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Comparing Finnish and Chinese national teacher education frameworks from the teacher competency perspective

Yan Wang [a], Terhi Nokkala [b] and Josephine Moate [a]

[a]Department of Education and Psychology, University of Jyväskylä, Jyväskylä, Finland; [b]Finnish Institute of Education Research, University of Jyväskylä, Jyväskylä, Finland

ABSTRACT

Finnish and Chinese teacher education have gained worldwide attention because of their pupils' significant achievements in international assessments. Focusing on the manifestations of teacher competencies in the respective teacher education frameworks, this article compares Finnish and Chinese teacher education and their curricular traditions. The mixed-method analysis of the two national frameworks draws attention to significant differences and similarities. Due to particular cultural contexts, while the Chinese Framework emphasises ethics, student management, and assessment competencies, Finnish teacher education focuses comparatively more on adaptive teaching, innovation, and partnering. The competencies of subject matters, pedagogy and subject didactics, teaching technologies, communication, multidisciplinarity, reflection and inquiry, and professional development are emphasised in both countries. This article provides insights into manifestations of teacher competencies in the context of hybrid curriculum traditions in Finland and China through adapting and applying an international framework, offering alternative perspectives on quality teacher education beyond Anglo-American approaches.

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Introduction

Education is seen by many as an essential aspect of national development. "Teachers' education determines teacher quality because it describes the teachers' characteristics in relation to content knowledge, classroom behaviours, academic ability, advanced education degree work, and teacher education experiences'' (Saracho and Spodek 2006, 424), influencing education quality. Therefore, preparing new teachers and continuing professional development for established teachers are crucial to the overall success of education (Darling-Hammond and Lieberman 2013). Finnish and Chinese pupils have performed well in the Programme for International Student Assessment (PISA) (e.g. OECD 2014, 2019). Due to the assumption that their quality teachers contribute to their quality education, Finnish and Chinese teacher education have gained considerable worldwide attention in recent years (e.g. Tonga et al. 2022).

CONTACT Yan Wang yanwangfinland@gmail.com Department of Education and Psychology, University of Jyväskylä, Seminaarinkatu 15, PL35, Jyväskylä 40014, Finland

However, international literature on the development of teacher education has been dominated by English-speaking academics, often rooted in Anglo-American educational traditions (Biesta 2013). Efforts from English-speaking academia to promote globalised notions of education have been facilitated by hosting foreign researchers and defining research and reputation through their dominant language (Enders and Musselin 2008). The global dominance of Anglo-American approaches to education and the misplaced assumption that this is the only way to approach education are highly problematic as they overlook the rich education traditions in Europe and other parts of the world. For example, Chinese scholarship is less widely recognised in English-speaking countries than those countries are in China (Marginson and Yang 2022). However, drawing on conceptualisations of higher education from beyond the Anglo-American field of research and practice can be "intellectually liberating" (Marginson and Yang 2022, 3). Therefore, understanding teacher education can be expanded by embracing more than one tradition and exploring encounters between different curricular traditions. With Finland and China as cases, this article aims to provide alternative perspectives of long-established educational traditions beyond the boundaries of the Anglo-American approach to developing quality teacher education.

In addition to interest in the 'secrets' underpinning successful educational systems, cross-cultural collaborations and partnerships are increasingly important in education development (Cockayne, Gao, and Antonio Lim 2020). This interest is evidenced in the increasing number of comparative studies over the last decade, which have been considered an important way of advancing cross-cultural understanding and scholarship (Tatto 2011). These studies address various aspects of teacher education, including structures (Tonga et al. 2022), competencies (Ge and Wang 2020), and cultural awareness (Y. Li and Dervin 2018). Finnish and Chinese education systems have performed well in PISA, raising the question of what could be learnt from a comparative study of these two different, yet similarly successful, educational systems. In addition to the interest in what works in the two systems, culturally understanding them is also significant. This understanding can help other nations recognise their curricular traditions while seeking to develop their educational system further.

Nevertheless, according to Kosmützky and Krücken (2014) on publications between 1992 and 2012, little research directly compares Finnish and Chinese higher education, although they have been respectively included in a number of international comparative studies (e.g. Capano and Pritoni 2020; Liu and Wan Ko 2020). The same holds true when comparing their teacher education. The study reported here aims to compare the Finnish and the Chinese national teacher education frameworks from a teacher competency perspective to address this gap and contribute to the knowledge base of teacher education and teacher competency in different cultural contexts. Our research questions are: What teacher competencies are integrated into the Finnish and the Chinese national teacher education frameworks? What are the similarities and differences between the two frameworks?

As Finnish and Chinese education draw on significantly different cultural traditions in education development, this study starts by introducing the curricular traditions behind the two research contexts. The theoretical framework of teacher competency is then presented as a framework for data collection and analysis, followed by the comparative methodology used in this study. The results address the similarities and differences

between the Finnish and the Chinese national teacher education frameworks and lead to a discussion on the current emphasis on teacher competency foci in relation to the respective curriculum traditions.

Curriculum traditions

A curriculum is not only about knowledge, skills, and attitudes; it reflects a society's prevailing culture and central scientific, religious, political, and economic goals (Kirsten, Afsar, and Bachmann 2016). A curriculum's historical development and contemporary situation arguably provide a comprehensive insight into a society's education. To comprehend modern curricula, one must understand the traditions that form the basis of their development (Tröhler 2016). As the contexts addressed in this study are Finland, a Northern European state, and China, an Eastern Asian one, the following section provides an overview of dominant curriculum traditions from Western and Eastern spheres, providing the cultural contexts for the two teacher education systems.

Previous research has identified two Western curriculum traditions: the Anglo-American curriculum and the Bildung-Didaktik curriculum (e.g. Autio 2014; Haapaniemi et al. 2021). A dominant Anglo-American curriculum tradition emerging in the twentieth century has emphasised learning through behavioural psychology and cognitive sciences lenses and favours an empirical understanding of educational phenomena (Autio 2014). This tradition tends to be instrumentalist, aiming to effectively and efficiently transmit society's knowledge to learners (Hopmann 2007). In this tradition, goals are pre-defined in terms of what a student should know or be able to accomplish and evaluated to ascertain the degree to which the goals have been met (Pantić and Wubbels 2012). Curricula following the Anglo-American style feature externally defined expected learning outcomes, which should guide teachers' daily work and provide a basis for evaluating teachers based on student achievement (Westbury 2012).

Another significant Western tradition, the Bildung-Didaktik, combines Bildung and Didaktik, two complementary educational approaches (Haapaniemi et al. 2021). In German philosophy, Bildung, dating back to the end of the eighteenth century, aims to educate the whole person and assist the "individual's development towards autonomy and the ability to self-direct responsible or ethically reflected action" (Michael and Ylimaki 2017, 28). As part of the Bildung tradition, students are encouraged to pursue further education, which is seen as a process of self-formation (Autio 2014). Societal change is a consequence but not a motive. Didaktik, in contrast, is a teaching and learning approach that combines theoretical and practical aspects, aiming to enhance learners' understanding of teaching content and pedagogical issues (Friesen and Osguthorpe 2018). Didaktik teaching is conceptualised as a moral and reflective activity through philosophical meaning-making (Hopmann 2007). Curricular goals are broad objectives to address through interaction what curricular information could mean to a learner (Pantić and Wubbels 2012). Bildung and Didaktik are integrated through their ethical or moral aspect, making teaching educative (Deng 2015). Curricula emphasising Bildung-Didaktik provide a guideline, and teachers have greater autonomy in teaching with this approach (Westbury 2012). This tradition places less emphasis on teacher evaluation with limited external control, favouring peer evaluation and self-reflection (Hopmann 2007).

This tradition has shaped the particular structures of Finnish teacher education. Finland lacks a national teacher education curriculum, but a government decree guides all the institutional curricula for teacher education programs. Finnish teacher education comprises a wide range of teaching professionals, including kindergarten teachers, primary teachers, subject teachers, special education teachers, and guidance counsellors (MOEC 2004). For example, teachers working in the primary grades 1–6 usually are generalist class teachers qualified to teach most subjects across the curriculum and have a five-year Master's degree in education (MOEC 2004).

In contrast to Western traditions, Confucianism provides the mainstream for the traditional ideology in Chinese curricula. Confucianism, having a history of more than two thousand years, argues that education should aim to foster a person's virtue first and then his knowledge and skills (Ma 2011). Education is realised by loving family members, human beings, and all beings (Zhang and Zhenyu 2013). Balance or harmony, regarded as Confucianism's main moral principle and methodology, may be pursued between student subjectivity and teacher authority, teaching subject knowledge and developing creative thinking skills, and the pre-planned lessons and the emerging contents during learning (Hu 2011). Confucianists encourage teaching based on every student's cognitive level, learning ability, and aptitude; they integrate learning with thinking and doing and teach through teachers' words and deeds (Tan 2017). Chinese education is often misconstrued as rote memorisation rather than appreciating the educational values written into the system (Li and Wegerif 2014).

In China, three curricula regulate the national teacher education. These are a national Teacher Education Curriculum (outlining pedagogical studies), a Common Core Course Curriculum (focusing on other fundamental courses except for pedagogical studies), and a Subject Specialised Curriculum (guiding subject studies). Moreover, the Chinese Teachers' Act (State Council of China 2023) classifies teacher education into education for pre-primary, primary, middle school, and higher education teachers. For example, Chinese primary teachers teach from grades one to six, including class teachers and subject teachers (MOE 2011), who have completed a four-year Bachelor's degree. In addition, other teacher education programs in China prepare special needs teachers and vocational school teachers.

This overview of curricular traditions indicates three different educational approaches, informed by different values and priorities. The following section outlines Finland and China's contemporary foci of teacher education through the lens of teacher competency, as educational researchers in both countries have used teacher competency in their national studies in recent years.

Teacher competency theoretical framework

Teacher competency-based frameworks have been widely studied to improve teacher education effectiveness (Pantić and Wubbels 2012). They are considered an important strategy for achieving educational objectives in many nations (Shidiq, Galih, and Faikhamta 2022). Teacher competency is defined as "an integrated set of personal characteristics, knowledge, skills, and attitudes needed for effective performance in various teaching contexts" (Tigelaar et al. 2004, 255). From this perspective, knowledge, skills, and attitudes are the three main domains teacher education can influence. In our

study, teacher competency (TC) is utilised as the guiding concept manifesting the contemporary framework foci and curriculum tradition of teacher education.

The terms 'competency' and 'competence' are commonly used interchangeably in academic and policy texts. Originating in the USA, 'competency' focuses on behaviour, motives, and other human attributes and refers to exceptional personal performance and incredible drive (Komarkova et al. 2015). The British phrase 'competence' relates to knowledge, practical skills, and work environment comprehension and is connected to job performance (Winterton 2002). Knowledge, skills, and attitudes are intertwined in the definitions of competency and competence (Komarkova et al. 2015). We use 'competency' ('competencies') in this study to stress individuals' attitudes (for example, ethics competency) apart from knowledge and skills to avoid narrowly measured competences.

Competency-based teacher education provides a framework with pre-defined objectives and assessment criteria, suggesting a close association with the Anglo-American curriculum tradition (Hudson 2002). Indeed, van Huizen, van Oers, and Wubbels (2005) have highlighted the danger of paying excessive attention to the instrumental function of teaching, alienating teachers from the purposes and values underpinning teaching and restricting practitioners' ability to choose and create their own performance. The notion of competence and competency, however, can also recognise and highlight teachers' professional and pedagogical expertise if teacher competency is not just reduced to a checklist of 'can-do' statements and evaluations.

In many countries, teacher education curricula have been structured to prioritise TCs as a vital tool of education (Voogt and Pareja Roblin 2012). Among the international TC comparisons, most studies discussed in-service teachers and fragmented TCs related to teaching and learning, for example, the wide-ranging knowledge base (Darling-Hammond 2021), teaching pedagogy (Ulferts 2019), versatile technologies (Kärnä, Dindar, and Hu 2020), student management (Hoang, Holopainen, and Siekkinen 2018), school climate (Ning et al. 2016), and self-efficacy (Malinen et al. 2013).

The aforementioned studies illustrate the potential of TCs to focus on particular aspects of education. While comprehensive TC research is scarce (Shidiq, Galih, and Faikhamta 2022), national educational systems have been seeking the broader development of TC. China, for example, has released a series of national TC standards catering for different tracks, including the Professional Competency Standards for Pre-service Primary Teacher Education (MOE 2021). The primary teacher competency standards include four categories: comprehensive educational competency, teaching practice expertise, independent professional development capacity, and teachers' ethics. Recent educational reforms in Finland similarly favour a competency-based curriculum (Haapaniemi et al. 2021). A reform has been underway through the collaboration of 70 experts from universities and stakeholders working together to establish the direction for Finnish teacher education development through the Finnish teacher education forum (Lavonen et al. 2020). This reform has selectively stressed three strategic categories to develop: a knowledge base, innovation competency, and teachers' own expertise development and their schools. These initiatives highlight the need for a more comprehensive TC framework. At the same time, as competency-based teacher education is closely related to the Anglo-American curriculum tradition, Finland and China have been grappling with the tension of how their own traditions and external influences can be brought together within educational systems.

Table 1. A teacher competency analytical framework.

Category	Subcategory	Description	Examples
Teaching & learning	Subject matters	Knowledge of curriculum and subject matters	Learn about the curriculum standards of at least two subjects.
	Pedagogy & subject didactics	Knowledge of pedagogical models and their advantages and disadvantages	Pedagogical basics for practical problem-solving; Didactically oriented studies.
	Adaptive teaching	Knowledge of diverse students, including special needs, and how they learn; Adapting teaching to respond to the strengths and needs of all learners	Understand how to engage learners with different needs; Differentiated teaching; Individualised guidance.
	Multidisciplinarity	Providing multidisciplinary and cross-disciplinary learning for children.	Create opportunities for cross-subject learning in activities.
	Student management	Managing students and the learning environment	Learn about the knowledge of classroom management.
	Assessment	Monitoring, evaluation of learning and development, and assessment	Learn to improve teachers' teaching and students' learning through assessment.
	Materials & technologies	Effective use of teaching materials and technologies in facilitating students' learning	Resources on site; Digital tools necessary for maintaining and creating different networks
	Communication	Demonstrating a good level of oral and written communication and negotiation skills	Master teachers' necessary language and communication skills
Coping with changes & complexity	Partnering	Effective collaboration with colleagues and partnering with parents, social services, and the community (including share of knowledge and expertise)	Maintaining and creating different networks
	Professional development	Professional growth and self-development	Connect with primary schools to learn about their education and management practices for perceptual cognition.
	Reflection & inquiry	Sense of self-efficacy and self-fulfilment; reflective and metacognitive skills	Reflection and improvement.
	Innovation	Willingness to try new ideas and strategies; personal creativity	Educational innovations while making the local curriculum and planning inclusive education
	Ethics	Exercising personal integrity and statutory responsibilities	Observe laws and Ten Standards of Teachers' professional behaviours

Mohamed et al. (2017) have developed an international TC framework that draws on extensive frameworks from ten settings and different cultures in Asia, Europe, and North America. Their original framework, including 17 TCs, comprehensively covers knowledge, skills and attitudes. We adapt Mohamed's original framework and include the 13 most relevant TCs to Finland and China (see Table 1) (to be elaborated in the data and data analysis section). Those are TCs related to teaching and learning: subject matters, pedagogy and subject didactics, multidisciplinarity, adaptive teaching, assessment, communication, student management, materials and technologies, and TCs to cope with future changes and complexity: partnering, professional development, reflection and inquiry, innovation, and ethics.

Materials and methods

This section outlines this study's methodology, data, and data analysis to answer the proposed research questions.

Cross-national comparative case study

The case study approach enables a detailed, in-depth exploration of the relationship between teacher competency foci and contexts. This research focuses on high-performing countries in international comparative evaluations of learning outcomes that are believed to provide quality education and teacher education (e.g. Tonga et al. 2022). Although an analysis of both high- and low-performing countries – a most different case selection (Seawright and Gerring 2008) – may give more valid conclusions, the great diversity in education and teacher education between high- and low-performing countries may make such comparisons problematic. Finland and China, both high-performing countries, are comparatively more comparable since they both value education, teacher education, and teachers (Niemi and Lavonen 2020; Qiong, Zhu, and Lo 2019). In addition, as discussed above, both regulate teacher education at the national level and integrate teacher competencies into teacher education, adding to their comparability. This study will focus on their common category of pre-service teacher education of primary class teachers.

Methodologically, this paper uses a diverse case selection, the primary objective of which is 'the achievement of maximum variance along relevant dimensions. It requires selecting a set of cases – at minimum, two – which are intended to represent the full range of values characterising X. The investigation is understood to be exploratory (hypothesis seeking) when the researcher focuses on X' (Seawright and Gerring 2008, 300). Finland and China significantly differ in history, size, ideology, curriculum traditions, and teacher education structures. Comparing two diverse high-performing education systems aims to identify the generally effective policies to achieve quality teacher education in all the high-performing countries that other countries can adapt to their local contexts. As the Finnish and Chinese contexts draw on significantly different traditions, it can be anticipated that although both nations have high-performing education systems, this might be for different reasons. Due to the limited space, this paper focuses on the contextual influence of curriculum traditions.

To understand the similarities and differences between the Finnish and Chinese national teacher education frameworks, we have chosen a cross-national comparative approach, which enables us to advance cross-cultural understanding, scholarship, academic performance, and social progress via the international study of educational theories, structures, and practices (Tatto 2011). This approach identifies, investigates, and explains similarities and differences among predetermined comparison units (Alexander 2012). It explores which aspects are universal and which are culturally or geographically specific. On the one hand, international comparative research can promote teacher education quality by identifying and spreading successful trends and good practices (e.g. Tonga et al. 2022). On the other hand, paying greater attention to similarities and differences between systems can promote a better understanding of education as a shared phenomenon without ignoring the influence of different traditions. Clarke (2013) argues that the focal area of interest must be valid within the respective research settings for comparative educational research to be valid. The focus of our study on teacher competency is a recent addition to Finland and China's curricula, further contributing to the scarcity of comparative studies on this topic.

Data and data analysis

To compare the manifestations of teacher competencies in the national teacher education frameworks of Finland and China, we conducted a mix-method content analysis of two official documents: China's National Teacher Education Curriculum (MOE 2011) and the Finnish Government Decree on University Degrees and Professional Specialisation Programmes: Chapter 4 Provisions on teacher education (MOEC 2004) (see Appendix 1). The Chinese document was chosen because it comparatively corresponds with the Finnish document by outlining teacher education aims and structures and studying content for different tracks. These documents are referred to as the 'Chinese Framework' and the 'Finnish Framework' when referring to them separately or 'Frameworks' when referring to them collectively. Recognising the limitations of small-scale documents, we used other policy documents and relevant literature as complementary documents (see Appendix 1) to support the interpretation of these texts.

Mohamed and colleagues' (2017) international TC framework has been adopted and adapted as the coding scheme and analytic tool in the cross-national comparative research reported here. It was chosen because of its broad reference to existing frameworks from different cultures and the integration of comprehensive TCs. It includes most of the latest topics in Finnish and Chinese TC studies. First, based on the TC lists and definitions in the above-mentioned complementary documents, we selected the 13 most pertinent TCs to Finnish and Chinese teacher education as subcategories, updated their names and descriptions, and added examples, as in Table 1. Then, we categorised the TCs into two sections: TCs related to teaching and learning and TCs related to coping with future changes and complexity.

Below, we give two examples of how we proceeded with coding. When analysing the Finnish Framework, for example, 'multidisciplinary studies' and 'cross-curricular themes' were counted as two units demonstrating the competency of multidisciplinarity:

> Class teacher education includes multidisciplinary studies in the teaching subjects and cross-curricular themes taught in basic education. (MOEC 2004, Section 20)

In contrast, 'subject integration', 'comprehensive-theme activities', and 'cross-subject learning' were counted as three units in the Chinese Framework, demonstrating the competency of multidisciplinarity:

> Learn about the value of subject integration (MOE 2011, 16); Design comprehensive-theme activities and create opportunities for cross-subject learning. (18)

One code unit corresponded to one related idea of the analysed competencies rather than one complete sentence. To ensure coding consistency, we conducted two rounds of coding within 10 days. The reasons for interpreting the unit differently each time were kept track of until a final consistent meaning arrived in this way (Schreier 2013). A trial coding on the eight TC subcategories related to teaching and learning was conducted before the main analysis on all the others. We italicised competency subcategory names in the paper to distinguish them from quotations.

A mixed-method analysis was conducted, as in the above example. First, summative quantitative content analysis was conducted to understand general policy measures through '"identifying and tallying keywords or concepts"' (Hsieh and Shannon 2018, 2).

The identified frequencies and percentages for each subcategory were computed following the coding procedure to demonstrate how often the competencies emerged. After that, a Chi-square test was conducted to test whether the two frameworks distribute the analysed teacher competency frequencies differently.

Then, deductive qualitative content analysis was conducted to gain insight into context-dependent meanings (Hsieh and Shannon 2018) by presenting how TCs were interpreted in specific contexts. Finally, the similarities and differences are discussed in light of the two countries' contemporary TC foci and their connections to curricular traditions. By placing the results from the two cases side-by-side, it is easier to understand the cultural influence of the results.

Results

The results section begins by outlining the key differences between the two Frameworks in terms of the aims, contents and coverage of TCs before presenting more detailed insights into which TCs were prioritised within the respective systems. These results help to understand the contemporary TC foci of Finnish and Chinese teacher education quantitatively and culturally.

Descriptive differences

Some descriptive differences are found when comparing the Finnish and the Chinese national teacher education Frameworks. First, their aims differ. Finnish teacher education aims "for the graduates to be capable of working independently as a teacher, instructor and educator" (MOEC 2004, Section 18). The objectives of Chinese teacher education are children's growth, teachers' professional development, and social progress (MOE 2011). Second, the Frameworks present the contents differently. Based on the total number, the Chinese Framework has a longer text and more units of the analysed teacher competencies ($N = 223$; 6 pages, 2576 words analysed) than the Finnish one ($N = 48$; 2 pages, 635 words analysed). Nevertheless, the Finnish Framework has a higher density of unit appearance (Finnish: 8%; Chinese: 4%). The descriptive data above demonstrates that the Chinese Framework presents comparatively more detailed content, while the Finnish content is comparatively more general. Additionally, the Finnish Framework explicitly mentions the internationalised term 'professional competence' repeatedly in the text, while the Chinese Framework continues to use 'knowledge and skills' and 'ability' instead of competency or competence in line with the national Chinese tradition.

Third, different coverages of TCs are found in the two Frameworks. The Chinese Framework includes 13 TCs as outlined by Mohamed and colleagues (2017), while the Finnish Framework focuses on 11: *subject matters*, *pedagogy and subject didactics, multidisciplinarity*, *adaptive teaching*, *communication*, *student management*, *materials and technologies*, *partnering*, *professional development*, *innovation*, and *ethics*, omitting *assessment* and *reflection and inquiry*. Furthermore, they selectively emphasise some TCs while being less focused on others. As in Figure 1, the distribution of TCs in the Chinese Framework ranges from 2% (e.g. *partnering*) to 28% (*professional development*), while the Finnish Framework emphasises TCs from 2% (*ethics*) to 31% (*subject matters*). They do not cover all the TCs evenly, and both Frameworks show a large gap between each other.

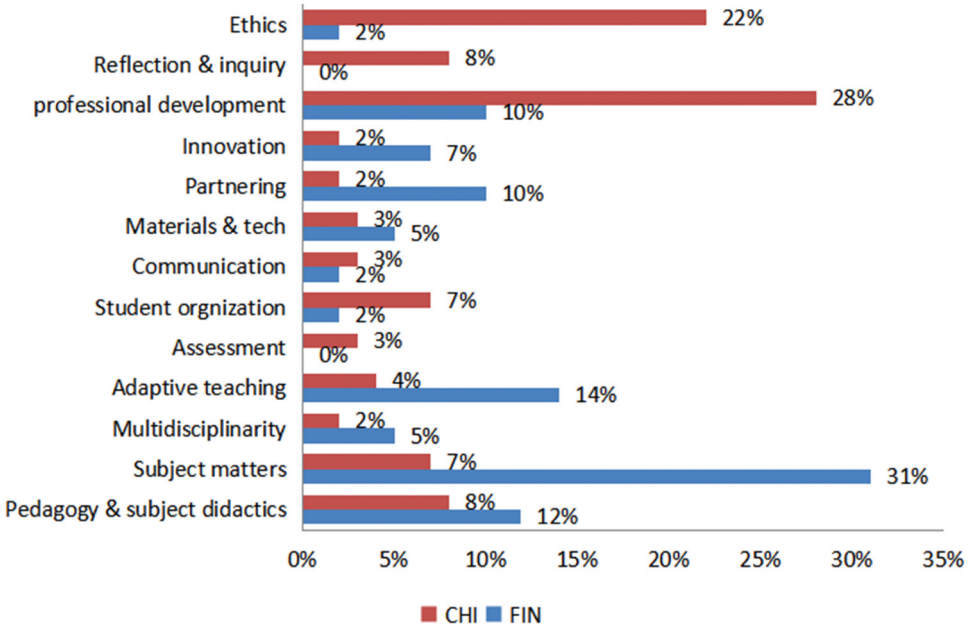

Figure 1. Teacher competency frequency distribution in the Finnish and the Chinese Frameworks 12. Note. $x^2 = 29.4$, $p < .001$.

The overall frequency distributions of the TCs differ significantly in the Finnish and the Chinese Frameworks, as in Figure 1 ($x^2 = 29.4$, $p < .001$). Next, we will discuss TCs first with the comparatively higher frequency percentage in one Framework and then with similar percentages in both. In this section, the numbers are important in the way they indicate how the different Frameworks present TCs in their specific context with diverse purposes, contents, and interpretations or in different ways.

TCs comparatively prominent in the Finnish framework

The Finnish Framework comparatively pays more attention to *innovation* (7%), *partnering* (10%), and *adaptive teaching* (14%) than the Chinese Framework (see Figure 1). At the same time, they present them with different contents and foci. For example, the content of *innovation* and *partnering* in the two Frameworks differ. While both emphasise pedagogical *innovation* in teaching and learning, the Finnish Framework additionally mentions generating novel ideas in making the local curriculum. While both discuss *partnering* with students, parents, and colleagues, the Finnish Framework encourages schools' societal connections by creating different networks. Furthermore, regarding *adaptive teaching*, the Finnish Framework focuses more on the knowledge to respond to the needs of diverse individual students, while the Chinese Framework stresses relatively more on the strengths of collective learner groups, the same term with different foci.

TCs comparatively prominent in the Chinese framework

Compared with the foci in the Finnish Framework, *professional development* (28%), *ethics* (22%), and *student management* (7%) are emphasised comparatively more in the Chinese Framework (see Figure 1). However, *professional development* also takes a relatively high percentage in the Finnish Framework (10%). Therefore, these findings suggest that both Frameworks emphasise teachers' professional development. More importantly, they present these TCs using different contents or contrasting strategies.

Professional development in the two Frameworks includes developing teachers themselves and the school's operation and environment. Nevertheless, in the Finnish Framework, it is only described as a general term. In contrast, the Chinese Framework elaborates on teachers' professional development, mainly based on curriculum studies with practice orientation and a classroom management focus (MOE 2011). Furthermore, regarding *ethics,* while the Finnish Framework does not expressly emphasise ethics, the Chinese Framework describes it in detail from "protecting students' learning interests and self-confidence and respecting their rights of learning and development''to''developing teachers' integrity and statutory responsibility'' (MOE 2011, 12). Moreover, the Chinese Framework includes a learning environment and student management in *student management*, while the Finnish Framework covers only the former. Additionally, the Chinese Framework elaborates on the learning environment as "supportive and challenging" (MOE 2011, 13). It describes student management as "classroom management"by, for example,"organising peer and collective activities benefiting themselves and for collectivity" (MOE 2011, 12–13).

Similar emphasis

Similar percentages of competency frequencies are found in *multidisciplinarity* and *communication* (around 3%) in the two Frameworks (see Figure 1). However, the same competencies are applied for different purposes or interpreted differently. The Chinese Framework outlines *communication* as "oral and written communication skills" (MOE 2011, 14) for teaching knowledge, while the Finnish Framework applies it to class interaction with students. Furthermore, regarding the competency of *multidisciplinarity*, the Finnish Framework interpreted it as ''multidisciplinary studies'' and ''cross-curricular themes'', while the Chinese Framework discussed it through ''subject integration'', ''comprehensive-theme activities'', and ''cross-subject teaching''.

Discussion

Beyond the data

Considering the limitations of the dataset, complementary documents, as in Appendix 1, and relevant literature are engaging with the interpretation beyond the data. For example, in Figure 1, *pedagogy and subject didactics* (12%) and *subject matters* (31%) in the Finnish Framework are emphasised more than in the Chinese Framework. Nevertheless, 8% of the Chinese Framework refers to *pedagogy and subject didactics*. Furthermore, another policy document, Subject Specialised Curriculum, addresses *subject matters* for Chinese teacher education. Therefore, we argue that

both Finnish and Chinese teacher education pay significant attention to *pedagogy and subject didactics* and *subject matters*. In addition, we note that their contents and interpretations are different. Finnish class teachers teach all the subjects and are encouraged to apply multidisciplinary pedagogy (MOEC 2004). However, the Finnish Framework does not explain how pedagogy should be used, leaving space for individualised interpretation and enactment. In contrast, Chinese class teachers teach one to two subjects and are encouraged to utilise practical problem-solving pedagogy according to the curriculum (MOE 2011).

Besides, the Chinese Framework emphasises *reflection and inquiry* (8%) and *assessment* (3%) comparatively more than the Finnish Framework. To orientate practice, the Chinese Framework highlights *reflection and inquiry* through '"developing problem sensitivity and problem-solving capacity"" (MOE 2011, 14) and encourages multiple *assessments* to improve students" learning and teachers' teaching. While the above two competencies are not mentioned in the Finnish teacher education Framework, they are stressed in the Finnish tradition or in another way. According to Westbury (2017), the Finnish Bildung-Didaktik tradition views teaching as a reflective activity that involves philosophical meaning-making. Furthermore, educational assessment has legislation in Finland for all levels of education. Therefore, we argue that *reflection and inquiry* and *assessment* are important teacher competencies in both Finland and China.

In addition, around 4% of the two Frameworks refer to *materials and technologies*, and both Frameworks mention the importance of technology in teaching, learning, and networking. Nevertheless, there is a difference in terms of teaching materials. The Finnish Framework does not mention teaching materials, but according to Kansanen (2003), teachers' autonomy in choosing and using materials is stressed in its curriculum tradition. In contrast, the Chinese Ministry of Education (2019) provides a controlled number of teacher materials based on the curriculum for teachers to choose from and use.

Cross-national TC comparison

This study compares the Finnish and Chinese national teacher education frameworks from the teacher competency perspective to better understand their contemporary foci and curriculum tradition of teacher education. The results from this comparative study indicate that comparatively viewing these studies through the lens of TC draws attention to how both educational systems have adopted and adapted TC into an existing tradition and sheds light on the similarities and differences between the two systems. The following discussion begins by connecting the results with the earlier studies based on the Teaching and Learning International Survey (TALIS) 2018 by OECD, which involved 48 countries participating in PISA, including Finland and Chinese Shanghai.

Regarding the teaching and learning TC category, in this study, we found that the Chinese Framework emphasises comparatively more the TCs of *assessment* and *student management*, while the Finnish one pays more attention to *adaptive teaching* and *technologies*, which supports Ge and Wang (2020) and Luo and Ran's (2022) findings based on TALIS 2018. Furthermore, both countries stress the significance of *subject matters* and *pedagogy and subject didactics*, which is also consistent with Ge and Wang (2020). Moreover, our result shows that the Finnish Framework pays slightly more attention to the *multidisciplinarity*

competency of primary teachers than the Chinese Framework, which complements Ge and Wang's (2020) finding that China puts more emphasis on the *multidisciplinarity* of subject teachers than Finland.

In addition to the TCs related to teaching and learning, our results regarding TCs to cope with future changes and complexity add to earlier studies. The Chinese Framework, for example, comparatively stresses *ethics* more, while the Finnish Framework focuses more on *partnering* and *innovation*. However, both Frameworks emphasise teachers' *professional development* and *reflection and inquiry*. Importantly, this study illustrates how TCs are presented and become part of different contexts with different contents, foci, and strategies. Comparing how curricular traditions have been hybridised also advances cross-cultural understanding.

Different contents

Both the Finnish and Chinese Frameworks discuss pedagogical *innovation* in teaching and learning and *partnering* with students, parents, and colleagues. In addition, the Finnish Framework encourages teacher innovation in making local curricula and creating different societal connections beyond schools, suggesting that Finnish teachers are granted more autonomy and active broader roles than Chinese ones. Furthermore, both Frameworks emphasise *subject matters* and *pedagogy and subject didactics*. While the Chinese Framework highlights the significance of curriculum guidance, the Finnish Framework does not mention curricula, so the need for curricular knowledge may rise among teachers, according to TALIS 2018 (Luo and Ran 2022). Indeed, in Finland, teachers are expected to be involved in developing municipal and school-level curricula.

Different foci

In *materials and technologies*, the Finnish Framework focuses more on technologies. Nevertheless, it leaves greater autonomy in choosing and using teaching materials for teachers, although textbooks have a well-established history in Finland (Moate 2021). Compared to that, the Chinese Framework guides and regulates both teaching materials and technologies. Furthermore, the Finnish Framework emphasises educational diversity to meet the needs of individual learners through *adaptive teaching*, aiming for individual freedom. That aligns with the Bildung-Didaktik tradition prevalent in the Finnish curriculum design (Haapaniemi et al. 2021). In contrast, the Chinese one stresses collectivity in *adaptive teaching*, *ethics*, and *student management* due to the ideology originating from Confucianism, as noted by Marginson and Yang (2022): the whole world as one community (tianxia wei gong).

Different strategies

In addition to the official national teacher education frameworks, Finland and China use other policies to complement the frameworks and regulate nationwide teacher education. In addition to the National Teacher Education Curriculum analysed here, a separate subject curriculum, a common study curriculum, and a series of TC standards according to different tracks are used to regulate national teacher education activities and teacher certification in China. In contrast, Finland has additional teacher ethics and assessment legislation to complement its Government Decree to guide all institutional teacher education.

Curriculum traditions

The cultural contexts of the two countries contribute to some differences in the manifestations of teacher competencies. Like Pantić and Wubbels' study in Serbia (2012), the Finnish and Chinese teacher education Frameworks comprise hybridised curriculum traditions, which means integrating international trends into established education systems. They both use the competency-based approach to educating teachers, but they feature elements from their own traditions, avoiding excessive attention to the instrumental aspects of teaching.

Finnish education is based on the Bildung-Didaktik tradition and aims to educate a whole person and assist individuals' development (Haapaniemi et al. 2021). Furthermore, Finnish teacher education promotes individual teachers' transformation, as stated in the Finnish Framework. At the same time, as noted by Autio (2014), Finnish education has been affected by the Anglo-American curriculum approach. However, the Finnish Framework describes the analysed competencies with general terms, leaving teachers a great deal of freedom within the framework to avoid the structured competency threat to human autonomy (Willbergh 2015), such as in the *pedagogy and didactics* competency. Furthermore, in the Finnish Framework, *assessment* competency is not significantly emphasised, as the Bildung-Didaktik tradition aims to cultivate a whole person without exaggerating external control or assessment (Autio 2014).

In contrast, we note China's efforts to form a hybrid teacher education curriculum by drawing upon traditional Chinese curricular ideas (Lavonen et al. 2020) and the Western Anglo-American curriculum (Zhang and Zhenyu 2013), which separately echoes the earlier studies. As the Confucian tradition promotes educating a moral person, the Chinese Framework emphasises *ethics* competency to identify the purposes and values underpinning teaching. Chinese teacher education aims to construct teacher beliefs through ethics education, especially core values as fundamental beliefs, to influence their teaching practices, shaping an expected teacher education system (Lin 2022). At the same time, the Chinese Framework describes teacher competencies in detail (such as in *professional development*), given that the Anglo-American tradition emphasises the system's instrumental efficiency and the national curriculum's regulating function with expected outcomes and articulated instructions. Additionally, the Chinese Framework encourages multiple-*assessment* competency to improve student learning and teachers' teaching. The Anglo-American curriculum also influences that idea, presuming a need to evaluate whether the expected outcomes are achieved.

The Anglo-American tradition has, in particular, informed the development of PISA. That arguably gives the misleading impression that students' learning outcomes are the most important feature of education and reduces interest in the broader considerations that inform the development of an educational system. However, while the Anglo-American tradition has become dominant, Finnish and Chinese cases provide other ways of examining teacher education, such as the Bildung-Didaktik and Confucianism. They neither unquestioningly adopt the Anglo-American tradition nor completely ignore it. It is significant that they choose relevant elements and integrate cultural traditions based on their local contexts and needs.

This comparative study of national frameworks explores how teacher competency has officially been formulated at the national level in each country. However, such a study

cannot examine whether the expectations of national frameworks are met in reality in different regions. Therefore, further empirical studies are needed on the implementation of TCs at universities and comparisons between national expectations and institutional implementation. This study has applied Mohamed et al. (2017) TC theoretical framework in a cross-national comparative case study, presenting its adaptation, interpretation, and application in different contexts. More in-depth case studies and cross-national comparative studies would consolidate, adapt, and improve that TC framework.

Conclusion

In this article, we studied what competencies are integrated into the Finnish and the Chinese national teacher education frameworks and the similarities and differences between the two Frameworks. Applying an analytical framework, adapted TC approach from Mohamed et al. (2017), we note that within the particular cultural context of educational policy in China, 13 TCs are included, with *ethics*, *student management*, and *assessment* competencies comparatively emphasised more. In contrast, the Finnish Framework draws on 11 TCs within the Finnish educational policy context and stresses *adaptive teaching*, *innovation*, and *partnering* comparatively more. Both Frameworks focus on the TCs of *subject matters*, *pedagogy and subject didactics*, *teaching technologies*, *communication*, *multidisciplinarity*, *professional development*, and *reflection and inquiry*.

This study built on previous TC and curriculum studies by providing insights into TC manifestations within contemporary national framework foci and hybridised curriculum traditions. The quantitative results on teaching and learning and the culturally dependent TC interpretations in the two Frameworks correspond with and enrich earlier studies (see, e.g. Darling-Hammond 2021; Ge and Wang 2020; Ulferts 2019). Furthermore, it contributes to comparative knowledge of Finnish and Chinese teacher education. From this perspective, understanding TCs oriented to cope with future changes and complexity, such as *innovation*, *partnering*, *professional development*, *reflection and inquiry*, and *ethics*, is especially valuable.

For policymakers, scholars, and practitioners interested in Finnish and Chinese teacher education, the similar teacher competency foci and the influence of Anglo-American curriculum tradition presented in the two national Frameworks can be considered to suggest some effective policy measures towards achieving quality teacher education in high-performing countries. However, despite attaining similar results in international assessments, different countries may emphasise very different aspects of education, utilising different traditions and strategies in teacher education based on particular contexts and needs. This comparative study on teacher education in Finland and China provides alternative perspectives of long-established educational traditions beyond the boundaries of the Anglo-American approach to developing quality teacher education. Ultimately, understanding teacher education, its traditions, and worldviews opens a path for a deeper understanding of how different societies view education and, by implication, how they view themselves.

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Notes on contributors

Yan Wang is a doctoral candidate in the Doctoral Program in Education at the University of Jyväskylä. Her research interest is comparative research on Finnish and Chinese teacher education. When being a leading school teacher in China for more than fifteen years, she experienced Chinese teacher education. Studying at the University of Jyväskylä (Finland) for her second master provided her with the opportunities to compare Finnish and Chinese teacher education. Also, her earlier experience of working as a visiting scholar in America shaped her insights of international comparative studies.

Dr. Terhi Nokkalab is a senior researcher at the Finnish Institute for Educational Research (FIER), University of Jyväskylä. Her research focuses on the interplay between education policy, organisational parameters and networks, and academic work, with a specific interest in comparative methodology and discourse analysis.

Dr. Josephine Moatec is an international educational researcher and teacher educator based at the University of Jyväskylä. Her research interests include pre- and in-service teacher development, the role of language in education and different forms of pedagogical development. She coordinates a programme specialised in foreign language pedagogy and bilingual education for younger learners.

ORCID

Yan Wang http://orcid.org/0000-0002-0678-1085
Terhi Nokkala http://orcid.org/0000-0003-2381-7825
Josephine Moate http://orcid.org/0000-0003-3530-4373

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Appendix 1

1. Data and complementary documents for Finnish and Chinese cases.

Cases	Types	Documents	Purposes	Contents
Chinese case	Data	National Teacher Education Curriculum (Trial) (2011).	Officially formulated by MOE to guide nationwide teacher education and teacher certification.	Outlining teacher education aims, structures, and course content of different tracks in pedagogical studies.
	Complementary documents	Subject Specialised Curriculum (2011).		Guiding subject studies.
		Professional Competency Standards for Pre-service Primary Teacher Education (Trial) (2021).		Outlining teacher competency goals, instructions, and standards.
		The Teacher Education Revitalization Action Plan (2018); the National Textbook Construction Plan for Universities and Primary and Secondary Schools (2019).		Official policy documents outlining the design and implementation of national teacher education strategies.
Finnish Case	Data	Finnish Government Decree on University Degrees and Professional Specialisation Programmes (794/2004): Chapter 4 Provisions on teacher education Sections 18–20 (Amendments up to 27/2015 included).	Officially formulated by MOEC to guide nationwide teacher education.	Outlining teacher education aims and structures and general studying content of different tracks.
	Complementary documents	A Collaborative Design for a Finnish Teacher Education Development Programme (Lavonen et al. 2020).	Part of national reforms, authored by key Ministry officials and the head of the teacher education forum, published as research.	Listing strategic TCs and their definitions.
		A Multidimensional Adapted Process Model of Teaching (Metsäpelto et al. 2022).		