

## CHAPTER 18

### **Teacher Contexts as Amplifiers and Filters to Environmental Pedagogical Content Knowledge within a Professional Development System**

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#### **Contextualising the research question**

The chapter draws on the contextual work underpinning a broader study that aimed to understand how environmental pedagogical content knowledge is supported and constructed in the Fundisa for Change teacher professional development (TPD) courses (Brundrit 2018). Necessary to this was an understanding of the contextual realities (amplifiers and filters) of the system in which the course occurs, leading to the question:

How do school and classroom contexts act to amplify and filter the environmental pedagogical content knowledge learning of teachers in a teacher professional development programme?

#### **Pedagogical content knowledge and teacher professional knowledge**

The framework underpinning this contextual work is informed by pedagogical content knowledge (PCK) research that has grown out of Shulman's conceptualisation of the notion in the mid-1980s. In October 2012, a PCK Summit was held in Colorado Springs, USA, that aimed to work collaboratively towards consensus around the definitions,

terminology and assessment of the concept of PCK, as well as to guide future research. In the definition that emerged from the PCK Summit, PCK is portrayed as personal or private professional knowledge held by an individual and which relates directly to classroom practice. In this sense, while teachers' knowledge and pedagogical practices are socially formed through professional learning, interaction and practices, the PCK of one teacher would not be the same as the PCK of another. Classroom practice is divided into two related parts: the planning for teaching and the skill involved in the act of teaching. It is described as the space in which personal PCK interacts with classroom context (see Thomas and Songqwaru, Chapter 17 who argue the importance of taking cognisance of PCK in context). At the Summit, PCK and the construct PCK and Skills (PCK&S), were defined as follows:

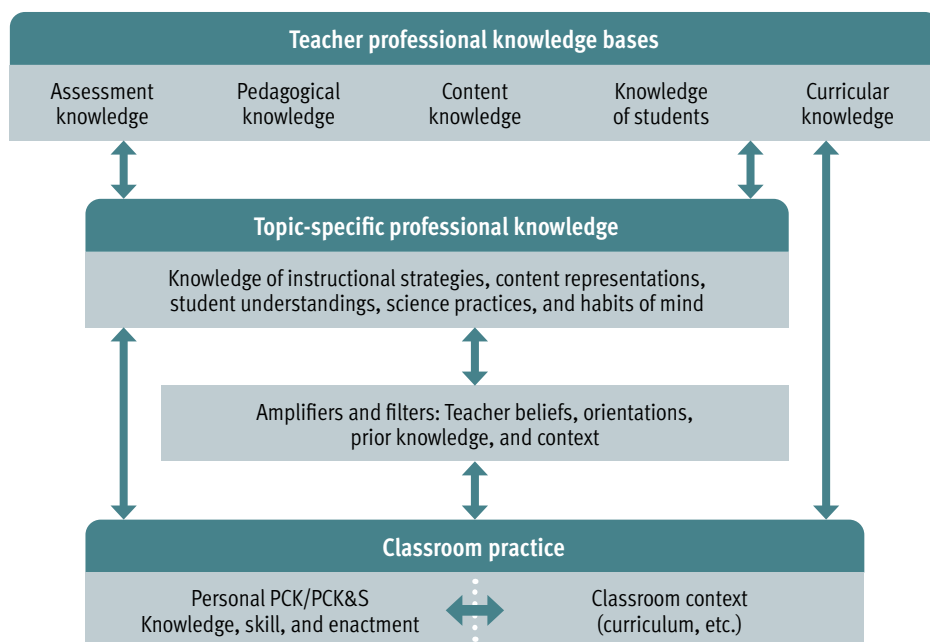
- *Personal PCK is the **knowledge of, reasoning behind, and planning for** teaching a particular **topic** in a particular **way** for a particular **purpose** to particular **students** for enhanced **student outcomes** (Reflection **on** Action, *Explicit*).*
- *Personal PCK&S is the **act** of teaching a particular **topic** in a particular **way** for a particular **purpose** to particular **students** for enhanced **student outcomes** (Reflection **in** Action, *Tacit or Explicit*). (Gess-Newsome 2015: 36)*

The definitions have allowed for the **analytical** separating out of the necessary related knowledge used for teaching, and the skill involved in the enactment of teaching as teachers apply this knowledge within their classroom contexts. The definitions also refer to the use of PCK at different times – first in the planning for teaching and second in the act of teaching. In planning for teaching, PCK is applied in the form of 'reflection *on* action' (Schön 1983), during which knowledge for teaching a particular topic, and reasoning for choices made with regard to how to teach it, are brought together from past experiences (Park & Oliver 2008). Personal PCK can thus be made explicit through the planning process. The act of teaching requires personal PCK&S and tends to be far more tacit as teachers 'think on their feet' and make decisions in split seconds – the 'why' of which are very hard to capture after the fact (Gess-Newsome 2015).

Another result of the PCK Summit was the Summit Consensus Model of teacher professional knowledge and skill, a section of which is shown in Figure 1. The model is used to clarify and develop the conceptualisation of teachers' PCK in terms of its relationship to other teacher professional knowledges. The top level of the model draws on Shulman (1986), to present a set of five teacher professional knowledge bases that collectively represent generalised teacher professional knowledge. These knowledge bases include knowledge of assessment, pedagogy, content, learners and curriculum.

Separated out from the generic knowledge bases are the knowledges that can be applied to the teaching of a particular topic at a specific grade level. These are listed as 'knowledge of instructional strategies, content representations, student understandings,

science practices and habits of mind' (Gess-Newsome 2015: 31). Both teacher professional knowledge bases and topic-specific professional knowledge are canonical knowledges held by the teaching community, and it is from these knowledges that personal PCK and PCK&S emerge through specific people in specific circumstances.



**Figure 1.** Selected section of the Summit Consensus Model of teacher professional knowledge and skill (Gess-Newsome 2015: 31)

Separated out from the generic knowledge bases, but shown in Figure 1 as informed by and informing them, are the knowledges that can be applied to the teaching of a particular topic at a specific grade level. Both teacher professional knowledge bases and topic-specific professional knowledge are canonical knowledges held by the teaching community, and it is from these knowledges that personal PCK and PCK&S emerge through specific people in specific circumstances.

Consideration of specific people in specific circumstances is captured in the Summit Consensus Model through the inclusion of the filtering or amplifying powers of teacher beliefs, attitudes, orientations, prior knowledge and context. These filters and amplifiers affect teacher personal PCK and PCK&S as well as their classroom practice (Luft & Roerhig 2007; Opfer & Pedder 2011; Gess-Newsome 2015). The implication is that amplifiers and filters cause teachers to 'pick and choose' from knowledge presented during professional development programmes, according to their perceived context, instructional orientation, learners, beliefs, and so on, as they evaluate the new information. The existence of amplifiers and filters in the Summit Consensus Model provides a means of understanding why the PCK of individual

teachers can be varied despite the same input from teacher training and professional development programmes. Although the Summit Consensus Model flags teacher beliefs, orientations, prior knowledge and context as potential amplifiers or filters of teachers' personal PCK, aspects of teachers' context emerged as dominating themes in this research and will occupy the focus of this chapter.

## The teacher within a professional development system

The Summit Consensus Model provides thinking tools for describing knowledge, its professional basis, and its transformation as it is reconstructed and put into practice by individual teachers. Contextual factors such as 'access to high-quality professional development ... as well as the nature of the professional development' can impact on 'what a teacher knows and how knowledge may or may not be used' (Gess-Newsome 2015: 35). The model shows the influence of context on the teacher in two sites: as amplifying or filtering teachers' knowledge, skill and enactment; and as classroom context, included in the classroom practice level in the Summit Consensus Model.

Developing the element of context even further, Grangeat and Hudson (2015) draw on the Summit Consensus Model and identify three types of teacher contexts as mediating teacher professional knowledge:

- **Social context**, comprising the habits and repertoire of the actions of the teacher group, orientations, culture and habits of mind of the teacher group, and the type of leadership and organisation of the collective work.
- **Classroom context**, comprising classroom practice and student outcomes.
- **Instrumental context**, including teaching resources and in-service education materials. (Grangeat & Hudson 2015: 210)

All of these contexts will be engaged with in this chapter as the case study is introduced and examples are given to illustrate how the amplifiers and filters have been understood within the broader context in which the teacher professional development happened.

## Methodology

The objective of this research was primarily to describe an iteration of a Fundisa for Change teacher professional development course and the context in which it occurred. To achieve this, a descriptive case study research design was used to describe and examine in detail the development and construction of environmental PCK in this course. The course took the form of five three-hour sessions focused on the content, pedagogy and assessment of environmental topics within the Grades 4–6 'Life and Living' knowledge strand of the Natural Sciences curriculum. The activities making up the course were designed to model various active learning teaching strategies.

## Participating teachers

The seventeen teachers attending the Fundisa for Change course were all in the process of completing a two-year part-time in-service Advanced Certificate in Teaching (ACT): Senior Phase Natural Science at the University of Cape Town (UCT). All of the teachers participating in this study were teaching at public schools, with one of those being a special needs school. The ACT entails commitment to travelling to attend lectures, often twice a week, for three hours, from 4.00 to 7.00 p.m., after school. The Fundisa for Change Teaching Life and Living Course was taught as part of the ACT lectures at venues located on the UCT campus. The teachers' ages ranged from twenties to fifties, with varying years of experience and pre-service training. For the data presentation that follows, alphabetical letters are used to represent the anonymous feedback from the questionnaires and pseudonyms are used to protect the identities of the teachers that were interviewed.

## Data generation processes

The amplifiers and filters described below arose as themes from the data and were recorded in analytic memos during the analysis. The themes were compiled by drawing on the following data sources:

- teacher contextual profile questionnaires,
- session transcripts capturing the facilitator transactions,
- transcripts of the group discussions,
- group outputs during the course activities, and
- teacher reflections on the activities – taken from the course reflection and evaluation forms.

## Role of context as mediating transformation of professional knowledge into PCK

The influence of the teaching contexts was analysed in terms of the five teacher professional knowledge bases of PCK that were identified in Figure 1: assessment, pedagogy, content, learners, and curriculum. The contexts investigated included the social context, classroom context, and the instrumental context of the teachers. Within each of these contexts, descriptions of the evidence of filtering and amplifying on the pedagogical reasoning and emergent PCK for the five PCK knowledge bases is now presented and discussed.

### The mediating role of the social context

The social context of the teachers refers to the broader professional culture of the school community, its leadership and expectations. Research has shown that 'the social

context in which teachers are embedded influences their PCK growth' (Grangeat & Hudson 2015: 208). Professional practices such as professional collaboration and being part of a learning community at school are seen as opportunities for teachers informally to develop their PCK and further their professional learning (OECD 2014).

Teacher contextual profile questionnaires revealed that the more frequent professional community behaviours engaged in by this group of teachers were: exchanging of pre-prepared teaching materials with colleagues; engaging in discussions about learning development of individual learners; and collaboration around common assessments. Less frequent behaviours were: observing other teachers teaching and co-teaching. Attendance of team meetings appeared to vary, as did taking part in collaborative professional learning.

Within the Fundisa for Change course, the most significant aspect in terms of ability to promote teacher environmental PCK appeared to be the opportunities for collaborative group work. Also of importance was the atmosphere of trust and mutual respect among the teachers on the course and between teachers and facilitators.

Each of the five sessions that comprised the course were between two and half and three hours long. Altogether, during the course, teachers spent 55% of the time in focused discussion. In reflections on an activity where groups planned conceptual progression for the teaching of an environmental topic, ten of the fifteen teachers referred to the advantages of doing the activity in a group. Teachers were also exposed to collaborative lesson planning that related to content, conceptual progression, pedagogy and assessment of an environmental 'big idea'. In their reflections on this activity, half of the teachers referred to specific aspects of their own learning about the lesson-planning process that had been developed in some way. Teacher B stated that the process 'Gave me a better understanding of the concepts that need to be present in an ecology lesson'; Teacher I commented that 'It makes me think carefully of what is my aim for this lesson, what do I want my learners to achieve' while Teacher L's learning was to 'accommodate all levels of understanding when you plan the lesson. Involve a variety of teaching aids'.

A further quarter of teachers' reflections on their learning, related their learning back to the group work that had preceded the lesson planning, making comments such as:

'This was very useful. I could learn from others and gain new ideas. Also, everyone had their own ideas to bring to the table and we brought it together very well.' (Teacher F)

'The group planning was good in that it led to ideas coming together then being perfected. It is different from individual planning where one just looks at one's ideas and develops that.' (Teacher K)

'This promotes team teaching as teachers plan together the same topic. Learners in different classes can be taught using the same lesson plan.' (Teacher O)

In addition, in the evaluation form, four of the fifteen teachers commented that the best aspect of the course facilitation was the group work and planning for teaching. This was supported with comments appreciating interactive engagement with topics, group planning and group presentation. Opportunities for active and collaborative learning appeared to be an amplifier for the transformation of professional knowledge into personal PCK for teachers on the course and acted in a general way across PCK knowledge bases.

### **The mediating role of the classroom context**

‘The way classroom practices unfold and students perform, directly interacts with teacher professional knowledge’ (Grangeat & Hudson 2015: 210). This observation was evident in the study, where a number of aspects of the classroom contexts of teachers participating in the course had the potential to have an amplifying or filtering effect on how they selected knowledge and actions for the classroom.

#### ***Influence of class size and discipline on teachers’ pedagogical choices***

Four of the teachers mentioned discipline and behaviour-related issues as specific challenges, with two of these teachers linking discipline problems to overcrowding in the classroom. Nine of the teachers had class sizes of between 27 and 40 learners. Seven had classes of 40 or more learners, with the largest class size being 51. One teacher, teaching in a special needs school, had a class size of 14. In one of the sessions, while giving group feedback on an activity regarding different teaching strategies, Phumza, a Group 2 teacher, commented: ‘I think these methods would be good but for our number of learners in our classes it’s going to be too hard.’ Her group indicated agreement. In another instance, Viwe, a Group 1 teacher, commented on the practicalities of showing a short movie in class:

‘Ja, ja. But being realistic, yes some of us do it in smart schools and do have the capabilities already to show movies like this. But the sad reality perhaps, is that most of us are faced with classes that reach 50 learners, so how ... are you going to keep it constructive in a scenario like this?’

#### ***Influence of language level of learners on teachers’ assessment and pedagogical choices***

In questionnaires, just over half of the teachers reported that their classes had more than 75% of learners with their first language different from the language of instruction. Asked about specific challenges they have with their target group of learners, three teachers mentioned learners’ lack of reading and/or writing skills as specific challenges, with one of these teachers observing that the learners actually resist reading and writing activities. Another teacher mentioned language of instruction as a challenge. This teacher also noted in particular the scientific terms used in the environmental

topics as needing a lot of explanation time. Of the teachers mentioned above, three have close to 100% of learners in their class having their first language different from the language of instruction. Some of the ways in which the teachers adapted their practices to accommodate these challenges are illustrated by the comments below. The first comment by Lindiwe from Group 2 describes a formative assessment strategy (see Mgoqi and Schudel, Chapter 3) the teacher uses to know if learners have understood text:

**Lindiwe from Group 2:** ‘So we go through it like, Question 1 what is your answer? One person. And then did anyone have another answer? Okay, that one. And then we say okay that was *the* answer. Why is that the answer do you think? Just ten minutes. Not more than ten minutes and then I’m done. And then that for me, I found that that also kind of consolidates that they understood what was happening in the notes and also how to apply the notes to the questions in the activity ... I found that using that ten minutes kind of strengthens their understanding, the strong ones ... we always have those ones that lag behind. But, like, the strong ones, they do get it after a while ... they do get what you are trying [to do] and they become more responsive.’

A number of teachers felt that the language level of learners impacted on the way in which they structured their assessments. One teacher felt that his desire for learners to pass made him avoid questions with higher cognitive demand. Another teacher explained that he avoids questions requiring lengthy writing but rather asks learners to provide point-form factual answers. However, this strategy would mostly result in a lowering of the cognitive demand of questions. Another teacher suggested providing a framework to make the meanings of the action verbs, such as ‘describe’ and ‘explain’, explicit. This strategy was acknowledged as providing scaffolding to learners. Thus, teachers’ time pressure and understanding of learners’ language ability were seen as impacting on both the form and cognitive demand of assessment tasks.

In another activity, teachers recognised discussion of word definitions as a useful generic teaching strategy for supporting language and vocabulary development. Language and science terminology in particular were mentioned by teachers both in the contextual profile questionnaire and during the course as important but time-consuming to teach, due to many classes having high percentages of learners with their first language different from the language of instruction. One of the ways in which the teachers adapted their practices to accommodate the language challenge is illustrated by the comments from Group 1 below, made during a discussion on learners’ responses to the words ‘Explain’ or ‘Describe’ being used in an assessment:

**Daluxolo:** With most of them [the learners] you find that there is a language barrier. They start explaining and they start writing something else totally. So what I try to do is ‘identify your main facts and then write



them in point form'. So, I don't know, is that good? Is it bad? Because when they start explaining, I tell you it's ...

**Nomvuyo:** You have to give them a framework. It's good then if they write in full sentences. You teach them.

**Daluxolo:** Yes, during classwork I do that, but then when it comes to examinations I try to limit them from writing because they really go way out of the topic. They fail to get the whole idea.

### The mediating role of the instrumental context

The instrumental context includes teaching resources such as textbooks, materials from teacher professional development courses and the curriculum document as well as classroom furniture such as tables, whiteboards and data projectors (Grangeat & Hudson 2015: 210).

Themes emerging that related to instrumental contexts were the effect of teachers' perceptions of the curriculum and the availability of resources. These themes appeared to impact on the pedagogical and assessment knowledge bases of the teachers' PCK.

### *Influences of curriculum time allocation on assessment knowledge*

The development of assessment knowledge in the Fundisa for Change course was skills-based at a general, subject and topic-specific level. Findings showed that the teachers appeared to have improved their understanding of how formative assessment strategies such as feedback can be used in their classrooms to further their learners' cognitive development and seemed to have a more defined idea of what actions they needed to take to implement these strategies. Teachers did, however, express that they felt constrained by the time allocations given to topics in CAPS in their performance of the formative assessment strategy of giving feedback. In this extract from a group feedback conversation about formative assessment in the fourth session, the teachers explain:

**Thenjiwe:** The problem is time allocated to CAPS ... It's working through the content. There's no time allocated for feedback. When you give them a test, you mark it at your own time because you are rushing to teach them something new again. We don't have time to really look at the assessment and discuss it. We would like to do that, but we don't have time. Really.

**Sonwabo:** I agree with Thenjiwe about time because ... you are teaching to assess, to cover what the CAPS document wants you to cover, not what you want the kids to understand.

The course included an activity of how to use the revised Bloom's Taxonomy (Krathwohl 2002) to identify the cognitive demand of questions and, through the use of appropriate verbs, develop higher order thinking skills in their learners as per the Curriculum and Assessment Policy Statement directives. Discussions gave teachers the opportunity to collaboratively create an understanding of the knowledge and cognitive dimensions of the revised Bloom's Taxonomy. Feedback given by the teachers at the end of the session appeared to reflect an increased awareness of the amount of thinking about questions required in setting up assessments, with regards to the cognitive demand of the questions. The process of checking the cognitive levels of questions was, however, seen as time-consuming. Thus, time pressure was seen as a filter to the use of these aspects of assessment knowledge.

### *Influences of curriculum time allocation on pedagogical choices*

In another activity, to develop the link between teaching strategies and educational purpose, teachers were first asked to read brief descriptions of a variety of generic teaching methods and to consider the relevance of the methods to their subject. The purpose was to remind teachers of the variety of strategies that exist, as 'a broader range of different kinds of methods generally helps us to address a broader spectrum of environmental learning outcomes' (Rosenberg, O'Donoghue & Olvitt 2013: 3). In the feedback immediately after the session, one group of teachers argued that the assessment focus of the curriculum was the reason why they did not use a variety of methods. On the reflection and evaluation form, the majority of teachers' reflections acknowledged that different methods served different purposes and that some could be used to make lessons more interactive and help them to plan with purpose and coherence. In the second part of the activity, teachers were tasked to make the link between teaching methods and the different purposes they serve, explicit. This part focused on general teaching strategies, thereby developing knowledge of instructional strategies at a general level. Teacher learning from this activity indicated an understanding that learning goals can be achieved using different teaching methods. Comments arising during the class feedback varied from seeing the potential of using a variety of teaching methods to keep the interest of learners, to anticipating problems with implementation due to class size.

Another problem raised during group discussions was that there was not enough time allocated for practical work, despite practical work being recognised as motivating for learners. In the teacher contextual profile questionnaire, four teachers mentioned motivation of learners as a specific challenge to their teaching. One of the teachers wrote that learners with social issues 'lack motivation and vision for the future'. This same teacher also saw motivating learners as part of his role as a teacher and a way of maximising learning in his class. He stated that he knows that learning is occurring in his class 'when learners are motivated to face a new challenge'. Motivation was also linked to opportunities to do practical work in class, with one teacher commenting that 'they get so interested and show eager[ness] to work when given practical work',

and another observing that ‘they enjoy it a lot because they are in most cases working in groups’. Practical work also has the potential to be an opportunity for learner self-regulation and this was mentioned by two of the teachers as the reason why learners enjoy it. Other reasons given were that learners performed well in practical work ‘because they get involved in the lesson and are responsible for their own learning’ and ‘because they are doing the project themselves step by step and they could see the results’.

### *Influence of perceived relevance on pedagogical knowledge*

The course developed pedagogical knowledge in three activities. The first of these involved the creation of a situation of purposeful listening through making the teaching goals and expectations explicit before watching a short movie. As part of the activity, teachers discussed the impact that knowing the structure and requirements of the activity had on their learning. They reported that their attention became more focused on the task as they knew what was expected of them. In addition, on the course evaluation and reflection form, a third of the teachers reflected that the ‘listening with intent’ strategy would motivate their learners to listen actively and enable them to respond better to assessment questions. Teachers amplified the learning in this activity by recognising the relevance and transferability of the strategy. This was evident in the reflection and evaluation form indicating that they could apply ‘listening with intent’ as a strategy to other topics and subjects.

A further two activities exposed teachers to different content representation strategies for both general and environmental topics. These activities involved the translation of environmental content from one form into another: that is, from text to mind-map, and from cyclical diagram to text and then into a different diagrammatic form. In the reflections, mind-mapping was mentioned as a useful tool for scaffolding conceptual development and for checking that learners had summarised concepts correctly for a section of content. In their reflections on translating the cyclical diagram to text and then into a different diagrammatic form, one teacher commented on how the use of a different content representation caused confusion initially, while others noticed how their thinking had been stimulated and challenged through the strategy of changing the content representation from one form to another.

### *Influence of access to resources on pedagogical knowledge*

Another potential filter to the use of different teaching strategies mentioned by the teachers was a lack of resources. Access to resources was raised as an issue by various teachers in a number of conversations throughout the course. During the first session in the recorded discussion of Group 1, four teachers were talking about the possibility of being able to show a video to their class. One of them indicated that they had access to a whiteboard (although it was broken); one had a working whiteboard but used a data projector and laptop; and the other two had no access to either forms of technology.

Only one teacher mentioned lack of resources in the form of stationery and apparatus as a specific challenge in the contextual profile questionnaire. In the reflection and evaluation form two teachers mentioned a lack of resources at their school, with Teacher E commenting: 'Teachers need resources. Most of the schools don't have resources, hence it's difficult to apply most aspects in real-life situations.' The presence or absence of resources appeared to have an amplifying or filtering effect, respectively, on the types of teaching strategies available to the teachers from a practical point of view. The statement by a teacher in the first session that if 'you don't have resources in your class you have to improvise', indicated how teachers adapt their teaching according to availability of resources.

## Summary and recommendations

Methodologically, this chapter has offered a framework for how teachers' social, classroom and instrumental contexts can cause them to filter or amplify aspects of the teacher professional knowledge presented in courses, thereby impacting on the development of their personal PCK. The findings covered a range of themes that can provide insight into course planning and further PLC work, with implications for conceptual development of learners, role modelling of teaching strategies, and better teaching methods and assessment strategies. These are summarised below and their implications considered.

The study findings showed that the predominant characteristic of the course that amplified teacher PCK development was the opportunity for collaborative learning, especially around teachers' own conceptual development and lesson planning. This was further amplified by the culture of trust and mutual respect among participating teachers. One recommendation would therefore be that the establishment of an atmosphere of trust and respect for differing points of view needs to be prioritised by the facilitators. This is particularly pertinent where groups of teachers who do not necessarily know each other are brought together for the purpose of professional development. The value that collaborative work has for PLCs is clearly indicated. Also highlighted is a potential gap to be filled: namely, the inclusion of peer observation in collaborative work.

In considering how the environmental content of the course could be adapted in classrooms to aid conceptual development among learners, teachers raised a number of concerns regarding ways in which content might be filtered, because of large classrooms and associated discipline problems, lack of reading and writing skills among learners, and even the extreme of resistance to reading and writing. A further filter regarding conceptual development of learners was a difficulty with scientific concepts, especially for English second-language learners. Amplifiers to teachers' capacity to bring the environmental content of the Fundisa for Change course to their learners included an acknowledgement that formative feedback and varying the teaching methods can strengthen learner motivation.

Further PCK developed in the course was role-modelling of a number of teaching methods and strategies. Teachers acknowledged the value of a variety of teaching

methods and strategies that were modelled for them (including the methods of mind-mapping and showing movies, and the strategies of ‘listening with intent’ and transferring representation strategies between text and diagram). One of the filters that will affect how they are able to apply this in classroom contexts was the perception of an assessment-driven curriculum and the large amount of content that teachers are expected to cover during the year. This is seen to limit use of innovative methods which may take more time in developing concepts among learners. Practical work was one of the methods particularly noted as being valuable for learner motivation but needing more time for execution.

In developing the teachers’ PCK around assessment, the course introduced the new Bloom’s Taxonomy for thinking about developing assessments with higher cognitive demands. Again, the pressure of curriculum volume was listed as a reason for teachers not feeling they had the time for careful construction of tasks balanced between low, medium and high-order cognitive skills. This filter, with the additional contextual filter of learners’ difficulties with scientific concepts as well as with language, led some teachers to explain that they intentionally chose assessment tasks with lower cognitive demand as they are worried about learners’ performance ratings. Also, teachers noted that they prefer to work with point responses as learners struggle to write full sentences and comprehensive texts. This is of big concern, especially considering the findings by Mkhabela and Schudel (Chapter 13) in which difficulties with higher order thinking are being noted in the sciences in higher grades – an indication that this problem has roots in lower grades and continues until the final year of schooling. While the issue of time constraints is a continual challenge for teachers involved in teacher professional development, it still may be worth developing strategies to share with teachers for developing logic and line of argument in longer paragraph and essay-type tasks.

Future research needs to consider how to design and implement TPD in such a way as to limit filtering and promote amplifying of professional knowledge. For instance, what sort of opportunities for teachers to share and develop constructive strategies to mitigate challenges within their contexts could be provided within the supportive space of TPD programmes? And how might we, as teacher educators, provide more sustained and contextualised TPD engagement?

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