

Research Article

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Understanding and utilising the interplay between two frameworks relating to teacher professional development: a case study

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Abstract: In England, there has been a teacher recruitment and retention crisis for many years. In such a crisis, it is important that initial teacher education (ITE) providers are able to identify, recruit and educate ‘high quality’ applicants to join the teaching profession. In this study, we focused on two case studies of beginning teachers who were enrolled in a University-School ITE Partnership. By listening to these two novice teachers, and analysing their experiences against two frameworks of professional development (the professional learning continuum of Wilson & Demetriou (2007) and the characteristics of effective teachers identified by Korthagen & Wubbels (2001)), we explain how a synthesis of the frameworks could help ITE providers to select, monitor and assess beginning teachers’ developmental trajectory when learning to teach.

Keywords: teacher education, teacher development, professional learning, reflection, reflectivity

1 Introduction

The current teacher recruitment crisis in England has been ongoing for many years, even prior to the beginning of this study in 2014. In the sciences, the impacts on biology teacher recruitment have been notable (Whittaker, 2020), and even accentuated for physics and chemistry (Education Select Committee, 2024). To combat this, the UK Government Department for Education emphasises the importance of initial teacher education (ITE) providers recruiting ‘great people’ (DfE 2019). Given that retention

of beginning teachers is also a significant challenge, it is important to understand the characteristics of potentially ‘great’ teachers, and how to enable them to thrive during their ITE. This paper listens to the voices, and explores the beliefs and experiences, of two beginning teachers, in relation to two published sets of understandings relevant to teacher development: (1) the professional learning continuum of Wilson & Demetriou (2007) and (2) the characteristics of a reflective teacher identified by Korthagen & Wubbels (2001). In so doing, we attempt to demonstrate how the interplay between these perspectives can generate a transformed understanding of participants’ own ITE, and how recognition of such synergies can be used to help identify and develop those individuals with potential to be ‘great teachers’.

1.1 Professional learning continuum

Wilson and Demetriou (2007) established a professional learning continuum through the synthesis of literature from teacher education (e.g. Cochran-Smith, 2005; Flores & Day, 2006); informal learning (e.g. Eraut, 2004, 2007; Hoekstra et al., 2007) and workplace learning (e.g. Retallick, 1999, Beckett & Hager, 2000), as well as engaging with broader ideas about reflective practice (Schön, 1983, 1987; Zeichner & Liston, 2013). In creating the continuum, they also drew upon the experiences of teachers who were involved with a University-School ITE partnership and their own personal experiences as teacher educators.

The continuum asserts that teachers learn through transitioning from implicit learning through a reflective/reactive learning phase, and ultimately to engage in deliberative learning (Wilson & Demetriou, 2007), with progression through the continuum being fluid (Table 1). This suggests that a teacher can move from one phase to another or vacillate between phases at any point in their career, particularly when changing schools.

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Table 1: Professional learning continuum (adapted from Wilson and Demetriou (2007)).

Implicit learning	Reactive/reflective learning	Deliberative learning
‘Hot’ action Make judgements based on intuition	Judgements linked to actions and the class-room environment	‘Cooler’ action Judgements based on deep understanding of the dynamics of teacher/students’ relationships and the contextual features
Knowledge in action Mainly emotional response (conative and emotive domains dominate)	Knowledge of action Response to affective and social context (affective and social domains involved)	Knowledge for action Cognitive domains also inform response
Instant response Routine action	Intuitive response Routines punctuated by rapid decision	Deliberative decision-making Planned action with progress reviews
Recognises patterns Some awareness of the situation	Rapid interpretation Short reactive reflection	Review involving discussion/analysis Conscious monitoring of thought and activity. Self-management. Evaluation.
‘Act’ like a teacher		‘Think’ like a teacher

1.2 Characteristics of reflective teachers

Taking a different approach, Korthagen and Wubbels (2001) derived the characteristics of reflective teachers, drawing on four large scale studies of teacher education programmes (SOL) in the Netherlands. They surmised that for teachers to be reflective, they should exhibit four attributes of reflective teachers (Table 2).

Even though the attributes are labelled as attributes of reflective teachers, it is more prudent to look at such attributes as pertaining to teaching rather than pertaining to teachers. This distinction is necessary, as a focus on teachers, rather than teaching, has little impact on improving classroom practice (Hiebert & Morris, 2012). In addition to the attributes of reflective teachers, Korthagen

and Wubbels (2001) also identified important correlates of reflectivity (Table 3).

Despite commenting that the correlates of reflectivity are “not a generic aspect of reflection” (p. 138), Korthagen and Wubbels (2001) did contend that amongst the correlates of reflectivity, some are consequences of the attributes, while others are antecedent factors allowing for development of the attributes. Integral to two of those correlates is the construct of self-efficacy (Bandura 1977), in this context being a teachers’ belief in his or her ability to successfully perform the tasks of teaching (Moulding et al, 2014). It can be argued that a teacher has reached that desirable state when they start to reflect on students’ learning, rather than reflecting on themselves.

Table 2: Attributes of reflective teachers (adapted from Korthagen and Wubbels (2001)).

Attributes of reflective teachers	Explanation of attributes
Attribute one: A reflective teacher is capable of consciously structuring situations and problems, and considers it important to do so.	Reflective respondents considered that it is crucial for them to “work out for themselves” (p.154) when a lesson did not go well. Less reflective respondents, however, will ask others’ opinions.
Attribute two: A reflective teacher uses certain standard questions when structuring experiences.	They emphasised that reflective teachers use specific questions to structure their reflection, such as what went well, what did not go well, why did it not go well and considered beginning-teachers should be taught to work with such questions.
Attribute three: A reflective teacher can easily answer the question of what they want to learn.	Reflective respondents did not wait for cues from teacher educators to determine what they need to learn in order to progress, while the same is not the case with less reflective respondents.
Attribute four: A reflective teacher can adequately describe and analyse their own functioning in interpersonal relationships with others.	As they progress, the more reflective beginning-teachers became aware of how their behaviour affects their students, and how they could act to help others.

Table 3: The seven correlates of reflectivity (adapted from Korthagen and Wubbels (2001)).

Correlates of reflectivity	Relation of correlate to the attributes of reflective teachers	Explanation of correlates
Correlate one: Reflective teachers tend to have a stronger interpersonal relationship with students compared to less reflective teachers.	Consequential correlate (hereafter consequential correlate 1)	Reflective teachers are confident to ask feedback on their teacher from their students, leading to students thinking their teachers value their opinion, strengthening their interpersonal relationships.
Correlate two: Reflective teachers develop a high degree of job satisfaction	Consequential correlate (hereafter consequential correlate 2)	This is related to the conscious structuring and re-structuring of experience (attribute one), making it more likely that the teachers will not lapse into routine action. In addition, reflective teachers are able to analyse and describe their interpersonal relationships, they will develop stronger relationships, enjoy their role, and therefore develop a high degree of job satisfaction.
Correlate three: Reflective teachers also consider it important for their students to learn by investigating and structuring things themselves.	Consequential correlate (hereafter consequential correlate 3)	Teachers who think that it is important for them to reflect, also give opportunities for their students to reflect, like asking for feedback.
Correlate four: Reflective student teachers have, earlier in their lives, been encouraged to structure their experiences, problems, and so on.	Antecedent correlate (hereafter antecedent correlate 1)	Reflective respondents commented that they had undergone a difficult period in their life and a powerful cultural change, which had forced them to structure their problems in a conscious manner.
Correlate five: Reflective teachers have high self-efficacy and a strong sense of personal security	Antecedent correlate (personal security) hereafter antecedent correlate 2)	Reflective teachers will need to develop high self-efficacy and a strong sense of personal security <i>in order to be</i> reflective. Prior to the process of reflecting upon one's own self and/or getting feedback from students, the reflective teachers would require a level of self-confidence, as "laying one's own performance open to inspection makes one vulnerable and threatens one's own survival within one's own inner reality" (p.142).
Correlate six: High self-efficacy in reflective teachers resulted in them reflecting on the students, while low self-efficacy resulted in them reflecting on themselves.	Consequential correlate (hereafter consequential correlate 4)	They noted the link between the level of self-efficacy and the object of reflection. The higher the self-efficacy, the more likely that reflective teachers will have students as their object of reflection, and the lower the self-efficacy, the more likely that reflective teachers will focus on themselves. Hence, in a teaching setting, the more confident teacher would ask the question "what did the students learn today?" instead of "what did I do today?"
Correlate seven: Reflective teachers tend to talk easily about or write about their experiences.	Antecedent correlate (hereafter antecedent correlate 3)	Talking or writing about experiences means the teachers open themselves up to self-criticism; this is dependent on high self-efficacy (correlate five).

1.3 Understanding and utilising the interplay between the professional learning continuum and the characteristics of effective teachers

The professional learning continuum was established from a University-School Partnership model through a teacher education programme that was modelled

upon the Oxford Internship Scheme (McIntyre, 1990a; McIntyre, 1990b; McIntyre, 1995; Wilson & Demetriou, 2007). Likewise, the characteristics of reflective teachers were derived from a teacher education programme (SOL) (Korthagen & Wubbels, 2001) that was similar in pedagogical principles to the Oxford Internship Scheme. Thus, it is likely that a reflective teacher identified within the context of the Netherlands SOL programme is similar to a reflective teacher identified within the context of

the University-School Partnership model. As such, it is appropriate to explore the interconnections between the characteristics of reflective teachers and the professional learning continuum. If synergies or interrelationships can be found, they may provide a foundation for transformed practice in identifying and recruiting new teachers of high calibre, supporting them through their initial professional development, and helping to address the teacher recruitment and retention crisis.

2 Methodology and methods

This study involved beginning-teachers on the Secondary Chemistry and Secondary Biology University-School Partnership Postgraduate Certificate of Education (PGCE) courses at an English university. Beginning-teachers in the cohort were initially observed over the course of several days, with a view to identifying those who would converse easily, and who demonstrated the capacity to think aloud in relation to theory and practice, and their own development. Two participants agreed to be part of the study. Coincidentally, these beginning teachers' own schooling had taken place, at least in part, in an international or boarding school context, which differed from the contexts of their professional placements during the course. This was felt to be an advantage, given that the juxtaposition of their own childhood experiences with their ITE experience may help them to 'make sense' of their professional experiences in UK state-funded schools with a greater breadth of perspective, and higher level of explicit reflection, than those who had been enculturated into the English context as children.

The two beginning teachers, Chad and Anne (pseudonyms adopted), were both new graduates with extensive pre-existing part-time work experience. Chad enrolled in the Secondary Chemistry PGCE programme with an undergraduate degree in General Science, obtained from a non-UK European university. As a child, Chad also went as an international exchange student from the UK to continental Europe. Prior to the PGCE, Chad had extensive part-time work experience in front-line customer service jobs, including becoming a tour guide for summer school students. However, he had little experience in a classroom or school environment. Anne entered the Secondary Biology PGCE with an undergraduate degree in Psychology, obtained from a UK university. As a child, Anne went to a boarding school. Prior to the PGCE, Anne had undertaken extensive part-time work experience in schools, including being a paired

reader and a teaching assistant for those with specific educational needs. This gave Anne extensive experience within a classroom and school context.

Chad's professional placements were in two contrasting schools. Both schools provided completely different environments, as attested to via observation data and corroboration from Chad. Both schools had a comprehensive intake and were in the East of England. His first school was in an urban context, with students felt by staff to have 'high educational aspiration', while his second school was in a rural context with students felt by staff to have lower aspirations, with one teacher suggesting that 'Our students are not the type to apply to Oxbridge (Oxford and Cambridge).' Anne's professional placements were in two comprehensive schools in the East of England. The schools were in close proximity to one another, the second placement school being in a village one rail-station stop from the town where the first school was located. Such proximity may indicate similarities between the student population in each school.

To explore the developmental experiences of Chad and Anne, we collected and analysed a number of data sources:

- a) PGCE application forms and PGCE assignments, including short critically reflective pieces (first assignment) focused on classroom teaching and learning, and a later, more extended educational research assignment (second assignment) focused upon the students' own teaching practice and rooted in the principles of either action research or case study.
- b) Individual and paired interviews, including post-lesson oral reflection interviews.
- c) Observation data from school or classroom visits and lectures attended by one of the authors.
- d) Interviews with Chad's and Anne's mentors to gain their insights concerning their mentees' professional development as teachers.
- e) Data from all the sources were collated, organised, and analysed using NVivo version 11. Qualitative data analysis was carried out via deductive coding, for which the information from Table 1 (professional learning continuum) and Table 2 and Table 3 (characteristics of reflective teachers) were used as coding schemes, and upon which the subsequent sections draw. We report this analysis for each beginning teacher, examining evidence of their progression through the professional learning continuum, and of the attributes and correlates of a reflective teacher.

3 Analysis of findings

3.1 Professional learning continuum

Although Chad had minimal prior experience in classroom teaching, he was already displaying judgement based on actions (using props) and the classroom environment midway through the first professional placement (PP):

The use of the props...getting the kids also to...walk around the classroom...I think it helps them visualise...a concept that you cannot see.

Indeed, after teaching the class for more than two months, Chad was able to carry out deliberative decision-making in relation to how he selected students to answer questions, having developed an apparently deep understanding of the teacher-student relationship toward the end of the school placement:

They were really...quiet...I think I might have...panicked...didn't want to pick on them...that would...knock their confidence...I did the MALS on them, so I know which one...is not confident, and which one is confident.

Such a transition to deliberative learning was also evidenced within his first assignment, where he drew on the research literature to inform his decision to refrain from using comfort feedback and praising students' intelligence:

As research has shown that praising intelligence can lead to students attributing their success to their perceived fixed intelligence (Mueller, C. M., & Dweck, C. S., 1998), during my lessons I refrained from praising students' intelligence and instead focused on praising their efforts...I avoided using comfort feedback as it has been shown to result in lower motivation for students (Rattan, A., Good, C., & Dweck, C. S., 2012). [Chad's first assignment].

Despite some expectation that Chad would regress toward solely exhibiting implicit or reflective/reactive learning in his second PP, Chad continued to display deliberative decision-making, albeit in an unexpected context, by choosing to use a teacher-centred approach when conducting a lesson:

It was...a lecture, but...that's what they want.

Chad's personal ideas of teaching and learning went against such a teacher-centred model, but the decision to give a lecture was based on his own classroom-based

research, which made visible students' preferences in relation to teaching style:

Many students said that they preferred being taught using traditional teaching methods.

The need to justify such findings enabled him to move toward deliberative learning, as observed in the assignment extract below:

The interviews of the students show that implementation of PBL [problem-based learning], a teaching technique that was totally unfamiliar to them, took students outside of their comfort zones, which some students were not too content with....[however] one cycle of action research is not enough for concrete conclusions to be made, as students were not settled into the routine of PBL.

Such a transition was also evidenced within the interview with his second PP mentor, who, when presented with the professional learning continuum, said:

He is moving into the last one [deliberative learning]...He reflects on the learning of the kids...He reflects on his own learning...He uses that to inform his planning.

Anne, by contrast to Chad, was a teaching assistant just prior to enrolling in the PGCE programme. As such, early evidence of reflective/reactive learning was expected, and was apparent in her post-lesson interview, where Anne made judgements that were based on actions (putting time limits in lessons) and the classroom environment:

They have all done their work...putting on time limits, which I hadn't done last lesson worked a lot of better.

Anne also showed evidence of implicit learning in her first assignment, for example, making an intuitive judgement concerning the students' vocabulary acquisition:

I was very aware that some of the words and phrases in the topic of respiration are new and confusing.

Her first PP mentor confirmed that Anne was very reflective, indicating that Anne was carrying out short reactive reflections, through to the end of her first PP. Such exhibition of reflective/reactive learning in the first PP was subsequently confirmed by her second PP mentor. It was in the second PP that evidence of deliberative learning also started to emerge:

She didn't start in here <pointed toward implicit learning>. She didn't just make decisions on the spot...When she was started...

she's...here <pointed toward reflective learning>. Now she has a lot of these traits <pointing toward deliberative learning>.

Indeed, such a view was reinforced by evidence from her research assignment, where she clearly considered the use of knowledge for action:

Due to the decrease in self-efficacy scores, I will introduce techniques that mean the students will think for themselves or ask their peers before asking a member of staff for help. I am more mindful of the effect that attitude to learning can have on students.

In summary, there was evidence that Chad was engaged in deliberative learning already in the first PP, whereas Anne did not engage in deliberative learning until the second PP. In the sections that follow, we seek to understand whether presence or absence of the characteristics of reflective teachers may have influenced this difference in trajectory. We examine each set of characteristics in turn.

3.2 Antecedent correlates of reflective teachers

Chad went to a university that used a Problem-Based Learning (PBL) teaching approach. This may have helped Chad to be able to structure experiences and problems in a conscious manner (antecedent correlate 1) prior to the PGCE programme:

I'm a more reflective person...because the whole cycle of PBL was basically a cycle of reflection...You come up with what you need to know and then you reflect on that...You then learn that... You take those learning goals. You really have to think about it, in order to understand it.

Chad's prior experience undertaking tours with students during summer schools also appeared to have increased Chad's personal sense of security (antecedent correlate 2):

I would stand in front of...people all the time...I've to put myself out there and give them a talk for forty-five minutes...It gave me the confidence...I can stand...in front of a group of twelve students for forty-five minutes...So what's the difference between standing in front of double that number.

From the beginning of the first school placement, Chad was able to talk relatively easily about his experiences (antecedent correlate 3). He spoke for an average of 5.4 minutes per lesson (60 minutes lesson), and then could engage in oral evaluation of the lesson for 3.8 seconds per minute. Chad diligently wrote

the first assignment lesson plans and first assignment lesson evaluations, again suggesting that Chad could talk and write easily about own experiences. Although such ease was less obvious during the second PP (he "tend[ed] to keep things to himself"), when interviewed for the research, he remained open to speaking freely. This may have been because:

The teachers...would always whinge about the kids...It is healthy to...talk about...any negative experience you have, but...I don't wanna [sic] be that teacher that does it in the staffroom...The staffroom that I was at...all they would do is...moan about the kids.

Anne described her time as a teaching assistant as having helped her to structure her experiences and problems in a conscious manner (antecedent correlate 1):

I was transitioning a boy...to the special [educational needs] school... had to ... be effectively reflective on...how we could not trigger him in the future, and I would have to talk to the class teacher...I had to tell him when I turned up, that this kid will gonna [sic] set him off, and he doesn't want this...I suppose that was being reflective....about how we can stop him punching other children.

Anne did not enter the Secondary Science PGCE with a Science degree, leading her to be conscious that her peers might see her as an impostor for being in Science instead of Psychology. She stated:

I was so worried when I first came in, that people were gonna [sic] be like, you did Psychology. What are you doing here?

Such lack of personal security (antecedent correlate 2) and self-efficacy as a teacher during the first PP was exacerbated by her perception of her mentor's role, focusing on a conversation where the mentor:. Anne said:

used to tell me, she would be looking...to check my mistakes...It made me so paranoid about her finding one.

Her personal security and self-efficacy as a teacher only increased after she realised that other people in the course would also need to re-learn GCSE Science content. Anne said:

I found now that actually everyone has to re-learn everything, like, I don't feel that much disadvantaged.

However, her sense of personal security and self-efficacy increased significantly only in the second PP, when her mentor also changed. Anne said:

The second professional placement mentor...Quite often, I would look at her if I was confused about something, and she'd be...that was a thumbs up...or she'll tell me she didn't know the answer either...It made me feel a lot better now...She's a very good teacher, but she doesn't know everything. It's okay if I don't.

Anne noted that she talked relatively easily about her experiences (antecedent correlate 3), as she regularly shared what happened in the school with her boyfriend over the phone. Anne stated:

I would phone my boyfriend...and be like...it's really horrible, or...oh my God, this kid did this cutest thing today.

Anne was also equally able to write relatively easily about her experiences. She said:

I actually found it really useful to write about my experiences, writing about what was going on in the week in general, made me feel less bad about what was actually happening... When you actually think about your week...actually, that really nice thing happened, and you sort of make yourself more positive.

In summary, Chad exhibited all three antecedent correlates of reflectivity in the first PP and the second PP. Anne exhibited all of them in the second PP, but not in the first PP, where she lacked a sense of personal safety and security. It is possible that the absence of this antecedent correlate may have impacted her ability to move to deliberative learning in the first PP, whilst she appeared to move easily to deliberative learning in the second PP.

3.3 Attributes of reflective teachers

Given that Chad exhibited all three antecedent correlates of reflectivity, it is no surprise that Chad also demonstrated all four attributes of reflective teachers during both the first and second PPs.

In relation to Attribute 1, Chad explained how he consciously structured his lessons:

What I really like doing...is trying to tell a story throughout...I usually do that...through the use of a starter activity...The starter activity can be recapping what we did in last lesson, and also explaining how last lesson relate to this lesson...creating sort of timeline.

Chad's first PP mentor noted that he always started to reflect on the lessons without waiting to be prompted, working out for himself what went well and what did not go well:

After every lesson...before I even tell him, how I thought it went, he'll tell me that this was good...This I could have changed...I think he does it without even realising.

This was echoed by Chad's second PP mentor during interviews, noting Chad's reflectivity:

He reflects on his own learning...He uses that to inform his planning.

In relation to Attribute 2, in post-lesson interviews, Chad frequently posed specific questions to himself to structure his reflection, and then answered them, even without prompting; for example:

What didn't go well? Pace. Obviously that didn't go well.

Likewise, in his lesson evaluations, although Chad used standard questions from Faculty staff to structure some of his reflections, he revised them, using his own questions to stimulate his thinking and practice:

How did it go?
How can I address any issues for next lesson?
How would I plan for when I teach this lesson again?

Not only was Chad's use of standard questions to structure his experience evident in his lesson-planning and evaluation, Chad's first PP mentor also confirmed a consistent approach to addressing his practice through a questioning approach:

There's been times when he said, how can I tackle this topic... this class...to ensure that they understand the topic.

In relation to Attribute 3, Chad was less dependent on the assigned mentors. Chad was easily able to know what he wanted to learn. This was particularly evident on his lesson plans, where he set himself developmental objectives. Such objectives for a sequence of lessons are included below:

Work on building a good relationship with the students; i.e. learning their names and one thing about them.

Carry on building a good relationship with students. Work with quieter students to understand why they are reluctant to speak up in class.

Instead of telling them the answers during presentations, I need to ask students questions that help them to get the right answer.

Both his mentors confirmed that Chad exhibited this attribute, his second PP mentor saying:

You can always see the following lessons, he's trying to do the things that you said the previous lesson that he needs to work on...whenever you...say this is something that needs to be worked on, he always...come up with a deliberate plan.

In relation to Attribute 4, Chad was aware that he needed to “*talk about the students*” rather than himself during his reflections:

I really shouldn't be talking about myself. I should be talking about the kids.

Chad's ability to describe and analyse interpersonal relationships with students was noted by his first PP mentor:

Instead of just leaving them alone...he realised that now he has to start building on relationships.

Chad's second PP mentor confirmed this during the following placement, noting:

He immediately began to form very strong relationship with the kids.

By contrast to Chad, Anne did not exhibit all four attributes by the end of the first PP. It is possible that such a pattern reflected the incomplete exhibition of the three antecedent correlates of reflectivity at the same stage. As outlined below, there was a transition in the second PP, where she was able to exhibit all four attributes of reflectivity.

Anne exhibited Attribute 1 during both PPs. During the first placement, she was seen to consider it important to structure her experiences in a conscious manner, judging by her systematic approach to reflecting on what happened in the classroom. For example, in relation to one particular lesson, she was able to evaluate, critically reflect, and define implications for future teaching:

I had to stop the activity prematurely, as it had worked better in my head. I don't think the instructions were clear enough, and there were much better ways of doing the same activity...next time I will give each student pair an item, and have 'highest' and 'lowest' written on opposite walls. Students will have to order themselves from highest to lowest holding their item.

Her second PP mentor confirmed that this continued in the second PP:

She's already very good at say[sic], I didn't like that, that went wrong, this time I'm gonna [sic] do this.

Indeed, there was also evidence of her consciously structuring situations and problems in her lesson planning, recognising the importance of continuity and progression in designing a sequence of lessons:

I like... linking lessons to other lessons... and that makes way more sense to them than just random one about Biology for five minutes.

Anne also exhibited Attribute 2 during both PPs. She made use of the faculty-issued reflective prompts as standard questions to structure her experiences in her lesson evaluations (see Figure 1 for an example):

During the second PP, she continued to prompt the questions to herself during the post-class lesson interviews, demonstrating continued use of standard questions to structure her experiences (although not refining and developing those questions herself in the same way as Chad).

In relation to Attribute 3, Anne herself noted that she always tries to independently search for the answers on what she wanted to learn as a teacher herself, before going to her mentor for input. Anne stated:

I would try and figure out how to fix it myself first...so, I've had a mentor-meeting...then she would ask me...what I think I can do to get there, and then she would ask me, okay, so, how are you gonna [sic] put that in your next lesson...then she'll say yeah, I agree...or you could try doing this.

The first PP mentor, and the second PP mentor corroborated the existence of this correlate:

She was able to say, this didn't go how I wanted it. There were loads of things that she picked up on that she wanted to address... she took them on board. (first PP mentor)

She's already very good at say, I didn't like that... This time I'm gonna [sic] do this. (second PP mentor)

In relation to Attribute 4, the first PP mentor noted that Anne “created this...nice atmosphere” in the classroom. However, Anne herself did not comment on her developing any interpersonal relationships with the students from the first PP; showing no evidence that she was able to adequately describe and analyse her interpersonal relationships with others. This changed in the second PP, where she explained:

I've always been really aware of interpersonal relationships, like, the staff and with kids...I won't plan a lesson around interpersonal relationships, but...I've spent a lot of time with Liam [a student with dyspraxia]...I don't plan him into my lesson, but I know that I will have to go and stand with him.

At the end: Immediate thoughts on the lesson?

What went well? Better pace than last lesson. The students achieved more this lesson. Having fewer tasks and therefore transitions helped.

What didn't go so well? Pace still not fast enough. Not enough for the high attenders during non-practical work. I thought there would be more beakers so students could have more than one trial running at once - as it was, they had a gap in-between trials.

What strengths can you build on? Pace. Differentiation

What might you develop? What do you want to change? Ensure more beakers or have something for them to do in-between trials. Include more timers to keep pace up. Keep a better eye on students that need stretching, make their work more challenging.

What went well:

This lesson was much smoother than last lesson. I felt far more confident and increased the pace so we got lots more done. The students managed to pair themselves in a way that meant fast workers were with slower workers so they all finished activities at the same time which made it quite easy to manage the entire class at once (I doubt this will happen again though so I will prepare for the worst at all times!)

They were much better at following instructions today, this was likely to be due to the manner I presented them – the practical method was given to them with parts missing, they had to listen to my instructions in order to complete theirs, this worked really well.

The girls at the front who aren't usually interested during the lessons were participating and shockingly smiled! I feel that this is a sign that they enjoy my teaching style (they were smiling whilst doing work, not smiling at me just to clarify!).

What didn't go so well:

I found it trickier to get their attention this lesson, perhaps due to it being a practical lesson and them being excited and therefore louder.

I believe I still need to work on my pace, though it was much better than last lesson I still need to speed things up. In the future I need to think more carefully about my practical method and equipment - I thought I had covered everything but due to the amount of equipment I ordered the students had some time in-between trials which I hadn't accounted for. I had thought that the students would be able to do multiple trials at once but this was not the case and this was due to poor practical planning on my behalf. If this is unavoidable in the future I will ensure there is a task for them to do whilst waiting for the next trial.

What I will do in the future:

I will definitely give practical instructions in this manner again, though perhaps reserve it for 'tricky' practical sessions as it is quite time consuming to make the sheet and read out the instructions slowly.

I will try to find a way of getting their attention for easily during practical sessions, perhaps having a non-verbal cue as my voice doesn't always carry over their noise.

There wasn't an ideal opportunity for me to stretch the students who needed it today, I will work this into my next

Figure 1: A lesson evaluation written by Anne

The second PP mentor noted that Anne had a very good interpersonal relationships with both staff and students:

She had a great interpersonal relationship...The kids love her. She gets on really well with other members of staff.

This suggests that during the second PP, Anne became able to adequately describe and analyse her interpersonal relationships with both students and staff in the school, something which was not apparent in the first PP.

In summary, Chad exhibited all four attributes of reflectivity in the first PP and the second PP. Anne again exhibited all of them in the second PP, but not in the first PP. Again, it is possible that this difference may reflect her inability to move to deliberative learning in the first PP, whilst she appeared to move easily to deliberative learning in the second PP.

3.4 Consequential correlates of reflective teachers

Perhaps unsurprisingly, evidence of consequential correlates was more difficult to observe, given the position of both beginning teachers as they immersed themselves in two different communities of practice (Lave & Wenger 1991). As such, evidence tended to be visible more easily in the second PP.

In relation to consequential correlate 1, Chad's first PP mentor did not comment whether Chad had better interpersonal relationships with students as compared to other less reflective student-teachers. However, the capacity to build stronger interpersonal relationship with students (as compared to other less reflective beginning teachers) was in evidence from his second PP mentor's comment during interview:

He started off with good strong interaction.

In relation to consequential correlate 2, Chad developed a high degree of job satisfaction during his first PP:

I had a really good time...got on with the staff...They made me feel like I was a really valued member.

When asked whether he was also satisfied with his decision to become a teacher, he noted:

I do have a good job satisfaction...I'm very...satisfied with my decision to become a teacher.

This was supported by his second PP mentor, who noted his comfort in the role of a teacher, and how that was reflected in his confidence:

He's certainly much more comfortable now in everything that he does. There's definite improvement in confidence.

Consequential correlate 3 makes clear that reflective teachers consider it important for students to learn by investigating and structuring things for themselves. During the first PP, Chad asked the students to research the topic themselves prior to the lesson:

What I need to do...is basically to tell them to research the topic beforehand.

Chad made use of exit tickets in his first assignment, to help students to learn by investigating and structuring their learning themselves:

I got students to fill out exit tickets each lesson to determine whether the activities they did during class were beneficial and how they had helped them to learn.

During the second PP, Chad noted how his feedback was designed to get the students to reflect on their own learning:

I gave students the opportunity for them to reflect...Yeah...I definitely did it verbally. I mainly give verbal feedback, but I do give some written feedback.

This was confirmed by Chad's second PP mentor. The mentor noted how Chad's research-based assignment was designed to get the students to investigate and structure their learning themselves:

His research-based assignment [problem-based learning] was all around based on getting the kids to reflect on their own learning ...getting them to identify their areas of weakness...what they need to do and work on...He's been very good at talking them through...getting them to work out where it is they need to do...what areas they are weak on...how they need to adjust...and modify that.

In relation to consequential correlate 4, Chad recognised that students should be the object of his reflection, rather than himself, in both PPs, demonstrating high self-efficacy:

I've learned a lot of what I can do as a teacher in order to...motivate...students...if you put a lot of effort... to differentiate...them as individuals...you will see...an increase in motivation. [end of first PP]

Initially I thought that teaching was just...I pretty much stand in front of the students...running through information...but that's not teaching, teaching is actually to do with kids...you model...your lessons around them. [end of second PP].

In summary, there was evidence of Chad displaying the consequential correlates across both PPs, with the exception of consequential correlate 1, where evidence only emerged from the second PP.

There was a similar pattern in relation to Anne. In relation to consequential correlate 1, the first PP mentor did not confirm whether Anne had a better interpersonal relationship with students when compared to less reflective beginning teachers. However, in the second PP, Anne noted how she made sure to foster interpersonal relationships with students by asking them to openly comment on her lessons:

I feel that reflective teachers are happy to ask their students... what would you want me to do differently next time...I imagine, some teachers would be too scared to ask what the kids maybe didn't like about the lesson, or what to improve, coz [sic] it is quite a scary thing to do.

This was corroborated by the second PP mentor who observed:

Yeah...some of the kids...their confidence increase...because of...her supportiveness, her encouragement...She's got a good relationship to be able to be more confident themselves.

In relation to consequential correlate 2, there was some evidence of job satisfaction in the first PP, although this may have been tempered by the pressure of classroom management:

I really enjoyed it...Classroom management was very difficult...but...I really enjoyed that side of teaching.

At the end of the second PP, although she did not confirm a high degree of job satisfaction, her mentor confirmed that:

she's definitely happy with what she's doing, job satisfaction.

Anne also confirmed that there was job satisfaction when her students were explicitly grateful.

I find it immensely satisfying when the kids say thank you at the end of the lesson.

In relation to consequential correlate 3, Anne enabled her students to learn in the first PP by reflecting on their work in response to her formative feedback:

The students receive formative feedback on a piece of work which will involve further questioning, identifying errors and setting targets. The students are given an allotted time within the lesson to 'answer' the feedback using a green pen.

That said, in the first PP, she appeared not to be aware of the impact of such feedback, as when asked to comment on consequential correlate 3, she said:

I don't think we got a lot of chance to do that [getting students to investigate their own learning] in the first professional placement.

During the second PP, Anne was directed to include Dedicated Improvement Reflection Time, which she subsequently recognised as valuable:

This seems like a bit like a waste of time...Then I realise that... if you get them to reflect every single lesson, you actually have to do less with the end of year topic...They are more aware of what they are not very good at before, and then become aware of what you need to work of [sic] with them.

Her second PP mentor confirmed that the students who were taught by Anne were reflecting on their lessons, and that Anne did consider it important for her students to learn by investigating and structuring things themselves

In relation to consequential correlate 4, Anne predominantly tended to position herself as the object of reflection in her first PP (see highlighted text in Figure 2), suggesting she may have had relatively low self-efficacy early in the first PP:

Indeed, such lack of self-efficacy was reflected in the anxiety she felt before teaching her lessons:

If you came to watch my first ever lesson, I was feeling sick. The first one was just so bad. I was really sick. I was close to getting a panic attack.

Lesson:

Year 10, Aerobic respiration. 10/11/16

What went well:

Considering this was my first ever lesson (and the only bit of Biology teaching prior to this was a game of Bingo) **I don't think it went as badly** as it could have done. **My classroom management was good** but they are a very nice class and they were really nice to me. **I think in theory my activities were good** but putting them into practice didn't go so well – I will use the activities in the future but with some well-needed tweaks! **I felt that subject knowledge would be the most difficult thing for me this year**, but **I felt confident in my subject knowledge for this lesson**.

What didn't go so well:

As it was my first lesson there were many things that didn't go so well! The most poignant was pace – **I was too slow, I let the student's take too much time on activities and didn't push them enough**. Due to things moving slower than I had anticipated **I lost some of the activities I had planned to do which was unfortunate**. **I need to work on my instructions** as the students kept asking for them to repeated despite me telling them verbally and having them on the board. **If I had given the instructions better the first time it would have saved a lot of time re-explaining and also saved my patience!** **I was so concerned with the lower attaining students that I forgot to look at the higher attaining students – I had extension tasks planned for them but somehow managed to not give them out**. **I put some work in that repeated the information earlier in the lesson, I thought this would help secure their knowledge but I think it bored them and had the opposite effect to what I had hoped for**. **I panicked during my demo and forgot all of the questions I had prepared, though I'm sure the more time I spend in front of students the less I will panic**.

What I will do in the future:

Improve my instructions, make them explicitly clear. I also will try to make the reasoning behind the activities clear as well, though they are clear to me I should let the students know too. Perhaps write a script of some sort for myself when it comes to things like questioning or demos to guide me if I get a bit stuck or get stage fright! **I will move the most important bits of the lessons away from the end of the lesson so they will never get left out at the end should I run out of time**.

Figure 2: Anne's first lesson evaluation during the first professional placement.

In the last lesson of the first placement, however, students became the predominant objects of Anne's reflection (see italicised text in Figure 3):

Such an efficacy shift continued into the second PP, with her sense of responsibility to students emerging during her interview with Chad:

Chad: "Yeah, I think, it's what we are saying earlier about responsibility, we constantly feel responsible about the student, for the student."

Anne: "Like even when you feel absolutely terrible."

Chad: "Yeah."

Anne: "You are like, battle on! It's fine."

In summary, there were similarities and differences between both beginning teachers in relation to the consequential correlates. There was limited evidence of consequential correlate 1 for both Chad and Anne in PP1, but much better evidence in PP2. By contrast to Chad, this pattern was replicated for Anne with respect to consequential correlates 2, 3 and 4. Again, it is possible that this difference may be interconnected with Anne's inability to move to deliberative learning in the first PP, whilst she appeared to move easily to deliberative learning in the second PP.

4 Discussion

This study makes sense of the ITE of two beginning teachers named Chad and Anne, drawing on their perspectives, and those of their professional placement mentors. By rooting such 'making sense' in two different frameworks of professional development (the professional learning continuum (Wilson & Demetriou 2007) and the characteristics of reflective teachers (Korthagen & Wubbels 2001)), we are able to explore how the two frameworks relate together, and to suggest outcomes for ITE which may be relevant to enabling new entrants to the profession to experience success, and hence remain in the profession beyond their ITE. Because the position of Chad and Anne on the professional learning continuum differed across their ITE year, and because the characteristics of reflective teachers which they displayed also differed, the findings provide an opportunity to understand the interrelationship of the characteristics of reflective teachers and a beginning teacher's journey across the professional learning continuum.

Chad engaged in implicit, reflective/reactive and deliberative learning through both his first and second PP. By contrast, Anne engaged in implicit and reflective/reactive learning during her first PP, only moving to

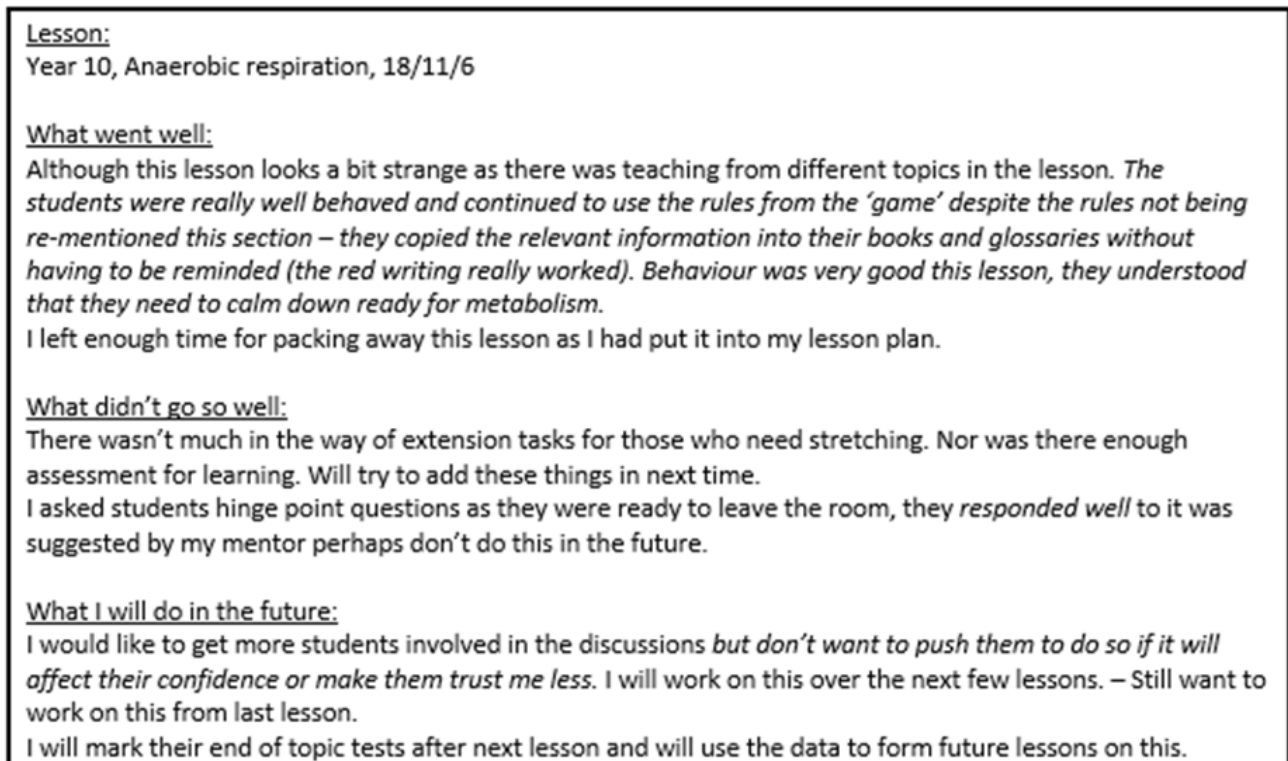


Figure 3. Anne's final lesson evaluation during first professional placement.

deliberative learning in her second PP. Engagement in reflective/reactive learning was expected, as the written assignments that both beginning teachers undertook in the first PP were designed to prompt such reflection. However, Chad went well beyond the expectations of those assignments in his practice. He may have been enabled to do so because he exhibited all three antecedent correlates of reflectivity, all four attributes of reflective teachers, and all three consequential correlates of reflectivity during the first PP. Indeed, although Chad briefly regressed toward only implicit learning and reactive/reflective learning at the start of his second PP, the presence of all three antecedent correlates may have enabled him to quickly reengage in deliberative learning.

By contrast, Anne did not exhibit deliberative learning in her first PP, with evidence of deliberative learning emerging only in her second placement. It is useful to examine those attributes and correlates which were also not exhibited in her first PP, to seek explanations for this difference with Chad. In relation to the antecedent correlates, there was no evidence in her first PP of Anne's sense of personal safety and security. Given that the process of reflecting upon oneself or getting feedback from students requires a level of self-confidence to lay 'one's own performance open to inspection', she may still have felt too 'vulnerable and threaten(ed)' (Korthagen & Wubbels, 2001) to engage in deep reflection and hence did not progress to deliberative learning during her first PP. This was perhaps surprising given her previous role as a teaching assistant, but may reflect uncertainty in transitioning to the role of a teacher, and that she had not recognized the interaction and relationship with students would be different (Rubie-Davies et al., 2010). This is perhaps reinforced by the lack of evidence for attribute 4 in her first professional placement; she did not describe and analyse her own functioning in interpersonal relationships with her students. And similarly by the lack of evidence for consequential correlate 1; there was no evidence that she had better interpersonal relationships with students in her first PP. Indeed, the way in which classroom management appeared to temper her job satisfaction in her first PP may also support the idea that incompletely formed relationships inhibited her ability to engage fully in deliberative learning, and maintained her focus on herself and her teaching, rather than her students and their learning. Indeed, with respect to consequential correlate 3, she refers to having limited chances to 'do that' in her first PP, reinforcing the possible impact of low self-efficacy on her ability to engage in deliberative learning, reinforced by the lack of evidence for consequential correlate 4.

Drawing on these findings, we propose an approach to integrating the professional learning continuum, and the characteristics of reflective teachers into a usable framework which could help initial teacher educators both to recruit 'great people' but also to support them effectively, particularly through their early professional placement experiences. This may differ for different ITE providers, but we created such a framework for the current context in Figure 4. One intention is to highlight to teacher educators the importance of the three antecedent correlates of reflectivity to move forward in the professional learning continuum. In short, a) reflective/reactive learning tends to coincide with exhibition of three out of four attributes of reflective teachers, and appeared to result in the development of at least two consequential correlates; and b) deliberative learning tends to coincide with the exhibition of all four attributes of reflective teachers and appeared to result in the development of all four consequential correlates. As such, prior exhibition of all three antecedent correlates of reflectivity and all four attributes of reflective teachers may support beginning teachers in continuing their journey from implicit to deliberative learning, rather than vacillating between phases of the continuum when faced, for example, with praxis shock in a new professional environment, and the impact on wellbeing and self-efficacy which can ensue (Ballantyne & Retell, 2019). DfE (2019, p6) are clear that it must be 'easier for great people to start...teaching'. It is actually the definition of 'great' which is lacking in their own policy document. This study suggests that those applicants to ITE who have the potential to exhibit the characteristics of reflective teachers are more likely to move from implicit to deliberative learning, making judgements about their practice which will equip them to adapt to a wider range of professional settings throughout their careers, 'rethink[ing] key ideas, practices, and even values to respond to novel situations' (Hammerness et al. 2005, 358-359). We would argue that building such 'adaptive expertise' (Berliner, 2004) within an ITE course is an essential prerequisite in retaining beginning teachers in the profession for longer.

The framework in Figure 4 gives an indication of how the integration of the professional learning continuum and the characteristics of reflective teachers could have value, highlighting the expectations which mentors or teacher educators could hold in relation to the attributes and correlates above, and how they influence a beginning teacher's transition to deliberative learning. It is also useful to identify the potential impact if, for example, one or more antecedent correlates is not well developed, and hence can be useful for identifying opportunities

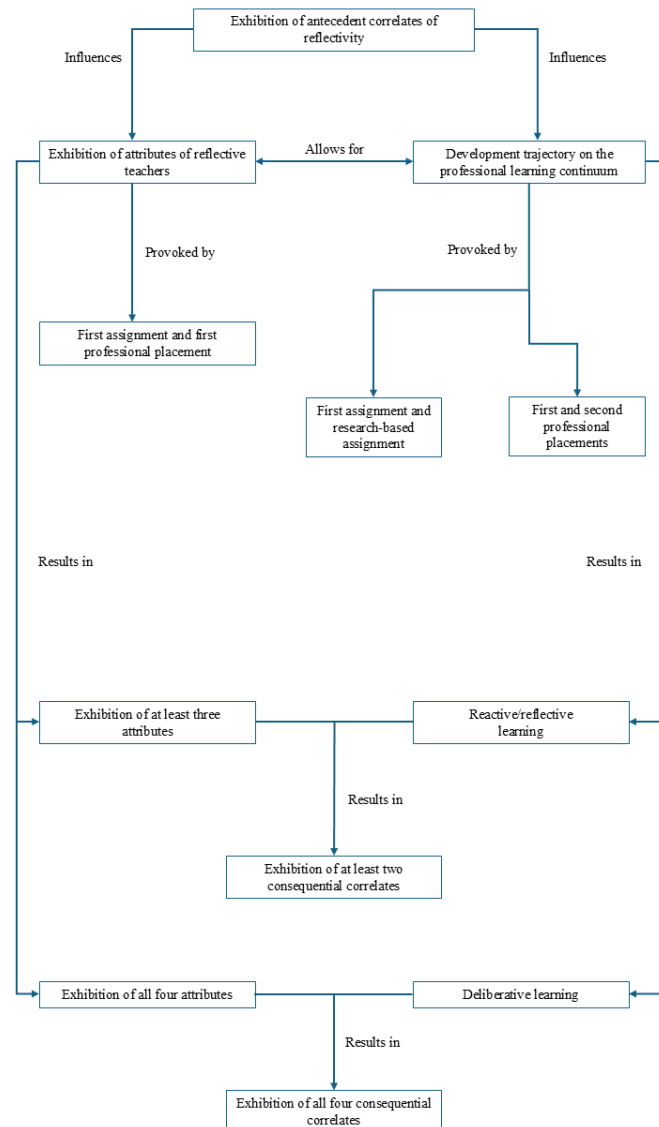


Figure 4. Framework relating progression along the professional learning continuum to the characteristics of reflective teachers.

for intervention prior to, or during the ITE programme. For example, in the case of Anne, providing support in relationship building with students may have enabled her to build towards deliberative learning more quickly. Indeed, the framework may not just be useful in guiding supervision and mentoring of beginning teachers already enrolled in ITE, but may also have utility during the recruitment process to ITE (for example, those with all three antecedent correlates may indeed be the great people that DfE (2019) is seeking). If we expect beginning teachers to progress towards deliberative learning, we also need to foster their understanding of their own development, giving them greater autonomy in their journey across the professional learning continuum, and leading to greater satisfaction and eventual retention (Worth & Van den Brande, 2020). If they understand the

interrelationship between the attributes, correlates and continuum, they are better equipped for action, setting professional development goals with their mentors which are appropriate and which enable them to develop effectively. The ITE programme in which Chad and Anne were engaged emphasises the importance of what Burn et al. (2022) call practical theorising, developing adaptive expertise through learning to critically evaluate ideas for practice, drawing on a wide range of knowledge and evidence in making such judgements (Burn and Mutton, 2015). Although the interrelationship of the professional learning continuum and the characteristics of reflective teachers can help to support teachers' trajectory to deliberative learning, our aim is not to suggest that attributes and correlates are immutable, or to establish a radical shift in educational theories of teacher

development, but to provide a nuanced and pragmatic framework which has utility in ITE, and which values conceptions of teacher education such as those presented by UCET (2020).

5 Limitations

This study has several limitations. The dynamics of the mentor-mentee relationship could have impacted on the extent of evidence available. Anne's relationship with her mentor may not have been supportive of her self-efficacy, and so further studies should be undertaken with a larger set of beginning teachers, in order to understand the impact of such a relationship. In addition, the interrelation between the beginning teacher's self-efficacy and their object of reflection could be explored in more detail. Instead of asking Chad and Anne to self-comment on their self-efficacy, a standardised self-efficacy scale (Bandura, 2006) may have been helpful. Likewise, given this study was undertaken in just one teacher education programme, replication in other programmes would be helpful to validate the findings, and to enable greater scope for generalisation.

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