Mommers et al., 2021), English language teaching (Tafazoli & Sadeghi, 2018), and applied linguistics (Kayi-Aydar, 2019). Finding a definition of the professional identity of CLIL teachers implies considering the position, beliefs, and identity as an individual/social process in a community. Throughout the literature review, these characteristics have been selected to describe the PSTs’ professional identity in CLIL.

2.2.1. Position/image of the self

Identity can be described by the position teachers attach to themselves. Kayi-Aydar (2019) relates position and identity by stating that “the positions people take up form who they are” (p. 19). According to Morton (2019), teaching in CLIL by contemplating the language and the content simultaneously supposes a challenge that crucially impacts professional identity construction. Hüttner et al. (2013) found out that teachers position themselves as content teachers because their command of the subject’s

content is better than their knowledge of English. Similarly, the results of Morton's (2016) study demonstrated how teachers feel and position themselves as unconfident when teaching a content subject in English and a CLIL setting: "Here, the identity position oriented to is not that of a language teacher, but that of a content teacher who happens to be teaching in another language" (p. 388). This paper explains the position based on the Positioning Theory (Kayi-Aydar, 2019), which describes how teachers or pre-service teachers position themselves when teaching a lesson.

Self-image takes part in identity construction and is related to the position. De Mesmaeker and Lochtman (2014) linked position and image as characteristics of the professional identity by analysing the teachers' positions (e.g., I see myself as a content teacher, I see myself as a language teacher, and I see myself as a teacher who integrates the content and the language). Cammarata and Tedick (2012) analysed the image that teachers had as a significant landmark in the shaping of their professional identity: "It was helpful just to see myself more as a language [teacher]... besides an elementary teacher, that we're teaching language through content, but it still is a type of language teaching." (p. 258). Teachers have an image of themselves in teaching, and they are positioned as either content teachers, language teachers, or both (content and language teachers). Therefore, the position and image show an intrinsic relationship which influences the transformation of the professional identity.

2.2.2. Beliefs and perceptions.

Beliefs and perceptions are demonstrated as characteristics that define professional identity. In addition, expectations and attitudes are related to beliefs (Portolés & Martí, 2018). De Mesmaeker and Lochtman (2014) defined 'beliefs' as perceptions that teachers have of themselves as teachers. Different studies, not related to CLIL but relevant, have explained the relationship between beliefs and the identity of PSTs (Chong & Low, 2009; Kuswandono, 2014; Schepens et al., 2009). All these authors (including De Mesmaeker & Lochtman, 2014) define teachers' beliefs as part of their professional orientation. Kuswandono (2014, p. 201) identified perceptions with the following question: "Why do you want to be a teacher." Schepens et al. (2009, p. 364) presented similar questions to identify the beliefs of student teachers: "Who I am as a teacher at this moment?," "Who do I want to become as a teacher?," and "Why do I want to study this degree?" Similarly, Chong and Low (2009, p. 62) included the question "Why I choose teaching?" to conclude that PSTs' beliefs about teaching can influence their practice. Furthermore, they seem to be more willing to change and modify their perceptions during their academic training process (Portolés & Martí, 2018). Beliefs, thus, are connected to individual attitudes, perceptions, and the professional orientation that PSTs have towards their teaching.

In a similar vein, the process of interaction with others influences beliefs. According to Pappa et al. (2017), identity as a negotiation process is related to own perceptions about teaching: "Do you feel like being the same teacher when you teach through a different language?" (p. 64). It interrogates the individual about the feeling that teachers or students develop when teaching by using a second language. Similarly, Morton (2016) highlights the importance of teachers' beliefs when they are teaching and how they feel: "I find myself not so prepared to teach in English" (p. 388). Therefore, beliefs are constructed through a social process in which perceptions, experiences, and language have a relevant influence on the professional identity of PSTs within CLIL.

2.2.3. Identity as a construction process into a community.

Identity can be identified as both an individual and a social process (Pappa et al., 2017). Cammarata and Tedick's (2012) study highlights how identity is built as an individual and reflective process by explaining the term 'awakening'. This concept underlines the importance of teachers' reflection on their own teaching practice and, indeed, the fact of being aware of integrating content and language when teaching under this approach. In this line, the construction of identity is connected to the term 'reflection.' Escobar (2013) highlighted the significance of reflection by describing that teachers reflect on their teaching practice to improve professional development. In this study, Escobar (2013) presented a case study in which the individual analysed their recorded lessons by reflecting on them. Similarly, in De Graaff et al.'s (2007) study, recordings of CLIL teaching practices were analysed by the participants to increase their pedagogical knowledge in CLIL (i.e., helping them with their teacher training). Therefore, reflecting on the identity involves an individual process of transformation.

In addition, the construction of identity is also recognised as a social process (Pappa et al., 2017). This process is associated with a group of similar purposes that share three features: domain, community, and practice (Martel, 2020). These characteristics are related to the idea of the community of practice associated with the construction of the professional identity. Wenger (1998) stated that the community provides the opportunity to negotiate teachers' identities with others. Similarly, Evnitskaya and Morton (2011) explained the community of practice as a place where people share ideas, experiences, beliefs, or values. In this sense, the CLIL approach converges both pre- and in-service teachers within a community with the same objective. Therefore, the process of identity in this community could be defined by common ideas and experiences of teaching under this approach.

Before moving to the methodology section, we should restate that the objective of this study is to design and validate an instrument to examine the professional identity of PSTs of primary education within CLIL. When designing the questionnaire, we focused on those characteristics derived from the literature review: position/image of the self, beliefs and perceptions, and the identity as a construction process into a community. These characteristics were selected to start designing the instrument as they were found as relevant features concentrated on the pre- and in-service teachers' professional identity in CLIL. Therefore, to conduct this research and achieve the main objective, the following research questions were established:

RQ1: Is the newly designed instrument valid and reliable to study the professional identity of PSTs within CLIL?

RQ2: Does the teacher training intervention influence the construction of the professional identity of PSTs?

3. Methodology

3.1. Research design

We applied quasi-experimental research through a one-group pretest-posttest design. The main goal of this kind of design is to ascertain the influence of the intervention on a specific sample (Allen, 2017). According to the one-group pretest-posttest design, two main features of this design are a single group of participants (i.e., PSTs) with the same condition (i.e., intervention) and a linear ordering (i.e., pretest-posttest design). As illustrated in Figure 1, through a linear ordering, the researchers should calculate the dependent variable before and after treatment (Allen, 2017).

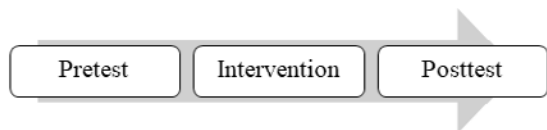


Figure 1. A one-group pretest-posttest research design. Own elaboration

3.2. Participants

The target population of this study was 73 PSTs of primary education from the University of Córdoba in Spain. All of the participants were selected through a non-probabilistic sampling process (purposive sampling). The participants were taking a course in the 4th year of Primary Education (specialized in English language teaching). 84.9% of the PSTs were female, and 15.1% were male. The majority of participants were Spanish (84.9%), and the rest were French (1.4%), Polish (9.6%), German (1.4%), and Turkish (2.7%). 86.1% took English as a specialization of their Teacher Education Degree (13.9% selected another specialization). As for their language level, most of the participants were intermediate users of English (89%), and the rest were proficient (6.8%) and basic users (2.7%) of English.

3.3. Instrument

3.3.1. Design process and structure

The process of designing the questionnaire followed three different phases of literature review and questionnaire construction, validation, and implementation. In the first phase of the literature review, we decided to construct a new instrument because the literature shows that only one study addressed the professional identity of secondary CLIL teachers through a questionnaire (De Mesmaeker & Lochtman, 2014). The instrument herein described will address the context of primary PSTs by introducing specific questions to study the professional identity. The questionnaire was developed deductively by considering those characteristics of CLIL teachers' professional identity emerging from the literature review. In the second phase, the questionnaire was validated through a panel of five experts. The instrument was modified according to the evaluation results and comments from experts. Finally, the questionnaire was ready to be implemented. In the final phase of implementation, PSTs took a subject in which CLIL was the fundamental topic during the first semester of their Bachelor's Degree course. Both pre- and post-test were analysed in terms of reliability. Additionally, the paired sample t-test was conducted to identify the significance of data from both questionnaires.

The designed questionnaire is composed of three main sections: (i) Background information, (ii) Content and Language Integrated Learning (CLIL) teaching, and (iii) Professional identity (see Appendix 1). Sections (ii) and (iii) were adapted from the main characteristics of professional identity found in the literature review. Section (ii) is based on De Graaff et al.'s (2007) study, in which they set different criteria to observe effective CLIL practices. We added De Graaf et al.'s (2007) five-point Likert scale (from 1= *strongly disagree* to 5= *strongly agree*) for 15 items to De Graaf et al.'s (2007) criteria. Also, in section (iii), different characteristics of PSTs' professional identity, including (i) Position/image of the self; (ii) Beliefs and perceptions; and (iii) Identity as a construction process into a community were considered in 16 items. Furthermore, in this section, the

study of the PSTs position in teaching is included through a similar semantic differential scale from De Mesmaeker and Lochtman's (2014) scale.

3.3.2. Validation of the instrument

The validation process was conducted through an international panel of experts (n = 5) selected from different universities and areas. Expert 1 is a researcher from the University of Oviedo (Spain) whose main area is focused on bilingual education and foreign language teaching. Expert 2 from Burapha University (Thailand) investigates mainly on TESOL field. Expert 3 from the University of Vienna (Austria) focuses mainly on CLIL, teacher development and classroom discourse, whose recent studies have been initiated on the professional identity in CLIL, particularly the beliefs of CLIL teachers. Expert 4, a researcher from the University of Jember (Indonesia), has concentrated their research on English Language Education, teacher professional development, and bilingual education. Lastly, trying to make the instrument valid and reliable, the last expert from the University of Córdoba (Spain) was selected to evaluate the questionnaire from the area of Applied Statistics.

Each section of the questionnaire was assessed by experts in terms of clarity and relevance (Table 1). The criteria followed a five-point Likert scale to evaluate the items (from 1 = *strongly disagree* to 5 = *strongly agree*). Additionally, experts made comments suggesting changes and improvements to the instrument.

Table 1.

Assessment Criteria for Evaluating the Items of the Questionnaire. Own elaboration.

Criteria	Indicators
CLARITY	The items are / are not well written.
	The items are /are not grammatically correct.
	The items are / are not clear for non-native speakers of English.
RELEVANCE	The items have / have no interest in the research.
	The items are / are not important for the research.
	The items are / are not necessary to cover the purpose of the research.

3.4. Intervention: A training programme for PSTs

The intervention aimed to help PSTs of primary education understand the meaning of CLIL and make them reflect on their professional identity. To achieve this goal, a training programme was developed by working on different characteristics of identity (particularly the image and position of the PSTs within CLIL). A video-recording was included in the programme to promote PSTs' reflections on their teaching practice. This tool facilitates them to identify themselves on the video by being aware of different aspects of their professional identity (e.g., position/image). Moreover, videos "can be viewed repeatedly and paused, so allowing for a selection of focus on the part of the student teachers and teacher educators" (Hüttner, 2019, p. 473). The fact of including videos supports PSTs to think about their beliefs. Also, this tool engages them to reflect on their practice (Escobar, 2013). In addition, video technology fosters learning from what is observed through videos (De Graaf et al., 2007) and, importantly, supports PSTs linking the theory and the practice (Sagasta & Pedrosa, 2018). Therefore, it is important to reflect on

the CLIL practice to transform the professional identity (Morton, 2016) while specific training programmes support this identity construction (Cammarata & Tedick, 2012).

Within the training programme, PSTs developed a CLIL integrated didactic unit (CLIL-IDU) by working in groups and receiving the fundamentals of the CLIL approach. The programme was implemented into a university syllabus in which PSTs received theoretical lessons focused on the CLIL approach, and practical seminars dedicated to work deeply on the professional identity for four months. During the practical seminars, video technology was implemented in four different sessions: i) In the first session, they prepared the objectives for the selected area of their CLIL-IDUs and recorded themselves giving this information. They were asked to watch their recordings and make comments with their partners in class. ii) In the second session, they recorded and analysed different chunks of videos from themselves by teaching vocabulary under the CLIL approach. iii) They were using a video-observation guide (Díaz-Martín, 2020) to analyse a video of a real CLIL lesson. iv) They simulated a CLIL lesson in which they applied their CLIL-IDUs. These simulated lessons were recorded and analysed by using the video-observation guide.

3.5. Data analysis

To analyse the questionnaire, we followed Greasley's (2007) steps: (i) naming variables, (ii) entering data into the SPSS, (iii) analysing data using the appropriate type of analysis, and (iv) writing the report. First, in our study, data analysis was accomplished using the SPSS Statistics 25 for Windows. Variables of the questionnaire were named before entering data into the SPSS. The analysis was different for every section of the questionnaire: (i) Background information contained mostly nominal data. This section was analysed by the frequency of data to know the participants' characteristics. (ii) CLIL teaching contained interval data information which was analysed by calculating descriptive statistics like the mean and the standard deviation. Finally, (iii) as professional identity integrated different parts, they were analysed differently. First, the positioning scale was analysed regarding the frequency to know the number of PSTs in each position. Then, the rest of the items (interval data) were calculated by the mean and the standard deviation. The descriptive data is a starting point of this analysis in order to have an overview of the professional identity of PSTs.

4. Results

This study shows the design of a questionnaire to study the professional identity of PSTs of primary education in CLIL. Results are presented to answer the main research questions of this research. The instrument demonstrates validity and reliability. Intervention is measured according to the significance. Noticeable findings are interpreted from PSTs' responses to the questionnaire.

4.1. Measuring the instrument: Validity and reliability

The process of validation was positively convincing according to the RQ1. The questionnaire design suffered minimal changes, and experts' recommendations improved both the content and the structure of the instrument. The items' means for every section were mostly higher than 4 in terms of clarity and relevance (see Table 2). According to these data and the experts' comments, items were modified or re-written.

Table 2.

Evaluation of Questionnaire's Items from Experts. Own elaboration.

Items	N	Clarity		Relevance	
		Mean	Standard deviation	Mean	Standard deviation
Section 1. Age	5	4,8	.45	4,8	.45
Section 1. Average Grade	5	4,4	.89	4,2	.84
Section 1. Degree	5	4,4	1,34	4,8	.45
Section 1. Specialty	5	4,6	.89	4,8	.45
Section 1. Mother tongue	5	5	.00	5	.00
Section 1. B)1	5	4,6	.89	5	.00
Section 1. B)2	5	4,8	.45	4,8	.45
Section 1. B)3	5	4,2	1,10	3,8	1,30
Section 1. B)4	5	4,6	.55	4,6	.55
Section 1. C)1	5	4,6	.89	4,6	.89
Section 1. C)2	5	4,6	.89	4,2	1,30
Section 2. Item 1	5	3,4	1,14	4,8	.45
Section 2. Item 2	5	3,8	1,30	4,6	.55
Section 2. Item 3	5	4,6	.89	5	.00
Section 2. Item 4	5	4,6	.89	5	.00
Section 2. Item 5	5	4,4	.89	5	.00
Section 2. Item 6	5	4,8	.45	5	.00
Section 2. Item 7	5	4,8	.45	5	.00
Section 2. Item 8	5	4,6	.89	4,4	1,34
Section 2. Item 9	5	3,4	1,52	4,6	.55
Section 2. Item 10	5	4,6	.89	4,6	.55
Section 2. Item 11	5	4,6	.89	4,8	.45
Section 2. Item 12	5	4	1,41	4,8	.45
Section 2. Item 13	5	4,6	.89	4,2	1,30
Section 2. Item 14	5	4,2	.84	4,6	.89
Section 2. Item 15	5	4,8	.45	5	.00
Section 3. Position scale	5	3,8	1,10	4,8	.45
Section 3. Item 1	5	3,6	1,67	4,6	.55
Section 3. Item 2	5	4,8	.45	4,4	.89
Section 3. Item 3	5	4,8	.45	4,8	.45

Items	N	Clarity		Relevance	
		Mean	Standard deviation	Mean	Standard deviation
Section 3. Item 4	5	4,6	.89	4,4	.89
Section 3. Item 5	5	4,6	.89	4,6	.55
Section 3. Item 6	5	4,6	.89	4,8	.45
Section 3. Item 7	5	4,6	.89	4,6	.89
Section 3. Item 8	5	5	.00	4,2	.84
Section 3. Item 9	5	4,6	.89	4	1,41
Section 3. Item 10	5	4,6	.89	4,8	.45
Section 3. Item 11	5	4,6	.89	4,6	.55
Section 3. Item 12	5	4,6	.89	4,6	.55
Section 3. Item 13	5	4,6	.89	4,6	.55
Section 3. Item 14	5	3,2	1,64	4,2	.84
Section 3. Item 15	5	4,8	.45	4,6	.89
Section 3. Item 16	5	4,6	.89	5	.00
Section 3. Item 17	5	4,6	.89	4,8	.45

In section 1 (background information), descriptive data like gender were included based on the experts' recommendations. In section 2, some items were modified to make them more precise (e.g., items 1 and 9). Despite the fact that the results regarding clarity and relevance were positive in section 3 (professional identity), most of the items were re-written, and one of them was eliminated (item 6) by following experts' suggestions. After the experts' evaluation, a pretest-posttest experimental design was applied to pilot the instrument and measure its reliability (i.e., the questionnaire was applied twice to the same sample to compare the results and measure their reliability). The questionnaire was administered to 73 PSTs. According to Nunnally and Bernstein (1994), the internal consistency presented excellent reliability ($\alpha > .85$ in the pretest and $\alpha > .93$ in the post-test). Finally, the internal consistency of the questionnaire depicted a reliable instrument (see Table 3).

Table 3.
Reliability of the Questionnaire. Own elaboration.

	Cronbach's Alpha	N of items
Pretest	.85	32
Posttest	.93	32

Table 4.
Paired Sample T-Test. Own elaboration.

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
				Lower	Upper			
Pretest-Posttest	-.37062	.20719	.03663	-.44533	-.29592	-10.119	31	.000

4.2. Intervention for PSTs' professional identity transformation

The questionnaire was administered to participants twice in the last academic course of their Primary Education Bachelor's Degree. The pre-test was applied at the beginning of the course and the post-test was administered once they finish the academic course in which the training programme (i.e., intervention) was implemented. Both questionnaires aimed at evaluating the effectiveness of the teacher training intervention on the construction of the professional identity of PSTs according to RQ2. A paired sample t-test was conducted to know if changes between questionnaires responses were statistically significant. As a result, it was found that $t = -10.119$ (Table 4), where t is the student-t distribution statistic, indicating significant changes between the pre and post-test samples.

Results of the paired samples t-test demonstrated that intervention caused an impact on different aspects: i) PSTs' knowledge of CLIL teaching, ii) PSTs' positioning, and iii) PSTs' professional identity. Figure 2 shows the CLIL teaching knowledge of PSTs in pretest and post-test. In this section of the questionnaire (see Appendix 1), the average of the post-test (3.96) is higher than the pretest (3.47), so the average of every item has risen slightly. Remarkably, some of the items (i.e., 1, 4, 6 and 12) have increased significantly (over 0.6) in the post-test.

The positioning scale of the questionnaire (Appendix 1) measures how PSTs place themselves as teachers. Figure 3 shows the number of PSTs in each position. In the pretest, position 5 is the most selected one by PSTs (21). Position 5 increases (24) in the post-test, and position 7 presents the highest difference among tests applied (from 1 to 8 PSTs).

Figure 4 presents professional identity items grouped into four blocks to clarify the meaning of every cluster as follows: (i) Professional orientation, (ii) Feeling about being a CLIL teacher, (iii) Personal beliefs, and (iv) Community beliefs. Overall, the tendency from the pretest to the post-test increased slightly. Noticeable changes are presented in items 3 (professional orientation), 4 and 5 (Feeling about being a CLIL teacher), and item 10 (personal beliefs). Within the 'Community beliefs' section, every item has increased positively (over 0.3) compared to items in the other sections being the ones whose changes between tests are more visible.

5. Discussion

The instrument designed to study the PSTs' professional identity of primary education in CLIL has been evaluated positively by different experts. Moreover, the administration of both questionnaires has brought satisfactory results by demonstrating the reliability of the instrument. The paired sample t-test demonstrated significant changes among tests applied which led to conclude that intervention (i.e., training programme) influenced the PSTs' professional identity transformation.

The comparative analysis of the results in both pre and post-tests depicts changes in the PSTs' professional identity while enhancing their CLIL teaching knowledge. Despite their

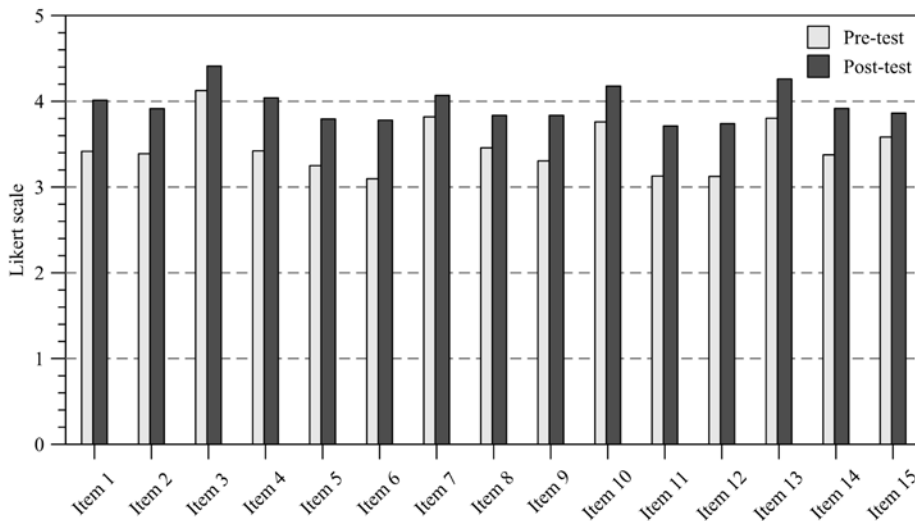


Figure 2. CLIL Knowledge Results. Own elaboration.

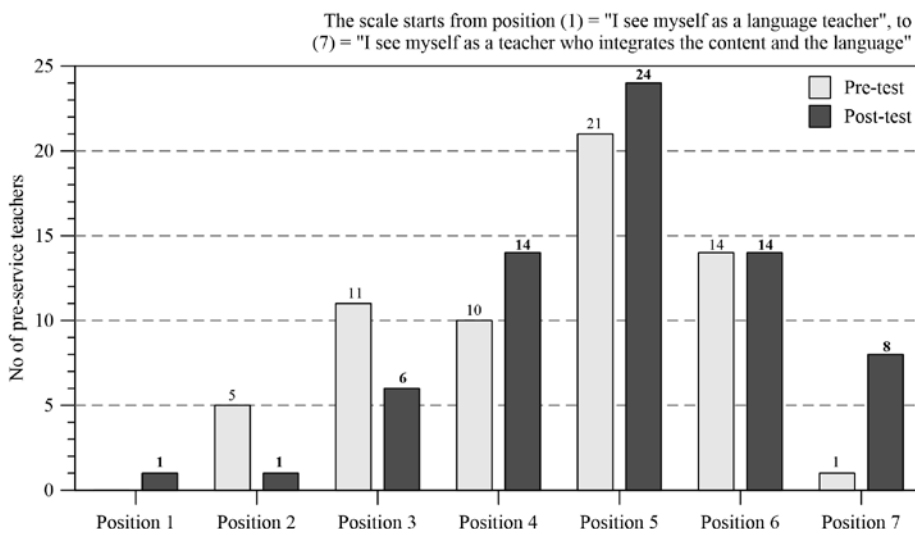


Figure 3. Positioning results. Own elaboration.

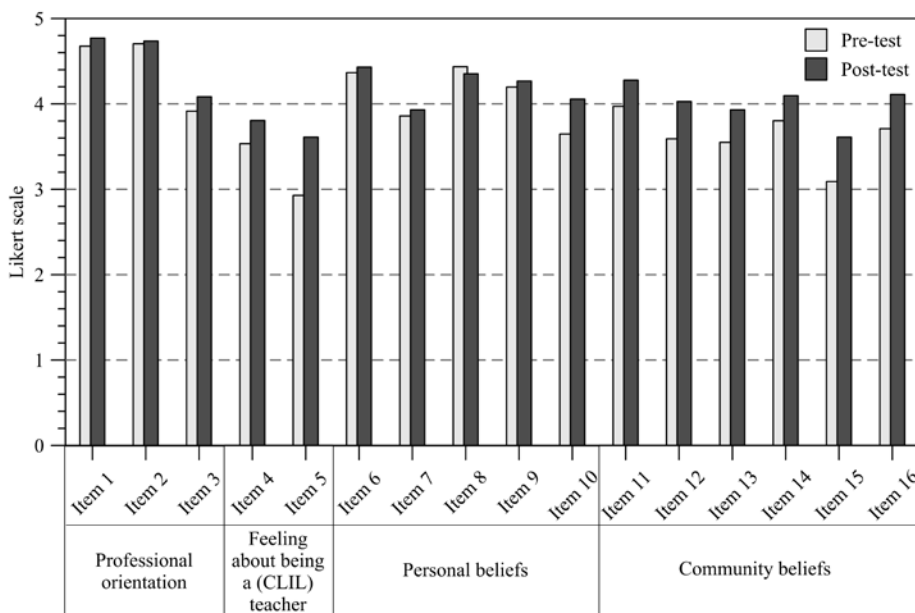


Figure 4. Professional Identity of CLIL PSTs - Results.

enhancement in the latter, which is in line with the results of Pérez-Cañado (2016), they still hesitate in most aspects of CLIL teaching. PSTs are still demanding more specific training in CLIL, as recently highlighted by Lo (2020). The administration of the designed questionnaire in this study to CLIL settings benefits in drawing an overview of the CLIL teaching knowledge of PSTs but also the professional identity, which may be decisive for developing specific training courses. In addition, their knowledge is also connected to professional identity construction (Nikula et al., 2016).

Interesting results have emerged according to the positioning of PSTs. The semantic scale helped researchers to identify PSTs' position. PSTs chose positions near being CLIL teachers rather than language teachers, although they were in the "Language Teaching Specialty". This may be explained as a result of the intervention applied as specific training on CLIL was delivered to PSTs. Similarly, pre-service teachers in Cammarata and Tedick's (2012) study depicted different positions after the intervention (i.e., participants saw themselves more as teachers that put the same balance between language and content). On the other hand, participants' positions may be explained by the language aspect which is in line with other studies (De Mesmaeker & Lochtman, 2014; Hüttner et al., 2013; Morton, 2016) (whose participants position themselves as language learners). According to PSTs' English level and observations made from video sessions, the target language may modify teachers positioning. Hüttner et al. (2013) found out that teachers positioned themselves as content teachers because of their lower knowledge of English. Similarly, Morton (2016) demonstrated that teachers presented struggles when teaching a foreign language. The intervention could have helped PSTs place themselves as CLIL teachers. Considering that they have watched videos of themselves teaching under the CLIL approach during the intervention, their position may have changed accordingly.

The results have shown the highest increase in the PSTs feeling about CLIL teaching and their sense of confidence about their preparation to be CLIL teachers (see item 5 in Figure 3). According to Cammarata and Tedick (2012), teachers feel more prepared after a training programme to teach in bilingual contexts. In this sense, intervention based on video sessions made them reflect on their practices which is connected to the identity constructions, which is also mentioned by Morton (2016) "the video-stimulated recall sessions were a particularly rich context for such identity and positioning work" (pp. 385-386). Therefore, intervention based on CLIL plus the use of video recordings could have a positive impact on the construction of PSTs' professional identity (RQ2).

As a starting point, the questionnaire has presented the most relevant aspects that define PSTs' professional identity within CLIL. On the one hand, within the "Personal beliefs" section of both questionnaires, item 10 presents the most significant change ('I reflect on the meaning of being a CLIL teacher'). That is, PSTs have transformed the way they think of being CLIL teachers. Similar results are found in Cammarata and Tedick's (2012) study, which highlights the way teachers transform their identity through reflection. On the other hand, it is interesting to see differences between both tests in the cluster of items "Community beliefs". The way PSTs think and transform their professional identity is defined more as a social than an individual process. They shared their worries about their (CLIL) teaching practice with their colleagues. Moreover, they agreed with becoming part of a CLIL teacher community as a committed person, and they are aware of being part of a professional community. Additionally, through intervention, PSTs could share each other's worries

as they discussed not only during the video-recording session but also through analysing their videos. Intervention then has aided PSTs to feel integrated into a community which has provided them with the opportunity to negotiate their professional identity (Wenger, 1998). This social process of identity construction is also found in studies of Pappa et al. (2017) and Evnitskaya and Morton (2011), which define the community of practice as a place to share experiences. In this sense, community beliefs clearly define the PSTs' professional identity.

6. Conclusions

This study presents a valid and reliable instrument that provides relevant information regarding the PSTs' professional identity within CLIL settings. The questionnaire offered an overview of the professional identity of PSTs. Reflecting on being a CLIL teacher as well as conceiving the self as part of a professional community were aspects that defined the PSTs professional identity. Therefore, the questionnaire was a useful instrument, but it had some limitations. Although questionnaires offer immediate information, they need to contrast data from other research techniques, such as interviews, to study the professional identity of PSTs in this area. Also, increasing the sample, comparing data with PSTs from other countries, and implementing other techniques could help researchers to define the PSTs' professional identity.

The questionnaire provided a good starting point to study the topic. Especially, this instrument is open for the research community in order to be implemented in different contexts (i.e., both national and international) to help on defining the professional identity of pre-service CLIL teachers for making decisions on their teacher training and, essentially, for helping them on knowing better how they teach as bilingual teachers by improving their professional development.

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Appendix 1**Professional Identity of Content and Language Integrated Learning Teachers****Section 1. Background information****A) Personal and academic data**

Age _____ Gender _____ Average Grade in your University Degree _____

Actual Bachelor Degree _____

Specialty _____ Mother tongue _____

Other studies (write the title and the level) _____

B) English knowledge*Please mark your responses with an X in the box and answer the question sincerely.***a) Level of English***Select your level of English:* A1 A2 B1 B2 C1 C2

Please write your certificate of language proficiency: _____

b) Have you studied in a bilingual institution? Yes No*If yes, select the institution (you can mark more than one)* Nursery Primary School Secondary School High School Higher Education/University*And, write the subjects which have been delivered in English:***c) Have you achieved a scholarship to learn English?** Yes No*If yes, write the name of the scholarship:***d) Have you ever lived in a foreign country?** Yes No*If yes, write the country and the period of time living there:***C) English experience****a) Are you doing your Practicum this year?** Yes No*If yes, answer the following question:*Is your Practicum set in a bilingual school? Yes No**b) Have you ever taught a second language in an informal context?** Yes No*If yes, please specify the context and the time (expressed as the number of months) teaching the language:*

Section 2. Content and Language Integrated Learning (CLIL) teaching

In the following section, you will find questions about your knowledge on different strategies within CLIL teaching. Please answer the questions by giving a mark from 1 to 5:

1= *strongly disagree* 2= *disagree* 3= *neither agree nor disagree* 4= *agree* 5= *strongly agree*

		1	2	3	4	5
1.	I know different resources, materials and tools to adapt the content into an additional language for the students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	I can identify the most appropriate content planning for the classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	I can prepare materials to make students interact with each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	I know strategies for preparing students to use the target language during the class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	I know different procedures to help students connect content and meaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	I know how to apply communicative and cognitive strategies for making students learn the language through the content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	I understand how to prepare material taking into account the language level of the students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	I know how to plan intercultural content for making students understand different cultures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	I know communicative and cognitive strategies for adapting teaching during the class	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	I can implement different procedures to make students interact with each other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	I understand how to apply strategies to solve comprehension or language use problem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	I know how to manage meaning identification in the classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13.	I know procedures to provide positive feedback to students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14.	I know different approaches to assess students' performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.	I know how to evaluate my own teaching practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 3. Professional Identity

In the following section, we would like you to answer some questions about your professional identity in terms of your image as a CLIL teacher, your beliefs about CLIL teaching, and your sense of commitment in a learning community.

First, we would like to know your position in the following scale. Please, put an "X" to indicate your position.

I see myself as a language teacher ____:____:____:____:____:____

I see myself as a teacher who integrates the content and the language

Second, state your opinion by writing an "X" in the box that best indicates the extent to which you either agree or disagree with:

1= strongly disagree 2= disagree 3= neither agree nor disagree 4= agree 5= strongly agree

	1	2	3	4	5
1. I myself have decided to study for this Teacher Education Degree	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I want to become a teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I would like to become a teacher working within CLIL settings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel prepared to be a teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel prepared to teach in CLIL environments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Specific CLIL teacher training is essential	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I believe that I am capable of teaching content and language integrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I find it useful to think about my own teaching practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I reflect on my teaching practice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I reflect on the meaning of being a CLIL teacher	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. I share my worries about my teaching practice with my colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I share my concerns about my teaching practice within CLIL with my colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I share my vision of CLIL with my colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I want to become part of a CLIL teacher community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. I feel part of a CLIL teaching and learning community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I am a committed person within a professional community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>