REVIEW ARTICLE

STATE OF RESEARCH ON THE CONCEPT OF DIGITAL CULTURE

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ABSTRACT

Numerous studies on educational technologies have focused on the concepts, methods, and instruments that influence young people's personal digital cultures. The goal of this paper is to review the existing research on the personal digital culture of aspiring teachers during teacher preparation. The analyzed papers provide profiles of young people's digital practices, beliefs, and abilities for teacher preparation. No study makes it obvious how future teachers' individual digital cultures will affect these training tools; some studies concentrate on professionalization and skill development during training, while others look at the integration of e-portfolios, distance learning, and alternate training. Additionally, the publications don't offer any information about the sources, personal epistemology, or the impact that prospective teachers' personal digital cultures will have on the material they bring to their training.

Keywords: Digital culture, teachers training, ICT, prospective teachers.

1. INTRODUCTION

Technological progress has made ICT ubiquitous in both private and professional life. Actors in the education system have responded to this progress on several dimensions. Research has been conducted on the integration of ICT into teaching practices, on their impact on learners' learning, and several studies have addressed the risks that these ICT brings to the education system. However, the place and use of digital technology in teacher education have not received its fair share in this profusion of research on ICT and education, especially regarding the personal digital culture of future teachers during teacher training. Two spheres can be distinguished on which young people alternate when using digital tools. One is personal, marked by playful, informal, and non-formal practices, while the other sphere is well marked by everything that is professional and school related.

The first appearance of the notion of 'school form' takes us back to the year 1990, where French sociologists defined the concept of 'school form' to provide researchers in the field of education with a reference point to analyze perceived changes in school in relation to societal developments. According to [1], school form is a mode of collective action considered to be a response to such a problem. Vincent [2] sees that changes in form in schools should be compared with transformations in society, whether they are economic, social, or cultural. Vincent [2] defines school culture as the set of material and intellectual devices put in place by and within school institutions, devices that create the school culture as it exists today. Poyet [3] defines it as the appropriation of technology, the development of its uses and representations, values, beliefs, as well as the products that result from it.

According to [4], we must accept that there is a discontinuity between generations. He introduced the notion of "Digital Natives" to describe the generation born at the same time as digital technologies. This generation will have cognitive modes and learning methods that are totally different from what we are used to seeing. Brouillard and Baron [5] have warned of the consequences of these learning modes on education. Bennett, in a publication in the "British Journal of Education Technology," shows less concern, stating that there is no reason to talk about discontinuities and consider these young people as strangers. According to him, education is not rejected by these young people, but it must confront the challenge of change.

Many studies have been conducted on the school and individual practices of these young people. Some researchers speak of a kind of discontinuity that can go as far as opposition, while others are optimistic and talk about continuity between these practices. Thus, a gap is well noted. How does digital culture act to reduce it? Poyet in [3] questions the digital culture of young teachers to see how this culture can reduce what he calls the gap between digital natives and digital immigrants. In his research, Poyet considers future teachers as digital natives who have developed two types of knowledge related to digital technologies: primary knowledge thanks to the rich digital environment that marks their personal life, and secondary knowledge constructed at school. These knowledge bases allow future teachers to understand and respond to the needs of their future students. The survey conducted by Poyet at an ESPE (École Supérieure de Professorat et de l'Éducation) in France concludes that future teachers show more porosity between their personal and school spheres, unlike students. In [3] Poyet insists on a revaluation of so-called non-formal skills of students and the role of ESPEs in developing pedagogical scenarios that prepare future teachers to take these skills into consideration. Bruillard and Baron [5] confirm that there is opposition between the two spheres, school and personal, and he asserts that it has existed for a long time. The authors notes that the use of technologies in school aims to slow down time, while young people's perceptions tend towards technologies that have an accelerating effect on time, which is clear in their playful practices. According to [5], young people are not responsible, but it is the educational system

that assumes responsibility. His argument is the absence in the educational system of means that take these personal practices into account, divert them in favor of students, and make them evolve.

Fluckiger [6] conducted several research studies on the personal and digital educational practices of students. He notes that digital educational practices are infrequent (65% of young French people declare that they never use the internet at school). According to [6], students realize the limited scope of their personal digital skills when they confront school activities that they have never seen in their daily practices. The results of these studies suggest that students' technical skills are often limited to implicit knowledge and that there are heterogeneous patterns of use when using similar tools. He also adds that specific relational skills that adolescents develop in their personal spaces cannot be reinvested in the school environment. This difficulty has played a role in legitimizing digital cultural practices, given the enormous gap observed between personal use and digital practices at school. Fluckiger [6] also investigated the continuity between educational and personal practices through direct observation in a class where middle school students used the Google search engine. A different use was noted during an activity involving information search, where the presence of a librarian prompted students to return to the results page once they finished reading a few lines on the proposed pages, whereas during personal use, navigation between pages occurred without returning to the results page. He emphasizes the role of situational contexts in determining the degree of porosity between school and personal practices. The absence of a pedagogical and referential framework for extracurricular activities blurs the distinction between what is considered school-related and non-school-related use. The question of continuity/rupture must consider several variables: the choice and delimitation of the subject, skills, objectives, and technological context. In the same vein, Villemontex [7] found significant developments in terms of interpenetration and complementarity between school and playful forms through activities that introduced the tablet as a learning tool in a study on the relationship of primary school students and teachers to digital tablets. These developments concern student autonomy and collaboration between them. The authors affirm that the characteristics and applications used on the tablet reinforce the playful aspect of knowledge. Negotiation between students and teachers concerning the limits and interferences between school and playful forms is necessary, and the first solution consists of transforming playful applications for use in the classroom, while the second converges to extend the school from beyond the school walls using tablets. Lefebvre and Fournier [8] conducted a study on the personal, professional, and educational uses of ICT by future teachers and practicing teachers, showing that future and practicing teachers have demonstrated an ability to use ICT for personal purposes (document production and communication), and they have a good mastery of web 2.0 tools. According to this study, future and practicing teachers report using ICT for professional purposes, specifically for producing documents to use in the classroom. The authors note that communication among various actors is facilitated by using ICT. The two authors observed progress in terms of the pedagogical use of ICT among the different participants in the study. Lefebvre and Fournier [8] attribute the low level of pedagogical use among future teachers to two constraints: their limited pedagogical experience and the opportunities to see how ICT can be successfully integrated. The study concludes that only practicing teachers demonstrate pedagogical use that demonstrates the appropriation of ICT. During the practice of appropriating ICT, digital tools are exploited in the classroom and manipulated by either the student or the teacher in meaningful learning and teaching situations.

Note that all research attempting to identify the knowledge of teachers and future teachers has not yielded consensus or sufficient results. Jorro and Tutiaux-Guillon [9] base the knowledge of teachers on two principles: on the one hand, the epistemological and social origin of this knowledge, and on the other hand, the effectiveness of this knowledge for the professional action of teachers. In their research on the lay knowledge and scientific knowledge of future teachers in teacher education, the authors note that the lay knowledge of future teachers is hybrid and possesses a complex grammar. This knowledge requires a process of experiential training (video training, simulation, etc.) and a questioning process that aims to implement the relevance of this knowledge to another knowledge.

This article aims to review the literature on the state of research on the personal digital culture of future teachers in teacher education. We are present in this text a description of the corpus of text composed of 50 articles from 14 international peer-reviewed journals, according to the countries and year of production. Depending on the different methods of data collection and analysis, different research objects will be presented during the analysis of the corpus.

2. METHODOLOGY AND CONSTRUCTION OF THE CORPUS

The article search was based on a list of peer-reviewed scientific journals (17 journals) related to information and communication technologies and the field of education. The first phase of the search in these journals involved searching for articles using different keywords. This phase resulted in 118 articles classified in an Excel spreadsheet, specifying for each article from each journal its ISSN, the website link on which it is downloaded, and the keywords used. This first phase accepted any article with the keyword in any part of the text.

The second phase was characterized by a specific filter that required the presence of the keyword in the title or abstract of the article. Each article was designated with a comment justifying its selection or elimination, and 66 articles were retained at the end of the second phase. The final step involved validation of the choices by the thesis supervisors, resulting in 54 articles being kept. The analysis of the articles was carried out using an analysis grid on Microsoft Word, which allowed for a detailed analysis of each article. The grid consists of five sections. The first section focuses on the characteristics of the text (reference, type, etc.). The second section addresses the problem and conceptual framework, and identifies the concepts used. The third section deals with the method, focusing on the approach and observation

modalities. The fourth section provides details on the empirical part of the research by noting the sample, data collection and processing procedures. Finally, the last section summarizes the article through a summary and an extract demonstrating its relevance to the thesis problem. This process of analyzing the articles allowed us to eliminate 4 articles from the 54 validated, for various reasons (the themes addressed were not relevant to the thesis problem).

3. RESULTS

The analyzed articles reveal a kind of diversity, as they are distributed across several countries (Figure 1), A diversity is also perceived at the level of data collection and analysis methods (Figure 2,Figure 3).
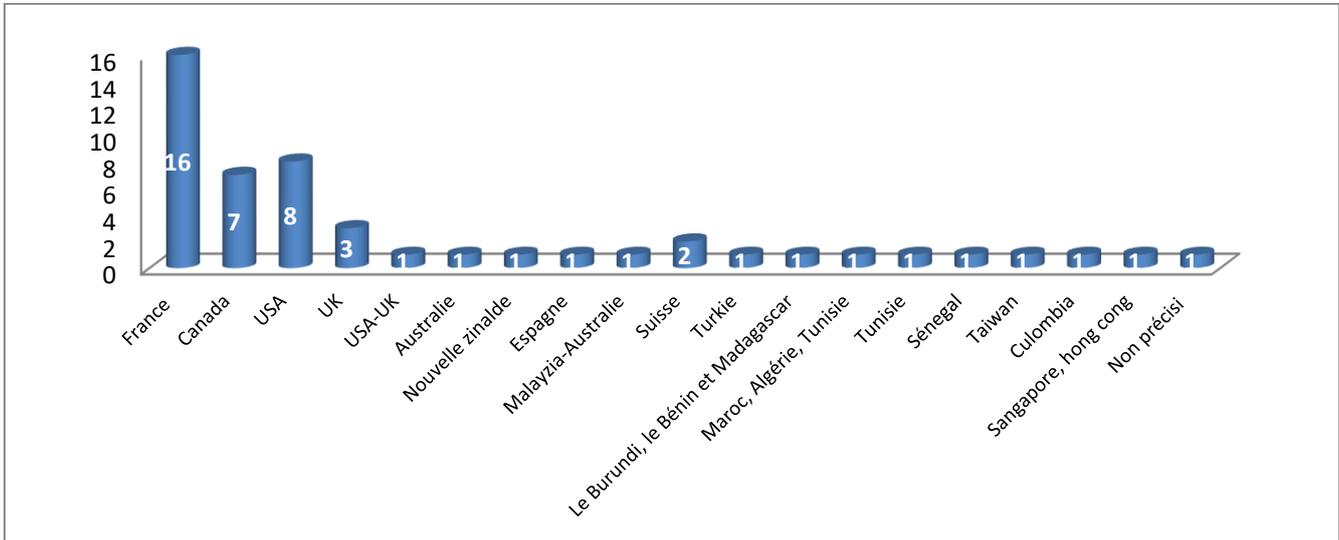
Figure 1: The figure presents the distribution of publications by country.
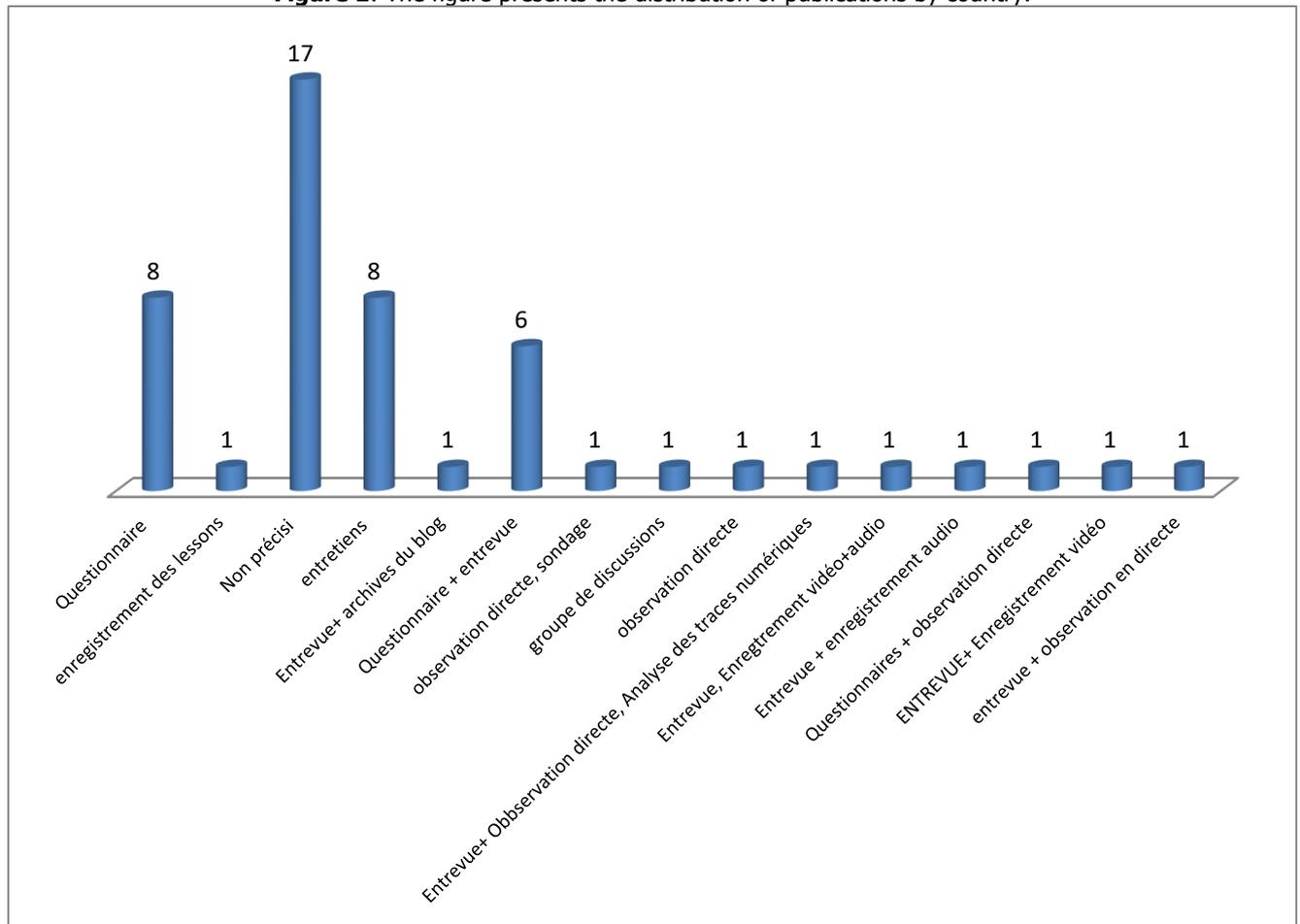

Figure 2 : The figure presents the distribution of publications by data collection methods.
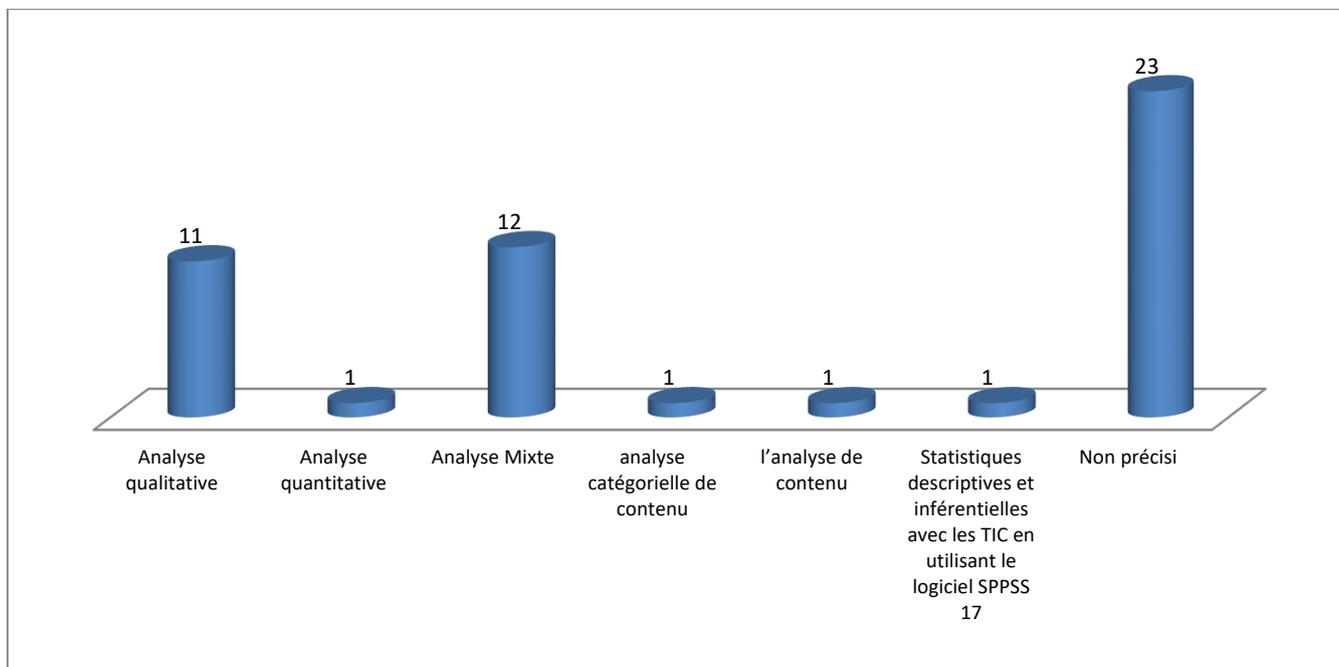
Figure 3 : The figure presents the number of articles according to the analysis method used.

A diversity of research angles is well noticed (Figure 4), in fact, 52% of the articles attempted to either describe or analyze the digital practices (personal, professional) of different actors (students, future teachers, practicing teachers, trainers, training managers...), 21% of the articles addressed the conceptions and representations of these actors on everything digital in schools (digital tools, social networks, blogs...), while 23% tried to combine them during the research (see Figure 4). Bernadette Charlier, the director of the University Didactics Center of Fribourg, conducts several research in the fields of adult learning and evaluation of innovative training devices. By questioning the place of research in educational technologies with the evolution of pedagogical practices, she notes confusion in several studies that initiate the evolution of pedagogical practices in connection with digital technology, in terms of ambiguity to differentiate technologies and media, to differentiate the concepts of technical objects. She concludes that it is practices that influence research and not technologies. A necessity arises, according to Charlier, to design interdisciplinary theoretical frameworks to have a clear understanding of the complexity of young people's digital practices and to propose development pathways in favor of these practices for quality education.
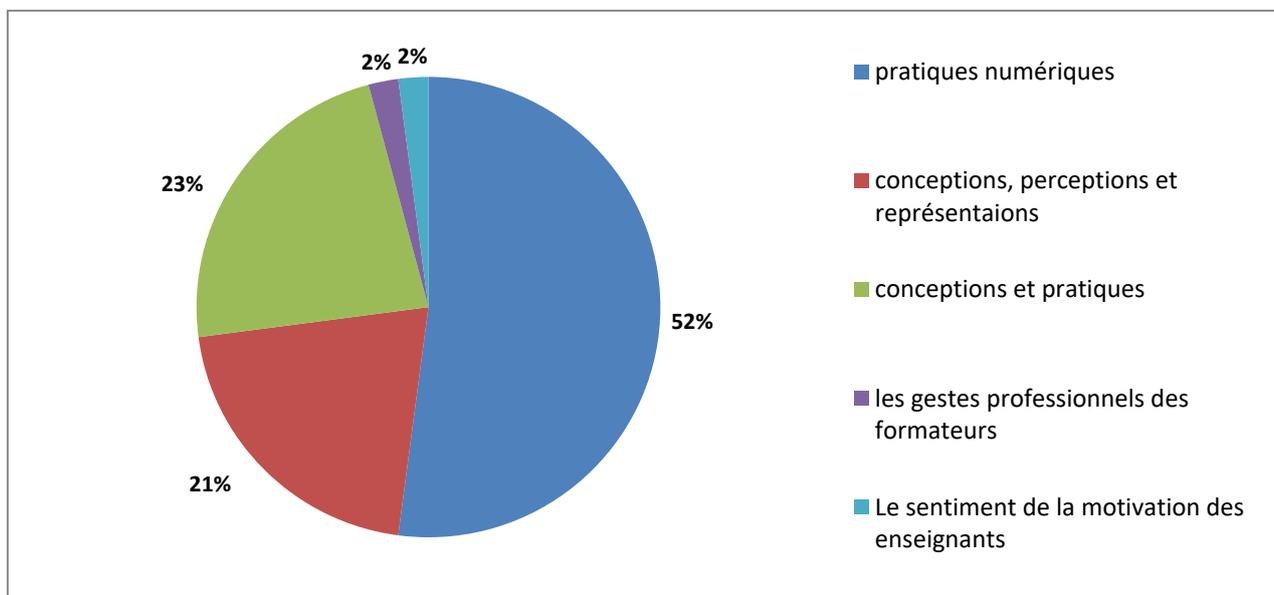

Figure 4 : the figure presents the distribution of the different research angles.

The analyzed articles were based on a considerable number of samples, including 5,118 future teachers/students, 468 practicing teachers, 188 trainers, 87 managers and directors of training centers, and finally 190 students (Figure 5). Two studies were notable for their sample size. The first is a Canadian study [10] with a sample of 2,065 future teachers, which investigates the mastery of professional competence to integrate ICT by future Quebec teachers. The other study is longitudinal research (4 years), focusing on digital portfolios and investigating the evolution of usage and representations among teacher trainers. This study involved 168 trainers and 1,496 future teachers.
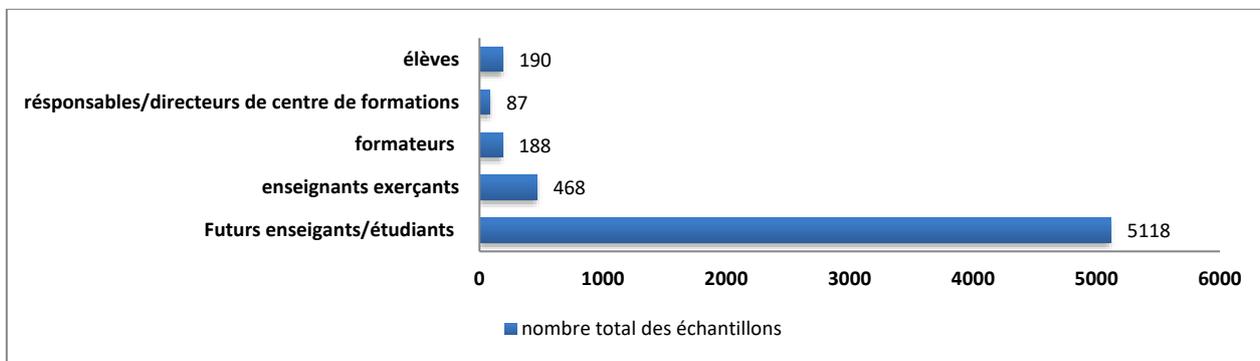
Figure 5 : the table showed the Sample categorization.

4. DISCUSSION

Personal digital culture is a reality in the lives of future teachers. They are not prepared to abandon their personal digital practices in favor of institutional norms. Most young people perceive school activities that integrate so-called formal digital practices as useless and of limited scope. Research has shown that future teachers' personal digital practices contribute to the development of their skills in terms of autonomy, collaboration, and communication with peers/trainers. Self-organizing in virtual communities of practice helps future teachers build a digital culture that promotes creativity and innovation with their future students. Researchers are warning educational authorities to begin reducing the digital divide between educational and personal spheres.

Lexical analyses have highlighted the importance of personal digital culture in the digital practices of young people, as evidenced by concepts such as social, personal, informal, and Facebook being the main concepts on the graphs. The issue of skills emerged as significant in the obtained graphs, with skills being treated on two axes: the first concerning future teachers' personal digital skills and the other concerning their professional digital skills. A comparison between Francophone and Anglophone publications extracted two trends. Francophone works focused on questions of skills and professionalization during teacher training, while Anglophone publications predominantly addressed questions of young people's personal digital practices on social networks and ways to leverage them to enhance the professional side of young teachers.

5. CONCLUSION

It seems interesting to investigate the references of personal digital culture among future teachers. It is also crucial to clarify the personal epistemology of these future teachers to better understand their beliefs and theories developed about this personal digital culture. The content that these future teachers bring to training is a rich field that requires further investigation to better clarify the boundaries between what is formal and what is informal among these future teachers.

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