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# Examining Teacher Competencies in Content and Language Integrated Learning: Professional Profiles and Ways Forward

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## Abstract

Despite the upsurge of research interest in Content and Language Integrated Learning (CLIL) teachers' professional competencies, very little evidence has been presented from the Chinese academia. To bridge this gap and understand Chinese CLIL teachers' status quo of competencies in relation to their demographic characteristics, the present study adopted a cross-sectional quantitative survey approach and investigated the differences in linguistic competence, content competence, pedagogic competence, CLIL fundamentals, interpersonal and collaborative competence, and reflective and developmental competence in a sample of 205 CLIL teachers from Chinese higher education providers. They had dissimilar genders, language expertise, content subject specialisation, affiliations, academic degrees, educational backgrounds, years of teaching CLIL and professional titles. Inferential analyses of the data obtained from a questionnaire indicated a high heterogeneity in the sample, allowing for the description of CLIL teachers' profiles of professional competencies in accordance with their demographic factors. It is concluded that professional training and ongoing research into CLIL teachers' needs are essential to achieve the homogeneity of competencies and that a supportive network should be established to encourage active partnership amongst CLIL teachers and educational institutions.

**Keywords:** CLIL, teacher competencies, professional identities, professional development.

## Introduction

Since the introduction of Content and Language Integrated Learning (CLIL) in the 1990s, this dual-focused pedagogical approach characterised by using an additional language other than learners' mother tongue or shared language as the medium of instruction for both content and language learning has stimulated considerable research interest in various educational contexts. Although the level of emphasis placed on content learning and language learning differs from case to case due to the variation in educational policies and contextual needs (Dale & Tanner, 2012), it has been commonly acknowledged that CLIL has dual learning objectives of a discipline subject and a foreign language (L2), the dynamic amalgam of which can benefit learners both cognitively and motivationally (Coyle et al., 2010).

In Mainland China (hereafter referred to as China), CLIL has been pushed forward since its first domestic application about two decades ago (Lv, 2001), though some scholars maintain that it has already been implemented in the late 1990s in the English-Medium Instruction programmes organised for young learners in developed cities (Wei & Feng, 2015). However, with the upsurge of research and development activities on CLIL application and practices in the western world, there is a dearth of empirical studies in China (Liu, 2019a; Mi, 2015), providing little evidence concerning the feasibility of this educational approach and making it a rare phenomenon for teachers to switch from a conventional L2 teaching approach to CLIL (Liu, 2020).

Against this general backdrop, the present study attempts to contribute to the understanding of CLIL in China by offering practical insights and suggestions out of empirical evidence gathered from real people in contemporary real-life institutions and settings. The pertinent research agenda is quite extensive, while the study brings attention to investigating the competencies of in-service CLIL teachers working in Chinese higher education providers (HEPs), which have witnessed most of the CLIL implementations in China's educational context (Hu, 2021). CLIL competencies refer to the necessary professional skills that a teacher is expected to possess "to teach content subjects and an additional language in an integrated manner" (Marsh et al., 2011, p. 6) and are an important variable as a catalyst for teacher professional development (Coyle et al., 2010). Adopting a survey approach, the author of this paper wishes to answer the following question:

- Do the survey participants who have differing demographic factors differ in the CLIL competencies needed for the successful implementation of this pedagogical approach?

It is expected that the research findings can provide valuable insights into CLIL practices in China and encourage more comprehensive teacher development and better organisation of CLIL programmes.

## Literature Review

CLIL is a pedagogical approach arising from the foreign language teaching (FLT) practices in Europe, and it is known as "a generic umbrella term that represents a dual-focused flexible educational approach with multiple dimensions and applications, in which an additional language is used for learning both content and language" (Gabillon, 2020, para. 10). Due to its dual-focused nature which is different from other FLT approaches, it has caught considerable attention of researchers and educators. A popular CLIL research agenda focuses on the investigation of performance evidence (i.e. students' language and content learning outcomes), effective evidence (i.e. learners' perceptions, feelings and emotions), process evidence (i.e. key moments when learning occurs) and materials and task evidence (i.e. learning materials used in classes, design and organisation of teaching and learning activities) (Coyle et al., 2010). It is expected that an ideal CLIL study should cover these aspects of evidence to present a comprehensive account of the studied programme, and this train of thought is still the mainstream in academia, underpinning most previous and ongoing studies.

Another CLIL research area is concerned with teachers' professional development and competencies, which play a significant role in assuring the effectiveness of CLIL implementations. Pavesi et al. (2001) are some of the earliest scholars attempting to bring this topic to the public. While identifying the types of teachers suited to CLIL (e.g. teachers qualified in both L2 and content subject, classroom teachers proficient in using an L2 as the medium of instruction, L2 teachers instructing learners on content subject learning, an L2 teacher cooperating with a content subject teacher), they illustrated that qualified CLIL teachers should have full command of L2 and content knowledge, "deep understanding of the cognitive, socio-cultural and psychological elements" of L2 learning, considerable teamwork skills, willingness to cooperate with other stakeholders (e.g. teachers, specialists) and commitment to classroom-based research (Pavesi et al., 2001, p. 87). One year later, Marsh (2002) proposed the notion of CLIL teacher competencies

as to a teacher's proficiency in the target language (TL), mastery over language theories, ability to employ CLIL methodologies, understanding of the learning environment, capability to develop a range of appropriate learning materials, flexible use of interdisciplinary approaches, and expertise in designing and organising proper assessment tasks. This work has given rise to the proposal of the European Framework for CLIL Teacher Education (hereafter referred to as the Framework) (Marsh et al., 2011), which identifies a CLIL teacher's competencies with personal reflection (commitment to one's cognitive, social and affective development), CLIL fundamentals (understandings of CLIL features and theories), content and language awareness (a dual focus on both content learning and language learning), methodology and assessment (pedagogical and professional skills in creating a meaningful learning environment), research and evaluation (engagement in classroom research), learning resources and environments (adopting suitable and cognitively challenging materials), classroom management (knowledge of classroom dynamics and management skills) and CLIL management (developing quality CLIL programmes and courses in collaboration with other stakeholders).

Since the introduction of the Framework, it has been highly rated for its constructiveness in teacher education and professional development (Cinganotto & Cuccurullo, 2017; Wolff, 2012). However, Vilkancienė and Rozgienė (2017) argue that it is vague in that some competencies (e.g. personal reflection) concern more with a teacher's general capabilities rather than CLIL-specific ones. In comparison, the CLIL Teacher's Competencies Grid (hereafter referred to as the Grid) formulated by Bertaux et al. (2010) tends to be more specific, as it identifies over ten sorts of competencies that are crucial in effective CLIL (i.e. programme parameters, CLIL policy, TL competencies for teaching CLIL, course development, partnerships in supporting student learning, integration, implementation, second language acquisition, interculturality, learning environment management, learner focus in the CLIL environment, learning skills focus in CLIL, learning assessment and evaluation in CLIL, lifelong learning and innovative teaching and learning approaches). However, due to a lack of explicit distinction among those competency areas, the Grid may be too detailed to be effectively adopted in teacher professional development (Vilkancienė & Rozgienė, 2017). In this vein, Pérez-Cañado's (2018) summative interpretation seems briefer and more practical, and a CLIL teacher should have:

- linguistic competence: a teacher's proficiency in the TL being taught and used as the medium of instruction.
- pedagogical competence: a teacher's familiarity with a range of student-centred pedagogical skills and methodologies to provide an engaging learning environment, diversified learning materials and appropriate evaluation tasks.
- scientific knowledge: a teacher's knowledge of the specific content subject being taught and CLIL-related theories.
- organisational competence: a teacher's classroom management ability within CLIL.
- interpersonal and collaborative competence: a teacher's ability to address students' needs and cooperate with colleagues.
- reflective and developmental competence: a teacher's awareness of lifelong learning and keeping up with the latest research or information on CLIL.

These frameworks or interpretations have been utilised as a valuable tool in studies to examine CLIL teachers' competencies and yield insight into professional development (Banegas & del Pozo Beamud, 2020; Cortina-Pérez & Pino Rodríguez, 2021; Custodio-Espinar, 2019; Vázquez et al., 2020). Although the contexts of these studies are different, they have all highlighted the necessity of paying more attention to CLIL teachers' competencies and providing more training opportunities for them, aimed at promoting professional development.

In China, the syntheses recorded by Mi (2015) demonstrate that divorced from the growing interest in CLIL teacher competencies and development in the western world, only a few Chinese scholars have given heed to these issues. For example, by reviewing the theories underpinning CLIL, Liu and Han (2015), in line with Liu et al. (2016), maintain that to maximise the potential of CLIL, teachers should be competent in CLIL fundamentals, content and language awareness, methodological implementation of CLIL and CLIL management with special attention to cooperation with colleagues. Despite these assumptions, one of the available empirical studies is Liu's (2019b), the results of which point out various types of competencies expected from the CLIL teachers in a HEP (e.g. the abilities to teach the TL, teach the subject content, foster students' comprehensive capabilities, manage the classroom, organise assessment activities and design teaching materials). However, her research also has shown unbalanced development of teacher competencies, with several areas (e.g. content awareness, ability to foster learners' comprehension) deemphasised. This is in line with Cao's (2021) study on the hindrances to the successful implementation of CLIL, which discloses that CLIL teachers with little content and language awareness may be incompetent to design cognitively appropriate learning materials to rectify the situation that students are less stretched in content learning and less supported in language learning when traditional textbooks are the only source of information. Both Cao (2021) and Liu (2019b), along with some other Chinese researchers (e.g. Li & Yang, 2015; Zhou, 2017) whose studies are not reviewed here because of the page limit, have acknowledged the context-dependent features of their findings and suggested that more attention should be paid to CLIL teachers themselves. This assumption justifies the needfulness and design of the present study set in the Chinese higher education context, which has witnessed and encouraged most of the development of CLIL in China.

## **Methodology**

### **Research Design**

This study adopted a cross-sectional quantitative survey approach, which emphasised the collection of data from a population at a specific point of time. This could allow the researcher to understand the status quo of CLIL teachers' competencies and compare them among the participants with diverse characteristics (Creswell, 2012). This design corresponded to the research objective and question.

### **Research Participants**

A sample of 205 licensed teachers was recruited from Chinese HEPs by snowball sampling, which was appropriate for the study due to the difficulty of identifying units to include in the sample

without a list of the population the researcher was interested in (Creswell, 2012). All the participants were informed of the purpose and design of the study with consent. Their demographic information was recorded in Table 1, including gender, language taught, subject taught, affiliation, highest degree, educational background, years of teaching CLIL and professional title. They were taken as the independent variables (IVs) in this study. Although there were other factors that might also influence the participants' competencies, namely the dependent variable (DV) of the study, the listed ones were assumed to be sufficient based on previous studies (e.g. Campillo-Ferrer et al., 2020; Custodio-Espinar, 2019; Skinnari & Bovellan, 2016) that had used similar variables to investigate CLIL teachers' competencies. It should be noted: First, because of the diverse languages the participants taught and the scattered percentages they occupied, they were simply categorised into English and languages other than English (LOTE); Second, the content subjects taught were also categorised into general discipline streams per the educational context in China; Third, despite the various types of HEPs that the participants were affiliated to, they were generally categorised into non-985/211 HEPs and 985 and/or 211 universities<sup>1</sup>; Fourth, in accordance with the participants' years of teaching CLIL and Liu and He's (2014) identification of Chinese teachers' career stages, they were labelled as novice teachers with 0-5 years of teaching and proficient teachers with 6-14 years of teaching.

**Table 1. Demographic Information of the Participants**

Gender	Female: 54.6% (n = 112) Male: 45.4% (n = 93)
Language taught	English: 77.6% (n = 159) LOTE: 22.4% (n = 46)
Subject taught	Economics: 24.9% (n = 51) Law: 21.9% (n = 45) Education: 17.1% (n = 35) History: 15.6% (n = 32) Literature: 12.7% (n = 26) Science: 7.8% (n = 16)
Affiliation	Non-985/211 HEPs: 53.2% (n = 109) 985 and/or 211 universities: 46.8% (n = 96)
Highest degree	Doctoral degree: 50.7% (n = 133) Master's degree: 35.1% (n = 72)
Educational background	Language-related: 70.2% (n = 104) Content-related: 29.8% (n = 61) Both language and content-related: 19.5% (n = 40)

### Research Instruments

The instrument used in the survey was a researcher-made questionnaire named Chinese CLIL Teachers' Self-Assessment of Competencies. It included six constructs, namely linguistic

competence (LC), content competence (CC), pedagogic competence (PC), CLIL fundamentals (CFs), interpersonal and collaborative competence (ICC) and reflective and developmental competence (RDC). This conceptualisation was made based on Pérez-Cañado's (2018) interpretation. However, the construct of scientific knowledge in her original work was divided into CC and CFs in this study due to her double-barrelled definition. Besides, Pérez-Cañado's (2018) definition of ICC at a learner level somehow overlaps with the PC and the classroom-management-oriented focus of the organisational competence, because, to some degree, all of them reflect the construction of an engaging and meaningful learning context. Therefore, ICC in this study simply referred to a teacher's ability to work with colleagues and specialists, and only PC was retained to represent a broad sense of CLIL teachers' abilities to offer a meaningful learning context. The questionnaire included 31 items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), and they were adapted from the Framework (Marsh et al., 2011) and the Grid (Bertaux et al., 2010). A pilot study had been run before the study, and it suggested acceptable reliability and validity of the instrument (see Table 2).

**Table 2. Reliability and Validity of the Instrument**

	Cronbach's Alpha	Confirmatory Factor Analysis	
		Average Variance Extracted	Composite Reliability
LC	.82	.78	.80
CC	.86	.71	.84
PC	.76	.83	.88
CFs	.88	.62	.93
ICC	.74	.59	.81
RDC	.77	.69	.90
Entire Questionnaire	.80		

### Data Analysis

The questionnaire was distributed online via Wenjuanxing, a survey platform, and the response rate was 98.04% ( $n = 201$ ). The collected data were then computed into Statistical Package for the Social Sciences 25.0 for analysis. The descriptive statistics reported in this paper included mean and standard deviation. Based on the normal distribution of the data, the inferential analyses were

ANOVA when the factor had more than three groups and *t*-tests when the factor was dichotomous. When the homogeneity of variances was satisfied, one-way ANOVA was run with post hoc analyses with Turkey's HSD. Otherwise, Welch's ANOVA was run with Games-Howell. Due to a large amount of data, all the *t*-tests and ANOVA statistics were compiled together in Appendix. Only the key data with *p*-values less than .05 in post hoc analyses were recorded in the text.

## Results

### Linguistic Competence

As shown in Appendix, no statistical difference was found in LC with regard to the participants' gender, the language taught and highest degree. However, it showed that affiliation influenced CLIL teachers' LC, with those employed in non-985/211 HEPs having a lower score than those working in 985 and/or 211 universities ( $t = -3.12, p = .002$ ). Likewise, years of teaching CLIL programmes also played an important role, as novice teachers had a lower level of LC than proficient teachers ( $t = -2.54, p = .012$ ). In ANOVA analyses, significant statistical difference was only found regarding the educational backgrounds ( $p = .004$ ). Post hoc analyses (see Table 3) revealed that the teachers with a language-related educational background had a considerably higher level of LC in the self-assessment than those with a content-related or language/content-related educational background ( $p < .05$ ).

**Table 3. Multiple Comparisons of Educational Backgrounds**

(I) Educational Background	(J) Educational Background	Mean Difference (I-J)	Sig.
Language-related	Content-related	1.727	.018
	Both language and content-related	1.938	.022

### Content Competence

As displayed in Appendix, inferential data analyses did not show any statistical difference between CC with the participants' gender, subject taught, educational background or professional title but with the other IVs. Specifically, CLIL English teachers, 985 and/or 211 university teachers, teachers holding a doctoral degree and proficient teachers were more capable of content teaching than their counterparts, namely CLIL LOTE teachers, non-985/211 HEP teachers, teachers having a master's degree and novice teachers ( $p < .05$ ).

### Pedagogic Competence

The data recorded in Appendix disclosed that no significant statistical difference was found between PC with the teachers' gender, subject taught, affiliation, highest degree, educational background or years of teaching CLIL. Nevertheless, there was a substantial difference between CLIL English teachers with LOTE teachers ( $t = 3.21, p = .002$ ). Meanwhile, a significant difference



was found amongst the participants of dissimilar professional titles ( $F = 4.88, p = .003$ ). Post hoc analyses (see Table 4) presented that teaching assistants had less PC than lecturers and associate professors.

**Table 4. Multiple Comparisons of Professional Titles**

(I) Professional Title	(J) Professional Title	Mean Difference (I-J)	Std. Error	Sig.
Teaching Assistant	Lecturer	-1.892	.56	.005
	Associate Professor	-1.705	.61	.029

### CLIL Fundamentals

The data in Appendix indicated no statistical difference between the participants' CFs with their gender, affiliation, educational background or years of CLIL teaching. However, English teachers had better mastery of CLIL-related theories than LOTE teachers ( $t = 2.48, p = .014$ ). Such a difference could also be found between the teachers who had a doctorate with those who merely had a master's degree ( $t = 3.21, p = .002$ ). Besides, a substantial difference was found between the DV with the subject taught and the teachers' title ( $p < .001$ ). Post hoc analyses (see Table 5) indicated that CLIL education teachers had higher scores in CFs than all the other content teachers and that professors knew more CFs than the academics who had lower ranks of titles.

**Table 5. Multiple Comparison of the Subject Taught and Professional Titles**

(I) Subject	(J) Subject	Mean Difference (I-J)	Std. Error	Sig.
Education	Economics	3.231	.356	.000
	Law	2.933	.363	
	History	2.752	.404	
	Literature	3.524	.42	
	Science	3.611	.49	
(I) Professional Title	(I) Professional Title			
Professor	Teaching Assistant	2.217	.460	.000
	Lecturer	1.844	.372	

	Associate Professor	2.277	.409	
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### Interpersonal and Collaborative Competence

Multifaceted statistical differences were found in this section between the DV with the IVs except for the language taught and the highest degree (see Appendix). *T*-tests revealed female teachers, 985 and/or 211 university teachers and proficient teachers had much higher scores than their counterparts, namely male teachers, non-985/211 HEP teachers and novice teachers. Statistical differences were also found in ANOVA analyses regarding the subject taught, educational background and professional title. Post hoc analyses (see Table 6) first showed multiple differences amongst the subjects taught in CLIL, and some teachers (e.g. law teachers) were less cooperative than the others. Besides, the CLIL teachers of a language-related educational background were less capable of interpersonal and collaborative work than those whose educational background was related to either the content subjects or a mix of language and content. Last, it was interesting to note that teaching assistants and lecturers had greater ICC than associate professors and professors.

**Table 6. Multiple Comparisons of the Subject Taught, Educational Background and Professional Title**

(I) Subject	(J) Subject	Mean Difference (I-J)	Std. Error	Sig.
Economics	Law	1.750	.413	.000
	History	-1.492	.470	.021
Law	Education	-1.323	.456	.047
	History	-3.242	.477	.000
	Literature	-1.462	.499	.043
	Science	-3.121	.591	.000
Education	History	-1.919	.508	.003
	Science	-1.798	.616	.045
History	Literature	1.779	.547	.017
(I) Educational Background	(J) Educational Background			

Language-related	Content-related	-1.670	.344	.000
	Both language and content-related	-1.821	.397	
(I) Professional Title	(J) Professional Title			
Teaching Assistant	Associate Professor	3.381	.393	.000
	Professor	3.294	.426	
Lecturer	Associate Professor	3.002	.304	
	Professor	2.915	.345	

### Reflective and Developmental Competence

Except for the participants' diverse educational backgrounds, statistical differences in inferential analyses were detected in all the other variables (see Appendix). *T*-tests firstly presented that male teachers, CLIL English teachers, 985 and/211 university teachers, teachers having a doctorate and proficient teachers had much higher RDC than their counterparts, namely female teachers, LOTE teachers, non-985/211 HEP teachers, teachers having a master's degree and novice teachers. ANOVA tests disclosed statistical differences in terms of the subject taught ( $p = .001$ ) and professional title ( $p < .001$ ). Post hoc analyses (see Table 7) indicated significant differences between education teachers with economics teachers, law teachers, history teachers and literature teachers, and between professors with teaching assistants, lecturers and associate professors.

**Table 7. Multiple Comparisons of the Subject Taught and Professional Title**

(I) Subject	(J) Subject	Mean Difference (I-J)	Std. Error	Sig.
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Education	Economics	3.182	.578	.000
	Law	2.547	.588	
	History	3.410	.655	
	Literature	3.335	.682	
(I) Professional Title	(J) Professional Title			
Professor	Teaching Assistant	3.643	.731	.000
	Lecturer	3.185	.711	
	Associate Professor	3.730	.706	

### Summary of Findings and Discussion

First, the above statistics indicated the participants' affiliation played a significant role in their LC, CC, ICC and RDC in CLIL, with those employed in key universities more competent than the others working at ordinary HEPs. This is a context-specific finding due to China's higher educational structures, which divide HEPs into various layers (Gu et al., 2018). It is worth noting that when HEPs at the top layers, which are normally top universities or 985 and/or 211 universities, receive more support (e.g. government funding) than ordinary HEPs at the bottom layers to improve teaching quality, enhance the academic reputation and expand academic research, chances are that educational resources are unequally distributed, widening the gap between the HEPs at different levels (Chiang et al., 2015). The effect of such a dichotomous educational system on CLIL teachers' competencies can be the same, as Espinar and Ramos's (2020) study, though conducted in a different context, reveals that in-service teachers can be unequally trained, supported or prepared for delivering CLIL lessons due to the different administrative processes. In this vein, special attention must be paid to CLIL teachers who work at ordinary HEPs and may receive less professional support than those working in prestigious ones.

Another interesting finding was that the participants who had a master's degree were less capable than those who had completed a doctorate, and specifically, the latter might have a sounder mastery over the content knowledge taught, a deeper understanding of CLIL-related theories and more commitment to lifelong learning and research than the former. Unfortunately, due to the research gap in CLIL teachers' professional development (Banegas & Hemmi, 2021), no comparable findings from previous studies can as yet be found, though it seems to be a fait accompli that the higher degree a teacher has, the abler they are owing to the advanced education that has "improve(d) themselves academically and contribute(d) to their professional knowledge" of the subjects being taught, curriculum development, pedagogical instructions and professional development (Çalç?o?lu & Yalvaç, 2019, p. 101). From an evidence-based perspective, this study

confirms this view and brings forward the issue that some teachers, especially those who are not academically competitive enough, may need more support in delivering CLIL programmes.

Against the backdrop that LOTE education is deemphasised in CLIL in China (Hu, 2021), this study presents that LOTE teachers were less capable than English teachers in various CLIL aspects (e.g. CC, PC, CFs, RDC). This reflects the general picture that “the role of ‘global Englishes’...has led to the marginalising of LOTE contexts” in CLIL (Coyle & Meyer, 2021, p. 8) and that although multilingual education has been promoted in China, more should have been done at the governmental and institutional levels to support LOTE teachers’ professional development in the same way as to how English teachers have been supported (Chen et al., 2020). Given the dual-focused nature of CLIL, the differences between CLIL teachers’ competencies with the subjects they taught were also investigated, which showed no significant difference in LC, CC and PC but in CFs, ICC and RDC. This confirms that the subjects taught can affect CLIL teachers’ competencies, just as the case reported by Custodio-Espinar (2019) that teachers of different subjects have disparate levels of professional competencies in organising CLIL programmes. This overall situation, on the one hand, reflects China’s endeavour to promote high-quality discipline construction, and Zhao and Dixon’s (2017, p. 11) work has confirmed this as evinced in the professional support offered to Chinese university and college teachers to ensure they possess high language proficiency, “good content knowledge, content pedagogical knowledge and also pedagogical knowledge for language teaching”. On the other hand, the disparities in certain competencies among different subject teachers reflect the criticism that the unequal support for the construction of different disciplines in China’s higher education system may cause segmentation between more favoured subjects with less favoured ones (Lo & Pan, 2021). It should also be mentioned that different educational backgrounds may also influence CLIL competencies, as the study demonstrated in a much commonsensical way that the teachers having a language-based educational background were more confident in teaching and using the TLs than those having a mixed or content-oriented educational background. Inevitably, many CLIL teachers are either language-driven or content-driven, and few of them may have received dual-focused teacher education specifically designed for CLIL (Lo, 2020), which justifies that they normally have divergent capabilities and perceptions of implementing CLIL (Villabona & Cenoz, 2021). This situation, along with the ones reflected by the findings of the languages and subjects being taught, sheds light on the need to unite language and subject educators of various fields to establish “not only a shared understanding of known practices but also a co-construction of new integrated pathways to guide meaning-making through connecting language domains” and content domains (Coyle & Meyer, 2021, p. 8).

The last point to note is the findings of the participants’ gender, years of teaching and professional titles. First, gender was of little effect on the participants’ self-assessment of competencies. Nevertheless, female CLIL teachers were more willing to participate in interpersonal and collaborative work with others than male teachers who, in comparison, engaged more in reflective and developmental practices than their female counterparts. No comparable findings from previous research can be found to confirm or disconfirm this idea, while the ones of the research placed in a broader educational context do have illustrated that Chinese female teachers tend to be more interactive and enthusiastic about professional collaboration (Liang & Zhou, 2016) but

less competent at lifelong learning and research, which is the essential indicator of RDC, than male teachers (Zhu & He, 2014). The reasons lying behind this are complicated and largely related to teacher identity discourses influenced by micro, meso and macro factors within a somewhat asymmetrical gender system in China (Luk-Fong, 2013). Thus, they will not be discussed in this text. Furthermore, the years of CLIL teaching also had little effect on the teachers' competencies, but CC, ICC and RDC were subject to this variable with proficient teachers gaining an upper hand over novice teachers. This reflects Bier's (2016) research finding that experienced teachers usually have a deeper understanding of CLIL and thus are more skilled than inexperienced teachers. Regarding the professional titles, teaching assistants had less PC than other academics of higher ranks, such as lecturers and associate professors; professors knew more CFs and were more involved in reflective and developmental work than other academics. This may sound commonsensical in the Chinese context, as an academic must have a thorough mastery of the basic theories of their branch of learning and superior "competence in education, teaching and research" to gain a higher academic title (Gu et al., 2018, p. 195). Still, it is surprising to find that teaching assistants and lecturers were more inclined to partake in interpersonal and collaborative work than associate professors and professors. This raises an interesting phenomenon in the field of CLIL. These findings correspond to the previous ones that the teaching experience gained over time and the types of teacher positions can indeed influence CLIL teachers' professional practices and abilities (Campillo-Ferrer et al., 2020) and reject the assumptions that they may not necessarily explain teachers' professional development (Skinnari & Bovellan, 2016).

The description and discussion of the heterogeneity of Chinese CLIL teachers' profiles of professional competencies have mirrored the inevitable "gap between who CLIL teachers are and what ideal CLIL teachers need" (Lo, 2020, p. 21) and disclosed the complex challenges confronting them. It seems to be a consensus that CLIL is a "linguistic and cognitive challenge" (Bier, 2016, p. 396) or a psychological and pedagogical challenge (Lo, 2020) for teachers, while these views can be too simplistic to be linked with the dynamically interwoven CLIL competencies. Thus, given the research findings and the special higher educational context in China, it is proposed at the end of this paper that the challenges faced by Chinese CLIL teachers are related to micro, meso and macro factors. The micro factors are concerned with teachers themselves, such as gender, educational background and teaching experience; the meso factors (e.g. the languages and subjects taught, professional titles) are identified with the context-specific features at an institutional level; the macro factors are placed in a more general social context and normally associated with the regional and even national education moves or policies. They are interwoven with each other, challenge a CLIL teacher's agency and influence their competencies. However, the recognition of these factors can help to better identify CLIL teachers' professional growth needs, devise appropriate ways to improve their competencies and finally contribute to successful CLIL.

## **Conclusion**

Regardless of the limitation that a non-probability sampling technique was adopted and thus prevented the researcher from generalising the findings to a wider population, the study can still be seen as one of the initiatives to bridge the CLIL research gap in Chinese academia by focusing

on teachers' competencies in implementing this pedagogical approach. The results of the study are multifaceted, and various factors may shape CLIL teachers' competencies of different types. In the process of professional development, the challenges confronting CLIL teachers can be varied, whether linguistic, content-related, pedagogical, theoretical, cooperative or reflective. However, the identification of CLIL teachers' profiles of professional competencies in accordance with the factors studied has underlined the need to establish an ecological milieu and a supportive network, wherein professional collaboration should be embraced among CLIL teachers of different profiles, information and resources should be shared amongst educational institutions, and support should be lent to the teachers who have just embarked upon their CLIL teaching journey. Continuous professional training programmes are essential to achieve this goal. The answer is straightforward: to help teachers better understand CLIL, identify the language and content learning needs, learn effective strategies to design and implement CLIL and become committed to lifelong learning. This can allow teachers to enhance their professional identities and students to reap the benefits of CLIL when teaching practices are effectively grounded in teachers' exceptional competencies. The goal of the research is to open up new ways for keeping alive the sustainability of CLIL. To this end, ongoing research into teacher training needs is also a must, requiring Chinese researchers and scholars to endeavour to explore CLIL teachers' dynamic agency in the long way ahead.

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#### **Note**

1. 985 and 211 mean Project 985 and Project 211 respectively, which are national projects initiated by the Chinese government to promote the development and reputation of Chinese HEPs and found world-class universities (Gu et al., 2018). It is believed that a 985 and/or 211 university is usually better than a non-985/211 HEP due to a higher admission threshold, more government support and larger educational resources (Lo & Pan, 2021).

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**Appendix: The Compilation of T-Tests and ANOVA Statistics**

		LC				CC				PC			
IV		M	SD	Statistics	Sig.	M	SD	Statistics	Sig.	M	SD	Statistics	Sig.
Gender	Female	17.78	4.049	$t = -1.461$	.146	8.93	.667	$t = -1.123$	.263	32.48	2.518	$t = 1.284$	.201
	Male	18.59	3.882			9.05	.925			31.98	3.007		
Language taught	English	18.09	3.928	$t = -.347$	.729	9.05	.818	$t = 2.195$	.029	35.98	2.639	$t = 3.210$	.002
	LOTE	18.33	4.217			8.76	.673			29.43	2.880		
Subject taught	Economics	18.41	4.239	$F = 2.101$	.067	8.76	.619	$F = 1.999$	.080	31.63	3.206	$F = 1.305$	.271
	Law	19.26	3.511			9.06	.818			32.09	2.234		
	Education	18.11	3.886			8.83	.568			32.11	2.447		
	History	16.60	3.645			9.13	.629			33.23	2.812		
	Literature	17.15	3.695			9.23	1.306			32.69	2.695		

	Science	18.63	4.978			9.13	.719			32.50	2.989		
Affiliation	Non-985/211 HEPs	17.35	3.895	$t = -3.119$	.002	8.84	.654	$t = -2.422$	.016	32.04	2.772	$t = -1.034$	.302
	985 and/or 211 universities	19.05	3.910			9.11	.885			32.44	2.740		
Highest level of degree	Doctoral degree	17.91	4.001	$t = -1.156$	.249	9.13	.830	$t = 3.587$	.000	32.49	2.667	$t = 1.667$	.097
	Master's degree	18.58	3.946			8.72	.655			31.82	2.879		
Educational background	Language-related	19.04	3.844	$F = 5.562$	.004	8.88	.649	$F = 2.195$	.114	31.94	2.716	$F = 1.377$	.255
	Content-related	17.31	3.771			9.07	.998			32.62	2.703		
	Both language and content-related	17.10	4.223			9.15	.770			32.50	2.909		
Years of teaching CLIL	Novice	17.50	3.986	$t = -2.539$	.012	8.84	.661	$t = -2.431$	.016	32.02	2.740	$t = -1.112$	.268
	Proficient	18.90	3.869			9.11	.878			32.45	2.766		
Professional title	Teaching Assistant	18.32	4.182	$F = 2.916$	.35	8.77	.717	$F = 2.122$	.103	30.90	3.134	$F = 4.875$	.003

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	Lecturer	17.25	4.061			9.15	.953			32.80	2.713		
	Associate Professor	18.92	3.862			8.86	.693			32.61	2.401		
	Professor	19.11	3.428			8.94	.416			31.57	2.547		

		CFs				ICC				RDC			
IV		M	SD	Statistics	Sig.	M	SD	Statistics	Sig.	M	SD	Statistics	Sig.
Gender	Female	10.04	2.055	t = 1.303	.194	9.14	2.321	t = 2.691	.008	11.22	2.415	t = -2.477	.017
	Male	9.68	1.951			8.29	2.180			12.20	3.249		
Language taught	English	10.06	2.083	t = 2.476	.014	8.66	2.292	t = -1.112	.267	11.91	3.078	t = 3.113	.002
	LOTE	9.24	1.608			9.09	2.288			10.83	1.691		
Subject taught	Economics	9.25	1.787	F = 22.860	.000	8.94	2.275	F = 11.624	.000	10.96	1.876	F = 4.757	.001
	Law	9.55	1.909			7.19	1.740			11.60	2.849		

	Education	12.49	1.067			8.51	2.525			14.14	4.131		
	History	9.73	1.258			10.43	1.524			10.73	1.660		
	Literature	8.96	1.280			8.65	2.097			10.81	1.266		
	Science	8.88	2.187			10.31	1.580			11.88	2.964		
Affiliation	Non-985/211 HEPs	9.71	1.973	t = - 1.134	.258	8.02	2.248	t = - 4.510	.000	10.84	1.719	t = - 4.172	.000
	985 and/or 211 universities	10.03	2.043			9.40	2.139			12.39	3.421		
Highest level of degree	Doctoral degree	10.20	2.092	t = 3.214	.002	8.98	2.253	t = 1.956	.052	12.11	3.226	t = 3.636	.000
	Master's degree	9.28	1.713			8.33	2.320			10.85	1.758		
Educational background	Language-related	9.73	2.054	F = 1.315	.265	7.90	2.240	F = 16.931	.000	11.17	2.240	F = 1.327	.353
	Content-related	9.66	1.879			9.57	2.061			11.32	2.061		
	Both language and content-related	9.08	1.716			9.73	1.935			11.20	2.233		

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Years of teaching CLIL	Novice	9.72	2.008	t = - 1.013	.312	8.00	2.267	t = - 4.562	.000	10.81	1.706	t = - 4.114	.000
	Proficient	10.01	2.016			9.40	2.120			12.40	3.396		
Professional Title	Teaching Assistant	10.04	2.055	t = 1.303	.194	10.32	1.301	F = 52.828	.000	10.87	1.765	F = 9.622	.000
	Lecturer	9.68	1.951			9.94	1.884			11.33	2.495		
	Associate Professor	10.06	2.083			6.94	1.714			10.78	1.803		
	Professor	9.24	1.608			7.03	1.654			14.51	3.899		