5

Working with the complexity of professional practice and development

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Introduction

It has long been recognised that the quality of teaching within an education system is one of the most important factors in ensuring a high quality experience for children (Hattie, 2003; Darling-Hammond et al., 2005), although what constitutes *quality* is disputed (Flores, 2019). The countries with the highest performing school systems have succeeded in making teaching one of the pre-eminent professions, respected throughout society and attractive to the highest achievers. They have focused attention on the effective recruitment, selection and initial training of teachers, so that all those who begin a career in the classroom are well equipped to do so (DfE, 2011, referencing Barber and Mourshed, 2007). Subsequent to the initial education of teachers, continued professional development is also crucial to continued engagement and growth of professionals. This has resulted in the evolution of a range of approaches to teacher professional development over time, from external training courses, through internal training to the use of practitioner research and engagement with academic research. These have all been part of teacher development ecosystems as schools try to develop informed and extensive support, especially for teachers in the early part of their career.

Since 2010, there has been an increasing focus on the development of beginning teachers perhaps the result of high attrition rates among recently qualified teachers (RQTs). Statistics published by the Department for Education (DfE) show that more than one in six (15.3 per cent) of the teachers who qualified in 2017 dropped out after just one year of teaching (DfE, 2019). In reaction to these negative trends the DfE has developed an Early Career Framework (DfE, 2020) for Early Career Teachers (ECTs) to ensure they retain the momentum in developing their expertise, the foundation of which has been laid in their period of initial teacher education (ITE). From September 2021, new teachers will receive

‘development support and training over two years instead of one, underpinned by the early career framework’ (DfE, 2021, p.3). Support includes training development materials and funding for mentor time.

The stress which has been put on different developmental activities has shifted over time and has often reflected political *innovations*. Such developments include the introduction of the National Strategies and the creation of research schools which now act as *clearing houses* for engagement with a narrow range of educational research evidence from organisations such as the Education Endowment Foundation. The use of randomised control trials has lead to ‘channelling the focus of innovation and development to tightly structured interventions and generating a series of narrowing effects’ (Burnett and Coldwell, 2020, p.1). Whilst various fads have come and gone, the role of mentoring has been relatively consistent over a long period of time. It continues to be a powerful activity for orientating and enculturating those early in their career to give them a positive start as well as helping individuals to develop and hone their practice with the help of a more knowledgeable other. In this chapter we offer a new way for you to understanding mentoring, by emphasising its process, and add to this the use of a framework for developing dialogues about your pedagogic practice, namely pedagogic literacy. We also draw upon case studies from our experiences of working with mentors and beginning teachers. Case study teachers have been given pseudonyms and have consented to their stories being shared in this chapter.

<Insert Task 5.1 here>

Basic features of mentoring approaches

A basic model of mentoring activity was outlined by Kram (1985, 1988) who split the process into four steps as the relationship begins, matures and eventually reaches some form of conclusion; initiation, cultivation, separation and redefinition (Kram, 1985, 1988). To begin with, there is a stage of *initiation.* In this phase the mentee begins by reflecting on both their strengths and possible areas for development before considering possible goals to frame the mentoring activity to come. They begin to work with a more experienced individual who often has a lot of professional and social capital within the organisational context of the mentorship. The initiation stage involves discussion and reflection to find common ground

and the establishment of a relationship which can be more or less formal in character. Having gone through this relationship and focus building phase, the mentor and mentee move into a *cultivation* phase where the relationship begins to develop through conversations, rounds of questioning and the use of feedback. Over the course of this phase the intention is to build self-efficacy within the mentee particularly through negotiation and a continued move towards the goals set out at the beginning of the process. As the mentee develops their independence and the depth of their skills and knowledge, the relationship moves into the third phase of *separation*. This can be a positive separation where the goals set by the mentee have broadly been met and they feel more confident or more experienced. However, the separation can also be negative if the relationship has become fraught for some reason, or if the mentee is not showing the growth hoped for. Beyond the separation phase comes the phase of *redefinition.* Here, separation is complete but where the relationship has been positive, may lead to peer co-working on new ideas or issues. Kram's model is a useful framework for beginning to think about the ways in which your mentoring relationship might grow and eventually conclude, as it includes the idea of time frames in this development (Penikett, Daly and Milton, 2018, p.407) . It is essentially a linear model with a start, a middle and an end, albeit the cultivation phase may have several cycles of development, dependant on the focus of the aims chosen at the beginning of the relationship.

Mentoring can serve many different aims but two main reasons for entering into a mentoring relationship are career development or psychosocial development (Chanchlani, Chang, Ong and Anwar, 2018). Career development might focus on elements of classroom practice or even subject knowledge. Geography degrees often lead to specialism and cannot hope to cover all aspects of such a vast multi-disciplinary field. As a result, it is plausible that a beginning teacher might be responsible for teaching glacial geomorphology and basic Quaternary science with no experience of that element of the subject at any level within their own education. Therefore, an element of a mentoring relationship might focus on developing a good level of subject knowledge so that the mentee can feel confident in teaching Key Stage 3, General Certificate of Secondary Education (14-16 year olds) or Advanced-level (16-19 year olds) students. In the case of classroom practice, most beginning teachers may have little experience of leading fieldwork, even within the confines of the school grounds where the health and safety issues may be minimal; they probably will not have experience of filling in the risk assessment forms developed by the school of which they are now a part. The use of mentoring can therefore help ECTs develop their context specific practice more

efficiently and with less anxiety than if they had been left to enculturate themselves. The following case study, drawn from our own experiences of mentoring beginning teachers; this one is about Olivia (pseudonym), and gives an example of how this mentoring support may occurNQT (newly qualified teacher) title was replaced by Early Career Teacher from 2021.

<Insert Box 5.1>

Mentoring might alternatively focus on psychosocial aspects of development. The mentor may act as a role model for the mentee, for example by discussing organisational politics and how to navigate them or by using classroom observation to understand how to develop presence in the classroom, especially when trying to develop behaviour management. For beginning teachers, the use of role modelling may help them in the early months as they will employ a form of *imitate the successful* heuristic (basically a rule of thumb) (Hertwig, Hoffrage and ABC Research Group, 2012) whilst they build their own confidence. However, where this happens it will be important to help them move on to develop their own approaches and practices so that they continue to develop rather than merely continuing to imitate the practice of others. Taking the example of leading fieldwork again, to imitate a more experienced mentor might help build confidence and familiarisation with the subject matter and geographical context. The fieldtrip might make use of a local nature reserve unknown to the mentee. To begin by observing the mentor leading a group before then leading elements and then a whole trip themselves, will almost certainly involve an imitation of the mentor's style. But there needs to be reflection and a move towards the mentee considering how they wish to develop their practice in an authentic manner, relying on their own teaching and behaviour management style.

Another psychosocial focus that a mentoring relationship might consider is issues of social acceptance. Joining a new school community can be both confusing and daunting, and having a more experienced individual who is able to introduce you to the right people and to help you navigate the unwritten rules of the organisation and the daily life within it. By meeting and reflecting on how school life works and how to immerse yourself into the complexities and life of the staff room or school meetings can be very helpful and can again save both time and anxiety in making the transition into feeling like any other member of staff as well as opening up discussions about workload and wider well-being issues.

Where issues begin to emerge, either in the classroom, or in the wider navigation of the school, the final psychosocial focus, counselling, might help. Here, the mentor acts to talk through issues that the mentee might be having and offers directions in which they might go to solve the problems they are facing. This can be a crucial aspect of a mentoring process especially for beginning teachers who may feel unprepared, vulnerable and unsure of their place within the wider life of the school, and who might, quite naturally, struggle with aspects of their classroom practice and work-life balance. In the following case study, we describe a teacher who one of the authors knew through their ITE programme – Sami (pseudonym), and kept in touch with in their early career.

<Insert Box 5.2>

The discussion above is obviously a simple overview of the mentoring relationship and has only tried to tease out some of the simple, core roles of what mentoring activity might include. However, some important underlying characteristics are apparent. Firstly, the mentoring process here seems to some degree quite linear, with goals being set at the start of the mentoring period, and then steps being taken to meet those goals. The relationship may be more open than this, but the focus is on developing practice and well-being through dialogue and support (See Clarke et al., 2022). In addition, there is no particular medium or framework for thinking about teaching practice, or for structuring the process of mentoring itself. The Early Career Framework might support teachers in their first two years of teaching, but it is a narrow, perhaps too narrow, framework for considering practice, and by definition will generally be seen as unapplicable for older teachers who are seeking mentoring. Finally, there is an implicit notion in this model that beginning teachers need a degree of support in the early stages of their careers, but after a while, and with the care and support of a more experienced colleague, they too become the *final product*, a few years into their career. The Early Career Framework suggests that teachers, having followed online materials over two years, are ready and have become mature practitioners. Indeed, the new Ofsted criteria (Ofsted, 2019) whilst moving away from individual judgements, promotes the idea that expertise is expected from the beginning of a teaching career. This idea, despite being diluted in the most recent framework (Ofsted, 2019) has been theorised as at risk of undermining ‘what is reasonable and possible in the pursuit of an unattainable perfection that in too many cases demoralises rather than motivates’ (Richards, 2015, p.237). In the next section we

suggest a very different way of understanding the mentoring process, and the way teachers might think about their developing practice using aspects of process philosophy and complexity theory to recast mentoring as an activity.

Processual Complexity

'No man ever steps in the same river twice, for it's not the same river and he's not the same man.' Heraclitus

Heraclitus is often identified as the father of process philosophy in Western Europe. The quote above emphasises the dynamic, flowing nature of reality, the basis for a process ontology. In this ontology, the universe is seen as primarily constituted of processes rather than substances. As Rescher (2000, p.5) argues 'The fundamental "stuff"' of the world is not material substance, but volatile flux.' We can translate this insight to the social world by stressing social processes as continually at the centre of human activity and society. In addition, it emphasises human existence as a process of becoming, that rather than identifying us as static entities, human *beings,* we can be characterised as human *becomings.* We are never static in time, we do not have an early period in our lives where we change, followed by a period of stasis once we are adults. Instead, our interaction with the world and our exposure to constantly new experiences means that we are ourselves constantly in a state of flux. As we will see below, this can have a profound impact on how we think about processes such as mentoring and how teachers understand their own development as professionals. Process philosophy (Whitehead, 1929) provides a simple yet profound insight, that education is made up of a huge number of processes, all of which are to a greater or lesser extent interconnected. For example, if we consider for a moment a geography textbook, a huge range of processes, from the education of the author, to their engagement with a computer, reference sources, paper, electricity, etc to the printing and even the reading of the text by students are all flowing forward and intertwining and diverging to give the textbook, and the context for learning at that specific time. These processes interact in different and often non-linear ways, and as such the processes involved can also be characterised as complex in nature. As a consequence of this complex nature, the learning which takes place, as well as the development of teachers as a form of professional learning, will be complex and emergent in nature. In other words, within educational contexts, it is almost impossible for us to

identify single processes and argue that they individually lead to given cause and effect patterns. As a result of this, it is problematic to suggest easy or single solutions to complex educational and pedagogic issues.

Complex systems are not random or chaotic, they have identifiable patterns (Johnson, 2007; Mitchell, 2009). They can be generally predictable whilst not allowing for detailed prediction of the future. This is best exemplified by the difficulty we have in accurately predicting weather more than three or four days ahead of the present, whilst being able to describe general, expected conditions at different points during a year. In complex systems, we can say generally what might occur using evidence and past patterns of experience, but we cannot examine and predict the detail very far into the future.

Another crucial characteristic of complex systems is our inability to consciously know all that is going on within that system at any point in time (Richardson and Tait, 2010). We have the best impression of the system through the processes and elements closest to us, those elements we are directly interacting with. But as the system becomes more remote from us, our ability to sense and interact rapidly decays to nothing. Hence, if we accept that processes are fundamental to the reality and flow of the ever changing and evolving world around us, we can only hope to gain insight and understanding of those processes closest to us and of which we might be a part.

To give a simple, but relevant, example of this argument, we can use a teacher's activity during a lesson. The lesson is composed of a multitude of processes, from reading, discussion, thinking, listening or writing, to the creation of resources, the planning of the lesson by the teacher and the behaviour of the students. Any of these processes themselves can be broken down into further processes. For example, behaviour is an emerging set of apparent processes such as sulking, smiling, shouting or crying, the result of interactions within the brain which are emergent through iterative connections to social and emotional interactions with others. In turn, these behavioural characteristics, which may well change themselves from minute to minute or even second to second, will create new processes in terms of peer and adult response. The complex multitude of processes interact with each other in emergent patterns that the teacher is able to interact with, and as they themselves go through longer term processes of professional development, may be able to understand and progressively react more proactively to positively impact on student behaviour (Bronfenbrenner, 1979; Merçon-Vargas et al., 2020).

Because of the sheer complexity of the interacting processes in the classroom, the teacher will only be able to interact with those in their immediate vicinity. The teacher can talk with a student who is struggling to understand river meandering, and explicitly work with them to aid their understanding. But they are not able to understand and interact with a student at the same time who is on the other side of the room; indeed they will not be able to claim any real insight as to the cognitive processes that student is engaged with at that distance. And in both cases, the teacher will have to interact with the child as well as the learning; the student they are helping might feel anxious about not understanding the subject content, the student across the room might be bored and considering disrupting the work of others.

Whilst this insight into a complex processual reality might seem almost random, it is not. As stated above, complex systems have patterns and classrooms likewise tend to be quite stable, with students experiencing their work in a generally predictable way. We merely have to accept that we cannot claim to *know* what is happening across the system at any given point in time and what we do know we only have partial knowledge and understanding of. For example, see the arguments in Puttick (2022) about the ways in which tentative and situated understandings that limit the kind of certainty with which we might make claims in the context of lesson observations. As teachers become more experienced, they begin to understand the patterns and processes involved in the continual emergence of learning in classrooms, and in part they become confident in admitting that they do not have an omnipotent insight. As one geography teacher commented to one of us after a lesson study observation, he had always believed that he knew exactly how his students were interacting and how much they were learning. Having engaged with lesson study[1], with observation of just three students and the use of interviews with them after the lesson to reflect on what and how they had learned, he admitted that he was confident that they had learned what he wanted them to, but how each of them had got there, the processes they had followed were unexpectedly diverse, and he still only had a partial level of understanding of how they had managed it. For beginning teachers, the temptation is to blame themselves for lacking an overview of this immense complexity, rather than questioning a system that expects it.

<Insert Task 5.2>

[1] a process in which teachers work together to target an area for development in their students' learning, using discussion and reflection to refine practice (see Cajkler et al., 2013; Wood et al., 2020)

A process model for practice development and mentoring in geography

What does a complex processual approach offer us when we begin to consider mentoring? Perhaps mentoring needs to be cast as an activity which is taking place within the complex flow of a multitude of processes which intertwine and diverge at different times and in different contexts. Experience and expertise are partly couched in recognising and acting within the patterns such processes create. To foster the emergence of new practice, or to enable greater confidence in organisational cultures, the mentoring pair will focus on a small number of foci to make their work manageable and understandable, but in reality, there will never be a clear cut-off between the processes they are focusing on and others which impinge on the issues they have chosen to explore.

Because complexity suggests that detailed predictions cannot be made very far into the future, a processual approach to mentoring suggests that there is little point in setting goals at the beginning of the process, other than to suggest broad areas in which it might be useful to work. Instead, we argue that we need to remember that at the core of a mentoring relationship is the desire to learn. Whitehead (1929/1967), in his processual philosophy of education, sees learning as a cyclic process consisting of three stages (see also Allen and Evans, 2006). The first stage is that of *Romance*, a stage where the excitement of finding out has primacy, that subject matter is chosen that 'holds within itself unexplored connexions with possibilities half-disclosed by glimpses and half-concealed by the wealth of material.' (p.17). This means that within the mentoring relationship, the mentee brings areas of keen interest, areas they have a desire to explore. Hence, it is not a deficit model focusing merely on righting perceived weaknesses, but an approach which enthuses the mentee into developing practice or helping them make sense of their chosen school in ways that they find both interesting and which will help them develop their expertise. As such, mentoring might focus on areas which are already strong but which can be explored further as well as areas of perceived weakness.

Having identified an area of curiosity, the next stage is that of *Precision.* Here, the processes or issues identified in the Romance stage are explored in detail and are expanded on. Here, Whitehead emphasises that 'in the stage of precise progress we acquire other facts in a systematic order, which thereby form both a disclosure and an analysis of the general subject-

matter of the romance.' (p.19) This is a process of detailed exploration and development based on a variety of evidence and information to allow for considered action and critical learning.

The final stage in Whitehead's model is that of *Generalisation*, which is synthetic in nature. How can we embed and understand our new insights not only in their own right but in relation to our wider understanding of the world, or in this case education? It is an attempt to create an ever-greater holistic understanding where the different aspects of teacher work are explicitly seen as elements of a single network of processes.

Whitehead's processual model of learning offers a way of giving coherence to the mentoring process by dispensing with the false certainty of goals whilst giving shape to an emerging narrative and areas for exploration. In addition, it allows both the mentor and the mentee to experience learning, perhaps with different foci, as well as contextualising that new learning in wider, holistic systems. This then suggests that all mentoring is to a greater or lesser degree a peer driven activity. Seeing the process of mentoring as complex and processual might help to mitigate some of the damage that deadlines, performativity and accountability do to teachers at all stages of their career (see Perryman and Calvert, 2019 for more on this topic).

<Insert Task 5.3>

A process driven mentoring approach is therefore characterised by a rhythmic learning exploration, which fosters emergent narratives over time. This being the case, as a mentor, you need to be aware of the complexity of the processes which make up the educational landscape of which you are a part and be open about this with your mentee, that the expectations of knowing everything all the time, whilst ignoring the social, emotional needs and secrets of the other people in the room is just not possible. This complexity also suggests that any notion that a set of goals can be set and met in a linear, reductive sense, is a mirage. Instead, a Whiteheadean approach to the learning present in mentoring suggests the need for ongoing mentoring throughout a career. The current national focus of mentoring beginning teachers in England is unhelpful, as this suggests that with some help over a limited number of years, teachers reach an optimal point from which they can then carry on ad infinitum. Whilst aspects of the Early Career Framework are suggestive of this reductive, simplistic

model, instead a process approach would suggest that all teachers should continue learning through evolving mentoring pairs and groups throughout their career.

To help develop the coherence in learning explorations at the core of a processual mentoring approach, it might be useful to offer suggested avenues for reflection and dialogue. In our view, the Early Career Framework runs the risk of missing an opportunity to be a positive support for mentoring, that enables open discussion of practices. It can be interpreted as offering a narrow perspective on what it means to be a teacher, and a mentor. As Lofthouse points out:

> Mentoring needs to be situated in a professional educational landscape in which new teachers and mentors challenge professional working practices that are restrictive, too often performative and sometimes even punitive.
>
> (Lofthouse, 2019)

Any framework that sets out the roles of mentors and beginning teachers needs to support this practice of challenge and critique. In addition, it is all too easily applied as a tick-list which encourages participants to demonstrate competence in instrumental ways. Here, we offer an alternative which is inherently complexly processual in nature.

Cajkler and Wood (2016) developed a model of pedagogic literacy based on their research into lesson study in initial teacher education (Cajkler and Wood, 2016; Cajkler et al., 2013). Their work starts from the premise that the rise of professional standards has had the impact of narrowing the work of teachers and has led to ever rising levels of performativity. They reflect on their use of lesson study in initial teacher education and argue that there is evidence, albeit small scale, that,

> Using lesson study in ITE provided participants with a structured collaborative opportunity for exploration of the complexity of the classroom, not compromising the need to meet the teaching standards but leading to a more rounded understanding of what it means to be a teacher. (Cajkler and Wood, 2016, p.511)

Seeing the pedagogic process as ‘rational, creative, and intuitive, but fundamentally...complex, defying simplistic ‘business capital’ prescriptions’ (p.513), they

develop a more holistic view of individuals' emerging practice and reflexivity, pedagogic literacy. This term is defined as,

> the complex of skills, knowledge, attitudes and values that enable teachers to use their reading of the classroom to reflect-in-action and to make learner-responsive decisions that support learning in all its complexity (cognitive, social and emotional). (Cajkler and Wood, 2016, p.513)

They have developed a model of pedagogic literacy (Figure 5.1) which is composed of a number of dimensions which all go to make up elements of teacher work and the wider pedagogic thinking and practice of teachers. Engagement with this diagram needs care! They refer to it as an emergent view. In other words, the model is vehicle for dialogue and reflection. It can only ever serve this purpose as the processes involved in teaching are so varied, by nature and by number, and emerge and change over time so much that any attempt to capture pedagogy in its entirety is not possible. This is why they problematise standards, as they are only ever a reductive, politically preferred tick list. Here, the dimensions are offered as no more than a touchstone for discussion and exploration, and the examples in each dimension are just that, examples, which can be debated and added to by any teacher using the model. In addition, it might become pertinent to add extra dimensions, indeed in subsequent presentations to the publication of the 2016 paper, Cajkler has added further complexity to the model. But crucial here is the admission that the model of pedagogic literacy is a partial view of ever changing, converging and diverging complex processes which go to make up the work of teachers. For this reason it should have currency for all in the profession whatever their stage of development and expertise. But this can only be the case where it is used to open up creativity, dialogue and professional exploration. This is why it can act as a positive navigational aid when exploring new practice or psychosocial issues through Whiteheadean learning cycles.

<Insert Figure 5.1 here>

This model can also remain relevant at all points during a career, and hence offers coherence in a complex processual mentoring model which emerges and changes over the course of whole careers. And it is this insight that is crucial in understanding perhaps one of the more

important insights we gain from assuming a processual model of mentoring. In the following case study, we share Pat's (pseudonym) experience of being mentored later in her career, as experienced by one of the authors, who worked with her.

<Insert Box 5.3>

Conclusion

In this chapter we have considered the epistemic and practice-based environment in which mentoring occurs. We have challenged the assumptions we make as mentors, and as professionals – what does it mean to be a teacher, what would a 'finished' teacher look like? To consider these questions we reflected upon the role of the teacher. We discussed pedagogic literacy as a useful model to show how a flexible, critical approach to mentoring might work in practice. We used case studies from our own experience to think about the real life experiences of mentors and mentees in geography departments, and how these experiences could be improved.

In summary, all teachers, regardless of their experience, or number of years 'served', can gain positively from ongoing mentoring dialogues. Political fixation with attempting to reach 'expert' level early in a career is suggestive of 'having arrived', of ***being*** the finished article. But, when we are thinking about teacher development, we are talking about a continuously emergent process of ***becoming*** over an entire career.

For discussion

We have set out our ideas for a different approach to mentoring beginning geography teachers. Refect on your experiences as a mentor and mentee during your career, particularly with regard to the pedagogic literacy model:

- Complex systems can never be captured completely, as we have discussed; based on your experience, what is missing from this model?
- Which aspects would you highlight as most important to your own development as an early career teacher and mentor?

Further reading and resources

1. **Allen, G. and Evans, M.D., 2006. *A Different Three Rs for Education: Reason, Relationality, Rhythm.* Amsterdam: Rodopi.**

This book sets out an alternative approach to education using the process philosophy of Alfred North Whitehead as its foundation. It offers a view of formal education much at odds with current English policy and thinking about pedagogy.

2. **Cajkler, W. and Wood, P. 2016. Lesson Study and Pedagogic Literacy in Initial Teacher Education: Challenging Reductive Models. *British Journal of Educational Studies,* 64(4), pp.503-521.**

This paper outlines the evidence on which the model of pedagogic literacy was based, before going on to make the case for pedagogic literacy as a concept and framework for developing teacher work.

3. **Whitehead, A. N. 1929/1967 *The Aims of Education and other essays.* New York: The Free Press.**

The original book containing Alfred North Whitehead's philosophy of education based on his process philosophy and cyclic model of learning.

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