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A longitudinal study of the impact of reflective coursework writing on teacher development courses: a 'legacy effect' of iterative writing tasks

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Abstract

Studies into the efficacy of teacher development courses for early career academics point to graduates conceiving of their teaching in increasingly complex and student-focussed ways. These studies have used pre- and post-testing of conceptions of teaching to identify this finding. However, these studies do not identify what aspects of these courses contributed to these changes. This exploratory case study investigates this phenomenon through a longitudinal study of 16 academic teachers' reflective coursework writing. Discourse analysis was used to contrast causal reasoning statements in assignments completed during participants' first 2 years in-service, while they were completing a UK-based teacher development course. This analysis identified how reasoning about teaching and learning became more complex over time. A key element was the integration of experiences and earlier learning into more nuanced and multi-factorial later reasoning about teaching choices and effects. This 'legacy effect' provides new evidence for the efficacy of academic teacher development courses.

Keywords Impact of teacher development · Academic identities · Reflective writing · Identity positioning

The impact of teacher development courses

The increasing link between academic probation and the completion of teacher development courses has sharpened interest in the efficacy of these courses. However, providing evidence for this efficacy is not straightforward, since it is difficult to separate out the impact of training and development programmes from other influences (Chalmers and Gardiner 2015; Norton et al. 2005; Roxå and Mårtensson 2015; Saroyan and Trigwell 2015).

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Gibbs and Coffey (2004) argue:

> 'We are still not in a position to demonstrate that it was the training itself that resulted in positive changes, merely that institutions that had training also had teachers that improved.' (2004, p. 99)

Chalmers and Gardiner (2015) concur arguing that although increasing numbers of academic staff are required to take teaching training and professional development, there is limited evidence of their effectiveness. A further challenge in evaluating and comparing programmes is their diversity and the ambivalence of participants' reported experiences. For many, participation was not valued (Fanghanel 2004). Some pedagogical training has been spurned where the input of centrally organised training and development programmes is argued to lack congruence with disciplinary perspectives (Gibbs and Coffey 2004) or departmental norms and practices (Knight and Trowler 2000; Trowler and Cooper 2002).

However, studies into the impact of teacher development courses have identified positive influences on academic teacher development. Increased self-efficacy has been found to be associated with longer-term pedagogical training (Butcher and Stoncel 2012; Postareff et al. 2007, 2008). Contrastive studies have assessed participants' conceptions of teaching pre- and post-course, principally through the use of the Approaches to Teaching Inventory (Prosser and Trigwell 1997). These studies have shown that more 'complex', student-centred conceptions of teaching were present among those who had completed teacher development courses (Hanbury et al. 2008; Lindblom-Ylänne et al. 2006; Postareff et al. 2007).

A possible explanation for this finding is that attendance on such programmes may lead to informal learning (Butcher and Stoncel 2012; Knight and Trowler 2000) and the creation of communities of practice (Sadler 2008).

> 'Pedagogical courses, the main goal of which is developing teaching skills, can also be regarded as communities when they enable interaction between colleagues. The courses provide opportunities for university lecturers to contemplate and discuss their teaching with colleagues and help reduce academic isolation.' (Remmik et al. 2011, pp. 188-189)

A further explanation is that change in conceiving of teaching is promoted by reflection in the form of the kind of coursework writing that participants are asked to complete on these courses (M. McLean and Bullard 2000). This kind of writing is perhaps the most ubiquitous feature of what can be very different approaches to teacher development. Reflective writing serves as a vehicle for developing 'reflective practitioners' (Schön 1987) among early career academic staff. This reflective practice is intended to develop participants' appreciation of the complexity of teaching and learning that pre- and post-testing studies have found. This longitudinal study of coursework writing investigated this link between iterative reflective writing and the complexity of causal reasoning about teaching and learning.

One way to explain why this link might exist is from the perspective of identity formation. Goffman's work on 'presentation of self' characterises identity as co-constructed through being 'performed' with others (1990). In the case of teacher development contexts, the requirement to 'perform reflection' is a form of 'presentation of self' that combines personal experience and educational theory and research. This repeated performance would predictably lead to the formation of a reflective professional identity in this context (Davies and Harre 1990; McLean and Price 2017). This study seeks to contribute to the literature on the efficacy of teacher development programmes by providing a longitudinal investigation of this process of identity formation by identifying participants' 'interpretative repertoires' (Potter and

Wetherell 1987; McLean and Price 2016). These repertoires are ways of conceiving of and describing phenomena that are common in the discourse of particular identity positions (McLean 2012). Causal reasoning is a key element of repertoires (Edley 2001), and this study identified how participants reasoned about teaching and learning over a 2-year period. Coursework writing on these courses is therefore not just a potential explanation for findings of the positive effects of teacher development (Hanbury et al. 2008). This writing was also a source of naturally occurring data for the analysis of the impact of teacher development.

Methodology

This exploratory case study presents an investigation into the finding that graduates of teacher development courses think about teaching in a more complex manner than before they took their courses (Hanbury et al. 2008; Postareff et al. 2007, 2008). The setting for this study was a 'single faculty' social science university. This university employs some PhD students to teach undergraduate classes and offers these class tutors the chance to enrol on an in-service, 2-year teacher development course (a Postgraduate Certificate in Higher Education). This course provides an introduction to teaching and learning in higher education, with a particular focus on social scientific study. Research participants for this study were selected from among two different year groups on this teacher development course. The first selection criterion was that participants had no previous teaching experience. This enabled the study to investigate development during tutors' first 2 years in-service. The second criterion was that participants were teaching qualitative social science disciplines. This was to enable comparison across broadly cognate teaching experiences. Sixteen novice social science class tutors were invited to take part by allowing their completed portfolio of coursework assignments to be analysed. This invitation to participate came after participants had completed the course. There was therefore no influence on their writing from the context of being part of a research study.

In order to explore the finding of teachers' developing awareness of teaching and learning, a longitudinal approach was adopted that examined their reasoning about teaching across the 2 years of the course. The data source was participants' coursework assignments. In total, 80 texts were analysed: five coursework texts for each of the 16 study participants. The first text was written pre-service. The other texts were module assignments, each of which was completed at the end of each of participants' first four teaching terms. The assignments were approximately 2000 words in length and each one had their own guidelines and assessment criteria. The analysis of these texts enabled the kind of 'theory-informed, contextualised investigation' of the impact of a teacher development course advocated by Bamber (2008; 107).

A general requirement of the module assignments was for participants to write about teaching and learning in ways that combined reflection on teaching experiences and participants' reading of relevant educational literature. Table 1 provides an overview of these tasks.

Our hypothesis for this case study was that this writing serves as a means of encouraging reflection, where reflection is seen as a vehicle for developing increasingly complex notions of teaching and learning (Schön 1984, 1987). If this is the case, then a longitudinal study of causal reasoning statements in these texts should identify increasing complexity in participants' successive assignments. In the context of this study, complexity in causal reasoning statements is understood as observable discursive practices such as reference to multiple factors, qualification of claims and integration of different sources to justify decision-making.

Table 1 Overview of coursework assignments

Coursework task	Word guide	Instructions and key concepts
Pre-service reflective task	2500	Prompt questions elicited participants' views on aspects of class teaching, student learning, assessment and feedback and course design
Small-group teaching assignment (end of term 1)	2000	Participants were firstly asked to place their own approach to class teaching within the traditions of teaching in the disciplines. The second section reported how participants had made changes as they planned and delivered their term's teaching and the final section asked participants to identify lessons they had learned
Student learning assignment (end of term 2)	2000	Participants profiled students in one of their classes and identified challenges they faced, explored how learning theory offered insights into these challenges and proposed responses
Assessment and feedback assignment (end of term 3)	2000	Participants were asked to comment on the assessment on a course they were teaching on in terms of key concepts such as validity and reliability, as well as to comment on their own marking of a set of essays, and then to evaluate their own feedback to their students in terms of principles of effective feedback
Course design assignment (end of term 4)	2000	Participants were asked to comment on the design of the course they were teaching in terms of constructive alignment, proposing changes if appropriate, as well as to design in outline a course that they could teach on the basis of their own disciplinary knowledge

The study's hypothesis was therefore that these behaviours would be increasingly evident in the reasoning statements found in participants' later writing on the course. This investigation was to explore whether our hypothesis was correct, and if so why.

To conduct the longitudinal analysis, a form of discourse analysis was developed from the tradition of Discursive Psychology (Edwards and Potter 1992; McLean 2012; Wetherell and Potter 1992). This tradition explores the 'interpretative repertoires' of speakers or writers (Edley 2001). 'Interpretative repertoires' are the ways in which a person understands and provides explanations for phenomena, in particular their frames of reference and causal reasoning. The analysis of 'interpretative repertoires' in this study identified causal reasoning statements about teaching and learning in each of the five texts written over the 2-year period. The first stage of analysis was to identify statements where a causative conjunction (or a syntactic structure such as an infinitive of purpose) explicitly linked main and subordinate clauses or where one of these clauses was implied by the surrounding sentences and it was possible to supply this clause from the context. This process yielded 2487 causal statements from across approximately 160,000 words of the 80 texts.

These statements were analysed thematically in two further stages (Braun and Clarke 2006). Firstly, statements for each tutor were analysed according to each module assignment, with explicit consideration of the assignment guidelines which framed their use, much as an interview question frame would structure an interview-based approach (McLean and Price 2016). In this stage, organising themes for reasoning statements were identified for each teacher and each assignment. The next stage was to contrast organising themes from the reasoning statements across the 16 tutors, still explicitly considering the effect of the assignment guidelines. This second stage led to organising themes across the assignments that were present in writing across the 16 participants (Table 2).

Table 2 Data gathering and analysis

	Actions taken to examine participants' expanding awareness of teaching and learning
Stage 1—identification of the causal reasoning statements	Identification of discursive practices associated with implicit and explicit causal reasoning statements about teaching and learning. These statements are identified through causative conjunctions (or a syntactic structure such as an infinitive of purpose) explicitly linking main and subordinate clauses, or where one of these clauses is elided but clearly implied by the surrounding context. In total, this initial coding yielded 2487 explanatory causal reasoning statements about aspects of teaching and learning.
Stage 2—analysis of causal reasoning statements by assignment	Organising themes arising from coding causal reasoning statements by assignment.
Stage 3—contrasting reasoning statement between the 16 participants	Identification of organising themes across the 16 participants, and done by assignment.

This methodological approach has two advantages. First, stage 3 of the analysis created the basis to compare what participants wrote at the same time, with the same instructions, across their first 2 years of learning to teach. This made this analysis genuinely longitudinal. It took time-series examples of tutors' writing that are comparable through tutors writing at the same stage of their course and in line with the same assignment guidelines and assessment criteria. Second, in explicitly accounting for the influence of the programme coursework tasks, it is possible to assess the role these tasks played in novice teachers' expanding awareness of the complexity of disciplinary teaching (Åkerlind 2003).

In line with pre- and post-testing studies, and other studies on the impact of pedagogical training, (Hanbury et al. 2008; Postareff et al. 2007, 2008; Remmik and Karm 2009), we found that teachers' reasoning about their teaching and their students' learning grew more complex as the course progressed. The longitudinal methodology enabled us to account for this change. Crucially, these teachers' conceptions of teaching and learning built progressively on, and qualified, earlier explanations and understandings. In this study, the process of building on and qualifying earlier conceptions of teaching and learning over time is termed the 'legacy effect'. The driver for this effect was that the participants were required to write iterative reflective assignments. The next section demonstrates how the course requirement to repeatedly write about teaching and learning, integrating educational reading with lived experiences in a reflective manner, enabled these teachers to develop their conceptions of teaching over time.

The 'legacy effect' of iterative coursework writing

The thematic analysis of the causal reasoning statements showed that each tutor's interpretative repertoire for explaining teaching and learning became increasingly complex over time. This complexity was measured in terms of reference to multiple factors, the qualification of claims and reference to multiple sources to justify decision making. We believe that this increasing complexity was the result of multiple influences on these tutors during this 2-year period. However, a critical influence seems to be a pattern that emerged in the stages of analysis of participants' writing. This is that certain organising themes appeared and then recurred (and developed) in teachers' writing over time.

As these themes recurred, changes were identifiable in how teachers wrote about them or combined them with other themes. It was the identification of recurring themes and the increasingly complex discussion of these organising themes that allowed us to identify the 'legacy effect' created by completing the coursework assignments for the course. As will be shown in the next section, most organising themes directly related to assignment guidelines and requirements. However, others did not. In pre-service writing, some organising themes related to teachers' expectations and study experiences. In later assignments though, organising themes that recurred came from the assignment guidelines of earlier assignments. This recurrence of themes was not a requirement of later assignment guidelines. Instead, teachers were building on their earlier assignment writing as they completed subsequent tasks, and their reflection became increasingly complex as a result. Table 3 provides an overview of how organising themes recurred in teachers' writing.

This 'legacy effect' worked in the following manner. Participants encountered new ideas of class teaching in the first module of the course. These ideas built on and reframed their pre-service expectations. This new input mingled with the experience of teaching and dissonance between pre-service expectations and the realities of their teaching experiences. Then, in the second module on student learning, participants wrote about new input on learning theory and student diversity, but they also referred back to ideas encountered in the first module, in discussion around how to support their students' learning. Participants did this even though it

Table 3 Legacy effect demonstrated through flow of organising themes

Assignment	Organising themes from coding causal reasoning statements
Pre-service writing	Teacher as 'guide' Teacher's passion and enthusiasm Learning from own study experiences Developing knowledge of the discipline
Writing at the end of tutors' first teaching term (on small group teaching)	Teaching the discipline Managing participation Planning and preparing Student behaviours Student direction
Writing at the end of tutors' second teaching term (on student learning)	Student diversity Motivation and student behaviours (*continuation from module 1*) Learning theory Influence of course structures and assessment on student behaviours (*continuation from module 1*) Student direction (*continued from module 1*)
Writing at the end of tutors' third teaching term (on assessment and feedback)	Principles of assessment and feedback The influence of assessment methods and practice on student behaviours (*extension from module 2 theme*) Learning theory and student motivation (*continued from module 2*) Skills development/student direction (*continued from module 1*)
Writing at the end of tutors' fourth teaching term (on course design)	Principles of course design The influence of course design and delivery on student behaviours (*continued from modules 1 and 3*) Pedagogic content knowledge (*including the themes of teaching the discipline, student behaviours and student direction from earlier modules*) Learning theory and student motivation (*continued from module 2*) Institutional and educational realities

was not required for the second assignment. In their second year of teaching and after their third term, in their assignment on assessment and feedback, participants wrote about principles of assessment and feedback, but frequently justified the points they made with reference to learning theory and diversity from their second module. Further, in discussions around how feedback can influence study, the first assignment theme of 'student direction' recurred. Again, this was not an assignment requirement. Finally, after participants' fourth term of teaching and in their final assignment on course design, themes from all the earlier assignments were integrated into explanations of different aspects of teaching and learning, and in justifying decisions made about course outlines. The outcome of this 'legacy effect' is that tutors' interpretative repertoires for teaching and learning were far more complex in their final module assignment than in early writing. This complexity can be explained through a process of accretion of ideas from earlier modules, as well how tutors integrated these themes with their lived experiences of teaching.

How tutors explained aspects of teaching and learning pre-service

As novices, tutors' writing was understandably dominated by focus on their own plans and actions. Causal statements focussed on the characteristics of a 'good' teacher, with enthusiasm and passion highlighted in particular. However, because these expectations were based more on the teacher than their actual students, they tended to lack an appreciation of teaching and learning difficulties that appeared in their later module assignment writing. The following quotes are examples of this underestimation of complexity:

> I hope to make the material as interesting as possible by being enthusiastic about it … so that students feel more motivated to study it (Participant 14)
> In this process, I will be a supportive teacher who sets high expectations for the class, as well as for me. For example, in order to show the class that I am ready to work with them, I actually read all the readings for the first class and have developed my own presentation for this week. (Participant 9)
> …my students are meant to learn about one theorist per week, and for the exam specialise in about 4 – 5 theorists. This should provide them with a sound understanding of basic normative principles pertaining to politics. (Participant 6)
> And yet I find it necessary to guide the students in class discussions and take an active part, since I have the knowledge of historiography and of the existing debates which they lack. (Participant 8)

These statements mirror previous findings in the literature in relation to teacher-focussed conceptions of teaching at the beginning of development courses (Hanbury et al. 2008; Postareff et al. 2007, 2008). This was the 'starting point' from which teacher's reasoning about disciplinary teaching and learning became increasingly complex.

Development from pre-service to first term teaching

The experience of teaching and completing this module and its assignment led to clear differences in how participants explained teaching compared with descriptions from their pre-service writing. Pre-service reasoning statements about the role of the teacher focussed

on content knowledge, passion and enthusiasm and being a 'guide'. Reasoning statements within these themes echoed those in pre-service writing, but what was added was how these beliefs and values could (and should) be operationalised, and how input on teaching had made a contribution to this. The following quotes illustrate this development:

> … the course I am teaching on covers a very broad area. In this context, my primary aims for the class were to provide a bridging role between the material of different weeks in order to specifically avoid the problem of 'all periphery and no core' (Piachaud 2007), to suggest specific literature and help the students negotiate the long reading list … (Participant 15)
>
> Many students were taking the course *for* credit at their home institution, so I felt a strong responsibility to prepare them for the mid-term essay and terminal exam with as much focus on the syllabus as possible (Participant 10)
>
> My first experience of teaching has been with a small (often really very small) group of mostly quiet students at 9am, which certainly throws up challenges … The GTA and PGCertHE workshops have been absolutely vital, summarising a move through knowledge to interpretation … What I have tried to do is to start with an exercise that serves as both warm-up and knowledge fixing, usually a list of questions summarising key points in the lecture and reading. (Participant 1)

Discussion of planning and preparing was absent in tutors' pre-service writing; however, early input on the teacher development course on planning was reflected in tutors' writing at the end of their first term:

> I have varied the teaching styles out of consideration for different styles of learning and different student needs. Kennedy (2007) makes the point that different styles benefit different students, in relation to class debates. (Participant 12)
>
> This term I have organised my classes through my own PowerPoint presentation. Initially, this was motivated largely by fear of 'drying up' in class. (Participant 7)

Teachers were surprised and frustrated when students did not behave as would have liked or expected. This experience of student resistance created reasoning statements that reflected an awareness of the limits of their control in overseeing their students' learning. This theme of constraint developed over time. It was particularly evident in participants' second module assignment and their responses to course input on student learning.

Integration of themes from the first to the second module assignment

An important theme absent from pre-service writing, but that emerged in the second module assignments, was the influence of course structures on learning. An example of this is discussion of assumed knowledge:

> As an introductory course, it does not assume any knowledge, but there is a steep learning curve for non-philosophy students to become familiar with philosophical jargon and knowledge of broad philosophical positions. (Participant 5)
>
> The two most common issues for students in my seminar group are the amount of assumed empirical knowledge, and their lack of familiarity with the specific modes of political-sociological argument and explanation which this course requires. (Participant 4)

Tutors wrote, largely for the first time, about their environments and what this meant for students, and therefore for them as teachers.

> It was clear that students in this class were intelligent and motivated by high exam performance, though it was a challenge to get them interested in the course material. I approached this challenge in two ways. First, I regularly introduced supplementary material from current events that demonstrated 'social policy' concepts in action … Second I acknowledged the performance orientation of the group by regularly demonstrating strategies to approach assigned readings that would facilitate high performance in the seminar discussions, essays and the exam. (Participant 13)

In contrast to first assignment writing, student behaviours were identified as challenging.

> Nevertheless, I noticed that in the second term, my students' preparation for the course decreased – they knew less due to having done fewer readings … I always said that I would understand that they had other obligations as well … However, I was strict with the ones who were not co-operating by, for instance, setting another deadline, and underlining the consequences for non-compliance … (Participant 16)

Similarly, reasoning statements about directing or guiding students carried forward from the first assignment, now included more reference to learning, rather than simply teaching:

> I will focus, therefore, on instructing my students in the modes of analysis and argument which are commonly used in political sociology. My reasons for this are partly practical: mastery of these modes is essential if they are to succeed… (Participant 4)

Another development was multiple instances of values espoused in the first module writing that were integrated into learning-theory-informed reasoning in the second module writing. For example, in module 1, participant 1 wrote about using essay-planning tasks in this way:

> I can see that the danger of being content with the evidence of intellectual understanding, foregoing the next stage of teaching the craft of application … which lies at the heart of formulating fully developed arguments. That is why I think the essay exercises … which I would like to reproduce in different variants, are so important.

In the same teacher's module 2 writing, this had become:

> But for some students who had clearly done inadequate reading or still had lacunae resulting from a non-IR background, I encouraged them to use the exercise of essay planning to build up a picture of what they needed to revise further, which speaks to the constructivist approach …

The distinction here is how the two quotes show increasing awareness of the likely influence of essay planning exercises. In the first quote, participant 1 presents these exercises almost as a panacea for a potential teaching challenge. There is no acknowledgement of student diversity, or practical challenges such as variable student reading. These considerations are though present in the second quote, as is the use of the verb 'encourage', which suggests that participant 1's sense of his own control of student learning is more qualified. This is a good example of a shift to an increasingly student-centred conception of teaching (Åkerlind 2003).

Integration of themes from the first two modules into end of their third term writing

There was no requirement for tutors to refer back to earlier modules when completing their assignment on assessment and feedback. Nonetheless, earlier themes were integrated into tutors' discussion and understanding of assessment. In particular, the influence of the second assignment on student learning was very clear in tutors' writing. As such, a shared topic in the second and third assignments was student motivation.

> Students who are inclined to be, for want of a better term, instrumentally rational, are more likely to ask questions about the exact requirements of the course so they can minimise the amount of work they have to do in relation to the marks they want to achieve. (Participant 4)
>
> Although the formative essays are designed to prepare students for the summative assessment, in practice, students do not always see the relationship between the two and how they might use feedback from the former to help with the latter. As noted by Brown 'students take their cues from what is assessed, rather than from what lecturers assert is important'. (Participant 6)

Also evident as an influence was the integration of learning theory into espoused good practice on feedback. Participant 5 provides a good illustration of this:

> It is a continuing problem that I have no office hours, so it is difficult to provide specific individual guidance. It would be helpful to have an office hour so that I could encourage more students to engage in one-to-one help, as individual guidance, in my experience, appears to have a positive effect on essay marks. However, the extent to which students will seek and act on advice will depend on their goals, as evidenced by learning theory. Some students are focussed on a full understanding of the subject, hence likely to act on advice such as widening their reading to develop their arguments. Students with performance-oriented goals, whose primary interest is to pass the exam, are less likely to act on such advice (Mattern 2005: 27).

It is also the case that the themes raised in the first module and carried into module 2 reasoning statements about teaching and learning and were also integrated here. A good example is how the early theme of directing or guiding students informed the identification of skills deficits in the assessment module assignments:

> Another common issue … is their inability or unwillingness to write in their own voice and make their own original set of arguments to a question. While I recognise that this is not an easy skill … I do encourage and support them, and do find that over the course of the year, many are able to make important strides in this area. I also encourage this focus on original argumentation because it is an important element in their summative assessment in this course. (Participant 9)
>
> I would be more conscious of the particular language used in the marking scheme when writing essay feedback. I would also end on a positive note in order to emphasise the skills that the student has shown. (Participant 2)

The change here in teachers' reasoning about teaching is that initially, they tended to offer simple teaching plans that would apply equally to all students. Over time, teachers focussed more on context and the multiple factors affecting their different students' learning. This led to

reasoning statements that differentiate between their students and that qualify the extent to which any teaching intervention will apply equally to all students. This is another example of 'expanding awareness' (Åkerlind 2003), where building on earlier ideas led to more complex later reasoning. The requirement to write reflective assignments was the driver for this increasing complexity.

Integration of themes from earlier module into fourth term writing

The intention of this final assignment on course design was to encourage tutors to draw together learning from across the course. Although this was not explicit in the guidelines, this is what happened in the causal reasoning statements identified in this set of 16 assignments. An example of this is the theme of student motivation, common in all of the final assignments. This was evident even though including learning from earlier assignments on student learning was not a requirement. Even so, participants used learning theory to justify design choices.

> Natural feedback from students who do not wish to take the course suggests that the irrelevance of the course for career aspirations, as well as a concern that the course will be too difficult, prevents the students from engaging in the course proactively and with interest … In order to ensure that they engage … the course needs to be designed in such a way as to ensure that, in order to pass, students engage with learning activities which are focussed around student-centred learning outcomes (Biggs 1996, 2004). (Participant 14)
> The variety of backgrounds means that there will always be significant variance in the initial understanding of the subject that students bring with them to the course. This in turn means that the way in which students 'construct' meaning out of what they are studying is likely to differ … (Participant 3)

Similarly, participant 4 used constructive alignment principles to explicitly ensure that '…deep learning is the best exam strategy'.

Assessment choices in course redesign and proposals incorporated reasoning from the earlier assignment on assessment (e.g. principles such as validity). The following quotes demonstrate this link between reasoning in the two modules:

> Exams challenge the necessary validity of assessment methods (i.e. whether an assessment tests what it wants to test), since exams tend to test "skills" outside of the ones practiced during term time … Indeed, according to information I collected for Module 4 on student assessment, I found that most students perform better in their essays than they do on the final exam. This leads me to the conclusion that there may be better ways by which the assessment methods could prepare students to succeed in the course. (Participant 2)
> My approach on both designed courses has been to have a diversity of assessment methods to maximise the validity of the course in terms of the students' diverse skills and, crucially, to assess the learning outcomes thoroughly. (Participant 1)

This final quote is an example of how participants integrated earlier themes from multiple modules. Discussion of input on constructive alignment (final module) includes reference to earlier input on learning theory (reference to Bloom and 'deep' learning) and first module input

on managing participation (reference to teacher's role, which in her earlier assignment focused on an interest in Paolo Freire's critical pedagogy and 'teacher as facilitator').

> Having clear outcomes is the first step in constructive alignment. In the revised (course code), students know that they are expected to learn the vocabulary used in the subject. According to Benjamin Bloom's taxonomy of cognitive levels (1984), merely learning vocabulary and what concepts mean constitutes first (or at most second) class cognition. The verbs used in the learning outcomes are consciously higher-order actions that encourage deep learning. Importantly, clear outcomes also shift the responsibility and thus power from the teacher to the student, thus facilitating student-based learning (O'Neill and McMahon 2005). The teacher's role then becomes that of a facilitator and resource person. (Participant 2)

Conclusion

This study contributes to the body of knowledge on the impact of teacher development by demonstrating the value of iterative reflective writing over time. Our longitudinal study indicates that the 'legacy effect' of building on earlier learning offers an explanation for how participating in a teacher development course develops teachers' conceptions of teaching and learning over time.

The impact of teacher development courses and programmes has previously been examined using pre- and post-testing (Coffey and Gibbs 2002; Hanbury et al. 2008; Lindblom-Ylänne et al. 2006; Postareff et al. 2007) and case studies (Butcher and Stoncel 2012; Ho et al. 2001). However, these methods are not well indicated to investigate how these courses contribute to changing teachers' conceptions of teaching. This exploratory case study presents complementary findings to pre- and post-testing studies by demonstrating how this group of novice academic teachers' reasoning about their teaching developed over time. This analysis shows that tutors' interpretative repertoires for their teaching became more complex through the integration of new ideas on education that they encountered as the course itself developed. Iterative reflective writing provided the means through which this change was achieved.

This suggests that a key contribution of the course was to provide the opportunity to write iteratively about teaching and learning. This form of meaning making seems to have encouraged tutors to integrate ideas about teaching that came from course input, reading educational literature and reflecting on their teaching experiences. This integration, over time, seems to have built-in narratives of self as academic teachers of the sort identified as 'identity trajectories' (McAlpine and Lucas 2011). A key feature of these trajectories is that individuals link past, present and future in a coherent way that accounts for who they have become (Acker and Armenti 2004). The mechanism for this integration took the form of a 'legacy effect' evident in the iterative process of writing about teaching and learning. This 'legacy effect' was evident even though it was not a formal requirement of the coursework tasks, which suggests that writing of this sort can provide a basis for identity formation through consistent interaction and presentation of self (Davies and Harre 1990).

This study provides the basis for further research into the effect of other teacher development programmes that use reflective writing. While the context of this study is tied to one particular course and institutional setting, it does provide a framework for longitudinal investigations in other contexts. We believe that further research will offer insights into the

development of teachers' conceptions of teaching and their expanding awareness of teaching and learning. An important additional element would be to also investigate the link between changing conceptions identified here and actual classroom practice. The context within which academics work is also worthy of further investigation: as Roxå and Mårtensson (2015) and Englund and Price (2018) point out, the degree to which academics 'apply' their teaching beliefs is influenced by their surrounding environment. This is implied in what participants wrote in this study, and evidence of teaching materials was provided, but it was not systematically investigated. On a practical level, this study suggests that there would be value in explicitly requiring backwards and forwards referencing in coursework reflective writing as part of teacher development coursework guidance.

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