The literature on professional learning communities (PLCs) highlights the significance of such communities for sustained teacher professional learning that is likely to result in the improvement of teaching practices (Borko 2004; Brusling 2005). Research studies have tended to focus on two aspects of PLCs: (1) how learning occurs and (2) the success and sustainability of PLCs. The focus of this chapter is on the latter. I argue that the success and sustainability of PLCs partly depend on community cohesion, which in turn is underpinned by the conceptualisation of identity as ways of belonging in community with others. Although there is no universally accepted definition of PLCs, in this chapter, such communities are regarded as groups of teachers collaboratively sharing and critically reflecting on their practice in ways that support ongoing learning and the improvement of practice (Stoll & Louis 2007). This definition foregrounds professional learning as occurring in a cohesive group where the focus is on collective knowledge building (Brodie 2013).

Although it is not the focus of this chapter, I begin by describing some features of what and how teachers’ professional learning occurs in a community. Professional learning involves the use of school-based data for collective inquiry; connecting research-based knowledge with data from school contexts to develop new understandings of practice (Jackson & Temperley 2008); using data and research to challenge long-held assumptions and practices; and trying out and reflecting on new ideas and practices that provide new and better learning experiences for learners (Brusling 2005; Katz et al. 2008). These features support continuing teacher professional learning through cycles of structured professional learning activities that are ongoing and sustainable and that provide teachers with opportunities for collaborative participation ‘in cycles of experimentation and reflection’ (Brusling 2005: 550). These cycles involve identifying learners’ learning needs, and hence teachers’ learning needs, and trying out and reflecting on new practices (Timperley 2009). Collaborative participation in these learning cycles creates platforms for dialogues that ‘enhance constructive sense making and meaning giving’ (Geijsel & Meijers 2005: 426). In such dialogues, teachers learn from one another by discussing local problems of practice and how such problems can be resolved, thereby providing opportunities to deepen understanding by challenging taken-for-granted practices, and proposing and testing solutions with the goal of improving the quality of classroom instruction (Katz et al. 2009). Brodie (2013: 15) argues that PLCs help teachers to ‘challenge their current thinking and to develop new conceptual ideas in mathematics and in relation to teaching mathematics’. These features of learning in PLCs have generated
national and international interest in such communities as a sustainable model of in-service teacher professional development (DBE & DHET 2011).

**PLCs, identity and teacher learning**

Successful PLCs depend on group coherence, collaboration and collective learning (Stoll & Louis 2007). Collective learning refers to learning *with* others in community rather than learning *from* others (Stoll et al. 2004). According to Stoll et al. (2004: 136), learning as a community ‘is underpinned by a sense of belonging and collective commitment to each other’s learning and ensuring that the school is moving’ (emphasis in original). Having a sense of belonging and collective commitment is underpinned by a strong identity as a member of a group.

There are several definitions of identity in the literature. Identity can be viewed as how people define themselves and how they are defined by others (Gee 2001; Grootenboer et al. 2006), and as a relational and sociocultural phenomenon which emerges through interaction with others (Bucholtz & Hall 2009; Gee 2001; Wenger 1998). Maclure (1993: 287) views identity as a tool people ‘use, to justify, explain and make sense of themselves in relation to other people, and to the contexts in which they operate’. Other conceptions of identity include a person’s sense of belonging to a group and achievement within the norms of the group (Bjuland et al. 2007), or a person’s self-concept which is constituted by an awareness of membership in a social group and the values and feelings associated with that membership (Pennington 2002; Wenger 1998). Common themes in these conceptualisations of identity are the social nature of identity (i.e. as a feature of how individuals relate to others in social contexts), that identities are multiple and that identities change. In this chapter, I adopt the view of identity as a relational phenomenon that is shaped through participation in communities of practice (Wenger 1998). From this perspective, identity is best understood in relation to communities in which individuals participate. I adopted this view because the focus of the research was to understand teacher identity in a PLC, which is a form of community of practice. In analysing teacher identity in the PLC, my focus was on the development of group identity through participation in community with others.

Group identity involves awareness of membership in a group, and the values and feelings associated with that membership (Pennington 2002). It also acknowledges collective responsibility for the learning efforts of the group. How teachers identify themselves as members of PLCs has implications for the success of communities. However, identity has received little attention in the research on PLCs. In this chapter, I draw on findings from a study of one PLC to show how the development of identities of belonging in a community with others supported the teachers’ participation and learning.
Conceptual framework

The theoretical framework I used to analyse the development of identity in a PLC is situated learning theory (Lave & Wenger 1991). Situated learning theory describes learning as integral to the social practices of communities of practice where learning involves changes in the forms of participation and identity (Lave & Wenger 1991). From this perspective, learning involves three core processes: participation, identity construction and practice (Handley et al. 2006; Wenger 1998). As indicated above, PLCs are particular kinds of communities of practice. Hence, to understand the work of PLCs, it is useful to analyse how the three core processes of learning in a community of practice emerge in the activities of PLCs.

A fundamental feature of situated learning is the centrality of participation in learning and identity construction in communities of practice; increased participation in communities of practice is regarded as evidence of learning (Koellner-Clark & Borko 2004; Lave & Wenger 1991). Similarly, identity formation is a process whereby individuals understand who they are and in which communities they belong and are accepted (Handley et al. 2006; Wenger 1998). In this sense, identity is a relational phenomenon between the individual and the social context, and is constituted and shaped through participation in different social contexts. Learning and identity are therefore inextricably intertwined.

Identity is connected to practice in that ‘practice entails the negotiation of ways of being a person in that context’ (Wenger 1998: 149). The ways of negotiating may not be explicit, but involve how one engages and relates with others in the activities of the community of practice. Through participation, individuals construct who they are in the community and ‘come to embrace or reject opportunities to participate more fully in their community of practice, depending on the “fit” or resonance of those opportunities with their current senses of self’ (Handley et al. 2006: 645). Thus, how individuals identify themselves as members of the community is fundamental to defining a community of practice and understanding individuals’ agency to participate in the community.

From Wenger’s characterisations of identity, I adopted identity as community membership or modes of belonging as the analytical framework for analysing the development of teacher identity in a PLC (Wenger 1998). My argument is that group coherence in a PLC is affected by the extent to which individual teachers see themselves as members of the community. Wenger’s (1998) view of identity as modes of belonging has three dimensions: engagement, imagination and alignment. These three dimensions are illustrated in Figure 10.1.

Engagement is the ‘active process of involvement in mutual processes of negotiation of meaning’ (Wenger 1998: 173). Engagement therefore refers to participating with others in the activities of the PLC and developing new understandings of teachers’ professional practice. Through such active participation, the teachers develop
identities of belonging in the PLC. At the same time, how the teachers see themselves as members of the community influences how they engage with others, hence the double arrow in Figure 10.1.

Imagination ‘refers to the process of expanding our self by transcending our time and space and creating new images of the world and ourselves’ (Wenger 1998: 176). Wenger likens imagination to ‘looking at an apple seed and seeing a tree’ (1998: 176). Imagination is thus a creative process whereby we create images of ourselves and others, within and beyond the immediate time and context; hence, it is a source of identity formation. With respect to a PLC, imagination refers to how teachers imagine new ideas and practices in their teaching, and new possibilities for their professional practice and their learners. Such imagination influences how individuals see themselves as members of a community and this, in turn, influences how they imagine themselves going forward with others in the community and beyond.
Alignment refers to ‘coordinating our energy and activities in order to fit within broader structures and contribute to broader enterprises’ (Wenger 1998: 174). Through alignment, broader enterprises are formed and participants are connected through the ‘coordination of their energies, actions and practices’ (Wenger 1998: 179). In a PLC, alignment entails how teachers identify with the practice and achievements of the PLC, and how they see these achievements as part of their professional practice. Alignment includes how teachers see themselves working with innovative teaching practices, developed in the community, in their actual teaching. The extent to which individuals view themselves as members of a community influences how they exert their energies and creativity in achieving community enterprises and goals. Thus alignment with the activities of the community influences, and is influenced by, how members understand themselves as members of the community.

Empirical context

The study was carried out at a high school in a township in the Gauteng West District (in Gauteng province, South Africa). The school was recently established and during the year of the study (2010), it had classes for Grades 7 to 11. The PLC consisted of five mathematics teachers and the author was the facilitator. The PLC engaged in a number of structured professional learning activities for a period of 12 months. The study was a pilot for Phase 3 (2011–2014) of the Data Informed Practice Improvement Project (DIPIP), a research project based in the University of the Witwatersrand’s School of Education. The DIPIP project establishes and supports PLCs of mathematics teachers in schools in and around Johannesburg. Its activities involve teachers in analysing learners’ errors, designing lessons to engage with learners’ thinking and jointly reflecting on these lessons. A key principle of the DIPIP project is that in coming to understand learners’ needs, teachers can come to understand their own learning needs: what mathematics they need to learn and how to use this knowledge to improve their practice (Brodie 2013).

The PLC met once a week for two hours after the normal school teaching time during the school term. The mathematics topics that were the focus of the activities were rational numbers (particularly connections among common fractions, decimals and percentages) and ratio (including the meanings and algorithms for ratio). Through the activities, the teachers developed new understandings in areas such as recurring decimals, equivalence of rational numbers, the thinking behind some learners’ errors, the mathematical justification behind some algorithms (Chauraya & Brodie 2011) and some instructional strategies to enhance the learners’ conceptual understanding of mathematics (Chauraya & Brodie 2012b). It is in the context of these activities that the shifts in the teachers’ identities, and how such shifts were linked to the PLC’s activities, were investigated.
**Data and data analysis**

The data consisted of transcripts of audio-recorded individual and focus group interviews before, during and after the work in the PLC. In the initial interview, the questions were about how each teacher saw himself or herself both as a teacher and as a member of communities. The individual teacher interviews were aimed at finding out, through descriptions of themselves in relation to others, how (if at all) each teacher had changed after participating in the PLC. Two focus group interviews were conducted with all the teachers at two different stages during the professional learning activities to find out whether they were developing a sense of belonging as a community. I conducted all the interviews using mainly open-ended questions that enabled further probing for details. In addition, as the facilitator, I observed how the teachers participated in the meetings, which helped me to understand some of what they said in the interviews.

In analysing teacher identity, a coding tool was designed to analyse Wenger’s three dimensions of identity as modes of belonging (namely, engagement, imagination and alignment – as illustrated in Figure 10.1). In designing the tool, codes for each of the three dimensions of identity were developed thematically from transcripts of the teacher interviews (Chauraya 2013). The codes for *engagement* were moral responsibility to the community, ways of engaging with others and relationships with others. For *imagination*, the codes were perceived roles in the community, perceptions of self in the community, perceived benefits of the community and visions for the future of the community. For *alignment*, the codes were identification with community practices, learning in the community and achievements of the community. The codes were not necessarily exhaustive descriptions of Wenger’s three modes of belonging, but were found to be sufficient for analysing identity in the available data. In developing the coding tool, inter-rater reliability was achieved by involving colleagues in coding the data separately and then agreeing on the coding.

The unit of analysis was the individual teacher, with the aim of drawing on this analysis to arrive at conclusions about the group in terms of whether (and if so, how) teacher identity shifted as a result of participation in the PLC. For the individual teacher interviews, the analysis focused on how the teacher described himself or herself before, during and after participating in the PLC. Thus, using the individual as the unit of analysis enabled me to draw conclusions about the collective. The focus group interviews were analysed to determine how the teachers talked about themselves as a group and their participation in the PLC at different stages of the activities.
Table 10.1 contains the biographical data of the teachers at the beginning of the study.

**Table 10.1 Teachers’ biographical data**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Participant Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tandeka*</td>
</tr>
<tr>
<td></td>
<td>Mandla</td>
</tr>
<tr>
<td></td>
<td>Jeffrey</td>
</tr>
<tr>
<td></td>
<td>Janeth</td>
</tr>
<tr>
<td></td>
<td>Bongiwe</td>
</tr>
<tr>
<td>Professional qualification(s)</td>
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</tr>
<tr>
<td></td>
<td>Bachelor of Science (Hons) Advanced Certificate in Education</td>
</tr>
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<td></td>
<td>Higher Diploma in Education</td>
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<tr>
<td></td>
<td>Diploma in Education (Sec) Advanced Certificate in Education</td>
</tr>
<tr>
<td></td>
<td>Diploma in Education; Advanced Certificate in Education; Bachelor of Education Honours</td>
</tr>
<tr>
<td>Major teaching subjects</td>
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<td></td>
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<td></td>
<td>Mathematics, physical science and technology</td>
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<td>Mathematics and physical science</td>
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<tr>
<td></td>
<td>Mathematics and physical science</td>
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<tr>
<td>Years of teaching</td>
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<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>5</td>
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<tr>
<td></td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Mathematics teaching experience (years)</td>
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</tr>
<tr>
<td>Grades taught during the study</td>
<td>Grades 7 and 8</td>
</tr>
<tr>
<td></td>
<td>Grade 8</td>
</tr>
<tr>
<td></td>
<td>Grades 7 and 9</td>
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<tr>
<td></td>
<td>Grades 8 and 9</td>
</tr>
<tr>
<td></td>
<td>Grades 10 and 11</td>
</tr>
</tbody>
</table>

* All the teachers’ names are pseudonyms.

**Teachers’ identities prior to participation in the PLC**

In the individual interviews conducted prior to them engaging in the activities of the PLC, the teachers were asked to describe their relationships and interactions with other mathematics teachers at the school. Their descriptions of themselves as members of communities reflected a sense of belonging in the communities based on their individual preferences as well as the grades they were teaching at the school. The following remarks by the teachers reflect the features of their identities as members of different communities.

Tandeka: Ja, for, for our department especially, if I find that no, in this chapter … ‘Excuse me please help me, how can you,’ and then we go to my class to explain to the learners. You may find that they understand him more than what I do … Yes, or else I go to Mister M … Mister M … please teach me,’ and then we sit down. ‘Here we do this and this, this, this’ and then I find a way …
In her comments, Tandeka portrayed the purpose of her engagement with others as getting assistance with what she found difficult to teach. In her comments, she strongly imagined herself learning from other individual teachers, thus a learner identity. This identity can be linked to her position in the mathematics department of the school. Tandeka was trained to teach at a primary school and had the least mathematics teaching experience of the mathematics teachers. She taught the lowest grades at the school – which could have contributed to her imagining herself as learning from the more experienced teachers.

Mandla: Uh I try to liaise with other educators within the school … maybe trying to solve some problems if I find them difficult for me to address … Just on my wishes yes, but according to the situation sometimes it’s difficult to consult … As far as other educators are, I do get positive support or response from the very same educators, like for instance Mister S and Ms M … they are very much supportive.

Mandla echoed Tandeka’s comment about engaging with other mathematics teachers on an individual basis for assistance. However, he expressed doubt about consulting some teachers, which suggests a limited sense of belonging in community with other mathematics teachers. Such an identity could be explained by Mandla’s position in the mathematics department. Although he had majored in both mathematics and geography at university, at the time of the study, he taught more geography classes than mathematics classes.

The third teacher, Jeffrey, revealed his scepticism about engaging with other mathematics teachers at the school.

I think the type of relationship is good, sometimes you, you work with teachers that you know don’t want to do their work and they want you to do their work, so that is the problem in most cases, where you want someone to do their own work. Teamwork is very difficult because now someone depends on you and is no longer doing their work, so sometimes we are having teachers like that.

Jeffrey’s comment highlighted his somewhat negative view of engaging with others, although he saw possibilities for good relationships with others. Thus, before participating in the PLC, he did not have a sense of belonging in community with others and imagined some teachers taking advantage of others if they were to work as a community.

Janeth’s (the fourth teacher) comments showed that her sense of belonging in the community was limited to teachers who taught the same grade as she did.

I am teaching maths lit with someone. Now we are doing teamwork, if we have a problem … I go there, ‘Mister J … I have a problem with this, please help me, can you please help me’. I like to work with these educators … I don’t know but most like Mister S … I was teaching with
Mister S … last year Grade 8 and 9. Most of the time I was the one who was doing all the assessment, if he is struggling with this, ‘Ma’am can you please help me’.

Janeth’s comments resonated to some extent with Tandeka and Mandla’s descriptions of their engagement with others. She saw her engagement with other mathematics teachers in terms of seeking assistance with regard to more challenging mathematics. For Janeth, her community was limited to the teachers who taught the same grade as she and she imagined it as being of mutual benefit. In the community, she consulted and was consulted by the other teachers. An interesting observation about Janeth’s comments is that she regarded her engagement with Jeffrey as exploitative, with her doing most of the work. Jeffrey, as revealed by his comments, also saw his engagement with others (including Janeth) as exploitative. Such unresolved conflicting perceptions of ways of engaging with others in a community can militate against developing strong identities as members of a community.

The fifth teacher, Bongiwe, described herself as an approachable person who consulted and was consulted by the other teachers.

I am a person who is used to sharing information with teachers. I, I, that is my personality. I am used to sharing information with teachers and whenever I come across something which maybe I, especially mathematics, maybe it can be, it becomes difficult for me to, to solve it, I am not shy to, I am not shy to go to maybe the other person to say that I am struggling with this one. Like yesterday, I was struggling with this with this [inaudible] from Grade nine maths … I didn’t even know the answers until I go to Mister M7 to say ‘But I am struggling to get this answer’.

Bongiwe’s comments differed from the other teachers’ comments. She described herself as open to sharing information with the other teachers and was not shy to ask for assistance from others. Although she saw her engagement with the other mathematics teachers as mutually beneficial, her sense of community was consistent with that of the other teachers and limited to engagement for the purposes of getting assistance from or offering assistance to the other teachers.

Using Wenger’s conceptualisation of identity as modes of belonging, the teachers’ comments above illustrate the existence of some mutuality but also of limited modes of belonging prior to their participation in the PLC. In terms of engagement, their comments indicate ways of engaging with one another based on the need to consult when they had problems. Such engagements supported the development of smaller communities based on individual preferences regarding whom to consult. Three of the teachers saw these engagements as problematic. Mandla’s remark indicates that he sometimes found it difficult to consult some of the teachers, as he often did not get ‘positive’ responses. Such a perception would likely limit his engagement with those teachers whom he perceived as likely to respond ‘positively’ to him. Jeffrey perceived engagement with other teachers as unworkable, as he imagined that he
would do the other teachers’ work. Janeth’s remark indicates preferential engagement with teachers who taught the same grade as she did. Like Jeffrey, she saw some of the engagements as exploitative in that she would do most of the work. These three teachers’ remarks highlight some of the challenges that can constrain constructive engagement with others and the development of group identity. The comments of the other two teachers, Tandeka and Bongiwe, show their appreciation for engaging with others. Tandeka’s description of her engagement with others indicates that she saw herself as learning from others, rather than collaborating with them. Such imagination may be based on a self-perception of being less knowledgeable than the other teachers, thus locating herself as a learner in her engagement with the other mathematics teachers. Bongiwe engaged with others by seeking assistance, and she saw herself as approachable and willing to offer assistance when asked. In short, the teachers’ comments before their participation in the PLC suggest limited ways of engaging with others. None of the teachers referred to their engagement with all the mathematics teachers at the school as community and none spoke about developing new practices or ways of understanding learners from their colleagues.

In terms of imagination, the teachers’ comments highlight an emphasis on self-perceptions drawn from past experiences rather than imagining themselves as members of a cohesive community. Each teacher’s comments can be seen as a description of, and an attempt to justify, ‘who I am’ in relation to others (Maclure 1993) rather than ‘who we are’ as a community (Wenger 1998). There was limited imagination of perceived roles within the community, of benefits of community and of visions of the community going forward. The teachers did not imagine possibilities for cohesive growth as a collective. In terms of alignment, there was limited evidence that the teachers aligned themselves with a particular community practice besides mutual consultation. There was some reference to limited mutually beneficial learning in community with others. No reference was made to identification with community practices and achievements as a community, suggesting limited experiences of successful teacher communities.

**Teachers’ identities during and after participation in the PLC**

During and after their participation in the PLC, all the teachers showed some shifts in their identities. In the interviews, the teachers were asked to describe their perceptions of their relationships and ways of interacting with other mathematics teachers in view of the activities of the PLC. They all made comments that show their identities developed as members of the PLC. They imagined themselves as learning and achieving together as a community. Their comments also indicate alignment with the practices of the PLC. The following are some of the teachers’ comments in the interviews during and after their participation in the PLC.

Tandeka: Sometimes you feel that the information you get from that teacher, that colleague, it is not enough. It is rather better when you are
in a team … and you find that you have more ideas rather than asking one person … Ja, because you may find that there is a problem, you go to another teacher you find that no, even from that teacher it’s difficult, but when we are here sometimes we get [inaudible] from you, so it helps …

Uhm to me, I can say if we can continue, we learn a lot.

Tandeka’s comments show a shift in her perceptions of community. Prior to her participation in the PLC, she engaged with individual colleagues whom she perceived as more knowledgeable for the purposes of ‘learning’ from them. Her comments here show her preference for engaging with the whole community of mathematics teachers rather than with individuals. The words ‘when you are in a team …’ suggest that Tandeka located herself as a member of the community where all the members learned ‘a lot.’ She imagined the community continuing and gaining through learning together. Her comments indicate some alignment with the community practice of learning as a group. Her emphasis on learning resonates with the goal of PLCs (i.e. professional learning).

Mandla’s comments indicate alignment with the practice of the PLC, which was absent in his comments prior to his involvement with the PLC.

Ja. That’s one of the questions I have learnt and as I have been saying eh we plan together, we assess the learners together and we can even gauge the performance of the learners, whether we are going forward or backward.

The comment shows that, for Mandla, collaboratively planning lessons and assessing learners’ performance were the key to the PLC. Planning lessons jointly and using commonly designed tests to assess the learners were PLC activities. For him, aligning with the practice would help the community achieve their goals. His use of ‘we’ highlights an identity of belonging with the others in community and indicates a shift from his identity prior to his participation in the PLC.

Jeffrey’s comments show a shift in his perception of the value of engaging with others, imagination of himself as a community member and alignment with the community’s practice.

Okay, my own experiences are that I can also learn from other teachers how are they solving their sums, and I can gain, I can go and say help me with this, and then I can go and teach it with eh that methodology.

After participating in the PLC, Jeffrey appreciated that engagement with others could lead to significant learning on his part. Like Tandeka, Jeffrey tended to emphasise learning in the PLC. During one of the focus group interviews, he made the following comment:
When we teach, we should be careful about what we say because whatever we say might go wrong to the learners and that is the beginning of an error.

The comment shows learning related to possible sources of learners’ errors in mathematics; in this case, the use of careless language by teachers which was emphasised in the community. Again, the use of ‘we’ shows that he saw himself as a member of the community – a shift from his identity prior to joining the PLC. For him, it was learning together in community with others that influenced his teaching in the classroom. He no longer saw engagement with others as exploitative.

Janeth’s comments also indicate a sense of belonging in community with others and shifts in her identity. The shifts were linked to her imagination of the roles of the PLC which included sharing ideas, supporting each other and going forward.

I think when we work as a team, it’s a good idea, ne, and we support each other, and we gain from each and every one in sharing the ideas, that is why I like teamwork, and then I think if we are going to [inaudible] We learn from other teachers, ne, we learn from other teachers, ne. Like I had problems with some of the topics, then since we had that group, and do the discussions, okay, I have realised that okay in order to get this, this is the right method … Eh, then at least if we sit down like we used to with this group, we are going somewhere. We discuss and then when we are going to give the learners at least it is something … At least, even next year I see that we are going somewhere from this year up until, I am telling you we are going to get the results. We must not stop doing that, even when you are gone, uhm, we must continue.

The comments show a shift in Janeth’s perception of engagement with others: she saw such engagement as mutually beneficial in terms of learning from one another and sharing ideas. This was a departure from her earlier perception of some forms of engagement as exploitative. Her frequent use of ‘we’ shows she imagined herself as a member of the PLC. Reference to sharing ideas and discussing in community with others shows alignment with the community’s practice. The professional learning conversations emphasised sharing thoughts and discussing mathematical ideas in depth. In terms of imagination, Janeth expressed a strong vision for the PLC’s future. Her wish that the PLC would not end also indicates a strong identity of belonging in community with others for the purposes of achieving ‘results’. Her reference to getting results in future shows her imagining the PLC’s achievements beyond the immediate context, which supports identity as belonging in community with others (Wenger 1998). Thus Janeth’s identity shift was based on her imagining herself as a member of the PLC, her alignment with some of the community’s practices and shifts in her perceptions of engaging with others in the community.

Finally, Bongiwe’s comments show her appreciation of learning with others in the PLC. She imagined the PLC as a context where problems of practice could
be addressed, which supported her identity as a member of the community. Her reference to lesson planning was in alignment with the community’s practice of joint lesson planning.

I think uhm teamwork enables us to learn from each other because sometimes you, you have problems and you don’t know where to raise your problems, but when you work in a team at least everything can be solved … and in the case where we do lesson plans because we used to do our lesson plans just haphazardly … I think it ends up maybe making us to, everything that we do in terms of maybe mathematics, let me say so, must be of quality sake, what we have been doing has been for quality’s sake, ja … so truly speaking team work helps a lot, and as a teacher, I would love for the whole department to work as a team because I think we can go very far.

Bongiwe’s reference to quality suggests that her experience of the community was that it could lead to qualitative improvements in the teachers’ professional practice. As the head of department, she was expected to assure quality in the department and she saw the community as a way to achieve this. She also saw joint lesson planning as a means to improve lesson planning, which indicates that she aligned herself with some of the PLC’s practices. Like Janeth, Bongiwe imagined the mathematics department going forward as a community. She expressed the wish that the PLC would continue. For her, there was professional growth in the community:

Ah my feeling is obvious to say let us continue next year … So the better way is to continue next year so that we can grow more than we are doing now.

Like the other teachers, Bongiwe’s comments emphasised learning in the PLC. Her identity as a member of the community was linked to her experience of learning and solving problems of practice together, as well as alignment with some of the community practices (such as joint lesson planning).

The teachers’ comments during and after their participation in the PLC indicate shifts in their expressed engagement, imagination and alignment with the PLC. In terms of engagement, all the teachers expressed appreciation for being able to work on a shared enterprise as a community. Learning together could be a reference to the negotiation of new mathematical understandings with respect to both subject content knowledge and pedagogical content knowledge – something that was common in the PLC’s conversations. Perceptions of engaging in the PLC to learn from one another were likely to foster the construction of identities of belonging in community with others, thereby supporting group cohesion.

The teachers’ comments show that they imagined the community continuing in future, leading to more learning, achieving results and ‘going far’. Their use of ‘we’ underscores that they regarded themselves as members of the PLC. Their comments
show that they imagined themselves going forward together as a community beyond the immediate context, which supports the construction of identities as belonging to a community (Wenger 1998). Such imagination helps to support the cohesion, effectiveness and sustainability of PLCs.

In terms of alignment, the teachers referred to the PLC’s activities, which can be described as the community’s practices. The references to lesson planning, assessing learners, discussing and sharing ideas, and solving problems as a group show alignment with the PLC’s practices – an indication that this alignment was a source of the shifts in the teachers’ identities as community members. As part of their professional learning activities, each teacher taught the jointly planned lessons to his or her class, and the lessons were recorded for joint reflection in the community. In these lessons and their lessons after the professional learning activities, the teachers attempted to implement the ideas that they discussed in the PLC in their teaching (Chauraya & Brodie 2012a, 2012b). These efforts indicate alignment with the ideas and practices developed in the PLC.

Identity and participation in the community

The analysis of the PLC’s conversations shows that the teachers’ participation in the community was not homogeneous (Chauraya 2013). The differences in participation can be linked to the teachers’ developing identities, which were also not homogeneous across the teachers. The differences in identity shifts could be linked to the individual teachers’ participation in the community, although other factors may also have been involved.

Even though Janeth experienced the work of the community as positive, and imagined and aligned herself with the community, some of her comments show that she continued to value engagement with individual colleagues outside the PLC.

I like to work with other teachers. Like myself and Mister M⁹ … we are teaching maths literacy, we are working together.

In one of the focus group interviews, she made a comment that shows she struggled to participate equally with others in the PLC.

Eh ah, challenges ne, for me it’s like uh, once you are asking questions ne M¹⁰ … and then, for example B¹¹ … knows the answers, maybe plenty of them, you are asking five questions and B … eh responds to three and then we keep quiet, it’s like eish you don’t know anything [laughter] to me that is a challenge, it seems like we are doing nothing and we are not thinking, even if we are thinking there is nothing coming out, that’s a challenge. [more laughter]

Janeth made this comment during a focus group interview – an indication that she felt safe enough in the community to raise the challenges she faced when
participating in the activities. Her comment resonates with my views on her participation in the activities: she did not talk much. At times, she seemed to lose track of the conversations and appeared disengaged. In most cases, she needed to be asked for her opinion before she made a contribution. However, when she did speak, her contributions were thoughtful. Janeth’s perceptions of having another community to support her could have been a source of her reluctance to actively participate in the PLC, which led to disengagement from it. The perception can be linked to how she saw herself as struggling to participate equally with others. These observations indicate the contiguity of identity development with other features of the PLC. Although Janeth felt safe to voice the challenges she faced when participating in the community, she seemed to struggle to participate equally with others and this limited participation may have contributed to her feelings of insecurity – which in turn could have militated against her developing an identity as a community member and resulted in her imagining herself as belonging to a smaller, more secure community.

Tandeka’s developing identity was also linked to her participation. She continued to see herself as learning from others – as opposed to learning with others. Such an identity could explain (and be explained by) the way that she participated in the community, where she was reserved and said very little. She listened more than she contributed but when asked directly for her opinion or thinking about the issue under discussion, she made very useful contributions – indicating full engagement with the PLC’s conversations. She was committed to the community and did all the preparation tasks for the sessions. While her commitment to the practices of the community was a source of her identity as a community member, she seemed to imagine herself as an unequal participant in the PLC. This perception of herself can be linked to her awareness of her qualifications and experience as a mathematics teacher in relation to the other members of the PLC. As mentioned earlier, Tandeka was trained to teach at a primary school and had the least teaching experience of the PLC. This could have contributed to her positioning herself as a ‘learner’ in the PLC, rather than as an equal participant.

The other three teachers’ developing identities also resonated with their participation in the PLC. Their participation could have been influenced by a number of factors, some of which are briefly mentioned here. Jeffrey, who had been chosen by the other teachers as the coordinator of the PLC, always encouraged the other teachers to arrive punctually for the meetings and participated actively in the learning activities. He often asked questions to seek clarification on pedagogical issues, which could be linked to his developing experience as a mathematics teacher and desire to learn. At the time of the research, Jeffrey had five years’ teaching experience. Mandla participated actively in the learning activities, often making jokes which provoked a lot of laughter. He had a lot of confidence and did not hesitate to voice his thoughts. Bongiwe participated actively and her participation could have been influenced by her position in the department and in the school. She was the head of mathematics
and science, and a member of the school management team. She had a lot of confidence when making contributions and often strongly believed that her ideas were correct, which could be linked to her position of power at the school. Although she did not dominate the PLC conversations, she contributed more than the other teachers and often asked challenging questions that supported critical reflection on issues. The three teachers’ comments in the interviews suggest a stronger shift in their identities than those of Janeth and Tandeka, and their participation resonated with their expressed identities as members of the PLC. It should be acknowledged that the teachers’ participation in the PLC could be explained by other factors not mentioned here. In this study, there was no clear evidence of the influence of other factors on the teachers’ participation in the PLC. For example, although the PLC consisted of three females and two males, there was no evidence that their participation was influenced by gender.

**Conclusion**

The findings of the study highlight how the teachers developed identities that supported the development of community, and fostered coherence and group identity. Using Wenger’s view of identity as modes of belonging, I have shown how the teachers’ participation in the PLC involved a process of identity construction. The teachers shifted from describing themselves mainly as engaging with other individual teachers to describing themselves as belonging to one community. For the teachers, engagement with others in the community, imaginations of joint learning extending into the future, and alignment with community practices such as joint lesson planning and problem solving supported the development of their identities as members of the community. The findings support the argument advanced in this chapter that identity as belonging is fundamental to the practice and effectiveness of PLCs.

The findings also show that identity development in the community was not homogenous, which could explain individual teachers’ participation and engagement with others in community and the different consequences of their participation (Chauraya 2013). Since participation is fundamental to teacher learning in community, the findings connect teacher identity to the core work of PLCs and the sustainability of such communities. The findings also highlight the role of teacher identity in the group dynamics of the PLC. When teachers in a PLC develop strong identities of belonging together in community, they develop a group identity and cohesion – which in turn will most likely support the effectiveness and sustainability of such communities.

**Notes**

1 Identification with a group does not mean agreement with all aspects of the group’s work (Wenger 1998).

2 In South Africa, the term ‘educators’ is also used to refer to teachers.
3 Referring to Jeffrey.
4 Referring to Bongiwe.
5 Referring to Jeffrey.
6 Referring to Jeffrey, whose surname starts with an S.
7 Referring to a teacher who did not participate in the community.
8 Referring to me, as the facilitator.
9 A teacher who did not participate in the PLC.
10 Referring to me as the facilitator.
11 Referring to Bongiwe.

References
IMPORTANCE OF IDENTITY IN A TEACHER PLC


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