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How pre-service teachers talk about observed lessons: Implications for teacher education

Abstract

The analyses of observed lessons are an important part of learning to teach. Pedagogically focused conversations are one way for pre-service teachers to do so. But how do pedagogically focused conversations enable pre-service teachers to make sense of observed teaching? Using a collective case-study approach, the study qualitatively explored the complexity of pedagogically focused conversations among differently qualified pre-service teachers during a focus-group interview. Complexity in participants' conversations was operationalised using constellations from Legitimation Code Theory. I found that when participants had access to a shared conceptual language of practice, their pedagogically focused conversation could take observed practice apart and analyse its parts in terms of their suitability, what was lacking, and how it could be improved. A more complex conversation means that the pre-service teachers have a conceptual toolkit from which to draw to make sense of observed practice.

Keywords: *constellations, contact learning, distance learning, networking, pedagogically focused conversations, pre-service teachers, shared conceptual language*

1. Introduction

Within a context where education is in crisis, pre-service teachers must develop the capacity to analyse and interpret observed teaching practices. Teaching is an "unnatural and intricate" way of working (Ball & Forzani, 2009: 498), which means that to get to the complexity of teaching, pre-service teachers need to make sense of the parts of teaching that they observe. One way to promote the analysis of observed classroom practices is through pedagogically focused conversations in which teaching practices are analysed using specialised principles of practice. The need to make sense of observed practices is not a new quest in initial teacher education or teaching in general. Pedagogically focused conversations are a valuable way to prepare pre-service teachers to teach in a way that "ensures [learners'] learning" (Cochran-Smith *et al*., 2009: 347). Possibilities for pre-service teachers to develop "critical sensibilities that question what is being done, for the benefit of whom"

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(Waitoller & Kolzeski, 2010: 67) are created through pedagogically focused conversations. This research sets out to investigate the affordances of pedagogically focused conversations as a means of making sense of observed practice.

2. Pedagogically focused conversations

Pre-service teachers should learn several things before they can qualify. Various sources enumerate the kinds of knowledge they need to master during their preparation programme. Shulman's (1987) influential categorisation includes knowledge of the subjects to be taught, knowledge of learners, pedagogical content knowledge, and knowledge of educational policy. Learning to teach requires learning to "use [this] knowledge base to provide the grounds for teacher choices and actions" (Shulman, 1987: 13). Formal knowledge that is used to ground teachers' pedagogical choices and evaluations is shared and transferrable (Moll *et al*., 2010). It can be used to make sense of a shared experience. Cochran-Smith and Lytle (1999) would call this *knowledge for practice*, where pre-service teachers learn a body of disciplinary and subject knowledge to "[scrutinise], [fuse] together and [express] different types of knowing in the moment of practice" (DHET, 2015: 9). Pedagogically focused conversations provide spaces for pre-service teachers to articulate their reasoning, and recruit principles, theories and ideas learned during their formal coursework to make sense of observed practice. This paper contributes to this body of research by investigating the affordances of talking about an observed lesson to connect aspects of classroom practice with insights from teacher preparation.

Ever-increasing numbers of pre-service teachers are briefly given a set of procedures to follow and are then sent into the classroom (e.g. TeachSA and Teaching English Foreign Language short courses) without conceptual knowledge and specialist ways of thinking. There is a growing movement in South Africa and abroad to move initial teacher education into learnership models to get pre-service teachers into schools as quickly as possible. Hofmeyr (2016: 89) claims that alternatively, qualified teacher cohorts have better retention rates, higher throughput rates, and "perform as well or better than those trained in the traditional … pre-service programme".

Although there is great value in learning from a more experienced teacher during teacher preparation (Langsford & Rusznyak, 2024), a crucial part of teacher preparation is the provision of structured, explicit opportunities to learn about the reasons for the observed teachers' pedagogical actions (Rusznyak & Bertram, 2021). Classroom practices, however, are often private and experienced personally (Loughran, 2019), and so an "enquiry stance" could enable pre-service teachers to "envision and theorise their practice" (Cochran-Smith & Lytle, 1999: 289). Spaces for powerful analysis of observed practice may be opened when pre-service teachers discuss their thoughts, opinions, ideas and alternative approaches to the observed lesson. In a pedagogically focused conversation, participants can draw on and extend one another's insights, potentially exposing them to more ideas about the observed lesson than they had originally developed (Langsford, 2020).

3. A policy perspective

South African initial teacher education is regulated by the Minimum Requirements for Teacher Education Qualifications (DHET, 2015). This policy "pays close attention to the various types of knowledge that underpin teachers' practice while encapsulating all of these in the notion of

integrated and applied knowledge" (DHET, 2015: 9). During the *practical learning* component of their teacher preparation programme, which is "an important condition for the development of tacit knowledge … an essential component of learning to teach" (DHET, 2015:10), pre-service teachers need to "theorise practice and form a basis for learning in practice" (DHET, 2015: 10). They do this by observing simulated classrooms, recorded lessons or real-life lessons in which they study practice using "discursive resources to analyse different practices" (DHET, 2015: 10). They spend anywhere between 20 and 32 weeks in classroom settings during their teacher preparation programme, depending on the programme and mode of study, and institution.

One of the opportunities for pre-service teachers to theorise practice is during pedagogically focused conversations. Pre-service teachers need to learn to engage in these conversations because, in South Africa, all in-service teachers are expected to engage in communal professional learning. All teachers should "participate in endorsed continuing professional teacher development activities/programmes" in which they discuss practice (SACE, 2018: 8). Beginner teachers are expected to "reflect critically on their own practice, in theoretically informed ways and in conjunction with their professional community of colleagues to constantly improve and adapt to evolving circumstances" (DHET, 2015: 62). In this communal learning, teachers are to draw on their conceptual teaching knowledge to make sense of the classroom practices and how they can "inform the choices they make in their classroom practices" (SACE, 2018: 9) in the future, as opposed to merely giving a 'blow-by-blow' account of the lesson. These pedagogically focused conversations allow teachers to "identify and challenge policies and practices that discriminate against, marginalise or exclude learners" (SACE, 2018: 9).

In South Africa, teachers need to have a degree to teach. One qualification to become a teacher is a full-time, four-year Bachelor of Education (BEd), where pre-service teachers engage in formal campus-based studies, with periods of practical teaching experiences in different schools each year. Their days are filled with deliberate engagement with educational theory, principles, and pedagogical conversations in which they are to theorise practice, foregrounding a *knowledge-for-practice* (Cochran-Smith & Lytle, 1999) approach. Another route is a Post-graduate Certificate in Education (PGCE), a one-year 'cap' on a relevant undergraduate degree, enabling the candidate to teach. Like a BEd, full-time PGCE pre-service teachers spend their days engaging with relevant theories and principles of teaching with intermittent practical components to enact their developing practice. An increasingly popular route to teaching is through a learnership, where pre-service teachers spend their days in the classroom working as teaching assistants and studying for their teaching, qualification after hours through distance education. Learnerships afford pre-service teachers access to "privileged repertoires of knowledge and practice" (Mawoyo & Robinson, 2005: 111) while they engage with their studies through distance education programmes. Distance education programmes "provide educational opportunities to mature nontraditional, working students who are often unable to access higher education in full-time, contact, and campus-based institutions" (Ngubane-Mokiwa, 2017: 112). Pre-service teachers are immersed within the context of the practice. Learnership students have ongoing opportunities to discuss their practices and those of their mentor, as opposed to full-time students, who go to schools intermittently. Learnership programmes foreground a *knowledge-in-practice* (Cochran-Smith & Lytle, 1999) approach. This study works with participants who have completed a full-time BEd or a learnership with a part-time BEd or PGCE.

4. Literature review

Several studies on in-service teachers discuss and interrogate their own and others' practices (e.g. Kleinknecht & Schneider, 2013; Dick *et al*., 2018), particularly mathematics teachers (e.g. Steele, 2005; Bartlett & Burton, 2006; Borko *et al*., 2008; Clark, Moore & Carlson, 2008; Elliott *et al*., 2009; González & Skultety, 2018). Notably, there seems to be very little on how pre-service teachers engage with others' practices in conversation *with one another*.

In a British study of how nine primary school teachers talk about their teaching practices together, Bartlett and Burton (2006) conclude that teachers' descriptions of practice enabled critical questioning from colleagues. In a study of six high school mathematics teachers in the USA, Horn (2010) also found that recounting personal teaching experiences allowed participants to troubleshoot ideas and give one another emotional support. She distinguishes between 'replays' or 'rehearsals' in professional conversations. Replays are descriptions of the events that unfolded in the classroom, while rehearsals are where the teachers discuss classroom actions in "an imagined or an anticipatory fashion" (Horn, 2010: 231). When teachers could network their teaching replays, the development of a more generalised knowledge of and for teaching was supported. Still, when they gave teaching rehearsals, they related teaching experiences to more generalised examples, supporting the development of "principled teaching knowledge" (Horn, 2010: 241). Rehearsing teaching enabled participants in Horn's study to become more responsive in changing classroom contexts. Similarly, Langsford (2021) found that the participants with access to a less context-bound understanding of teaching were more likely to cope in diverse classroom contexts.

Twenty-one mathematics teachers at various school levels were found to have participated in a pedagogically focused conversation in four distinct ways: challenging the claim; providing evidence for an unsupported claim about practice; summarising or echoing a claim about practice; or making a claim that is either new or related to the previous claim. When discussing mathematical knowledge, the conversations were "crisp and straightforward … well-supported by copious mathematical evidence" (Steele, 2005: 314), while pedagogical discussions were denser, with more 'turns' and qualified more by personal ideas or opinions. In a more recent study, five geometry teachers watched videos of their own teaching over two years and collaborated with others to revise and re-teach the lesson better (González & Skultety, 2018). Analysis of 'discussion segments' of conversations showed that most of the discussions in the video clubs were about learner conceptions about the topic being taught, with very few discussion segments focusing on pedagogy or mathematics itself.

While these studies give insight into different features of pedagogically focused conversations, this research notes two gaps: firstly, research is silent on the pedagogically focused conversations of *pre-service teachers*, and secondly, the studies do not explore the mechanisms that enable pedagogically focused conversations. This research presents a tool to analyse not only how pre-service teachers develop a pedagogically focused conversation, but also the generative mechanisms of those conversations and how complexity is operationalised in discussions of practice.

5. Theoretical framework

Teaching is a nuanced, complex activity, but pedagogically focused conversations tend to comprise 'tips and tricks' (Borello, 2019) because teachers do not have the time to explicate their thought processes in detail (Loughran, Mulhall & Berry, 2004: 371; Loughran, 2019). Dick *et al*. (2018) propose a model of socio-pedagogical norms, which are "participation patterns that become established and subsequently expected when teachers are talking with their colleagues about instruction" (Dick *et al*., 2018: 297). For this study, establishing norms for deeper pedagogically focused conversations among pre-service teachers is valuable. Drawn from 'socio-mathematical norms' (e.g. Elliott *et al*., 2009; Clark *et al*., 2008), socio-pedagogical norms have four types, taken directly from Dick *et al*.'s (2018) writing: providing evidence when making claims, using value judgements; building on one another's ideas; increasing the depth of the conversation. The third and fourth norms provide a useful categorisation of what the pre-service teachers in my study may or may not be doing in their conversations, so I use only these norms in this study.

5.1 Building on one another's ideas

Part of developing complexity is building on one another's ideas. When teachers build on one another's ideas, they engage in joint sense-making (Sherin, Linsenmeier & Van Es, 2009). Dick *et al*. (2018: 301) use this concept to capture "whether teachers' talk turns were directly related to the previous turn [or whether] another teacher followed that turn with something completely different". I argue that pre-service teachers develop a more complex network of understanding of the observed lesson when they build on one another's ideas.

5.2 Increasing the 'depth' of the conversation

Analysing lessons means more than giving an account of arbitrary classroom activities and busyness. Surface-level descriptions of practice restrict pre-service teachers' abilities to "develop their gaze as they learn to teach" (Rusznyak & Bertram, 2021: 45). To analyse something is to take it apart and then determine how those parts fit together (Anderson *et al*., 2005). Pre-service teachers need to examine the parts of practice in their conversations, considering relevant theories and principles of practice, contextual and pedagogical priorities "to move beyond a superficial description of visible classroom routines" (Robinson & Rusznyak, 2020: 523) and towards authentic analyses of classroom practice. By exploring the mechanisms that give professional conversations 'depth', I take up Dick *et al*.'s (2018) challenge for further research to be done on the concept of 'depth' in conversations.

6. Methodology

This research analysed the extent to which two differently qualified groups of beginner teachers network professional teacher knowledge when explicating their pedagogical reasoning around an artefact of practice. To investigate how pre-service teachers enact complexity in their pedagogically focused conversations, I conducted a qualitative collective case study of two groups of differently qualified pre-service teachers. The study assumes a social-realist paradigm, because it sees knowledge as being "[collectively produced] within epistemic communities" (Swift, 2023: 26); yet that knowledge is not reducible to the individual experiences of participants in those communities. A qualitative approach enabled me to investigate the rich, textured accounts (McMillan & Schumacher, 2010) of participants' reasoning to explore the collective production and use of knowledge of teaching.

6.1 Participants

All participants had completed their initial teacher education programmes either part-time with a learnership or full-time, but had not yet begun teaching at a school. Participants were purposively selected because they fit the criteria: they had studied a BEd full-time contact learning or completed a learnership programme with part-time distance study (either BEd or PGCE). Table 1 summarises the relevant attributes of the participants in this study:

Table 1: Summary table of participants in the study

Pseudonym	Teacher preparation programme	Contact or distance study
Ashley	PGCE part-time and learnership	Distance
Karabo	BEd full-time	Contact
Laeticia	PGCE part-time and learnership	Distance
Shanae	BEd full-time	Contact
Taryn	BEd full-time	Contact
Tracy	BEd full-time	Contact
Tshepo	BEd part-time and learnership	Distance

Participants in Group 1 had all studied in a contact mode, and participants in Group 2 had all studied in a distance mode.

6.2 Data collection

Participants were invited to a semi-structured focus-group interview with their colleagues. All participants were invited to watch the same recording of a Grade 8 Social Sciences lesson on climate taught by a novice teacher. During the semi-structured focus-group interviews, I asked participants to discuss what they thought was good about the lesson, what they thought could be improved, and what advice they would give the teacher. This paper reports on the findings of participants' discussions about what advice they would give to the teacher.

6.3 Data analysis

I divided the data into units of analysis, which I defined using Horn's (2010) notion of "episodes of pedagogical reasoning". Each episode consisted of a judgement about the observed teaching and a reason for the judgement. To ensure reliability, my study advisor and I independently coded a sample of the data by allocating a code to each episode and refining the data analysis tool. Once we had reached a point where the analysis tool captured the nuances of the data, I continued to code the rest.

The analytic approach for this paper is drawn from Legitimation Code Theory (Maton, 2014). LCT has been used to analyse conversations between teachers and learners (e.g. Meidell Sigsgaard, 2012), between teachers about teaching, learning and knowledge in their disciplines (Clarence, 2016), and in nursing (McNamara, 2010). I use 'constellations', an analytic approach from LCT that explores constituents of a practice and the relations that actors deem to have between them. A constellations analysis "describes any sort of stances (e.g. ideas, beliefs, practices, etc.) as a selection from a larger set of possible stances" (Maton & Doran, 2021: 51), allowing me to represent the connections in the networks of meaning that participants make between ideas to give the observed teacher advice. Constellations are made up of nodes and clusters. In this study, a node would refer to any aspect of an observed lesson that pre-service teachers regard as significant and worthy of comment, e.g. how the

teacher monitors learning or interacts with a learner asking a question. I am interested in how participants group nodes into clusters of meaning and how they draw links between the nodes, sometimes assigning them a value judgement. The participants in this study observed, analysed, and made sense of the shared lesson from a particular stance, which might be influenced by their engagement with formal teacher knowledge, personal experiences of teaching, personal preferences, etc. Therefore, I can develop an evidence-based visualisation of the networks of meaning developed in each group's conversations.

While comparing the conversations between these two groups of pre-service teachers, I do so analytically to see how pedagogically focused conversations can support their development. To contextualise the study, I have described how each programme prioritises knowledge for teaching. The study contributes valuable findings about how pre-service teachers make sense of observed practice.

6.4 Ethical considerations and trustworthiness

Full ethical clearance was granted by the Ethics Committee in Education of the Faculty of Humanities (protocol number: 2014CE3M). All participants gave their informed consent to participate in and have their conversations audio-recorded for the study. All persons in the lesson recording gave consent to participate in the recording. The interviews were audio-recorded and transcribed by a professional to ensure trustworthiness. Data from participants' rich, authentic conversations mitigated a lack of generalisability in this small-scale study.

7. Findings and discussion

Conversations about how the novice teacher could improve her lesson from the two groups were analytically distinct in terms of their networking and complexity. Group 1's conversation was more networked and complex, displaying more of Dick *et al*.'s (2018) socio-pedagogical norms. Group 2's conversation was more atomistic and disconnected. I begin with an analysis of Group 1's conversation.

7.1 Group 1's conversation condensed clustered, networked concepts

The group discussed the teacher's content knowledge on the topic of climate. Table 2 is the section of Group 1's conversation. Note that main ideas are underlined, formal teaching-specific terminologies and concepts are highlighted, and connections are italicised:

Table 2: Analysis of Group 1's interpretation of the observed lesson

Section of BEd participants' focus group discussion		Analysis
Tarryn:	For me it just didn't seem like she knew what she was teaching. *And if* you don't know what you're teaching, you're not able to teach it, and then the learners can pick it up, and they're not able to learn. *And* you can't answer questions, and she didn't know where she was, or definitions. So, *if* she just took the time to learn about what she was supposedly teaching, *then* she would have been able to teach it a lot more confidently as well, *and* be able to handle discipline matters better, *and* let the children answer the question. She wouldn't have to figure it out for herself. *Then* she'd be able to know when the fact that the children aren't reading graphs, and that they don't know that stuff. Just by knowing what she wants to teach them.	*Theme:* **Content knowledge.** *networked with...* Questioning. *networked with...* Teacher confidence. *which organises...* Discipline. *and...* Questioning. *networked with...* Learner (mis)understanding. *networked with...* Knowledge of content.
Shanae:	*I agree* with Tarryn. If felt like she only knew what was in the textbook, and I think that's why she relied on it so much. *So*, there was no deeper knowledge into that. *And then*, even right at the beginning of the lesson, when she asked the learners "what is climate?" one of the learners actually responded with the exact same definition she gave them later on. *But* she had said to the learner that they were incorrect. So, I think she was searching for one answer, and maybe it was slightly out in terms of the way they phrased it, and then she just discarded it. *So*, it was very evident that she needs to start reading deeper - getting to know content - before she actually teaches it.	*networked with ...* Researching the topic. *networked with...* Learner (mis)understanding. *networked with...* Researching the topic.
Tarryn:	*I agree*. I think *if* she, like Shanae said, knew her content knowledge, she would be able to pick up that the children have made their own understanding, and that they actually do understand.	*networked with...* Learner (mis) understanding.
Karabo:	I *agree* with what you are saying - Tarryn and Shanae - *that* she should have indeed like prepared the content thoroughly, and I also feel like she should allow the learners to actually feel free to talk more in the classroom and to ask questions. *Because* I felt like she did not create an environment where you can feel free to just ask a question.	*networked with...* Researching the topic. *New theme:* **Learner interactions** *networked with...* Inclusive classrooms.
Tracy:	I also *agree*. *Because* when you teach something that you do not understand, it's also a bit difficult to keep relevant examples. I also feel that even though she was asking those questions, at some point she was also not sure of their answers, because learners get different answers, and she would say, "Oh, twenty-five degrees, maybe twenty-six."	*New theme:* **Lesson planning.** *networked with...* Relevant examples. *networked with...* Learner (mis)understanding

Shanae:	I *agree* with what you're saying, Tracy. And I think it *also* comes down to her lesson preparation. There was absolutely nothing in her lesson plan about learner prior knowledge, or learner misconceptions. *And* knowing that beforehand would have helped her in teaching her lesson. *Because* then she'd know which examples to use that would be relevant to the learners. She'd pick up on where they might have difficulty in the lesson. *So*, I think only as the lesson went on, then she picked up, "Oh they actually don't know how to read off a graph," and *then* the explanation after that I don't think was good enough.	*which organises...* Prior knowledge. *and...* Learner (mis)understanding. *and...* Relevant examples. *and...* Barriers to learning. *networked with...* Learner (mis)understanding

In this conversation, eleven teaching and learning concepts were networked with the importance of thorough content knowledge. Group 1's conversation created a dense network of related ideas in seven exchanges. The participants brought several formal concepts to bear on the observed lesson and networked them to create a complex web of ideas that form a cluster of ideas. A cluster is a group of ideas that have a coherence, which organises them around a particular bigger idea (Maton & Doran, 2021). These clusters are then networked to create a constellation: a grouping of clusters. Figure 1 is an illustrative interpretation of Group 1's constellation made up of clusters:

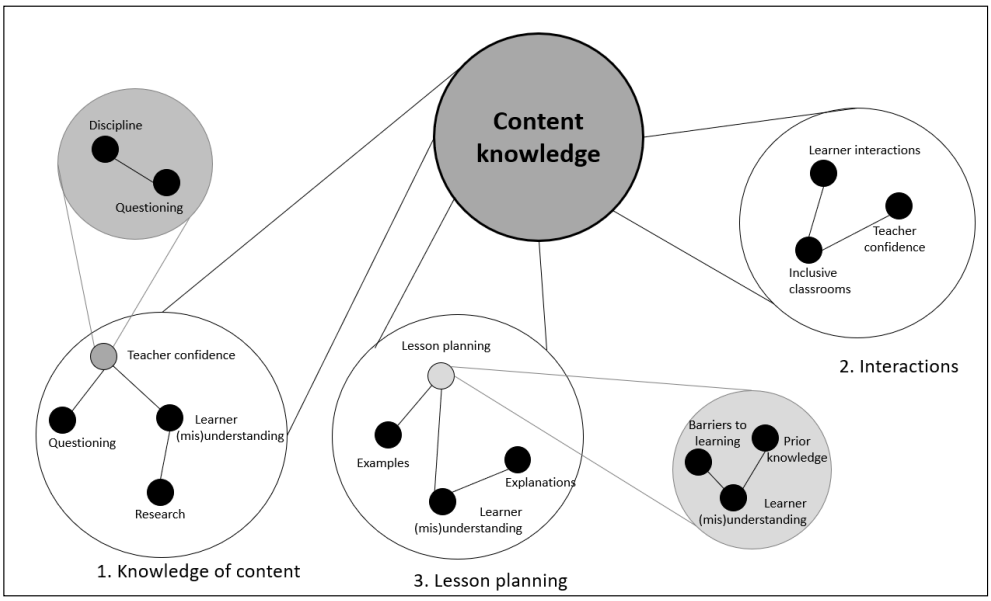

Figure 1: Constellation of Group 1's interpretation of the observed lesson

The conversation was more than tips, as the participants articulated the conceptual bases for their judgements about the teacher's lack of content knowledge to create networks of meaning. Twice, participants did not build on and deepen the previous point. Instead, they introduced a new 'cluster' of discussion. Importantly, these clusters were still related to the

main problem: the teacher's poor content knowledge. Within these clusters, which organised Group 1's conversation, there was significant networking of ideas and even networking of ideas within other ideas, creating 'sub-clusters'. This conversation has three major clusters: preparation, interactions and lesson planning.

7.1.1 Cluster 1

When discussing the lesson, participants were adamant that the teacher should have prepared better for the lesson. Tarryn began the conversation by introducing the main problem: Tarryn thought the teacher was not familiar with the content knowledge of the lesson. She connected this with how questioning was affected by a lack of content knowledge, meaning that the teacher would lack confidence in answering learners' questions. She connected this to the concept of teacher confidence, which she used to organise ideas about her perceptions of the teacher's classroom management and allow learners to ask questions, creating a 'sub-cluster'. Tarryn returned to the main problem to talk about how learner understanding or misunderstanding may be missed if the teacher is unfamiliar with the content. Shanae connected Tarryn's ideas with her observation that, had the topic been thoroughly researched before, Shanae thought the teacher would have noticed other learner misunderstandings. Shanae then linked this idea back to the importance of researching the topic for a successful lesson. Tarryn connected this idea again with the main problem of noticing learner understanding and misunderstandings. Karabo then picked up this idea, agreeing and reinforcing previous claims that she felt the teacher needed to research the content.

7.1.2 Cluster 2

Karabo created a new cluster by introducing a new idea: she believed that the teacher's poor content knowledge would affect how the learners interact in the classroom. She connected this idea with the concept of inclusive classrooms by discussing creating a safe environment where "you can feel free to just ask a question". Tarryn noted how understanding the content knowledge promoted teacher confidence and then linked this back to how, if a teacher is confident, she would allow learners to discuss and interact in class, thereby creating an inclusive classroom. Tracy agreed.

7.1.3 Cluster 3

Tracy created a new cluster by bringing in a new idea that teachers could select appropriate examples when they understand the content knowledge. Tracy connected this idea, noting that teachers cannot give accurate information when they do not understand their content knowledge, promoting learner misunderstanding. Shanae then summarised the conversation by formalising and networking several ideas: she connected Tracy's point with a perceived lack of content knowledge. She then linked several different ideas to rigorous lesson planning, creating a sub-cluster where a teacher can organise ideas using thorough lesson planning: if one does not plan thoroughly, one cannot cater for learner misconceptions; then learner misunderstandings are promoted; then one cannot choose relevant examples; this promotes barriers to learning. Shanae finally returned to the larger network, noting her perception that the teacher only noticed learner misconceptions while teaching, which Shanae felt made her explanation inadequate.

7.1.4 Discussion of Group 1's conversation

Group 1's pedagogically focused conversation was characterised by a relatively densely networked structure, with participants frequently connecting teaching- and learning-specific ideas with one another. Similarly, Steele (2005) found that the pedagogically focused conversations in his study were 'dense.' Like the participants in González and Skultety's (2018) study, participants focused on the content knowledge of the lesson. However, what made Group 1's conversation in my study different from that of Group 2 was that Group 1's participants had a shared conceptual language to discuss the observed lesson. These participants had established what Dick *et al*. (2018) call "socio-pedagogical norms". Drawing on their "conceptual toolbox" (Winch, 2012: 4), the participants could build upon one another's points to develop a detailed critique of the teacher's lack of content knowledge because they could articulate their pedagogical reasoning using a shared conceptual language. This was evident in their tendency to take up and extend one another's ideas using words like 'and', 'if', and 'but'. This finding echoes Steele's (2005) study, where teachers participated in a pedagogically focused conversation by summarising or echoing a claim, and they participated either by making a new or related claim to the previous. This increased the depth of the conversation as they had the shared conceptual tools and vocabulary to break the practice into its constituents collectively, evaluate what was there, notice what was not there, and give their grounds for those evaluations. The mechanism which gave this conversation its depth was access to that shared conceptual language. Furthermore, because these participants could network their ideas (in what Horn, 2010, calls 'teaching replays'), the development of a more generalised knowledge of and for teaching may be supported more. In relating the specifics of the observed lesson with more generalised examples (what Horn, 2010, calls 'teaching rehearsals'), the development of knowledge for teaching in any context is supported (Horn, 2010; Langsford, 2021).

Such critical discussions using a shared conceptual language generate opportunities for pre-service teachers to improve their practice, becoming "a window into the professional knowledge of teaching" (Loughran, 2019: 526). Access to a shared conceptual language of practice enables pre-service teachers to "[evaluate] the current situation … and [give] a sense of alternative ways of acting" (Biesta *et al*., 2018: 52). When pre-service teachers have a shared conceptual language, they draw on ideas removed from a specific context (Moll *et al*., 2010), enabling them to see beyond the context of the observed problem situation. Pre-service teachers can draw upon one another's perspectives via their shared language "by adopting and modifying tools and concepts so they fit the demands of their own context" (Grossman & Pupik Dean, 2019: 158).

7.2 Group 2 discussed their ideas as atomistic, discrete suggestions

Group 2's participants presented various ideas of how the teacher could improve her lesson. They created four separate nodes, one connected with another idea. Table 3 is an extract from Group 2's conversation:

Table 3: Analysis of Group 2's interpretation of the observed lesson

Laeticia:	I think she should stop limiting teaching strategies. She should just try out different teaching strategies and see how they work for her in the classroom. That's what I think.	***New idea:*** **Teaching strategies.**
Interviewer:	Okay. So, she needs to stop limiting and start trying out. Okay?	
Ashley:	I think she must stop being too much in front (sic.). She must go and interact, and not only when she answers questions. But I think with that subject, sometimes she has to explain stuff, she must walk through the learners (sic.) and interact with them more...while she's busy presenting.	***New idea:*** **Interactions with learners.**
Interviewer:	Okay, so she needs to stop standing in front, and start moving around. Okay, that's very interesting.	
Tshepo:	For me, when she asked questions, I would rather have her asking follow-up questions. And not look for the right answer. When you ask questions, stop looking for the right answer. Yes, we know that um there is a definition for climate, you see. *But then in order for* learners to be free in the classroom and express themselves and what they think, rather than expecting the correct answer, you must start building on what the learners are saying. Because some of what they're saying is true. So rather use what is good from what they are saying. So that at least they see that their contributions are not for nothing.	***New idea:*** **Questions.** *networked with...* Learner expression.
Interviewer:	So, she should use follow-up questions?	
Ashley:	I think the other part is she should stop not caring for the learners in a way. Try to see if learners understand in a way. Because in her lesson, I think some of the learners, they missed her (sic.). I think she should stop continuing further, further, and further.	***New idea:*** **Learner understanding.**

Five ideas were shared in this conversation, but only two were connected with each other – and by the same person. Group 2's conversation was highly segmented over the four exchanges. Although they brought some ideas to the conversation, it was atomistic, with very few networks of meaning developed. The four nodes were disconnected from one another, with no main problem identified. Figure 2 illustrates Group 2's constellation:

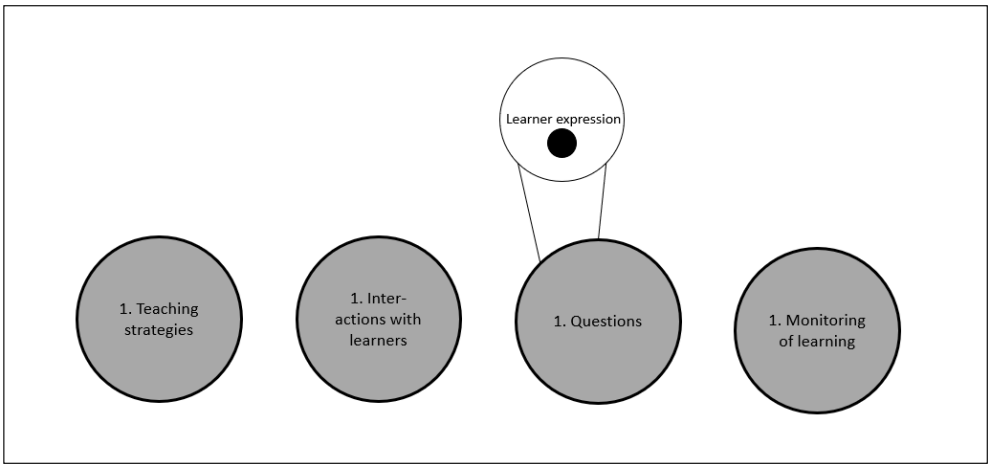

Figure 2: Constellation of Group 2's interpretation of the observed lesson

Group 2's participants tended to introduce new, disconnected ideas, so the four nodes (teaching strategies, interactions with learners, questions, and learner understanding) were not anchored to any problem the group was trying to solve.

7.2.1 Node 1

Laeticia introduces a new idea about the teacher's teaching: Laeticia felt the teacher should try using more teaching strategies in her lesson.

7.2.2 Node 2

Ashley introduced a new idea when he postulated that the teacher should increase her interactions with the learners, describing how she should walk around the classroom while teaching.

7.2.3 Cluster 1

Tshepo introduced a simple cluster of ideas, expressing his opinion that the teacher should ask more follow-up questions, connected with how learners could express themselves when there are follow-up questions.

7.2.4 Node 3

Ashley introduced another idea where he spoke about monitoring learning.

7.2.5 Discussion of Group 2's conversation

Group 2's participants' conversation drew on more everyday ideas, such as talking about "explaining stuff" and using vague pedagogical principles, such as walking between the learners. Group 2's conversation had a contextually more relevant language on which to draw. Notably, Group 2's participants did draw on a shared conceptual language to discuss the observed lesson. These participants could not establish socio-pedagogical norms to guide their pedagogically focused conversation without a shared conceptual language. Without a common language and set of understandings, participants could contribute to the conversation

by adding a new idea, not by building on what had come before. Their conversation was like a list of 'dos and don'ts'. Group 2's conversation can be described as superficial, atomistic, or segmental.

This finding is surprising because, by the nature of a distance programme with a learnership where pre-service teachers spend their days in classrooms, these participants would have had far more opportunities for rich, pedagogically focused conversations with mentor teachers than students pursuing contact studies. However, as Loughran (2019) laments, the busyness of classroom life prevents these powerful conversations from happening. Furthermore, these students are often assigned to a single school for their studies, cutting down teaching opportunities in other contexts. These participants seem to draw on educational theory "in a contingent manner in service of concerns that arise in practice", which is "unlikely to provide [pre-service teachers] with the conceptual tools to respond in theoretically informed ways to limitations and structural constraints associated with prevalent practices" (Rusznyak, 2015: 19).

8. Conclusion

A shared conceptual language gives pedagogically focused conversations more depth. I began this paper by arguing that education in crisis needs teachers to be able to analyse the parts of teaching to see what is and what is not working. This research proposes one way to do this is through pedagogically focused conversations. Socio-pedagogical norms provided a useful theoretical orientation to the study. At the same time, Legitimation Code Theory's constellations enabled analytical robustness to show how pre-service teachers condense networks of meaning in their pedagogically focused conversations. I found that when the participants in this study drew on a shared conceptual language in these conversations, their pedagogically focused conversations had more depth; they could build on and extend one another's ideas, enabling meaningful engagement with the observed lesson beyond giving tips for teaching. When participants did not draw on their shared conceptual language in these conversations, the conversations were relatively segmental with few connections made to unpack and generalise.

Further study is required to investigate the ways in which teacher preparation programmes can promote meaningful pedagogically focused conversations as developmental opportunities.

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