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Exploring School Leaders' Reflections on Professional Digital Competence. Perspectives on Person, Profession, and Position

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School leaders play an important role in leading digitalisation. The conditions for such leadership became more complex following the COVID-19 pandemic and have become increasingly demanding with the emergence of Generative Artificial Intelligence (GenAI). This paper aims to explore and analyse school leaders' reflections on professional digital competence (PDC) in relation to leading digitalisation. Two research questions guide the study: How do school leaders reflect upon PDC? (RQ1) and How do school leaders reflect on professional development for leading digitalisation? (RQ2). Using document analysis of reflective learning journals written by school leaders (N = 31), the study examines their understandings of PDC and their related professional-development needs. The school leaders viewed PDC as a broad concept encompassing both their own competence and their capacity to lead teachers and students through digitalisation. Their reflections revealed an awareness of person, profession, and position in relation to personality dynamic, self-realisation, and identity. Strengthening these dimensions is important for developing school leaders' PDC and their capacity to support teachers and students in increasingly complex digital environments. Leading digitalisation therefore remains a critical and emerging educational issue in the post-COVID-19 context and amid the growing influence of Artificial Intelligence (AI) on teaching, learning, and educational leadership.

Keywords: *Digitalisation, digital skills, principals, professional development.*

Introduction

School leaders have an important role in leading for digitalisation, a responsibility that became more complex during and after the COVID-19 pandemic. The rapid reforms introduced during the pandemic arose from "necessity rather than deliberate and thoughtful planning" (Netolicky, 2020, p. 394), requiring school leaders to navigate disruption while deciding what from the old normal should be sustained, adapted, or reintroduced in the new and next normal (Netolicky, 2019; Netolicky, 2020). The pandemic also foregrounded inequities between schools and families (Harris & Jones, 2018; Netolicky, 2020). As digital technologies became more widespread, the challenge shifted from simply continuing emergency practices to reflecting on experience and identifying new directions (Hargreaves, 2020). COVID-19 may therefore be understood not only as a short-term crisis but also as a catalyst for educational change (Zhao, 2020), creating opportunities for more

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effective school leadership, including new forms of digital leadership (Harris, 2020; WB, 2021).

In Sweden, this post-pandemic transition builds on decades of investment in educational technology. Long before COVID-19, schools introduced one-to-one laptop initiatives and information and communication technology systems intended to support teaching and learning (Håkansson Lindqvist, 2015a; 2015b; Grönlund, 2014; Tallvid, 2015). National and local projects have similarly sought to strengthen school digitalisation and the digital skills of teachers and students (Jedeskog, 2007; Tallvid, 2015). However, the educational effects of increased access and sustained investment remain unclear (National Agency for Education, 2016; 2022). International findings likewise show that access to technology does not automatically produce high levels of use or improved learner outcomes (European Commission, 2019). Although digital technologies have become established in Swedish schools (European Commission, 2018), the strong policy ambitions for digital competence have not always been clearly realised in practice (Olofsson et al., 2011; Olofsson et al., 2020).

Swedish policy has progressively placed strategic responsibility for digitalisation on school leaders. In 2002, the Ministry of Education proposed support for the strategic leadership of digitalisation, followed by the National IT Strategy (The Committee for Digitalisation, 2014) and the National Digitalisation Strategy for Schools (Swedish Government, 2017). The introduction of *adequate digital competence* broadened responsibility across the school organisation by making all staff responsible for supporting students' digital competence. The Swedish National Agency for Education (NAE) also identified professional development in digitalisation as necessary at all levels of the school system (NAE, 2016). Its framework defined digital competence as understanding the societal impact of digitalisation, using and understanding digital tools and media, adopting a critical and responsible approach, and solving problems and translating ideas into action (NAE, 2018). These expectations brought school leaders' own digital competence, strategic leadership, and responsibility for pedagogical development into sharper focus.

Several national initiatives have sought to strengthen school leaders' professional digital competence (PDC). The NAE's *Leading Digitalisation* module (*Leda Digitalisering*) was designed to increase knowledge of how digitalisation can support school development, administration, and students' learning environments (NAE, 2018). Digitalisation was also incorporated into the Swedish national principal training programme and its 2021–2027 steering document (NAE, 2026). Within this work, school leaders are expected to identify organisational needs from pedagogical, administrative, and technical perspectives (NAE, 2020), reflecting Norberg's (2019) description of the national principal programme as a programme in constant change.

Despite these initiatives, persistent challenges remain. The NAE's national follow-up of teachers', preschool teachers', and school leaders' work with digitalisation in 2021 found that the aims of the digitalisation strategy had not yet been achieved. Access was generally good, but gaps remained in teachers' access to digital tools and in support for students with special needs (NAE, 2022a). Students also needed better conditions for developing information-search and critical-thinking skills. Although COVID-19 accelerated school digitalisation, its lasting effects and implications for teaching quality remained uncertain. The NAE therefore called for school leaders to adopt a more systematic approach by formulating and reviewing

digitalisation plans, mapping PDC, and examining how digital tools and textbooks function in teaching (NAE, 2022a). These findings further accentuated school leaders' need for PDC.

The policy context has since become less linear. Although a new digitalisation strategy was proposed (NAE, 2022b), it was not implemented by the government. Instead, the NAE was commissioned to develop advice and recommendations for digitalisation in schools, work that has been delayed. This development forms part of a broader shift from digital towards analogue approaches, described in other Nordic contexts as a "pendulum swing in its approach to educational technology post-COVID" (Kucirkova et al., 2026, p. 446). In Sweden, this shift includes restrictions on mobile phones and reduced use of digital books in schools (Kucirkova et al., 2026).

At the same time, the rapid emergence of Artificial Intelligence (AI) and Generative AI (GenAI) means that digital leadership remains a pressing concern despite changing policy priorities. AI is affecting teaching, learning, and the organisation of education (Karakose & Tülübas, 2024), while debate has moved from whether tools such as ChatGPT should be used towards how they can be adopted reflectively, critically, and effectively (Strzelecki, 2024). AI can support reflection, idea generation, assessment, and language correction, but it also raises concerns about control, cheating, reduced creativity, and academic dishonesty (Neumann et al., 2023). School leaders must therefore be able to evaluate digital resources critically and adapt AI in education to their particular organisational contexts (Rudolph et al., 2023).

Early research has begun to identify opportunities and challenges associated with AI for teachers and students (Neumann et al., 2023; Rudolph et al., 2023), but research on its implications for school leadership remains limited (Fullan et al., 2024; Wang, 2021). The available evidence suggests that AI may help school leaders reduce administrative work and focus on "more productive and creative issues that demand their human skills and their social intelligence" (Fullan et al., 2024, p. 342). Nevertheless, limited attention has been paid more broadly to how school leaders understand PDC and what professional development they require to lead digitalisation under changing post-pandemic, policy, and AI-related conditions. This gap makes school leaders' own reflections on PDC particularly important.

Against this background, this paper aims to explore and analyse school leaders' learning reflections regarding PDC for leading for digitalisation. Two research questions guide the study: *(RQ1) How do school leaders reflect upon PDC? (RQ2) How do school leaders reflect on professional development for leading for digitalisation?* The paper contributes knowledge about school leaders' reflections on and understandings of PDC and, based on these reflections, their professional-development needs. In doing so, it addresses leading for digitalisation as a critical and emergent educational issue and considers how school leaders can support and advance the use of digital technologies in schools.

Literature Review

International research has long emphasised strategic leadership as central to school development. Leithwood and Riehl (2005) identify four functions of successful school leadership: *setting the direction, developing the organisation, developing people,* and *developing teaching and learning*. These functions involve formulating goals, translating them into action, and examining their implementation, thereby supporting organisational and educational change (Fullan, 2015; Leithwood & Jantzi, 2006; Petersen, 2014, 2016). They are equally relevant to leading for digitalisation, where school leaders must connect technological initiatives to teaching, learning, and organisational development. Williams (2008) highlighted this responsibility during a period of rapid technological growth, while Dexter (2008) described school leadership as vital to students' digital competence. From this perspective, informed and effective school leaders are a fundamental condition for purposeful digitalisation in schools (Dexter, 2008).

Leading for digitalisation also requires school leaders to manage organisational change and evolving professional roles. In Chua Reyes's (2015) study of ICT reform, school leaders described shifting identities, emerging roles, and ambivalent capacities as they moved from leading teachers as deliverers of knowledge towards leading "a team of teacher facilitators" (p. 378). Such change is complex because leadership may either facilitate or impede reform (Sheppard & Brown, 2014), and the intersection of school leadership and digital technology extends beyond technology use to the established concerns of educational leadership (McLeod et al., 2011). Accordingly, leading for digitalisation is a complex task (Håkansson Lindqvist & Pettersson, 2019), particularly when leaders seek to reduce digital divides (Starkey et al., 2017).

School leaders can support this change in different ways. Tołwińska (2021) identified one approach centred on infrastructure and access to modern equipment and another that promoted a sharing culture through which teachers could develop PDC. School leaders' capacity to provide such support is itself shaped by available technological and pedagogical support and by the quality of the technological infrastructure (Ottestad, 2013). Adequate support for school leaders from school organisers is therefore also important (Pettersson, 2018a, 2018b, 2021; Reis-Andersson, 2022). Effective digital leadership consequently depends not only on individual leadership but also on supportive organisational conditions.

Professional digital competence provides a conceptual basis for understanding these demands. In their study of preservice teachers, Instefjord and Munthe (2016) identified three knowledge areas: technology proficiency, pedagogical compatibility, and social awareness. Lund et al. (2014) similarly described a shift from generic skills towards an understanding of PDC that includes both general and profession-specific competence, making professional appropriation of digital skills an "extremely demanding, dual endeavor" (p. 284). Lindfors et al. (2021) therefore called for stronger organisational conditions, accessible PDC, and leadership support for educators' dual didactical task. Although this work concerns teacher education, it is relevant to school leaders because they must develop their own competence while simultaneously creating conditions for teachers' and students' digital development. For school leaders, PDC thus combines individual digital capability with pedagogical, strategic, and organisational leadership.

The need for school leaders' own PDC has been recognised for more than two decades. Early studies described a competence threshold that school leaders must cross before feeling prepared to lead digitalisation (Brockmeier et al., 2005). School leaders were often hesitant to lead technology implementation because they lacked experience and formal training (Flanagan & Jacobsen, 2003), while Schiller (2003) found considerable variation in how they understood technological competence in practice. Anderson and Dexter (2005) likewise argued that school leaders require adequate technological skills for their leadership roles. These skills extend beyond operating technology: school leaders must also be able to read, interpret, and analyse data, capacities that are "increasingly becoming…critical" (Schiller, 2003, p. 179). Recent research continues to show that school leaders receive limited professional development for their role as leaders of change (Acton, 2021).

Despite this longstanding concern, school leaders' PDC is often overlooked because attention is directed primarily towards teachers' competence. School leaders are expected to guide institutional digital integration, yet their technical and leadership-specific competencies remain under-theorised and secondary to instructional oversight (Reis-Andersson, 2023; Tømte, 2024). A Swedish municipal study, for example, found that school leaders frequently emphasised teachers' pedagogical training and access to hardware but rarely examined how their own digital skills shaped administrative practices (Reis-Andersson, 2023). Digital leadership in compulsory education also remains conceptually fragmented and is often subordinated to broader pedagogical supervision or institutional goals (Tømte, 2024; Silveira et al., 2026). Systematic reviews indicate that, although school leadership spans technical, pedagogical, and strategic domains, frameworks defining leadership-specific digital competencies remain limited (Karakose et al., 2024; Silveira et al., 2026).

This conceptual gap contributes to uneven digital development, particularly when professional development prioritises general classroom teaching rather than the distinct demands of educational leadership (Castaño-Muñoz et al., 2026; Silveira et al., 2026; Hamzah et al., 2025). The gap is consequential because school leaders' digital decisions influence instructional quality, technology integration, administrative practice, and equity (Reis-Andersson, 2023; Castaño-Muñoz et al., 2026; Tømte, 2024). Whereas earlier policies framed digital literacy primarily in relation to teachers, current scholarship increasingly identifies digital leadership as necessary for sustainable organisational change (Karakose et al., 2024; Pettersson, 2018b). Research nevertheless provides limited insight into how practising school leaders understand PDC and the competence they need to fulfil this responsibility.

Addressing this gap requires professional development designed specifically for school leadership. Leadership programmes are increasingly expected to build on participants' existing experience and knowledge (Bush, 2012), yet preparation programmes take time to adapt and may not keep pace with new pressures on school leaders (Hess & Kelly, 2007). This concern applies both to novice leaders and to experienced leaders who must continually update their knowledge and skills. Professional development should therefore be leadership-specific, individualised, context-responsive, and continuous rather than based on a one-size-fits-all model. It should equip school leaders to manage complex school operations, lead

organisational change, and promote digital equity (Abu-Tineh, 2025; Dasruth & Naicker, 2026; Ersoy & Demırer, 2026; Author, 2019; Okunlola & Naicker, 2025). However, research on school leaders as learners and on PDC development in practice remains limited (Acton, 2021; Matthews & Crow, 2010). The present study addresses this gap by examining how school leaders reflect on PDC and on the professional development needed to lead for digitalisation.

Theoretical Framework

Viewing the school leader as a learner, Saarukka's (2017) model interprets *principalship* by taking as its point of departure "the school leader being a person, working as a professional and occupying a specific position in the education system" (p. 11). Relating the categories of *person, profession,* and *position* to intrapersonal and interpersonal processes generates multidimensional outcomes. The components of personality dynamic, self-realisation, and identity intersect with all three categories and enable a developed and nuanced understanding of leadership processes and their outcomes. Saarukka's model can therefore support an understanding of principals' professional leadership identity in relation to leading digitalisation. Its categories may also provide deeper insight into the different dimensions of PDC than models that focus primarily on competence domains.

Saarukka (2017) uses the model to identify the relationship between the phenomenon of principalship and the person by understanding "the individual also from a professional perspective and how the individual interprets the context. As school leadership is a social mission, the professional perspective needs to be broadened to include the position" (p. 35). In this paper, Saarukka's framework is used to explore how school leaders' professional identity can be understood in relation to leading digitalisation. The categories of person, profession, and position are examined in relation to the three components of personality dynamic, self-realisation, and identity.

Table 1. *Interpretation of Integrating the Components in Categories via Saarukka's Model*

Components/Categories	Person	Profession	Position
Personality dynamic	Understanding oneself and individual capacities	Understanding others, interacting and managing as a professional	Ability to communicate, make decisions, and take responsibility
Self-realization	Increasing self-knowledge	Acting with professional manners in practicing leadership	To have awareness of and being able to fulfil responsibilities as a principal

Identity	Awareness of personal identity and ability to develop it	Identity develops through the profession, internal and external confirmation, and professional skills	Identity develops through trust and respect to fulfilling the mission

Source: Saarukka (2017).

In Saarukka's (2017) model, *personality dynamic and person* relate to individuals' understanding of themselves and their abilities. *Personality dynamic and profession* concern individuals' understanding of others, as well as their interaction and management as professional school leaders. *Personality dynamic and position* relate to individuals' ability to communicate, make decisions, and take responsibility for those decisions. *Self-realisation and person* concern increased self-awareness. *Self-realisation and profession* involve acting professionally in the exercise of principalship, while *self-realisation and position* concern awareness of and the ability to fulfil the responsibilities of a school leader. *Identity and person* encompass awareness of personal identity and the ability to develop it. *Identity and profession* concern the ways in which identity develops through internal and external affirmation and professional competence. *Identity and position* develop through the trust and respect associated with fulfilling the mission. According to Saarukka (2017), school leaders can develop all of these components simultaneously.

Method

With Saarukka's (2017) model as a point of departure, this paper uses an inductive approach to examine school leaders' reflections on PDC in relation to leading digitalisation. The data consisted of 31 learning reflections (N = 31) inspired by Moon's (2006) concept of learning journals. The reflections gave the school leaders an opportunity to consider what PDC meant in their profession and what forms of PDC could support their leadership of digitalisation. They were written in autumn 2021 by school leaders in the final term of the Swedish National School Leader Programme. The participants represented all levels of schooling, from preschool to upper secondary school, and were given a short period during a lesson to respond. The reflections were brief: the longest contained approximately 300 words, the shortest 38 words, and the average approximately 160 words.

Braun and Clarke's (2021) thematic analysis consists of six interconnected steps that guide researchers in identifying and interpreting patterns within qualitative data. The first step, familiarisation with the data, involved reading and rereading the material. The second step involved generating initial codes. In the third step, searching for themes, the researcher examined relationships among the codes and grouped them into themes that captured important aspects of the data. The fourth

step, reviewing themes, involved assessing whether the proposed themes accurately represented both the coded extracts and the dataset as a whole. In the fifth step, defining and naming themes, the scope and meaning of each theme were refined. In the sixth step, producing the report, illustrative examples were selected and the findings were interpreted in relation to the research questions and theoretical framework. Thus, the analysis was iterative, with movement back and forth between the steps as an understanding of the data emerged. The interviews were first read carefully, with the research questions in mind. Relevant meaning units were identified and organized within codes. The codes were subsequently grouped themes that captured the underlying meaning of recurring themes. Reflexivity was maintained throughout the research process to acknowledge and account for potential bias and researcher influence.

The analysis adopted a theoretically informed approach in which the emergent themes were interpreted through Saarukka's (2017) framework. The themes are presented within the framework's categories, and extracts from the school leaders' reflections are used to illustrate them. The participants' texts are identified as "School leader" followed by a number (School leader 1–31).

Although the data were collected five years before the present study, they remain relevant to the research questions. The aim of this paper is not to describe current conditions but to examine experiences and processes through reflection that may provide insights beyond the specific period of data collection. The material is analytically valuable because it supports both the empirical examination of school leaders' reflections on PDC and related professional development and the theoretical exploration of Saarukka's (2017) model. Nevertheless, the time elapsed since data collection is acknowledged as a limitation, and the findings are interpreted in relation to the context in which the data were generated.

Findings

In this section, the findings are presented according to the themes: PDC from the perspectives of a school leader as an individual, in a profession, and in a position.

For many of the school leaders, PDC was seen as an individual competence. One school leader summarized this as, "Digital competence for me is the ability to use different digital tools/programmes to do my job, my studies, and to make my daily life work" (School leader 18). Several school leaders reflected on the importance of their own digital competence. "It is important that, as a leader, you also have a certain competence in the area to be able to lead certain processes or take on support from more competent staff" (School leader 19). For one school leader, their PDC meant, "I also need to be a role model" (School 18). One school leader expressed a similar idea of being a role model, along with accepting the idea of not being an expert. "I do not need to know everything about digitalisation, but I should be a role model and a pioneer" (School leader 5).

Another school leader focused on tools for achieving digital literacy, stating, "this is about having the ability to use digital tools to make everyday life easier" (School leader 7). One school leader expressed that digital competence meant developing teaching. "[Using] digital tools in teaching to improve teaching, not

because everyone has a computer and they have to work with it" (School leader 20). For teachers, one school leader saw the importance of feeling confident. "Digital competence is about feeling confident and being able to use digital tools that can be used to develop student learning or peer learning and structures in the school" (School leader 14).

The school leaders expressed several important aspects for leading for digitalisation from a professional perspective. One aspect was the professional role of creating conditions and supporting teachers' PDC.

> To be able to lead professional development, I think it is important that we [school leaders] work on our learning regarding leading teachers' learning in digitalisation... 'modelling" and starting from research while it is important to have a bottom-up perspective to have a good impact. (School leader 4)

For one school leader, leading digitalisation involved leading staff, which could be challenging: "At the moment, the staff are at different levels, have different interests, and therefore, have chosen different ways" (School leader 2). This work involved supporting teachers with different levels of PDC. Another school leader reflected on the need to lead and create structures, stating that this would be achieved "by leading work on implementing digital tools and programs, being attentive to the skills needed by staff, [and] using support functions and knowing how to get support" (School leader 13). The same school leader also viewed leading digitalisation as "ensuring that employees are 'forced' into the use of digital tools" (School leader 13).

From the perspective of position, several school leaders reflected on the broader goals of digitalisation in the steering documents regarding PDC and digitalisation. One school leader described the possibilities of digitalisation. "Great opportunities for increased accessibility and equality, for all students regardless of their abilities.... Digital competence and use are part of the school's compensatory task" (School leader 10). One school leader reflected on seeing PDC as a way to support the issue of equity in school.

> Digital literacy is now one of the basic competences that all individuals must have in order to participate on equal terms.... Schools need to develop a more long-term and coherent approach, and the development of skills needs to be developed. (School leader 1)

Another school leader expressed the idea of improving the quality of teaching to provide students with strong opportunities in society.

> [The] competence to use digital tools, platforms, and so on to raise the quality of the activity. In schools, it is a question of democracy that everyone in society can understand the digital world we live in to be active agents in society and societal development. (School leader 16)

Expressing a similar line of thought, one school leader reflected on PDC as a means of supporting students: "Digital literacy is also a qualification or key to society; it can also be a formal qualification. In order for it to become formal, skills

development efforts are needed" (School leader 18). This school leader regarded PDC as important for students' preparation for further study and employment.

Discussion

This study addressed two research questions: how school leaders reflect upon PDC (RQ1) and how they reflect on professional development for leading for digitalisation (RQ2). The findings show that PDC is not understood merely as technical skill. Rather, it comprises school leaders' individual competence, their capacity to lead teachers' learning and organisational change, and their responsibility for realising broader educational goals. Saarukka's (2017) model makes this multidimensional character visible by locating PDC across the interrelated categories of person, profession, and position. The analysis of these three categories primarily answers RQ1 by clarifying what PDC means to the school leaders. The competence needs expressed within each category also provide the empirical basis for answering RQ2 and identifying implications for professional development.

At the level of the person, the findings answer RQ1 by showing that the school leaders understood PDC as the knowledge and confidence needed to assess their own abilities, remain up to date, and develop an identity as digitally competent leaders. Their reflections correspond to Saarukka's (2017) components of personality dynamic, self-realisation, and identity: they considered what they could do, recognised areas for development, and reflected on acting as role models without needing to be technical experts. This supports earlier research describing a competence threshold that leaders must cross before feeling prepared to lead digitalisation (Brockmeier et al., 2005) and the hesitation that may result from limited experience or training (Flanagan & Jacobsen, 2003). It also supports recent arguments that school leaders' PDC cannot be reduced to technical proficiency but must be understood as a leadership-specific competence encompassing pedagogical, administrative, and strategic dimensions (Reis-Andersson, 2023; Tømte, 2024; Silveira et al., 2026). The participants' reflections on confidence and role-modelling illustrate why school leaders' own competence should not remain secondary to attention given to teachers' digital competence. In relation to RQ2, differences in confidence, experience, and self-identified needs indicate that professional development should begin from each leader's existing competence rather than assume a uniform starting point (Bush, 2012). Because preparation programmes may struggle to keep pace with technological change (Hess & Kelly, 2007), such development also needs to be continuous. Thus, at the person level, the school leaders' reflections point to differentiated opportunities for self-assessment, updating knowledge, and strengthening confidence and professional identity.

At the level of the profession, the findings answer RQ1 by showing that PDC concerned school leaders' capacity to create organisational conditions for teachers' learning and purposeful technology use. In Saarukka's (2017) terms, personality dynamic involves understanding and interacting with others, self-realisation concerns acting professionally, and identity develops through professional skills and internal and external affirmation. The school leaders' attention to staff members' differing levels of competence, the need for structures and support, and their own

role in modelling and leading learning illustrate these dimensions. The breadth of these reflections corresponds to conceptualisations of PDC that integrate technological proficiency, pedagogical compatibility, and social awareness (Instefjord & Munthe, 2016). Although developed in teacher-education contexts, the dual concern with developing one's own competence while supporting the learning of others also resembles the demanding professional appropriation of digital competence described by Lund et al. (2014) and Lindfors et al. (2021); the present findings extend this concern to school leadership. They further show that leading for digitalisation is not an individual undertaking but depends on supportive organisational infrastructures and relationships between school leaders and school organisers (Pettersson, 2018a, 2021; Reis-Andersson, 2022). This supports the view that digital leadership extends beyond technology use and involves established processes of educational leadership, organisational learning, and reform (Chua Reyes, 2015; McLeod et al., 2011). In relation to RQ2, the school leaders expressed need to lead teachers at different competence levels implies professional development focused on pedagogical leadership, collegial learning, shared goal-setting, and organisational change. Such development should be leadership-specific and context-responsive rather than based on a one-size-fits-all model (Bush, 2012). At the profession level, therefore, RQ2 is answered through competence needs concerning how to lead staff learning, establish supportive structures, and ensure that digital technologies serve teaching and learning rather than become ends in themselves (Tołwińska, 2021; Dexter, 2008; Williams, 2008; Leithwood & Jantzi, 2006).

At the level of position, the findings answer RQ1 by connecting PDC to the formal mandate and accountability of school leadership. Saarukka's (2017) personality dynamic is reflected in the ability to communicate, make decisions, and take responsibility for them; self-realisation involves recognising and fulfilling the obligations of principalship; and identity develops through the trust and respect associated with carrying out the mission. The school leaders connected this mission to steering documents and to their responsibility for creating conditions for teachers' PDC and peer learning (NAE, 2016, 2022a; Tołwińska, 2021). They also framed digitalisation as a matter of democracy, equity, and the school's compensatory mission rather than simply technology adoption. By presenting digital competence as necessary for participation and future citizenship, they positioned PDC as a means of addressing rather than reproducing digital divides (Starkey et al., 2017). This interpretation is consistent with recent studies showing that school leaders' digital decisions influence instructional quality, technology integration, administrative practice, and equity (Reis-Andersson, 2023; Castaño-Muñoz et al., 2026; Tømte, 2024). In relation to RQ2, these reflections indicate a need for professional development in strategic decision-making, policy interpretation, ethical judgement, and equity-oriented leadership. At the position level, professional development should therefore help school leaders translate steering documents into coherent organisational goals and evaluate whether digital initiatives support students' participation, learning, and future citizenship (EC, 2019; OECD, 2022; UNESCO, 2017).

Taken together, the findings provide distinct but connected answers to the two research questions. In answer to RQ1, the school leaders reflected on PDC as an integrated leadership competence spanning person, profession, and position: it

encompasses individual knowledge and confidence, the professional capacity to lead teachers' learning and organisational change, and the positional responsibility to connect digitalisation with policy, equity, and accountability. In answer to RQ2, their expressed competence needs indicate that professional development should be continuous, differentiated, leadership-specific, and context-responsive. It should support self-assessment and confidence at the person level, the leadership of staff learning and organisational change at the profession level, and strategic, ethical, and equity-oriented decision-making at the position level. These needs accord with recent calls for preparation and professional-development programmes that explicitly address school leaders' technological, pedagogical, strategic, and transformational leadership competencies (Castaño-Muñoz et al., 2026; Dasruth & Naicker, 2026; Hamzah et al., 2025; Okunlola & Naicker, 2025). The present findings add an identity-oriented dimension by showing that such development must also engage school leaders' confidence, self-understanding, and interpretation of their professional mandate. These implications are derived from the school leaders' reflections on the competence required for their work; the data do not establish preferences for particular programme formats. Recent reviews describe school leaders' digital competence as conceptually fragmented and identify a shortage of leadership-specific frameworks (Karakose et al., 2024; Vũ & Trinh, 2025; Silveira et al., 2026). This study contributes to that developing field by conceptualising PDC not only through technical, pedagogical, and strategic competencies but through the interaction of person, profession, and position.

As a contemporary implication, rather than an empirical finding, the integrated understanding of PDC is also relevant to the rapid development of AI in education. It provides a basis for examining how school leaders adopt and govern AI and how they balance human judgement with AI-supported decision-making (Wang, 2021; Tyson & Sauers, 2021; Karakose & Tülübas, 2024). School leaders will need to judge how AI may support administration, teaching, and learning while addressing its pedagogical, organisational, and ethical implications (Fullan et al., 2024; Neumann et al., 2023; Rudolph et al., 2023). PDC can thus be understood as an ongoing leadership capacity for responding critically and purposefully to both established and emerging digital technologies. Future research should examine and test this application of the framework in AI-related leadership contexts.

Conclusions

In answer to RQ1, the school leaders understood PDC as an integrated leadership competence spanning person, profession, and position. It encompasses individual knowledge, confidence, and professional identity; the capacity to lead teachers' learning and organisational change; and the formal responsibility to connect digitalisation with educational goals, equity, and accountability. In answer to RQ2, their reflections indicate that professional development should be continuous, differentiated, leadership-specific, and responsive to context. It should strengthen self-assessment and confidence at the person level, the leadership of staff learning and change at the profession level, and strategic, ethical, and equity-oriented decision-making at the position level. Empirically, the study contributes

knowledge about how practising school leaders understand PDC and the competence they need to lead for digitalisation. Theoretically, the application of Saarukka's (2017) model shows how personality dynamic, self-realisation, and identity operate across the categories of person, profession, and position, thereby linking competence development to both professional identity and the exercise of leadership. A practical implication is that programmes for school leaders should address these dimensions together rather than treating PDC as a set of generic technical skills. Although AI was not part of the empirical material, the findings remain relevant as a contemporary framework for considering how school leaders can evaluate emerging technologies critically, ethically, and in relation to educational purposes.

Future Research

The study is limited by the small sample, both in the number of participating school leaders and in the length of their reflections. Nevertheless, these brief texts provide valuable insight into how school leaders understand PDC. The findings are relevant to school leaders, school organisers, and educators responsible for leadership development, and may inform both preparation programmes and continuing professional development. Saarukka's (2017) model proved useful because it enabled competence-development needs to be examined across the categories of person, profession, and position and their associated components. Future research could use in-depth or focus-group interviews to investigate more fully the complexities of leading digitalisation, the implications of AI in education, and the PDC that school leaders require for this work.

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