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Dolna 17, Warsaw,
Poland 00-773
+48 226 0 227 03
editorial_office@rsglobal.pl

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EXPLORING THE IMPACT OF TEACHER PROFESSIONAL IDENTITY ON THE TEACHING OF NUMBER CONCEPTS IN THE FOUNDATION PHASE

Gugulethu Ncube
Faculty of Education, University of Zululand, South Africa
ORCID ID: 0000-0002-9395-4713

Phillip A. Kutame
Faculty of Education, University of Zululand, South Africa

Sithabile Ntombela
Faculty of Education, University of Zululand, South Africa

Oluwatoyin Ayodele Ajani
Faculty of Education, University of Zululand, South Africa

ABSTRACT

This qualitative study sort to understand the influence of teacher professional identity on teaching number concepts in the foundation phase. Twelve foundation phase teachers from the Johannesburg East District were purposively selected. Data was collected using in-depth interview schedule and observation tool and analysed thematically. The findings reveal that teacher professional identity has an influence on how teachers teach number concepts. The influence was either negative or positive. The positive identity manifested where teachers view themselves as pedagogical content knowledge specialists, in loco parentis, among others. Teachers who exhibited a positive teacher professional identity were characterised by enthusiasm, self-motivated, friendly, having a sense of competence and commitment. On the other hand, a negative teacher professional identity was characterised by teachers viewing themselves as teacher-administrators, the 'l' as a social worker, among others. In some scenarios, we noted that there was lack of synergy between the way teachers teach number concepts and the self-image. The self-image was not reflected in their teaching. We concluded that the manner in which teachers see themselves as teachers teaching number concepts plays a major role in shaping the teaching of number concepts in the foundation phase. We recommend that the employer invest in programs that will improve how teachers see themselves as teachers teaching number concepts.

KEYWORDS

Teacher Professional Identity, Number Concepts, Foundation Phase, Influence, Pedagogical Content Knowledge, Teaching Practices

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Introduction.

The influence of teacher professional identity on teaching number concepts in the Foundation Phase (FP) is established and fostered through their acquaintances with learners (Haluch, Radcliffe & Rowley, 2021). Teaching number concepts requires teachers to be guided by their professional identity (Hannaway, 2016; Van der Westhuizen & Hannaway, 2021). Scholars Bressler & Rotter (2017), Foroutan, Reshadatjoo & Samani (2019), and Živković (2012), agree that teacher professional identity is an integration of professional and personal roles. In this study, foundation phase is used to refer to Grade R to Grade 3 while teacher professional identity refers to how teachers view themselves as teachers teaching number concepts.

The Annual National Assessment (ANA) of 2011 showed that the results of more than 6 million Grade 3 learners obtained an average performance of 28% in Numeracy (Modisaotsile, 2012). According to Palmer (2007), teachers teach their identity. They teach who they are. It is therefore important to investigate how teachers' self-images influence their teaching in the foundation phase.

Literature Review

Professional identity plays a crucial role in shaping teachers' effectiveness, ethical behaviour, and engagement with students, as noted by Woo and Henfield (2015). This identity encompasses a teacher's awareness of their roles, values, and skills, influencing their pedagogical practices and overall interaction with learners (Sutherland & Markauskaite, 2012; Bates et al., 2019; Tomlinson & Jackson, 2021). Enhanced professional identity, supported by personal growth and external factors, leads to greater teacher efficacy and a stronger sense of purpose within the educational setting (Gibson et al., 2010; Pistole & Roberts, 2002). This development is further enriched through experiences, mentorship, and applied knowledge.

Understanding one's professional identity is associated with higher job satisfaction, reduced burnout, and improved efficiency, as highlighted by Sabanciogullari and Dogan (2015) and Pittman and Foubert (2016). Identity formation is an evolving process, influenced by changing social contexts and lifelong learning opportunities (Dweck, 2017; Mockler, 2011). Over time, professional identity matures in response to both internal and external influences, including experiences within the workplace and broader societal expectations (Alves & Gazzola, 2011).

A strong professional identity is particularly significant for educators, as it fosters ethical practices, enhances well-being, and broadens their insight into the teaching profession (Burns & Cruikshanks, 2017). In contrast, a weak identity may lead to reduced public recognition, limited career mobility, and diminished job satisfaction (Burns, 2000). Teachers who lack a solid professional identity may struggle to innovate or collaborate, impacting their overall effectiveness and sense of belonging within their professional community.

The influence of group membership on professional identity can be seen as a form of collective control and uniformity, as argued by Jemielniak (2012). Identification with a group can meet various self-related needs and foster institutional cohesion (Ashforth et al., 2008). Teachers with a flexible and positive professional identity tend to find greater job satisfaction and are more committed to their roles (Skorikov & Vondracek, 2011). A strong professional identity benefits not only individual teachers but also their colleagues and students, fostering a positive school culture (Cowin et al., 2013). Conversely, a weak professional identity is linked to high attrition rates and reduced effectiveness within the profession (Salamonson et al., 2013). While strong identity offers numerous advantages, it may also pose challenges, such as difficulty engaging with individuals outside one's professional group due to perceived identity threats (Molleman & Rink, 2015). Professional identity has thus been a focal point in understanding workforce challenges, particularly in education, where teachers' workload, curriculum demands, and administrative tasks often shape their self-perceptions (Trede et al., 2012).

Research highlights that professional identity is closely tied to self-esteem, status, and job satisfaction for teachers (Skorikov & Vondracek, 2011). Positive self-perceptions encourage greater confidence and effective execution of teaching roles (Fuller et al., 2013; Sachs, 2001). Teachers who possess a strong professional identity are more likely to view themselves as competent educators, fostering a deeper commitment to their students and their teaching practices (Ro, 2019). The development of a positive professional identity also offers socio-economic advantages, enhancing teachers' status and career prospects (Baldry & Marks, 2009). This identity development is linked to professional mastery, which encompasses qualifications, experience, and dedication to the job (Mann et al., 2008). Teachers who achieve professional mastery often experience greater autonomy and self-efficacy, key components of a strong professional identity (Kyriakidou, 2012).

Professional identity is not static; it requires continuous growth, adaptation, and reflection to remain relevant in a changing educational landscape (Calley & Hawley, 2008; Puglia, 2008). Teacher educators play a critical role in fostering strong professional identities in new teachers, creating a foundation for effective teaching and lifelong learning (Woo et al., 2017; Jurekovic, 2019). Teachers' professional identity is further shaped by their ability to connect theory with practice, enhancing learner outcomes through effective pedagogical approaches (Avalos, 2011).

Challenges faced by teachers in teaching number concepts highlight the importance of pedagogical content knowledge. Teachers must implement diverse teaching practices to foster student engagement and understanding (Arends et al., 2017). However, inadequate use of physical teaching aids and limited comprehension of mathematical concepts can impede effective instruction (Mntunjani et al., 2018). It is essential for teachers to possess both content and pedagogical knowledge to adapt their teaching methods to learners' needs (Hill et al., 2005).

Historical and contextual factors also shape teachers' professional identities. In South Africa, disparities in teacher training during the apartheid era continue to impact teaching practices, particularly in mathematics (Bowie et al., 2019). Teachers must have a solid grasp of number concepts and the skills to make them relatable to students' everyday lives. Effective teaching relies on a deep understanding of content, the ability to engage learners, and the use of meaningful, context-based teaching strategies (Fritz et al., 2013).

Ultimately, professional identity influences every aspect of teaching, from lesson planning to classroom interactions. Teachers with a strong sense of identity are better equipped to adapt their strategies and respond to the needs of their students. Creating supportive environments, providing ongoing professional development (Ajani & Govender, 2019), and fostering reflective practices can strengthen teachers' identities, enhancing both their job satisfaction and their effectiveness in the classroom (Van De Walle et al., 2010; Copur-Gencturk, 2021).

Methods

This study employed a qualitative research design to explore the influence of teacher professional identity on the teaching of number concepts in the Foundation Phase. A qualitative approach was chosen as it allowed for an in-depth understanding of the personal and professional factors that shape how teachers perceive themselves and their teaching practices. The research design included both in-depth interviews and classroom observations to capture the lived experiences and teaching behaviours of Foundation Phase teachers.

The study was conducted with twelve Foundation Phase teachers from the Johannesburg East District, selected through purposive sampling. This method ensured that participants had relevant experience and could provide rich, contextualised insights into the influence of professional identity on teaching number concepts. Teachers with varying years of experience and teaching contexts were included to ensure a diverse range of perspectives. Data collection involved two primary methods: in-depth interviews and classroom observations. The interviews were semi-structured, allowing for flexibility while maintaining a focus on key areas related to teacher identity and teaching practices. The interviews aimed to capture teachers' self-perceptions, beliefs, and professional experiences. Classroom observations provided additional insights into the practical application of these self-perceptions in teaching number concepts.

An interview schedule was developed to guide the semi-structured interviews, focusing on themes such as teaching practices, self-image, and perceptions of professional roles. An observation tool was used to systematically capture data on teaching behaviours, interactions with students, and the use of teaching strategies during number concept lessons. These tools ensured consistency and reliability in data collection. Data was analysed using thematic analysis, which involved coding and categorising the data to identify recurring themes and patterns. The analysis focused on the relationship between teacher professional identity and teaching practices, highlighting both positive and negative influences on the teaching of number concepts. Themes were derived inductively from the data, allowing for a grounded understanding of the teachers' experiences. Ethical approval was obtained from the relevant educational authorities and the University of Zululand. Informed consent was secured from all participants, ensuring they understood the purpose of the study, their role in it, and their right to withdraw at any time. Confidentiality was maintained throughout the study, and participants' identities were anonymised in the reporting of findings.

To ensure the trustworthiness of the data, strategies such as member checking, triangulation, and peer debriefing were employed. Member checking involved sharing preliminary findings with participants to verify accuracy and validity. Triangulation was achieved by combining data from interviews and observations, and peer debriefing provided an opportunity for external validation of the findings. The study was limited to a specific geographic area, which may affect the generalisability of the findings. Additionally, the sample size,

while sufficient for a qualitative study, may not capture the full diversity of experiences across all South African contexts. Nonetheless, the study offers valuable insights into the relationship between professional identity and teaching practices in the Foundation Phase.

Presentation Of Findings

The presentation of findings section explores the key themes and insights that emerged from the study on the influence of teacher professional identity on the teaching of number concepts in the Foundation Phase. Drawing from in-depth interviews and classroom observations of twelve Foundation Phase teachers in the Johannesburg East District, this section delves into how teachers' perceptions of themselves, shaped by personal experiences, professional roles, and self-image, impact their instructional approaches. The findings reveal both positive and negative influences, illustrating the complexity of teacher identity and its implications for teaching practices, learner engagement, and curriculum delivery in foundational mathematics.

Theme 1: *Influence of Personal experiences*

The influence of personal experiences in teaching number concepts emerged as one of the significant sub-themes. Like literature (Mockler, 2011 and Beijaard, 2017), teachers teach who they are. Personal experiences of teachers define how they conduct themselves in their classes, the way they teach and the kind of relationships they develop with various stakeholders. One of the participants indicated that their father encouraged them to be self-sustainable and focus on education. The participant indicated that they were also teaching their learners to be independent and invest in themselves though education.

Participant A Site 1: "*I come from a family where my dad was an educationist. He encouraged us to learn and not just get married. He used to say education is the only thing that people can't take away from you and l try to instill that to my learners. So l teach my learners to be independent from as young as this*".

Teachers teach as they were taught (Blume, 1971; Ozmutlu, 2022). Most of the teachers took lessons, good or bad, from their own teachers. In this study, one of the participants became emotional as they remembered the influence their grade one teacher still has in their own teaching. The participant praised their late teacher and indicated that they were the best who did everything to ensure that they understood any concept. The teacher specified that they learned that it was important for a teacher to go all out and ensure that the learners understood what they were teaching. The participant indicated that this was the reason they were staying late at night preparing for tomorrow's lesson.

Participant B site 1: "*My grade 1 teacher, (may her soul rest in peace)…She put all her best to make sure that I learn, so what I learnt from her, it influenced me and I make sure that I give it to other generations. She would make sure that whatever she was teaching even if we do not understand, she would go out of her way to make sure that we understand the concept. If it means that she was to take us outside and write numbers outside. If it means we have to take out our shoes and count our toes and fingers she would do that*".

One participant indicated that while their personal experiences influenced the way they taught number concepts, they influenced them in a rather different way. They indicated that the teaching and learning methods they were taught using are different from the ones they use now. Consistent with literature (Piaget, 1952b) the participant indicated that they take cognisant of their learners' knowledge that they bring to school and build on that knowledge. The participant indicated that during their school days, teachers never recognised their prior knowledge.

Participant C site 1: "*The way that I was taught is totally different from the way learners are taught these days because during my time we were just relying on what the teacher was teaching us. The teacher didn't ask us what we know our prior knowledge. Right now children come to school with knowledge, so mixing those, my knowledge and their knowledge building on what they already know it helps me teach them and find exactly where they are at in their learning*".

Another participant indicated that they were taught to walk with confidence by their mother and they were also teaching their learners to carry themselves with confidence. Consistent to literature (Rymanowicz, 2015; Walther, 2019), foundation phase learners imitate their teachers.

Participant B site 2: "*My mother was a teacher. She used to tell me not just to walk. She used to tell me that the way l walk is linked to my energy. I teach my learners the same. My learners are not allowed to just walk, I tell them, "do you see how I walk, I want to see you walk like that with confidence*".

Another participant made note of resources. They indicated that they attended a school in the rural areas where there were limited teaching and learning resources. The participant indicated that they know the pain of

going to a school that has no resources and they didn't want their learners to experience the same. They indicated that they always ensure that they have adequate resources.

Participant A site 3: "*I grew up in a place where let me say, I attended a school where there was lack of resources. So even if I don't have resources and I see that these resources could work, I don't mind buying them*".

The results of this study indicated that teachers' entire teaching is whatever teachers go through in their entire lives form personal experiences. Those personal experiences influence the teaching of number concepts in the foundation phase. Teachers, knowingly and unknowingly bring their personal experiences to class. Their identity is shaped and reshaped by their personal experiences. It is almost accurate to say by looking at how a teacher teaches; one can tell about their personal experiences. It was evident that teachers and parents of teachers play a vital role in the personal experiences of teachers. Many teachers either took the personal experiences that are shaping their professional identity from either home or school. It is therefore important that teacher professional identity be looked at holistically rather that as something that began when teachers started their teacher career. This will take the country's macro and micro systems to work collaboratively. In this sense, teacher professional identity influences teaching behavior. When teachers reflect on their past experiences and beliefs, they make sound decisions about their teaching of number concepts (Korthagen, 2004; Zhao & Zhang, 2017).

Theme 2: Strategies, techniques and methods in teaching number concepts

Strategies, techniques and methods in teaching number concepts emerged as one of the strong sub-themes in the study. Participants agreed that teaching strategies, techniques and methods include structure, instructional objectives and an outline of planned tactics, necessary to implement the strategies. Consistent to literature (Issac, 2010; Joldes, 2022), participants indicated that strategies, techniques and methods were that kind of behaviour which every teacher manifested in class i.e., the developments of the teaching strategies, giving proper stimulus for timely responses, drilling the learnt responses, increasing the responses by extra activities and so on. However, they noted that there were no specific strategies, techniques and methods that were best in teaching number concepts in the foundation phase.

The findings indicate that in the past years there has been move towards an individualized and student-centred pedagogies (Schleicher, 2019). The introduction of technology posed a challenge on teachers with social networking and use of digitalized platforms promoting new pedagogical styles with artificial intelligence also becoming important as a learning agent (Lanas & Kelchtermans, 2015; Minea Pic, 2020). Moreover, the shift towards greater accountability and control in the education systems, often restricted to a small set of success criteria (e.g. teaching number concepts in the foundation phase), leave minimal room for defining the duties, ethos and values that teachers themselves accept as the heart of their professional identity.

In line with literature (Issac, 2010; Joldes, 2022), one of the participants indicated that their strategies, techniques and methods depended on what their learners needed to be taught. They however mentioned that they still made use of the old rot learning as they found it still applicable despite the evolution of education.

Participant A Site 1: "*There are so many teaching methods that l find suitable. I usually use the mix depending on what the kids need…Growing up my parents were firm believers that you need to know your timetables when you were little you know that. They encouraged me to cram and sing my timetables. As much as we don't do as much as we used to with this curriculum. I still reinforce that because l feel it works with the kids…*".

Another participant was of the view that learners had different learning styles thus they varied their strategies, techniques and methods. The participant emphasised on the importance to use all the strategies, techniques and methods.

Participant B site 1: "*I don't have a specific teaching method, because remember as people we are gifted in different ways. For those who are kinaesthetic, they must write, for those who are visual, they must see, for those who are tactile they must touch. Those who are audio they can close their eyes and listen…When you are teaching number concepts try and use all the methods*".

Some of the participants had special preferred strategies, techniques and methods.

Participant A Site 2: "*mmm... group, should I say group guide teaching method*".

Participant A site 3: " *When we teaching we have to be always repeating, use repeat method, neh because these learners they're not the same, they do not have the same pace….I think if we can do mental math every day. I think it can improve the number concepts*".

Some of the participants indicated that their most preferred was play-based because it provided opportunities for learners to actively and imaginatively engage with people, objects and the environment.

Participants were of views that symbolic representation was a critical aspect of their teaching. One of the participants indicated that when playing, young learners may be organising, constructing, manipulating, exploring, investigating, creating, imagining and making sense of their world.

Participant C site 2: "*For the young learners, these ones are learning through play, so any activities you make they must be fun for them to enjoy. Learners can make a lot of things when playing. They can use building blocks to show creativity, use dough to make anything. Play is the best in foundation phase*".

Another participant felt that play made them to help the learners develop holistically. They indicated that it promoted the physical, social, emotional, cognitive and creative development of the learner.

Participant C Site 4: "*By learning through playing, learners develop motor skills, emotional and social skills*".

Teachers should apply processes that inform teaching and learning. The adoption of diverse strategies caters for the diverse needs of learners. It is where teachers should embrace diversity by embracing all learning strategies. Learners should be afforded an opportunity to explain how they got their answers. Teachers often fall into the trap of telling learners what to do and how to do it. Learners bring into the class methods and strategies and teachers should embrace these. Teachers should always bear in mind that effective teaching of number concepts is more concerned about the problem-solving process rather than the answer.

The findings imply that there is no 'one size fits all' when it comes to strategies, techniques, and methods in teaching number concepts in the foundation phase. It was evident that teachers prefer varying their strategies depending on the learners' needs and the activities they were doing with learners. The findings also show that teachers are still making use of the old teaching strategies like rot learning. It can therefore be concluded that there is nothing called old teaching strategies in teaching number concepts in the foundation phase, if it works, why not try. Regarding teacher professional identity, teachers feel happy when they are not forced to stick to one teaching strategy. Teaching becomes fun as they can adapt the strategy even during the lesson should they feel the need to do so. Thus, the autonomy for teachers to choose the strategies of their choice is a pointer for positive teacher professional identity.

Theme 3: Influence of context on professional identity.

The influence of context on professional identity emerged as one of the strong sub-themes in the study. Mockler (2011), in their theoretical framework that was adopted in this study, argues that the context has an influence on the professional identity of teachers which in-turn has an influence on teaching number concepts. Conceptualization of school context varies across settings. Fisher (2000), and Adamopoulos and Syrou (2022), divided school context into structural and cosmetic factors. Dube (2022), and Suarez and McGrath (2022), on the other hand described the context as the hardware and software. Structural factors, according to Fisher, include buildings, number of learners in the school and geographical size of the school, while cosmetic factors include furniture. Boissieri (2004), and Amsterdam (2010), view hardware as school buildings, classrooms, equipment and public health and software as curriculum, schoolbooks and writing resources. In this study l viewed the school context as the building (classrooms) which are immovable resources, physical (movable) and human resources.

Site 1 was a fee-paying school. This means that above the subsidy the school receives from the government, the school also collects fees from learners. The money collected from fees can be used to employ more teachers in the school and buy more teaching and learning resources. This also means that the teacher-leaner ration is less than in a no fee-paying school. The school was located in a low-density suburb of Johannesburg East District. The school seemed well looked after and clean. The school building structures are built with nice bricks and there are air cons and heaters in each classroom. Even though Site 1 was better resourced, participants at this site still raised concerns about overcrowding.

Site 1: *Authors 2024*

One of the participants indicated that they had forty or more learners in their classroom.

Participant A Site 1: "*You are not sitting with forty learners of the same thinking ability, they are different. So how can l cater for all those learners? I sometimes use my break time if l have to, sometimes give them extra lessons if l have to*".

What was common among all the participants was the stress from overcrowded classes. Sites like Site 1 that had adequate resources battled with overcrowding also. This was even though they were collecting extra money in the form of school fees.

Site 2 was a public primary school located in the low-density suburb of Johannesburg East District. This school was a quintile 3 and a no fee-paying school. The school had brick structures and seemed to be well organized. More so, the school looked clean. However, the learners inside the classroom seemed not to have enough resources as compared to site 1.

Site 2: *Authors 2024*

Site 3 was a public primary school located in the low-density suburb of Johannesburg East District. This school was a no fee-paying school. The whole school has container classrooms. Container classrooms are classrooms built from zinc. These are mobile classrooms. From my experience as a teacher, these classrooms have become very hot during summer and very cold during winter. In this site, those classrooms that l visited had no air cons and heaters.

Site 3: *Authors 2024*

Another participant from Site 3 was unhappy with the teacher-learner ratio and said her prayer was that every foundation phase teacher be allocated an assistant teacher.

Participant C site 3: "*The only wrong that we have in class ma'am that I see is we've got so many learners in our classes and we are one. The ratio is not the same as the one at private schools and we don't have assistance. The teacher-learner ratio is 1 to 45 learners, and if its 45 learners, they expect you to mark these books in a day. They expect you to excel with everything you're doing. It's not easy, it's not easy. If we've got assistance in our classes and we've got based assistance, you understand*".

Participant A site 3: "*Sometimes I don't have resources and I see that these resources could work, I don't mind buying them*".

It was clear that the context was having an influence on the teachers' professional identity. One participant was feeling drained while the other had to buy resources from their pocket. This obviously affects the way they see themselves as teachers teaching number concepts in the foundation phase.

Site 4 was located in a low-density suburb of Johannesburg East District. All the structures in this school are container structures and is a quintile 5 school. It was a no fee-paying school unlike Site 1 which is a quintile 5 but a fee paying school. A no fee paying school means that the school has limited resources as it is by law not allowed to collect any fees from learners. This school depends entirely on the subsidy it receives from the government. In a no fee-paying school, the teachers are all paid by the government and the school does not afford to employ extra teachers unlike in a fee paying school. This leads to teachers who find themselves teaching fifty learners in a class.

Site 4:*Authors 2024*

One of the participants showed strong emotions when they narrated how they sometimes stop teaching due to the heat in the container classroom. They noted that it is no use teaching when you can see that learners are not concentrating due to weather conditions.

Participant A Site 4: "*In our school we don't have resources and this makes teaching foundation phase so frustrating … At times it is because as you can see we are not in a normal school like other school. We are in a container whereby it becomes hot in summer and then you can see that the learners are struggling. We are standing in front of them you can see that they are not taking it anymore. So as much as we want to continue with the lesson you prefer to take other options because you can see that your learners are not paying attention. So it's something else that attracts their attention*".

It was clear that the context influences how teachers define themselves in relation to their job as teachers teaching number concepts. The implications of the data is that the school environment influences how teachers view themselves. Teachers who teach in container classrooms exhibited a negative professional identity. They felt disempowered as they are sometimes forced to abandon their lessons due to weather effects that are beyond their control. This clearly influences teacher professional identity as the affected teachers lag behind as compared to their counterparts who work in schools that have 'better' context. This should be frustrating to teachers as they are expected to cover a certain amount of work by their employer who fails to take into consideration the contextual effects affecting different schools.

The context in which teachers work in is also revolving. Other new expectations about school context are the increasing requirements for equity and inclusiveness, during increasingly diverse and heterogeneous learner populations (Matthews & Banks, 2022; Karousiou, Hajisoteriou & Angelides, 2019). These circumstances pose a challenge in defining teacher professional identity of teachers by teachers and other stakeholders which has a great impact on the how teachers view themselves. A restricted view that does not consider the current challenges of the teaching profession can hinder the development of a rich and multi-faceted identity that comprises the several roles and tasks that teachers fulfil today (Sachs, 2016; Murray, 2020). Therefore, it is of great importance that teachers have the necessary support to develop strong and positive professional identities, which allow them to respond flexibly and act accordingly in their different contexts (Sachs, 2016). However, developing a strong teacher professional identity also intertwines with the diverse expectations from stakeholder groups, together with conflicting demands related to the changing context in which teachers carry out their work.

Discussion

The findings of this study highlight the significant influence of teacher professional identity on the teaching of number concepts in the Foundation Phase. This influence can manifest both positively and negatively, depending on how teachers perceive themselves within their professional roles. The positive impact of professional identity is consistent with research by Beijaard, Meijer, and Verloop (2004), who assert that teachers with a strong professional identity demonstrate increased enthusiasm, self-motivation, and a sense of competence. Teachers who viewed themselves as pedagogical content knowledge specialists and acted in loco parentis displayed high levels of commitment and creativity in teaching number concepts, which aligns with Palmer's (2007) notion that teachers teach who they are.

Conversely, the study revealed that a negative professional identity can hinder teaching effectiveness. Teachers who perceived themselves as mere administrators or social workers, rather than educators, exhibited a lack of synergy between their self-image and instructional practices. This finding supports the work of Sachs (2001), who notes that a fragmented or negative professional identity can lead to reduced engagement and job dissatisfaction. Such teachers may struggle to adopt innovative methods or engage deeply with their teaching, as observed by Mockler (2011), who emphasises that teacher identity is closely linked to professional beliefs, attitudes, and practices.

Personal experiences also emerged as a critical factor shaping teachers' professional identities and teaching practices. Many participants reported that their upbringing, past teachers, and familial influences had a lasting impact on how they approached teaching number concepts. This aligns with the work of Britzman (2003), who argues that teachers' biographies and personal histories significantly influence their professional identities. Positive personal experiences often translate into a more proactive and student-centred approach to teaching, while negative experiences may lead to a reluctance to innovate or adapt new pedagogical strategies (Kelchtermans, 2009).

The importance of context was another prominent theme, with findings indicating that school environments, resources, and class sizes directly influence teachers' professional identities and teaching

approaches. Teachers working in under-resourced schools or overcrowded classrooms often reported feeling disempowered and frustrated, which is consistent with findings by Day and Gu (2010), who highlight that contextual factors play a crucial role in shaping teacher identity and practice. In contrast, teachers in better-resourced environments were more likely to exhibit a positive professional identity and adopt a wider range of instructional strategies.

The role of professional development and training emerged as a key factor influencing teachers' ability to effectively teach number concepts (Ajani, 2024). Continuous professional development has been identified as essential for enhancing teachers' content knowledge and pedagogical skills (Avalos, 2011; Ajani, 2021; Govender et al., 2023). However, several participants noted a lack of sufficient training and support, which negatively impacted their confidence and efficacy. This finding echoes the work of Opfer and Pedder (2011), who argue that professional development must be contextually relevant and ongoing to have a meaningful impact on teaching practices (Ajani, 2018, 2023).

Teaching strategies, techniques, and methods used by teachers were found to be closely linked to their professional identities. Teachers who identified strongly with their roles as educators were more likely to adopt student-centred approaches, such as cooperative learning and play-based methods, to engage learners in number concepts. This aligns with Vygotsky's (1978) socio-cultural theory, which emphasises the importance of interactive and collaborative learning environments. On the other hand, teachers with a weaker professional identity tended to rely on rote learning and traditional methods, which may not fully support the development of foundational mathematical skills (Fang, 1996).

The study also highlighted the impact of teacher autonomy on professional identity and instructional practices. Teachers who had the freedom to choose their teaching strategies reported greater satisfaction and a stronger sense of professional identity. This finding supports the work of Ingersoll (2003), who argues that teacher autonomy is a critical factor in job satisfaction and professional commitment. However, the lack of autonomy experienced by some participants, particularly in contexts with rigid curriculum requirements or limited resources, often led to frustration and disengagement.

Class size and learner diversity further complicate the teaching of number concepts in the Foundation Phase. Teachers with large classes reported difficulty in providing individualised attention and incorporating diverse teaching strategies. This challenge is well-documented in the literature, with Blatchford et al. (2011) noting that smaller class sizes allow for more effective differentiation and learner engagement. The inability to cater to individual learner needs can negatively impact teacher self-efficacy and professional identity, as noted by Bandura (1997).

Another important aspect of teacher professional identity is its dynamic and evolving nature. As noted by Beauchamp and Thomas (2009), professional identity is not fixed but develops over time through experiences, reflections, and interactions with others. Teachers in this study demonstrated varying levels of identity development, with some actively reflecting on their practices and seeking growth, while others appeared stagnant. Supporting teachers in their identity development through mentorship, collaboration, and reflective practices can lead to more effective teaching and improved learner outcomes.

In conclusion, the findings underscore the complex interplay between teacher professional identity and the teaching of number concepts. Enhancing teacher professional identity requires addressing contextual challenges, providing adequate training and support, and fostering an environment that values teacher autonomy and collaboration. By doing so, educational institutions can create a positive professional culture that supports effective teaching and learning in the Foundation Phase. This aligns with the work of Wenger (1998), who emphasises the role of communities of practice in shaping professional identities and improving educational practices.

Implications of the Study

The findings of this study have important implications for educational policy and teacher development programmes, particularly in the Foundation Phase. First, the influence of teacher professional identity on teaching practices suggests that efforts to improve educational outcomes must prioritise the development of a positive professional identity among educators. Professional development initiatives should move beyond content delivery and focus on nurturing teachers' self-perceptions, confidence, and professional roles (Ajani, 2019). This can be achieved through mentorship, reflective practices, and workshops aimed at reinforcing the value and expertise that teachers bring to their classrooms. Investing in teacher identity is crucial, as it directly impacts motivation, engagement, and the effective delivery of curriculum content, such as number concepts.

Moreover, the study highlights the significant role of school context in shaping teacher professional identity. Policymakers and school administrators must recognise that structural factors, such as resource availability, class sizes, and working conditions, greatly influence how teachers view themselves and their effectiveness in the classroom. Addressing disparities in school infrastructure, providing adequate teaching resources, and reducing class sizes are critical steps to creating a conducive learning environment. When teachers feel supported and empowered within their contexts, they are more likely to adopt innovative and student-centred teaching strategies, enhancing learning outcomes for their students.

Lastly, this study underscores the importance of tailored professional development programmes that account for the unique challenges faced by Foundation Phase teachers (Ajani, 2020). Training that focuses on building pedagogical content knowledge, promoting autonomy, and fostering collaborative learning environments is essential for cultivating a strong professional identity. Efforts should also be made to involve teachers in the design and delivery of these programmes, ensuring they are relevant and address real-world classroom challenges. By doing so, educational stakeholders can create a culture of continuous learning and professional growth, ultimately improving the quality of education in the Foundation Phase and supporting the holistic development of young learners.

Conclusions

In conclusion, this study highlights the critical influence of teacher professional identity on the teaching of number concepts in the Foundation Phase, revealing both positive and negative impacts on instructional practices. Teachers' self-perceptions, shaped by personal experiences, school contexts, and professional development opportunities, play a pivotal role in how they engage with learners and deliver curriculum content. Addressing the challenges faced by educators, such as inadequate resources, large class sizes, and limited professional support, is essential to fostering a positive professional identity. By investing in targeted training, supportive environments, and policies that prioritise teacher well-being and autonomy, educational institutions can empower teachers to effectively nurture foundational mathematical skills, ultimately enhancing learner outcomes and the overall quality of education.

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