

## ECER 2023 submission

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### Going beyond the digital as instrument: pre-service teacher education in critical digital competencies in Quebec

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#### Abstract

Digital competence is understood as a "*situated multiple integrated skills and practices (conceptual, attitudinal, procedural, and ethical) that empower people (individuals and groups) to participate and communicate efficiently in society*" (Marín & Castañeda, 2022, p. 5). Teachers, who are to educate (and empower) future citizens in the digital world, and with the special impact from the Covid-19 pandemic, are especially called worldwide to develop their digital competence as professionals (Bond, 2020).

National (or even regional) mandates for teachers to develop their digital competence are usually gathered in professional reference frameworks. Reference frameworks for teachers are relevant in that they are "*policy documents that define the minimum standard of professional attributes that all educators teaching within a given educational system are expected to possess, to be able to do their jobs properly*" (Villar-Onrubia et al., 2022, p. 129). Even if some countries (or regions) have also their own digital competence framework for teachers, these do not have the same level of recognition as mandates or policy documents, since often take the form of non-binding documents proposed as guidance. In addition, most of those frameworks do not address the critical dimension of teachers' digital competence, which would involve going beyond effectiveness and instrumental aspects of digital competence, and hence, it is a pending issue in teacher training around the world (Castañeda & Villar-Onrubia, 2023).

In this sense, the concept addresses critical digital literacies and digital citizenship in that citizens could engage critically, ethically, and responsibly with digital technologies (Pöttsch, 2019). It involves adopting a critical approach when consuming and sharing content and dealing with data, but also developing a level of awareness of the power dynamics of ICT stakeholders and their implications (Villar-Onrubia et al., 2022). Even though these literacies are key to any person, they are even more important for teachers, who are uniquely positioned to empower younger generations in that responsible, critical and ethical engagement with digital technologies (Gouseti et al., 2021; Marín et al., 2021).

In this study we explore the specific case of the Quebec province (Canada). The province counts with an action plan for digitalisation since 2018 that will be completed in 2023. The first of its measures involved the establishment and implementation of a reference framework for digital competency (Ministère de l'Éducation du Québec, 2019), which includes links to the new version of the reference framework for professional competences for teachers (published in 2020). The *Competency 12, Mobilize digital technologies*, details, in its scope that "*it goes beyond the technical skills needed to use digital tools for pedagogical purposes in the classroom. Teachers must be aware of the impact of these changes on the nature and value of learning*" and highlights as key elements, aspects such as "*exercises ethical citizenship in the digital age*" or "*develops critical thinking with regard to the use of digital technology*". These elements coincide with the dimensions that appear in the framework for digital competency and show a difference regarding the value of critical and digital citizenship elements from other teacher reference frameworks worldwide (Villar-Onrubia et al., 2022).

By studying the case of digital competences integration in teacher education programmes in Quebec universities, with emphasis on critical digital competences and digital citizenship, may provide insights into new ways of doing and contribute to research in this context.

Two research questions were posed in the study:

RQ1: How is the teacher reference framework being mobilized in terms of digital competences in teacher education programmes at Quebec universities?

RQ2: How are critical digital competences and digital citizenship considered among the development of digital competences in teacher education programmes at Quebec universities?

## **Methods**

The study follows an interpretive approach, since the objective is to understand better how digital competences are integrated in teacher education programmes at the Canadian province of Quebec, as a worldwide referent (Villar-Onrubia et al., 2022).

To triangulate data and obtain a broader view and insights into the two research questions, two qualitative data collection methods have been used in parallel: semi-structured interviews and document analysis.

Semi-structured interviews were guided by three questions leading to open-ended and flexible answers by the participants with relation to: a) their vision of the development of digital competency in teacher education, b) the elements of digital competency (importance, emphasis, practiced) and critical digital literacies and digital citizenship, and c) the further development of digital competency in pre-service teacher education programs. The key elements of the digital competence of the reference framework for teachers was used as a prompt in b) (Ministère de l'Éducation du Québec, 2020). The interviews were conducted with 7 higher education instructors in education departments with expertise in educational technology or distance education of 3 universities with teacher education programs in Québec. The interviews were recorded and transcribed before analysis.

Document analysis involved the search and analysis of the website descriptions of the 34 courses focused specifically on digital competency in teacher education programs that led to professional accreditation (undergraduate and graduate) in the 13 universities across Québec with these kind of programs. Data was tabulated in a spreadsheet file with the different basic information about the courses and their correspondence to the elements of the digital competency framework.

Content analysis from interviews' data and the courses identified in the document analysis was conducted using two coding approaches in different steps. First, a deductive coding approach was applied based on the digital competency elements. A second inductive coding approach was carried out to identify further relevant codes. The qualitative analysis software MAXQDA2022 was used to support this analysis process.

## **Conclusions**

The preliminary results show that training for digital competence in teacher education programs is covered by all Quebec universities, although there is still room for improvement in terms of critical digital competence, which may relate to the fact that the new reference framework for teachers was still being deployed at the time of the study.

The analysis of the 34 courses related to digital competence for teachers shows that the dimensions regarding the harnessing of the potential of digital resources for learning and the developing and mobilizing technological skills are among the most frequently present elements. Developing critical thinking regarding the use of digital technology is the third element in the list in terms of frequency, present in around half of the courses. Other dimensions such as adopting an innovative and creative approach to the use of digital technology or solving diverse problems via digital technology were present barely in two courses. On the other hand, most of the courses included in their descriptions some connection to critical digital literacies and digital citizenship.

These findings coincide partially with what interviewees stated. They mostly agree on the digital competence elements that were more emphasized (the more instrumental ones, e.g., communication or content production), and the less emphasized (e.g., innovation and creativity or critical thinking) in the teacher education programs. Most interviewees stated that all dimensions were important and interrelated, but that developing and mobilizing technological skills was the basis. Also, they highlighted the importance of critical thinking regarding the use of digital technology.

This study contributes to the further development of the (critical) digital competence for teachers in higher education, involving implications at the institutional and teaching and learning levels to be considered, e.g. approaches to digital competence that consider its cross-curricular status.

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