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Teacher personal professional identity and the challenge of digital citizenship: A process-oriented case study in Italian and Irish secondary schools

L'identità professionale personale del docente di fronte alla sfida della cittadinanza digitale: uno studio di caso orientato ai processi nelle scuole secondarie italiane e irlandesi

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ABSTRACT This paper examines the relationship between teacher personal professional identity (TpPI) and digital citizenship through an exploratory case study. It aims to provide an in-depth understanding of the impact of digital technologies on the teaching profession by analysing the experiences of 43 secondary school principals and teachers in Ireland and Italy. The empirical research, grounded in the idiographic paradigm, adopts a process-oriented vertical case study approach. Within this framework, a comparative axis is developed to analyse and contrast interview-derived data. The main findings reveal two distinct trajectories of identity development and offer insights into participants' conceptions of both digital citizenship and the broader digital transformation of education.

KEYWORDS Teacher personal Professional Identity (TpPI); Digital Citizenship; Irish Secondary School; Italian Secondary School; Qualitative Case Study.

SOMMARIO Questo articolo affronta il tema dell'identità personale professionale del docente (IpPD) in relazione alla sfida della cittadinanza digitale. L'obiettivo generale è esaminare in maniera approfondita l'impatto delle tecnologie digitali sulla professione docente attraverso l'esperienza di presidi e insegnanti irlandesi e italiani (43 partecipanti in totale). La ricerca empirica, inquadrabile all'interno del paradigma idiografico, segue un approccio verticale orientato al processo. All'interno di questo quadro teorico, viene sviluppato un asse comparativo per analizzare e confrontare i dati emersi dalle interviste. I principali risultati rivelano due traiettorie

distinte di sviluppo identitario e offrono spunti significativi sulle concezioni dei partecipanti in merito sia alla cittadinanza digitale, sia alla più ampia trasformazione digitale dell'istruzione.

PAROLE CHIAVE Identità personale Professionale del Docente (IpPD); Cittadinanza Digitale; Scuola Secondaria; Italia; Irlanda.

1. Introduction

Teacher professional identity (TPI) plays a fundamental role for quality of teaching and for the overall effectiveness of educational systems (Suarez & Mcgrath, 2022). TPI portrays a multidimensional and complex concept that involves the integration of five distinct sub-identities: personal, social, collective, professional, and digital (Feser & Haak, 2022; Masoumi & Noroozi, 2023; Zavatta, 2024). These identities, which teachers elaborate on over time, can change in relation to multiple contexts and are influenced by a range of individual factors. While the individual factors may include discourses such as personal biographies and narratives, emotions, social contexts and relationships with others (Rushton et al., 2023), the multiple contexts have also been identified as the initial teacher education, the different professional and organizational contexts (mainly characterized by the relationship with students and colleagues), the extracurricular settings and external events (Liu & Trent, 2023).

Within this theoretical frame, the personal professional identity of teachers (TpPI) highlights the subject's awareness of their profession, whereas the social and collective professional identity respectively stress self-awareness in relation to others and social awareness of the profession (Zavatta, 2024). TpPI, thus, includes values, attitudes, ethical positions, and levels of agency that shape how teachers engage with their practice and their learning communities (Persico, 2024).

As Faiella and Bortolotti (2024) observe, before the COVID-19 pandemic, it was widely assumed that digital technologies had become a fully integrated feature of daily and professional life. In this context, both semiotic and philosophical perspectives have pointed to a revolutionary shift in human experience related to digital development, described as the "post-digital condition" (Faiella & Bortolotti, 2024, p.5; Jandrić et al., 2018; Eugeni, 2022; Panciroli & Rivoltella, 2023) and the "onlife condition" (Floridi, 2017). These two notions underscore the pervasive nature of digital media, which not only permeate human experience but also serve as extensions of the human self. This condition signals a new ontological dimension of reality, referred to as the infosphere. According to Floridi (2017), this transformation constitutes a revolution – the digital revolution – comparable in epistemological scope and impact on human thought to the Copernican, Darwinian, and Freudian revolutions.

Despite these theoretical considerations, the pandemic revealed profound pedagogical and technological unpreparedness across global education systems. Teachers were forced to rapidly renegotiate their identities and adapt to digitally mediated teaching and learning environments, often without sufficient training or institutional support (Mollo et al., 2024).

In the wake of this shock, a growing body of research (Bahari, 2022; Flores & Craig, 2023; Galvin et al., 2023; Goodwin et al., 2023; Johnson et al., 2023) has examined the impact of digital transformation on teachers' identities, particularly across the personal, social, and collective dimensions. These studies highlight identity shifts to remote teaching, the exploration of blended learning systems (Karkazis et al., 2019), the enhancement of digital and data literacy (Panciroli & Rivoltella, 2023), and the implementation of smart pedagogies (Bahari, 2022).

While this transition has provided opportunities in the educational and teaching practice, it has also presented challenges and downsides, such as technological barriers, ethical issues, and increased workloads (Mollo et al., 2024). In response, policy frameworks, such as the European Commission's Guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training, as a part of the Digital Education Action Plan 2021–2027, have increasingly recognised the strategic role of teachers in promoting digital citizenship. Digital citizenship is defined as: "the capacity to participate actively, continuously and responsibly in digital environments (local, global,

online) at all levels (political, economic, social, cultural, and intercultural)" (European Commission, 2022, p.1).

From this perspective, teachers are expected not only to support students in developing digital skills and ethical behaviour, but also to model inclusive and socially aware digital behaviour themselves (Zavatta & Persico, 2024). Here, TpPI becomes central since it intersects what Engeness defines as "teacher digital identity" (Engeness, 2021, p. 98): teachers' awareness and self-perception as professional, particularly in relation to digital tools, digital environments, ethics, and pedagogical practices, directly influences their ability to improve the quality of students' digital skills and, more broadly, to contribute to the quality of their educational experience and therefore their formation as active and responsible citizens.

It is not surprising that Panciroli and Rivoltella (2023) underscore the necessity to rethink the paradigm of citizenship in the light of new ecosystems conceived as digital ecologies (De Kerckhove et al., 2022). As such, teachers can enable students to develop a responsible digital citizenship following an ecosystem perspective (Cosgrove, 2019; Panciroli, 2020) concerning four key dimensions: the teaching experience, the learning processes, the development of the school community and students' ethical and social behaviour online.

Drawing on these theorical and policy-based considerations, the main purpose of this paper is to examine the impact of the digital revolution on teacher personal professional identity by presenting an exploratory qualitative case study (Creswell & Poth, 2018) conducted in two European countries: Italy and Ireland. The overarching aim is to offer an in-depth understanding of personal professional identity in relation to the digital revolution and the concept of digital citizenship.

2. The context of the research

According to Suarez and Mcgrath, "*there is little research on the professional identity of teachers that has been carried out across different countries*" (2022, p. 16). This article addresses this gap by focusing on the Italian and Irish secondary school contexts for three emblematic reasons that highlight two limitations in the existing literature and a possible research path. Firstly, considering a recent body of studies in the field of Comparative and International Education (Craig, 2016; Cappa, 2017; Mincu, 2020; Salajan et al., 2023; Galvin et al., 2023), it emerges that the Italian-Irish pairing has not yet been directly examined. Secondly, Ranieri's (2022a) subjective review delves into some of the well-known digital competence models for teachers, namely TPACK, Unesco's ICT Competency Standards for Teachers, Krumsvik's digital literacy model for teachers and DigCompEdu, without examining the Irish Digital Learning Framework (DLF) (Department of Education and Skills [Des], 2017). In its contents, the Irish framework provides an intriguing definition of digital citizenship and digital competence that align closely with those of the European Commission presented in Section 1. Following the DLF, digital citizenship "refers to the norms of appropriate, ethical and responsible behaviour when using digital technology" while the digital competence is associated with "*the set of skills, knowledge and attitudes that enable the confident, creative and critical use of digital technologies to enhance teaching, learning and assessment*" (Des, 2017, p. 16).

To develop students' digital competences and foster digital citizenship, in both the Italian and the Irish contexts, recent studies propose a similar interpretation of teacher pedagogical digital knowledge as it moves from an instrumental logic of task execution to a prospective of ethical identity-building and digital citizenship. For instance, Feerick et al. (2022), in relation to the Irish secondary school context, distinguish between a 'limited understanding' and a 'holistic understanding' of Information and Communication Technology integration "where digital technology is seamlessly used in all aspects of teaching, learning and assessment to enhance the learning experiences of all students" (2022, pp. 30-31). Following the perspective of DLF, "embedding the digital technology" (Des, 2017, p. 3) within the school context means to enable the confident, creative and critical use of digital technologies to enhance teaching, learning, assessment, management and leadership (Cosgrove, 2019; Feerick et al., 2022).

Similarly, in the Italian context, several scholars (Ranieri, 2022a; 2022b; Panciroli & Rivoltella, 2023) endorse the development of digital competences as a means to achieve digital citizenship. Notably, Ranieri's line of inquiry investigates the relationship between teacher professionalism and the concept of

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digital citizenship (2022a; 2022b), pointing out that the transition from the strictly technical to the pedagogical and educational dimension of technology cannot be taken for granted.

Given the research gaps in the field of Comparative and International Education and this common inquiring line, this paper seeks to explore new ways of understanding the mechanisms of identity formation in the context of Italian and Irish secondary school. The explorative case study therefore addresses two main research questions:

RQ1: How does the digital revolution affect TpPI, according to Irish and Italian teachers and principals?

RQ2: What is teachers and principals' understanding of digital citizenship?

3. Methodology and participants

Hanna et al. (2019, p. 22) review of quantitative measurement instruments for TPI states that teacher identity "cannot simply be perceived directly" but must instead be analysed from a "broad perspective". Further, the article shows that none of the instruments reviewed has simultaneously measured and evaluated the domains constituting the teacher identity construct, thereby risking an inability to grasp its overarching meaning and the personal process of identity formation and negotiation.

Considering these drawbacks and in the light of the research problem, which namely addresses TpPI, this paper proposes an explorative qualitative case study framed within the idiographic paradigm (Cohen, 2017). This paradigm "favours the alternative view of social reality which stresses the importance of the subjective experience of individuals in the creation of the social world, then the search for understanding focuses upon different issues and approaches them in different ways. The principal concern is with an understanding of the way in which the individual creates, modifies and interprets the world in which he or she finds himself or herself" (Cohen et al., 2017, p. 8). As a consequence, the ideographic paradigm priorities on a number of individual cases which are analysed in depth.

Drawing on this conceptual framework, the case study is based on core elements of the process-oriented vertical case study approach outlined by Bartlett and Vavrus (2017). Accordingly, a multi-level case approach is adopted, based on an axis of comparison representing actors at meso (school leadership), and micro levels (teaching experience). As described in section 1, this axis explores the experiences of Irish and Italian principals (meso level) and teachers (micro level), through a narrative thread built from interview-derived codes. The vertical approach enables a process-focused interpretation that supports a comparative reading of the responses of teachers and principals across the two national contexts (Italy and Ireland). In doing so, the case study addresses key contextual features, such as culture, context, space, and place, highlighting participants' subjective awareness of them (Bartlett & Vavrus, 2017).

Semi-structured interviews were conducted in either Italian or English (according to the interviewee's mother tongue), lasting between 40 to 100 minutes. In line with the idiographic paradigm, a non-leading interview pattern (Saldaña & Omasta, 2018) was used to facilitate the subject's speaking reflection process (Trinchero, 2004) (see Figure 1).

The construction of the codebook followed the approach of the third school of Thematic Analysis (TA) (Adu, 2019; Braun et al., 2019) which "*sits somewhere between coding reliability and reflexive TA, sharing the structured approach to coding with coding reliability TA (though often without the use of coding reliability measures) with the broadly qualitative underlying philosophy of reflexive TA*" (Braun et al., 2019, p. 849). This approach does not require the involvement of two coders to ensure internal reliability, rather, it aims to provide a coherent and grounded interpretation of the data (Braun et al., 2019; Byrne, 2022).

Furthermore, recent developments in qualitative research have suggested replacing the traditional positivist criteria of internal reliability and external validity with the notion of credibility in the coding process (Pagani, 2020). Thus, to address concerns around coding consistency in the absence of multiple coders (Castleberry & Nolen, 2018), a detailed and systematic coding method called DIP (Adu, 2019) was used, an acronym that represents three main coding strategies which have been concurrently adopted: "Description-focused coding, Interpretation-focused coding, and Presumption-focused coding" (Adu, 2019, p. 27). This coding strategy took the form of a mixed method approach which has become particularly prevalent in education over the last thirty years (Trinchero & Robasto, 2019). The fundamental argument in favour of such methodology is that it substantially reduces some typical limitations of qualitative research, such as the difficulty in describing regularities, while preserving its reflective methodology.

The Description-focused strategy uses an inductive approach which "summarizes in a word or short phrase […] the basic topic of a passage of qualitative data" (Adu, 2019, p. 28). This strategy was applied during the first cycle of analysis, where codes were determined. With the aid of NVivo 14, both the total number of occurrences and the number of occurrences for each individual interview were provided. Thus, each code consolidates respondents' experiences related to a specific topic, as summarized by the code title, and presents both qualitative and quantitative indicators derived from the transcripts (Saldaña & Omasta, 2018). The software also enables the documentation of analytical decisions regarding coding the data and reassembling them into categories and themes, improving transparency and consistency in the coding process (Castleberry & Nolen, 2018).

The Interpretation-focused coding strategy goes beyond the description and "*involves the interpretation of texts*" (Adu, 2019, p. 32). During this phase, the codes were associated with definitions from literature, mainly from DigCompEdu (Redecker, 2017) and DLF. Codes were then grouped into five categories: *student digital citizenship*, *teacher digital citizenship*, *didactic and pedagogical competences*, *professional competences* and *key elements of professional change*. Finally, using the Presumption-focused strategy, three overarching themes were identified. The general structure of the codebook, summarizing codes, categories and themes, is reported in Figure 2[1].

The processual approach to comparison adopted in this case study follows a "logic of juxtaposition" (Bartlett & Vavrus, 2017, p. 52) considering the general case study as a unified whole and treating the categories as units of discussion. Notably, this approach also allows for comparison of heterologous data sources (Bartlett & Vavrus, 2017).

[1] For more detail of the codebook see https://docs.google.com/document/d/1elfXD_ceFpGFRN-E_j8mx_M7v_SL2Ub6/edit?usp=sharing&ouid=116803237320246269750&rtpof=true&sd=true

Themes	Categories	Codes
Surviving identity scenario Thriving identity scenario Digital citizenship	Students' digital citizenship (8)	Responsible and critical use; digital distraction; digital addiction; content creation; cyberbullying; information & media literacy; digital divide; plagiarism.
	Teachers' digital citizenship (2)	Digital agency, technological determinism.
	Didactic and pedagogic competences (4)	Facilitating students' collaboration; inclusive and differentiated teaching; enhanced digital teaching; facilitating students' engagement
	Professional competences (3)	Professional collaboration; continuous professional development; selecting & managing digital resources.
	Key elements of professional change (9)	Digital revolution; COVID-19; administrative workload; reduction in attention span; change in school regulations; change in school regulations; new and different learning styles; heterogeneous students' population; transmissive lesson; AI

The structure of the interviews

1. General informations about the participants
2. How has the teaching profession been changing over the last twenty years?
3. What challenges do new technologies pose for your profession?
4. Could you articulate these challenges in terms of risks, benefits and opportunities?
5. What comes to mind when you think of the concept of digital citizenship?

Figure 1. Interview pattern.

Figure 2. Scheme of the codebook.

The empirical research took place between March 2023 and March 2024. A convenience group sample (Cohen et al., 2017) was utilized in the research (see Figure 3) which involves forty-three interviewees:

- Twenty-two secondary Italian teachers (12 males and 10 females) and five secondary Italian principals (3 females and two males);
- thirteen Irish secondary teachers (9 females and 4 males) and three Irish secondary principals (3 females).

This sampling procedure aligns with the interpretivist philosophy of qualitative research whose purpose is not primarily to achieve generalizability of results but rather to understand and report the meaning-making processes of the respondents (Cohen et al., 2017). In this vein, this paper has followed Hennink and Keiser's indications regarding the sample sizes for saturation in qualitative research. In their revision, they "*demonstrate that small sample sizes are effective for qualitative research*" (Hennink & Keiser, 2022, p. 8) pointing out a suitable sample size that ranges from nine to seventeen interviewees.

Finally, in keeping with the theoretical foundation underpinnings of TA, where the researcher is a part of the research process bringing their worldview in addressing the research questions (Castleberry & Nolen, 2018; Braun & Clarke, 2021), the positionality of this paper tends to consider the idiographic approach as particularly suited to the investigation of educational phenomena (Potestio, 2023).

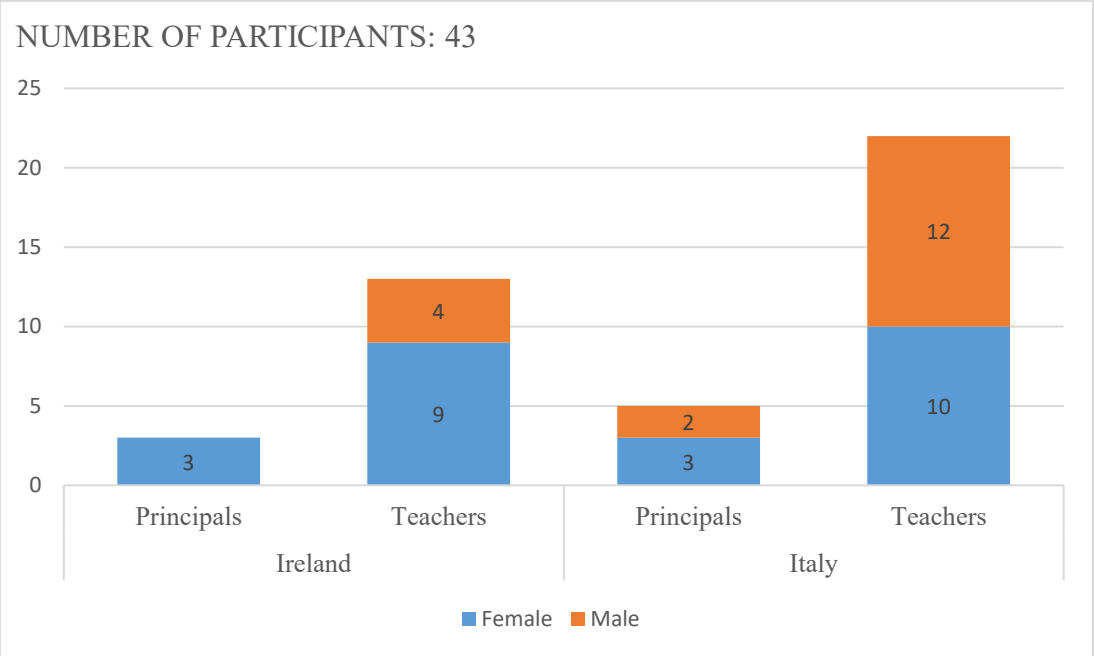

Figure 3. Participants' distribution.

4. Results of the case study

The following Section presents and discusses the results of the empirical research. While the categories *key elements of professional change, didactic and pedagogic competences and professional competences* address RQ1, the theme digital citizenship and the related categories students' digital citizenship and teachers' digital citizenship answer to RQ2.

Results for RQ1 – How does the digital revolution affect teacher personal professional identity according to Irish and Italian teachers and principals?

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All interviewees acknowledge that the digital revolution and the COVID-19 pandemic constitute two of the primary transformations in their profession (see Figure 4). Indeed, the digital revolution is reported by 70% of the respondents (3 Irish principals, 9 Irish teachers, 3 Italian principals and 15 Italian teachers) and the Covid pandemic by 53% of them (1 Irish teacher, 7 Irish teachers, 4 Italian principals and 11 Italian teachers). In general, the pandemic period has been recognized as a time of self-development and experimentation by many teachers regarding the use of digital technologies: "*Certainly COVID represented a point of no return. Both for the kids and for us. Thanks to covid, I learned how to use technologies. Ahahaha. I made a virtue of necessity. In such a dark time I learned to see technology as a resource*" (Italian teacher 14).

"*The watershed moment for technology in Irish education was COVID, basically. Before COVID, like in most schools, teachers might have gone to the room with a computer, and maybe less than 50% of them would have been using it for PowerPoint presentations showing video clips and stuff. But most people never used it. They did not use their emails at all…"* (Irish principal 3).

As shown in Figure 4, other codes emerge as directly related to the digital revolution, namely: the reduction in attention spans (6 Irish teachers, 1 Italian principal and 10 Italian teachers), change in school regulations (2 Irish principals, 7 Irish teachers, 2 Italian principals and 4 Italian teachers) new and different learning styles (3 Irish teachers, 1 Italian principal and 9 Italian teachers), transmissive lesson (2 Irish principals, 5 Irish teachers, 3 Italian teachers), and artificial intelligence (1 Irish principal, 6 Irish teachers, 1 Italian principal). On the other hand, the codes administrative workload (1 Irish principal, 4 Irish teachers, 3 Italian principals and 11 Italian teachers) and heterogeneous students' population (2 Irish principals, 6 Irish teachers, 2 Italian teachers) indicate general change in the Italian and Irish school setting.

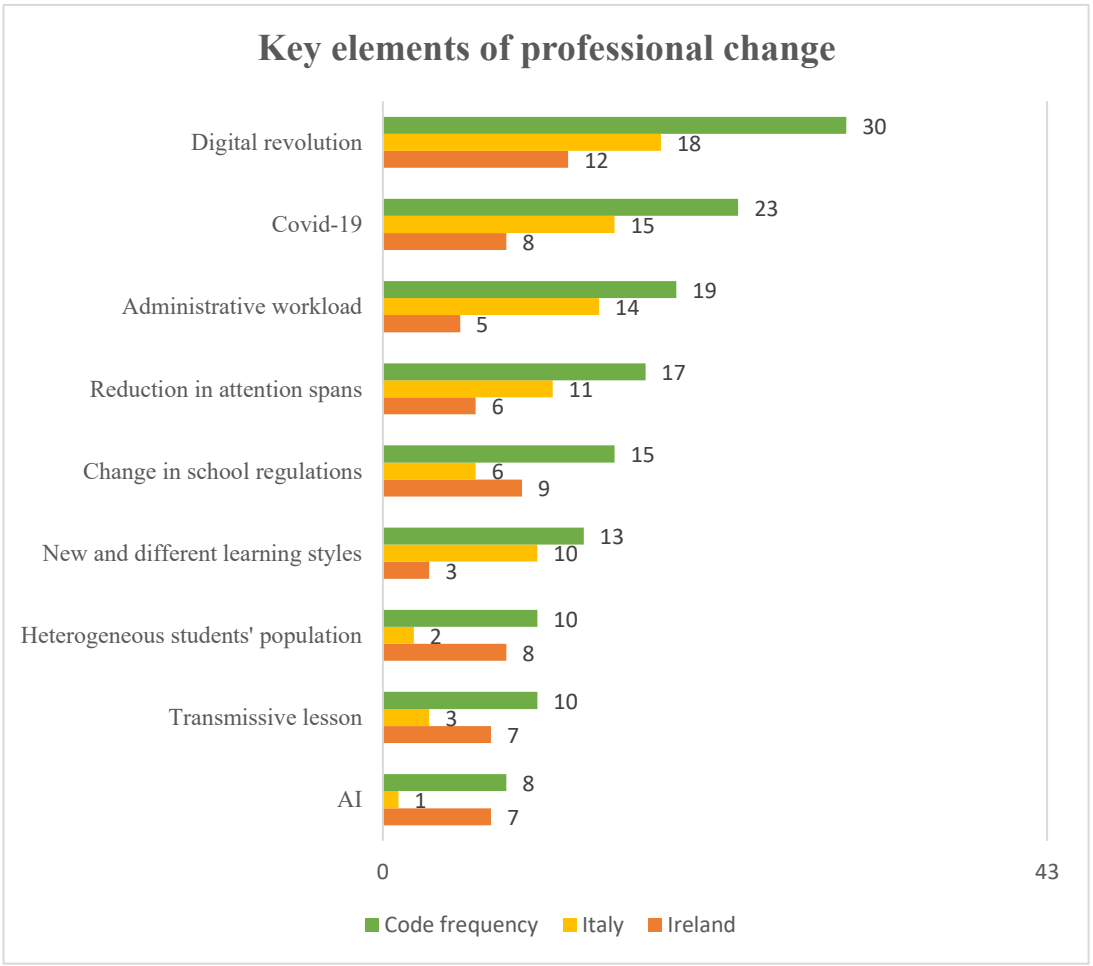

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Figure 4. Codes related to the category Key elements of professional change.

Interestingly, the interviews mark other features related to the digital technologies impact on TPI. These represent not just external changes but a total remaking of the teaching experience in both pedagogical and professional terms. Focusing on the didactic and pedagogic dimension (Figure 5 and Figure 6), the benefits of digital technologies concern: 1) the student engagement – this code is mentioned in twenty-one interviews (2 Irish principals, 5 Irish teachers, 3 Italian principals and 11 Italian teachers) –; the possibility to enhance the teaching activity with digital technologies, reported thirteen times (2 Irish principals, 2 Irish teachers, 1 Italian principal and 8 Italian teachers); having the chance to respond to individual learning needs and differentiates teaching and learning activities, reported ten times (1 Irish principal, 6 Irish teachers, 3 Italian teachers); and, lastly the possibility to facilitate students collaboration mentioned in seven teacher responses (3 Irish teachers, 4 Italian teachers). In the following some emblematic examples are proposed. The first is an explanation of the code student engagement: "*It offers great opportunities for creativity, choice, and flexibility… […] If someone said to me today, 'Look we're pulling technology…there's no more technology', I think the learning style would have to change completely. The students would lose a great deal of flexibility. […] I think it would be a huge loss. Technology has enhanced my classroom. I think it's easier to engage students*" (Irish teacher 4).

The second is related to the code enhanced digital teaching "*I believe integrating digital tools with traditional ones is both necessary and essential. For my subject, studying only from books or notes isn't enough. Combining written materials with digital resources like videos, films, and music is fundamental*" (Italian teacher 23).

The third explains the inclusive potential of digital technologies, also considering the new heterogenous class population: "*with regards to technology for students with special education needs…. There are like there's lots of different things out there. Now, you can get just a digital pan, that you put over the words for students with dyslexia, and it's translated like you know, into English or into Polish, whatever language they speak…*" (Irish principal 3).

The last one regards the code facilitating students' collaboration: "*I usually use digital technologies for homework and to have students work in groups*" (Italian teacher 26).

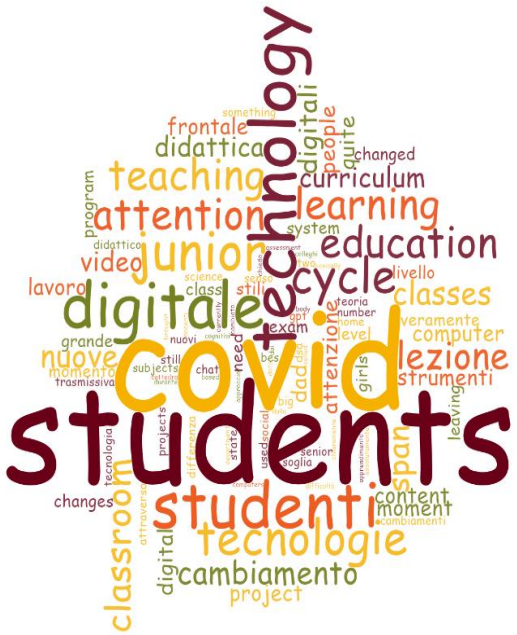

Figure 5. Word cloud of the category Key elements of professional change.

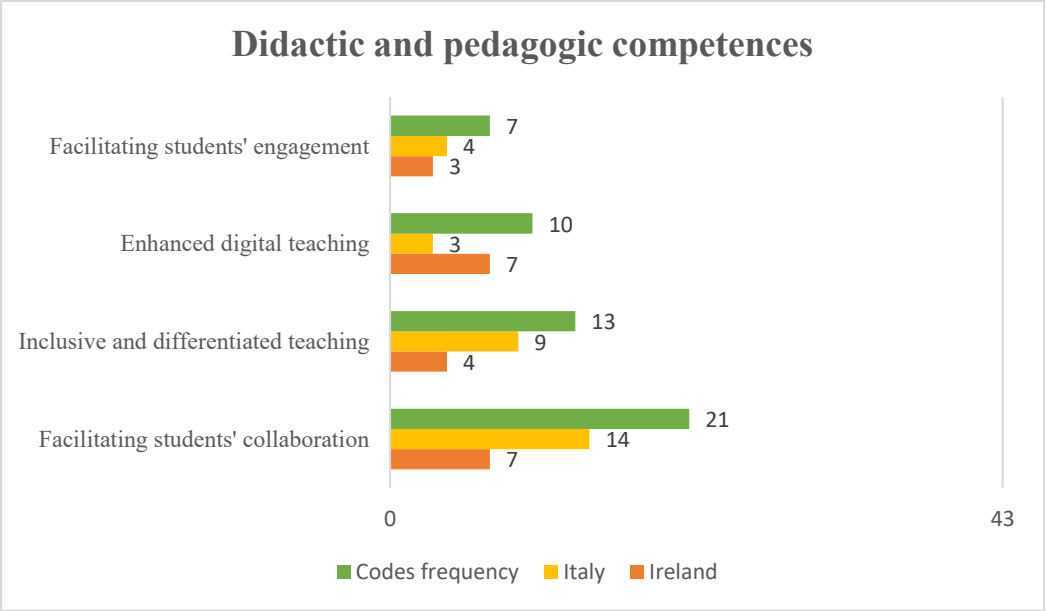

Figure 6. Codes related to the category Didactic and pedagogic competences.

Exploring the category *professional competences* (see Figure 7), three codes occur from the interviews analysis. The first one stresses that twenty-one of the interviewees use digital technologies to select and manage teaching resources (1 Irish principal, 9 Irish teachers, 3 Italian principals and 12 Italian teachers): "*Technologies are important because they help me to keep everything well organised. It makes it much easier to stay in touch with colleagues… to share resources with them and with students. […] As I mentioned earlier, I try to integrate technology wherever possible. One particularly useful tool is sharing materials through Google Drive*" (Italian teacher 16).

The second one is related to teachers' continuous professional development (CPD). It emerged fourteen times (1 Irish principal, 7 Irish teachers and 6 Italian teachers): *We're currently participating in a masterclass on 20th-century history with a lecturer. It is a blended course […]. Without this setup, it wouldn't have been possible for the lecturer to participate*" (Italian teacher 20).

"*Then another advantage, I guess, is the possibility for professional development and professional learning online. Like I can google Leaving Cert biology resources, sometimes they are much better than teacher training days*" (Irish teacher3).

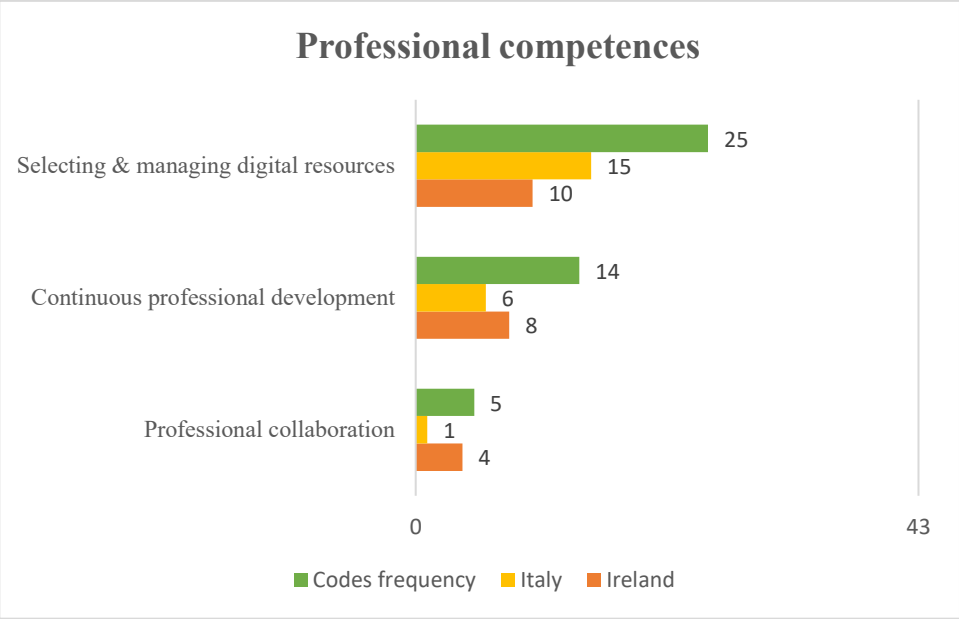

Figure 7. Codes related to the category professional competences.

The last one regards teachers 'professional collaboration (five occurrences, 1 Italian teacher and 4 Irish): "*The collaboration among us, whether among colleagues within departments or even across different departments, has improved significantly. I don't even need to meet my colleagues in person; we can work online without having to physically meet […] I can also collaborate with colleagues outside of our school. I think sharing ideas is also enhanced through platforms like Twitter and other professional networks*" (Irish teacher 2).

Results for RQ2 – What is the teachers and principals' understanding of digital citizenship?

The categories students' digital citizenship and teachers' digital citizenship (see Figure 8 and Figure 9) provide an in-depth understanding of the digital citizenship topic. Regarding the first category, the data explore four literacies related to digital citizenship (Panciroli & Rivoltella, 2023). As shown in figure 8, the code information & media literacy is mentioned twelve times (1 Irish principal, 3 Irish teachers and 8 Italian teachers), while the codes content creation and responsible and ethical use, specifically related to digital literacy, occur seventeen times (2 Irish principals, 3 Irish teachers, 1 Italian principal and 11 Italian teachers) and twenty-four (2 Irish principals, 7 Irish teachers, 2 Italian principals and 13 Italian teachers) times, respectively.

In addition the interviewees highlighted some weaknesses that may inhibit the development of these four literacy: digital distraction mentioned by twenty-four participants (3 Irish principals, 7 Irish teachers, 3 Italian principals and 11 Italian teachers), digital addiction occurred twenty-three times (3 Irish principals, 6 Irish teachers, 3 Italian principals and 11 Italian teachers), cyberbullying sixteen times (6 Irish teachers, 4 Italian principals and 6 Italian teachers) and digital divide thirteen times (3 Irish principals, 2 Irish teachers, 2 Italian principals and 6 Italian teachers).

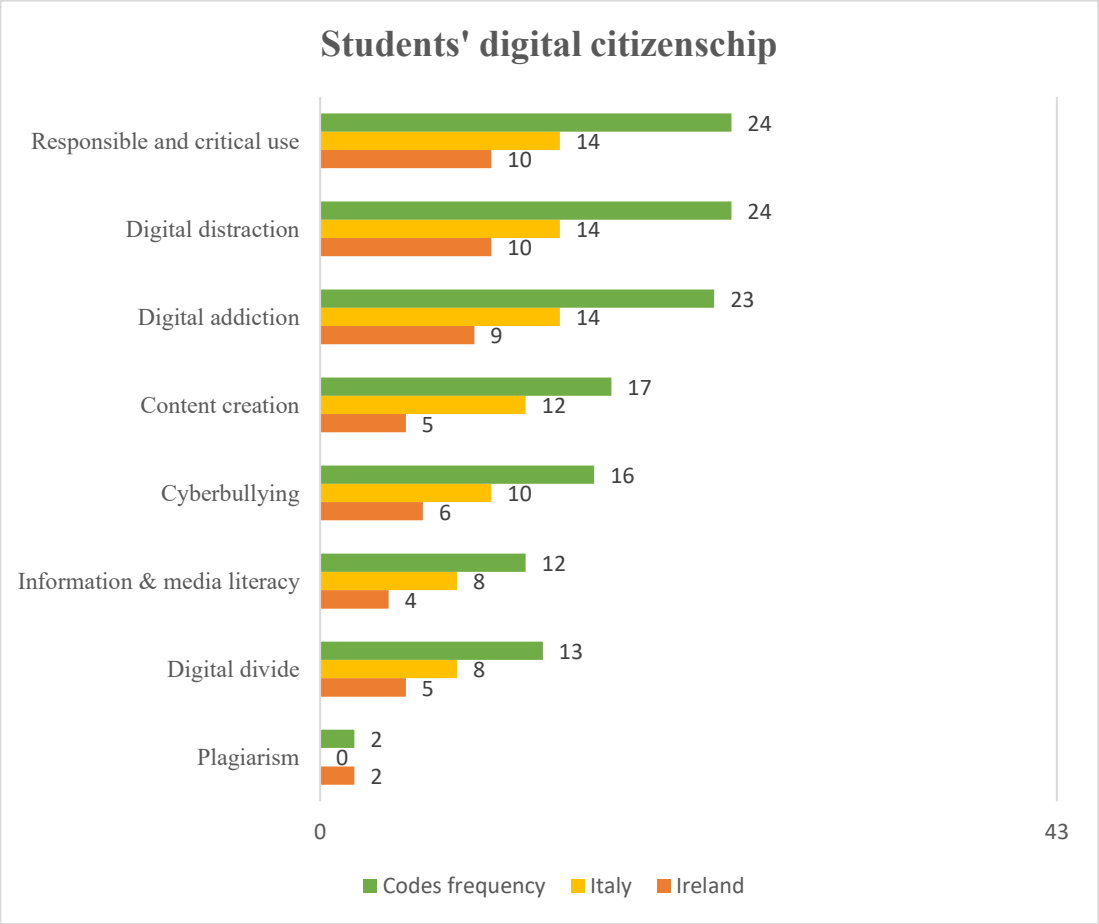

Figure 8. Codes related to the category students' digital citizenship.

"*I guess… the issue of mobile phone addiction is one of the major drawbacks of technology. It is really affecting our students' interpersonal and communication skills in a negative way. For instance, think about the use of chatting apps and the phenomenon of cyberbullying—it often happens outside the classroom dynamic and is something we teachers find hard to control. […] So, this' s why digital citizenship becomes a crucial skill. It's about finding the right balance between the real and virtual worlds. People need to learn how to manage these two realities. Being a citizen means being aware, understanding the spaces of freedom and rules we operate within, and recognising our rights and responsibilities"* (Italian principal 8).

In relation to these downsides, the perspective of citizenship clarifies teachers and school's mission in supporting students to develop the three digital literacies mentioned above: *"Our students need to learn how to use the digital medium with respect for themselves and others. They many times use these tools without much thought, and they are not aware of the risks. They tend to see technology as just a game. Instead, there are so many aspects to be learned: privacy, knowing how to communicate effectively, and avoiding mobile phone addiction. This is also our mission as teachers"* (Italian teacher 19).

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"*The ethical use of digital devices and social media. I suppose that's becoming a big part of our education*" (Irish principal 2).

As a final point, data literacy is more blurred as it has been exclusively explored in connection to plagiarism (2 occurrences, 2 Irish teachers): "*I am gonna show you what an AI does. So write an essay about the role women played in society in Germany, right? Write it in the style of a 14 year old student and don't use big words. It literally appears… […] This a 14/15 old year language. There's nothing academic about that. That's why I don't have the skill I can't control that anymore. […] I can't fight this, so I decided to use it. When you're doing women in Nazi Germany… You could get your students to ask the AI bot for the student then to copy and paste that over. And students have to create 10 questions. Are they learning? Yes because the student has to go OK, what percentage of women were? and then they might have to swap with a friend and get their friend to answer the question*" (Irish teachers 1).

This final code introduces the specific issue addressed by the category of teachers' digital citizenship through the two codes: technological determinism occurred eighteen times (3 Irish teachers and 15 Italian teachers) and digital agency mentioned fourteen times (1 Irish principal, 3 Irish teachers, 1 Italian principal and 9 Italian teachers). The former describes an imposed use of technologies, where teachers are passive and fulfill top-down directives in relation to digital technology: "*I see a disadvantage in the almost forced use of digital technologies as it diminishes our freedom"* (Italian teacher 32).

"*The risk of being not masters but underlings of the instrument itself*" (Italian teacher 33).

On the other hand, the code of digital agency expresses teachers' capacity of change and self-improvement regarding the use of digital technologies: "*there's good stuff out there that teachers are posting on Instagram and Twitter and all of that sort of stuff. Especially Twitter, I would say. Twitter doesn't give that overwhelming feeling, you know?* (Irish teacher 6).

When it comes to the new possibilities offered by technology, I'll speak from the teachers' perspective this time, […] I see it as a chance to bring new energy to our work— keeping up with the changes, but also trying out things that were once unimaginable. It's these opportunities that make my profession so fascinating" (Italian teacher 18).

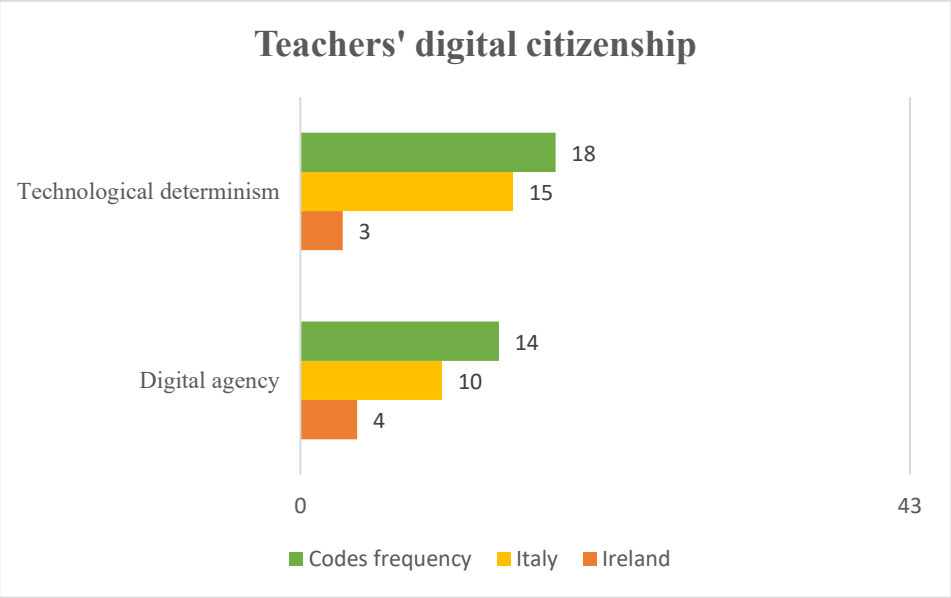

Figure 9. Codes related to the category students' digital citizenship.

In conclusion, three intriguing themes emerge as general results of this qualitative case study. Two of them portray two different TPpI trajectories: a thriving scenario and a surviving scenario. Given the codes presented above, teachers describe digital technologies as an empowering tool to enable their professional development, their teaching activity and student's engagement, in the first scenario. For this reason, this theme associated positive experiences: "*Technologies are essential, they have now become a*

part of teachers' professional experience" (Italian principal 4). "*I would say 99% of my lessons involve using a computer… They are essential for my classes*" (Irish teacher 6).

On the other hand, the surviving scenario points out a sense of powerlessness emphasising a logic of control which leaves teachers with little room to manoeuvre: "*last summer, we got a grant from the Department of Education. And there were I think about 10, maybe 12, smart screens, interactive smart screens put in. And one of my colleagues' rooms was a chosen one. […] This completely blew her mind, she really struggled with suddenly having to change overnight her approach to teaching. Because a) her whiteboard was gone; b) she had to learn a whole new area of technology in relation to using an interactive whiteboard and how it works. She was really, really, really struggling with this. To the point where she started to reschedule classes and change*" (Irish Teacher 7).

"*I think the risk is letting machines and technological innovations dictate the rhythm of school time. The danger here is losing human time in favour of adapting to machine time*" (Italian teacher 34).

The last theme concerns the idea of digital citizenship, underscoring the relationship between students and teachers' digital citizenship: *the topic of digital citizenship is really important… […]. But honestly, this school doesn't have many tools to support that idea. I'm not trying to sound pessimistic! It's just that I think it's difficult to talk about students' digital citizenship when even our teachers don't have a proper sense of digital citizenship*" (Italian principal 6).

5. Discussion of results

The empirical data reveal that TPI emerges from multiple elements linked to teachers' individual experiences, their self-perception as professionals (Rushton et al., 2023), the quality of the social relationships they establish over the time, the local cultural contexts where these relationships take place (Mollo et al., 2024) and broader structural and external changes (Groenewald & Arnold, 2024).

With regard to the digital revolution, the first significant finding offers a nuanced understanding of how the related shifts in teaching practices have shaped both TpPI and conceptions of digital citizenship among Irish and Italian teachers and principals. Across both national contexts, participants widely recognised the digital revolution, amplified by the COVID-19 pandemic, as a watershed moment for education. However, their interpretations slightly diverge.

In Italy, digital transformation is often described as a reactive adaptation prompted by necessity, with teachers emphasizing how the pandemic forced them to develop digital skills previously underutilized. Statements like *"I made a virtue of necessity"* illustrate this pragmatic and situational approach to professional development. The Italian context also reflects greater emphasis on structural constraints, including administrative burdens and imposed use of technologies, contributing to a feeling of external pressure and diminished professional agency.

In contrast, Irish participants tend to describe the digital shift with more optimistic terms. The shift was often described as a before-and-after turning point in technology use, with limited prior engagement (e.g., email, digital presentations). While acknowledging initial challenges, many Irish educators viewed this transformation as a catalyst for pedagogical renewal, characterised by increased autonomy, experimentation, and engagement with social media presented as online professional networks. This trend aligns with findings by Ulla et al. (2024), who argue that platforms such as TikTok offer teachers opportunities for self-expression, student connection, and continued growth through exposure to diverse content and professional dialogues.

In terms of professional competences, teachers in both countries reported using digital tools for planning, resource management, and continuing professional development (CPD). However, Irish participants more frequently discussed informal, self-directed CPD through online platforms and social media, presenting a more networked and decentralised model of professional learning. Italian teachers, while also engaged in CPD, more often referred to structured, institutional formats. The theme of digital collaboration further reflects this divide: Irish teachers described broad, often trans-institutional networks of practice, while Italian responses focused more on intra-school collaboration. These results resonate with Flores and Craig (2023), who identified accessibility, authenticity, collaboration, democratisation, and personalisation as key features of online teaching and learning post-pandemic.

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Focusing on didactic and pedagogical competences, both Irish and Italian teachers reported similar benefits from digital tools, including increased student engagement, differentiated instruction, and collaborative learning. However, Irish educators were more likely to integrate these experiences into a broader narrative of professional identity development. Digital tools were thus perceived not only as instructional aids but as catalysts for ongoing professional growth. Italian teachers expressed appreciation for these tools as well but framed their use within a context of existing constraints, particularly curricular demands and limited institutional flexibility.

Notably, Italian teachers more frequently emphasised inclusivity as a key driver of digital integration, especially in response to increasingly heterogeneous classrooms. Their responses often highlighted the utility of digital tools in supporting students with special educational needs and multilingual backgrounds, thereby drawing a strong connection between digital and social equity. Similarly, Irish teachers focused on student agency and engagement, portraying digital environments as spaces of creativity and learner autonomy. Some Irish participants referenced inclusive pedagogies such as Universal Design for Learning (Meyer et al., 2024), further underlining this focus.

As highlighted by Pathiranage and Karunaratne (2023) teachers' understanding of the potential of technology towards education is one of the key features in fostering teachers' agency. As a matter of fact, awareness shapes teachers' use of technology and helps them to improve. "*Awareness supports in creating teachers' beliefs and beliefs about technology influence how teachers use technology in teaching*" (Pathiranage & Karunaratne, 2023, p. 9).

When considering digital citizenship, both Irish and Italian respondents articulated a strong sense of responsibility in fostering students' critical engagement with digital environments. Teachers in both contexts emphasised the importance of information literacy, ethical digital behaviour, and content creation, articulating the challenges faced in promoting digital citizenship, citing distractions, addiction, cyberbullying, and lack of institutional support. These concerns were tied to a broader perception that teachers themselves lack adequate guidance and training in navigating digital ethics, making it difficult to fulfil their pedagogical and civic role.

The analysis also revealed two contrasting constructs shaping teacher digital citizenship: technological determinism and digital agency. Italian narratives more frequently described a sense of imposed digitalisation, where teachers perceived technology as controlling or constraining their work. Phrases such as *"forced use"* and *"losing human time to machine time"* reflect concerns over diminished autonomy. Conversely, Irish participants were more likely to express a sense of empowerment and experimentation, viewing digital tools as avenues for reinvention and professional relevance.

Together, these findings suggest two emerging trajectories of TpPI. The first, a thriving scenario, is characterised by engagement, adaptability, and innovation where technology is integrated into teaching practice in ways that reinforce agency and professional identity. The second, a surviving scenario, points to resistance, overload, and institutional inertia, where digital transformation is experienced as top-down and misaligned with teachers' realities. Importantly, both scenarios were present in each national context.

Finally, the intersection of student and teacher digital citizenship emerged as a central concern in both systems. Teachers and principals viewed their own digital competence and ethical orientation as foundational to shape students' awareness and behaviour in digital spaces (Lucas et al., 2021). Yet, this connection was seen as aspirational rather than fully realised. While digital citizenship was widely acknowledged as a vital educational goal, it remained unevenly supported at the structural level particularly in terms of training, curricular integration, and school-wide policies.

6. Conclusion

Teacher personal professional identity (TpPI) scholarship is an important way to understand the construct of TPI. Although TpPI work cannot examine all aspects of teachers' professional identity, this paper highlights how it can be affected by the diffusion of digital technologies. Indeed, it is beyond the scope of this article to address all the dimensions covered in TPI (Zavatta, 2024). However, the case study highlights two main dimensions which can be affected and enhanced: the didactic and pedagogic competences and the professional competences. Confirming the existent literature (Rushton et al., 2023),

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it also shows that teachers' sense of identity lies at the heart of teacher professional development as it has been depicted by the two different identities trajectories (the surviving and the thriving scenario).

Notably, the vertical comparison adopted in the case study facilitates the contextualisation of findings through engagement to four recent contributions in the field. First, the experiences of Irish teachers support Ulla et al. (2024), who emphasize the growing use of social media platforms as informal professional learning networks. Second, narratives from both Italian and Irish educators reinforce the work of Flores and Craig (2023), demonstrating how digital tools are employed for lesson planning, resource management, and continuous professional development. Third, the study echoes the findings of Pathiranage and Karunaratne (2023), who argue that teachers' understanding of the educational potential of technology is crucial to fostering professional agency. Fourth, both teachers and principals in the study underscored the importance of their own digital competence and ethical awareness as foundational for promoting students' responsible and critical engagement in digital spaces, aligning with Lucas et al. (2021).

Moreover, building on the rich research stream opened by Panciroli and Rivoltella (2023), this case study explores the concept of digital citizenship analysing four main literacies: informational, media, digital and data literacy. Among these, the need to further investigate data literacy emerges as particularly urgent, especially in the Irish context, thereby confirming findings in the existing literature (Lin et al., 2022).

Future studies could further examine the impact of professional training initiatives on teachers who experience the "surviving" trajectory, with the aim of supporting their sense of digital agency and professional confidence.

Finally, a key limitation of this study regards the sample size of the respondents as it is not statistically representative. Hence, the results should be considered in relation to participants.

7. Ethical aspects

This study was approved by the Ca Foscari University Ethics Committee. Informed consent was obtained from all subjects involved in this study. I used Chat-GPT to translate the extracts from the Italian interviews.

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