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TEACHER EDUCATORS
and TEACHERS as LEARNERS
INTERNATIONAL PERSPECTIVES

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CHAPTER 3

Using ‘Modelling’ to Improve the Coherence of Initial Teacher Education

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Abstract

Internationally, initial teacher education programmes usually include trainee teachers in formal taught sessions facilitated by a teacher educator. These formal taught sessions are intended to build on and to shape the more informal workplace learning gained by supported teaching experience in schools. The formal teaching provides opportunities to foreground the trainee teachers’ experiences as learners, but the pedagogy of teacher education is complex and the intentions of teacher educators and actual learning outcomes of these sessions is uncertain. Many teacher educators use an element of ‘modelling’ within their approach, although the frequency, nature and impact of this strategy is contested. Modelling may also be used by school based teacher educators during more informal workplace learning, for example when being observed teaching and in the ensuing debrief with a trainee teacher. This chapter argues that explicit modelling of ‘being a learner’ by teacher educators may provide the ‘glue’ required to make the domains of knowing and the layers of purpose in the complex pedagogy of teacher educators more coherent for trainee teachers.

Key words: modelling; congruent teaching; teacher educator; practical wisdom; public knowledge.

Introduction

In this chapter I will focus on ‘modelling’ within the pedagogy of teacher education. Teacher educators are ‘teaching to teach’ and so have good opportunities to provide a role model for their student teachers in terms of the strategies they use and the professional values they apply. This is particularly

the case where teacher educators have been appointed to their role on the basis of their previous successful practitioner experience as ‘school teachers’. As will become apparent, this modelling by teacher educators is a contested area of their pedagogy and there is only limited research evidence concerning its implementation and impact on student teachers. Modelling may be used by teacher educators in formal taught sessions for student teachers but also within their more informal workplace learning in schools and classrooms (van Velzen et al., 2012). I will argue that modelling is important and has the potential to provide the ‘glue’ by which a complex and layered pedagogy for teacher education may be made coherent.

In the first sections I propose a metaphor for understanding teachers’ professional learning and introduce the idea of a layered pedagogy for teacher education. A framework for understanding modelling is then developed and presented, based on the current literature and limited research evidence base. This framework is tested by application to the analysis of interview data from two studies of UK based teacher educators, one group were based in a case study University department and the other group worked in colleges of further education. Finally, the chapter adds some challenging prompt questions for teacher educators to the framework for modelling, and proposes its use for the further development of teacher education programmes.

Teacher learning

A higher education programme in any subject discipline will generally involve an element of ‘becoming’. That is, it will involve the student in identity building and developing ‘functional’ knowledge, for example as a ‘Historian’ or as a ‘Mathematician’. However, in professional fields such as teacher education, the expectations for functional knowledge and identity building are likely to be much stronger and accelerated. For example, student teachers may be expected, even on their early programme experiences in school, to be able to operate at the level of a learning assistant or responsible adult within the workplace setting. Initial teacher education programmes, within higher education at undergraduate or postgraduate levels, have added complexity because the student teachers come with a considerable prior personal experience and models for teaching based on their own experience (Lortie, 1975). However, many teacher educators, even those based in higher education, are likely to be able to model a very full range of professional

values, strategies and identities. This is because they will often have prior experience in school-teaching and 'practitioner teacher' is usually one element of their wider identity as an academic (Boyd & Harris, 2010; Swennen, Jones & Volman, 2010; Murray & Male, 2005).

Taylor (2008) investigates conceptions of 'learning to teach' held by student teachers, university based teacher educators, and school-based teacher mentors, within a UK university-schools partnership. To some extent the study aligned the conceptions held with those identified in previous phenomenographic research across a range of higher education students and lecturers (Kember, 1997). Her analysis of questionnaire and interview data identifies four ways of understanding 'learning to teach' but arguably the most sophisticated conception identified went beyond transmission and apprenticeship to consider the 'student as teacher and learner'. This conception of learning to teach 'focuses in a holistic way on student learning' and is about 'enabling students to think critically and originally, question existing practices and explore new principles' (Taylor, 2008, p. 78). It is similar to Kember's (1997) 'conceptual change' category that was identified more generally across higher education teaching and learning. The conception of a student teacher as teacher *and* a learner has resonance with Loughran's idea of student teachers being involved in both 'learning to teach' and 'teaching to learn' (2006). However, this leaves a key challenge for teacher education programmes of building links between formal taught sessions and the workplace learning gained through teaching practice.

The need to link from formal learning to practice, a key challenge for all programmes of professional education, is not adequately captured by the metaphor of 'transfer of learning'. Transfer implies knowledge gained through acquisition and movement of that knowledge. Learning to teach is more sufficiently described as 'becoming within a transitional process of boundary-crossing' (Hager and Hodkinson, 2009, p. 635). This metaphor is more useful as it considers the student teacher developing their practice and identity as a teacher and crossing boundaries between formal learning settings and their own classroom as well as between the different workplace settings experienced during their programme. The 'becoming a teacher and boundary crossing' metaphor is more aligned to situated learning perspectives (Lave and Wenger, 1991; Wenger, 1998) which emphasise the significance of context and the social nature of workplace learning. Much of the professional learning of the student teachers is likely to arise within

the workplace and to be social and situated (Lave and Wenger, 1991; Wenger, 1998) but formal learning also contributes (Fuller et al., 2005).

Metaphors, linguistic representations, are a powerful way by which we try to capture the 'experience of human learning' (Lakoff & Johnson, 1980). In a classic paper, Sfard proposed two metaphors for learning in higher education, 'acquisition' and 'participation', and these reflect transmissive and social constructionist theories of learning (1998). Language used by a teacher such as 'I covered the topic thoroughly with the children' might suggest their underlying use of the 'acquisition' metaphor for learning. In this way metaphors that are commonly used by teachers may powerfully reveal and influence their pedagogy.

However metaphors for learning may be misleading (Hager, 2008) and one such metaphor is paradigmatic in professional fields such as teacher education. To what extent do you personally hold and use the metaphor of a 'gap' between theory and practice? This metaphor might be revealed when a teacher educator makes comments such as 'I need the trainee teachers to *apply* learning theory to their teaching'. A key problem with the 'gap' metaphor is that it assumes that there are two distinct bodies of knowledge, one is 'theory' and one is 'practice'. This is in line with assumptions made more widely in higher education that 'propositional' and 'procedural' knowledge may be considered as distinct bodies of knowledge (Biggs and Tang, 2011). From a sociocultural perspective this assumption is questionable and professional knowledge is better considered as professional 'knowing' that is mediated, situated, social, dynamic and contested (Blackler, 1995). To this list of the characteristics of professional knowing, and informed by Wenger's work on practice and identity (1998) it is also useful to add that professional 'knowing' is developed in negotiation with identity. As teacher educators it is important for us to consider alternatives to the theory practice 'gap' metaphor because such underlying metaphors shape our pedagogy.

From a sociocultural perspective an alternative metaphor is that teachers' professional learning is an 'interplay' between vertical public (published) knowledge and horizontal practical wisdom (Boyd & Bloxham, 2014). In this metaphorical framework (Figure 1.) the vertical domain of professional knowing is hierarchically organised through the peer reviewed publication process and includes learning theory, research evidence, professional guidance and policy. The horizontal domain of professional knowing is focused on ways of working in particular educational workplace settings such as schools

or teacher education departments in universities. This horizontal domain captures and values the situated and social nature of teachers' knowing.

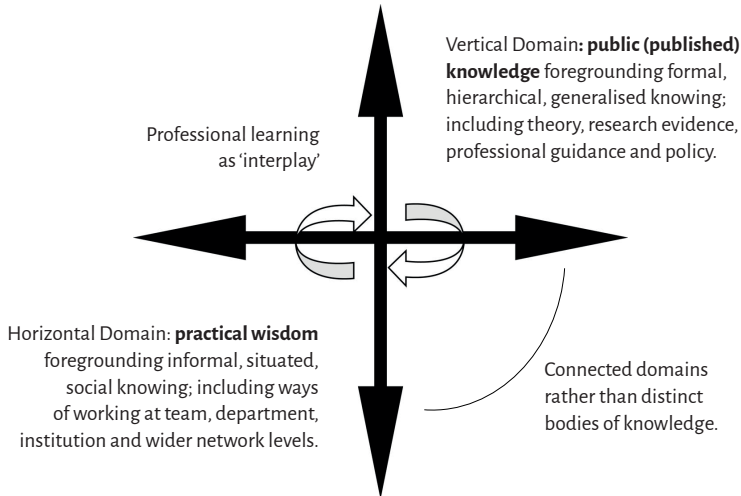


Figure 1. A situative metaphor for professional learning (Boyd & Bloxham, 2014; Boyd, 2014)

The metaphor of 'interplay' helps to capture the contested nature of teacher knowing and the power at play in pedagogical decision-making. For example, the everyday practice of a teacher will be influenced by how other teachers in the setting work but also by the published national policies on quality assurance and curriculum. It is important for teachers and teacher educators to critically reflect on the metaphors for learning they hold, in relation to their own professional learning and in relation to the learning of their students or pupils. A study undertaken in Spain, of the metaphors for children's learning held by teachers, suggested that behaviourist metaphors dominate and that social constructivist metaphors were more widely held by trainees than by experienced practitioners (Martinez, Saulea & Huber, 2001). In relation to their own professional learning, when reflecting on critical incidents at work, a busy teacher may privilege practical wisdom. This may constrain their engagement with research evidence or even with alternative strategies proposed by relevant professional guidance.

A layered pedagogy

The knowledge or professional knowing of teachers is complex and contested (Calderhead, 1988; Leach and Moon, 2000; Shulman and Shulman, 2004; Ellis, 2007) and the pedagogy of teacher education reflects that complexity. Figure 2. is an attempt to capture teacher knowledge diagrammatically. In this diagram the overlap between pedagogical knowledge and curriculum subject knowledge represents ‘pedagogical content knowledge’ which may be considered as the teacher’s understanding of the key concepts within a curriculum subject and their knowledge of how to teach these ideas effectively (Shulman, 1986). However, Figure 2 represents a sociocultural perspective by combining and overlaying ‘practice and identity’ as a teacher and by placing the whole conception of teacher knowledge within the wider social and policy framework.

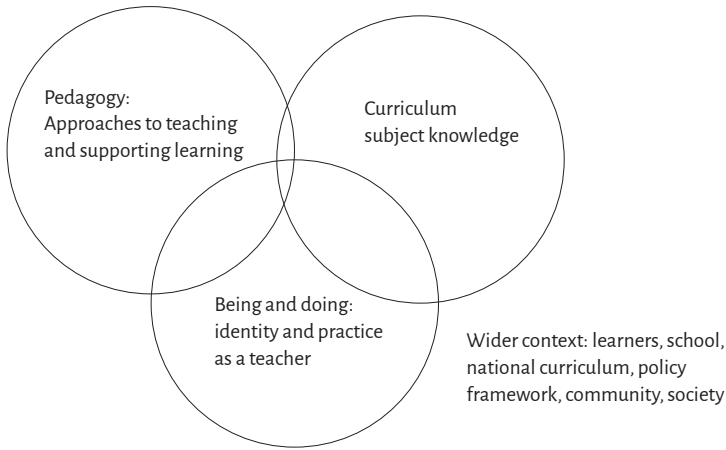


Figure 2. A diagrammatic view of teacher knowledge

This view of teacher knowledge helps to explain the multiple purposes of teacher educators so that within a formal session they may introduce a key aspect of pedagogy but they might do this within the context of teaching a school curriculum subject. In this situation the student teacher is learning about teaching strategies and related learning theory but also aspects of the subject discipline and pedagogical content knowledge. In a particular learning

activity the teacher educator may choose to foreground a particular element of this complex mixture but it may be helpful to consider these as multiple 'layers of purpose' within the pedagogy of teacher education (Boyd and Harris, 2010). The primary focus of the teacher educator is on the learning of the student teacher, but they are also concerned for their own continued learning as a higher education teacher and perhaps most importantly on the learning of the pupils (students) in the classes of the student teachers.

Combining Loughran's 'learning to teach' and 'teaching to learn (2006) with these multiple layers of purpose begins to capture the complexity of teacher education. A question arises as to what extent student teachers are able to handle this complexity. Both teacher educator and student teacher need to be aware of the layers of purpose within a formal session and explicit about which of them they are foregrounding at any one time. Of course discussion of a teaching and learning issue will often range across different layers and that is to be welcomed, but it may lead to confusion rather than clarity if the discussants are not aware of the richness and complexity of the session. For example, the use of artefacts in teacher education sessions may cause confusion for student teachers if they are unsure about the purpose (Ellis et al., 2011).

A central element of becoming a teacher is to learn to see teaching from the perspective of the learners. This is reflected in the pedagogy of teacher education through the adoption of enquiry based approaches. The completion of small scale action research by student teachers usually includes gathering and analysis of pupil voice together with other evidence of learning. The critical analysis and engagement with literature that action research requires is intended to help student teachers become critical thinkers who are sufficiently confident to question current practice and their own embedded conceptions of teaching which often may be focused on teaching as telling and learning as transmissive. Modelling by teacher educators appears to offer a strategy that introduces an enquiry based approach to professional learning and it takes advantage of the fact that the student teacher is a learner.

Current views on modelling

This section focuses on conceptions of 'modelling' as a strategy within a pedagogy for teacher education. This engagement with the literature on modelling identifies a framework in Figure 3. that represents current thinking on the strategy. The framework represents intentional modelling by teacher edu-

cators whilst it acknowledges that all teacher education experiences, many of them beyond intentional planning by the teacher educator, are likely to have some influence on the practice of student teachers.

The basic concept of modelling in teacher education is summarised by the statement that ‘How I teach IS the message’ (Russell, 1997) and more recently this has been referred to as ‘congruent teaching’ (Swennen, Lunenberg and Korthagen, 2008). Teaching is congruent when it models effective teaching and learning strategies that student teachers will be able to reconstruct in their own classrooms. The congruent teaching may also display values held by the teacher (Willemse, Lunenberg and Korthagen, 2005). A problem with using this basic concept is that the student teachers may not hear the message. They may be blissfully unaware that the teacher educator is modelling. In addition, this basic concept appears to be based on an uncritical acceptance of ‘good practice’, that there are effective teaching strategies and learning to teach is simply building a repertoire of those techniques and applying them in your classroom practice. In the proposed framework for modelling based on the literature and presented in Figure 3, the initial level of implicit modelling uses the term ‘congruent teaching’ (Swennen, Lunenberg and Korthagen, 2008) and relies on the student teacher working alone to experience and then unpack the approach of the teacher educator.

Some teacher educators use ‘self conscious narrative’ in order to introduce explicit modelling into their taught sessions. They ‘step out’ of the teacher education session and explicitly reflect in front of the student teachers by ‘thinking aloud’ about their design and facilitation of the session. The idea of ‘stepping out’ was inspired by Fowler in the French *Lieutenant’s Woman* (Wood and Geddis, 1999) when the novel is interrupted by reflection on the author’s intentions. This kind of explicit modelling is not only modelling teaching strategies and drawing the student teachers’ attention to them, it is also modelling reflective practice by a teacher, although the practice involved is that of a higher education teacher. It can be argued that the modelling of being a critically reflective teacher is a higher level conception of modelling that moves beyond congruent teaching and implicit modelling of professional values and this is reflected in Figure 3. by the second level of ‘explicit modelling’.

Building on explicit modelling some teacher educators attempt to provide a rationale for their approach to teaching by engaging with public knowledge (learning theory, research evidence, professional guidance or policy) and this is identified as a refinement of explicit modelling within Figure 3. (Lunenberg,

Korthagen and Swennen, 2007; Swennen, Lunenberg and Korthagen, 2008). An additional refinement of explicit modelling is to ask the student teachers to consider their own classroom practice in relation to the teaching strategy modelled and to the points raised in the teacher educator's reflection (Lunenberg, Korthagen and Swennen, 2007; Swennen, Lunenberg and Korthagen, 2008).

Figure 3. A framework for modelling based on the literature

Modelling in Teacher Education

LEVEL 1: Implicit modelling using congruent teaching that models strategies and values: the teacher educator uses strategies and demonstrates professional values that reflect 'good practice' in facilitation of adult learning but that may have some relevance to the context within which the student teachers will be teaching. This approach relies on the experience of that teaching to influence the emerging pedagogy of student teachers and subsequently their practice in classrooms. Within this level the teacher educator may facilitate metacognitive thinking by student teachers in the plenary of the formal taught sessions.

LEVEL 2: Explicit modelling of critical reflection on practice: the teacher educator steps out of the session and thinks out loud about their approach to teaching. If another teacher educator is in the session then a reflective dialogue between the two teacher educators may take the place of this 'think aloud'. The teacher educator aims to provide insight into the practical wisdom that underpins the design and facilitation of the taught session. They may refer to their underlying beliefs and values and will position the session as an example of adult education.

LEVEL 2a: Building from explicit modelling the teacher educator relates their practical wisdom to public knowledge: the teacher educator extends their explicit modelling to make some connections from the choices they have made, representing their practical wisdom as a teacher, to public knowledge (published work including learning theory, research evidence, professional guidance and policy).

LEVEL 2b: Building from explicit modelling the teacher educator encourages reconstruction by student teachers: the teacher educator may introduce an activity that requires student teachers to respond to the issues raised in the modelling by reflecting on their own classroom practice. The student teachers begin to consider how they may be able to reconstruct the approaches to teaching or professional values that have been modelled within their own classroom practice.

It should be noted that in the proposed framework set out in Figure 3, the refinements 2a and 2b are activities that build from explicit modelling, that is not to deny that they may also be used by teacher educators in other situations.

Modelling is a contested element of teacher education and the literature identifies a distinct strategy in teacher education of using a 'lesson within a session'. For example, in their paper Wood and Geddis (1999) focus on a teacher education session within which an example school maths 'lesson' is being taught as a kind of role taking with the tutor playing the class teacher and the student teachers playing the role of pupils. Role taking involves switching to lessons pitched at the age phase of the pupils that the student teachers are being trained to teach. This distinguishes it from congruent teaching which is using strategies in teacher education, a subject discipline in higher education, that have a rationale based in learning theory and may be reconstructed for use in the school classroom. Using a 'lesson within a session' is an element of modelling in teacher education that adds complexity to the situation.

Much of the literature on modelling in teacher education is based on self study but a small scale empirical study argued that student teachers *experience* the teaching by their lecturer and modelling enables the teacher educator to act as a role model (Lunenberg, Korthagen and Swennen, 2007). These researchers argue that pedagogical innovation by teacher educators, made explicit through modelling, may be powerful in influencing change in the practice of their student teachers. The study used observation of teacher education sessions and then checking of the findings with the lecturer. They found only modest amounts of modelling in the practice of their sample of ten teacher educators. Another study focused on school-based teacher educators and found that congruent teaching appeared to be widespread but explicit modelling was rare (van Velzen and Volman, 2009).

Explicit modelling as a strategy in teacher education is not straightforward and teacher educators may struggle to recognize differences between their espoused pedagogy and their actual teaching behaviours (Loughran and Berry, 2005). Collaboration and co-teaching have been found to be useful by teacher educators in developing their modelling practice (Wood and Geddis, 1999; Loughran and Berry, 2005). In a small scale study coaching support for three teacher educators increased their ability to link theory and practice as suggested in level 2a of the model in Figure 3., (Swennen, Lunenberg and Korthagen, 2008).

One of the risks of explicit modelling is that in some ways it makes the teacher educator vulnerable by requiring them to reflect publicly on their practice including all its limitations (Loughran and Berry, 2005). Occasionally, students and even colleagues may take advantage of this in inappropriate ways, perhaps by citing mistakes admitted by the teacher educator as part of their explicit reflection. Accepting this measure of vulnerability does not appear to be an unreasonable demand on teacher educators as they clearly hold positions of power in relation to their student teachers. However, in many cases, including the UK, the quality assurance context and inspection regime of teacher education help to create a relatively high degree of accountability and it would not be surprising if teacher educators felt constrained in the extent to which they are willing to make themselves vulnerable through explicit reflection on their practice during modelling.

Very little work has been done on the impact of modelling on the learning and practice of student teachers. One study investigated a large number of students completing a child development course using a quasi-experimental approach contrasting student responses to a course based on lectures versus activity based learning (Struyven et al., 2010). This study found that there was no simple link between the way student teachers were taught and their classroom practice and showed considerable critical reflection and reconstruction by the student teachers. However, this study appeared to focus on the impact of congruent teaching rather than explicit modelling.

Teacher educator conceptions

This section applies the analytical framework for modelling presented in Figure 3. to data from semi-structured interviews in two case studies of teacher educators based in different workplace settings within the UK. This exploratory qualitative analysis provides some insight into the practice of teacher educators and is used to inform an evaluation of the framework.

TWO CASE STUDIES

One group of teacher educators (n=12) are volunteer participants based in seven Further Education (FE) colleges in the north-west region of England and they are training teachers to work in the lifelong learning sector or post compulsory phase of education. This group of teacher educators are providing Higher Education

(HE) teacher education programmes but in Further Education College contexts. They will therefore be referred to as 'HE in FE teacher educators'. The student teachers taught by this group are specialists in a wide range of subjects and may teach in the College or in the workplaces of partnership employer organisations. Many of these student teachers already have an established identity within their vocational area of work for example as a bricklayer, hairdresser, police officer and so on. The study of these HE in FE teacher educators used the semi-structured interviews of twelve lecturers with a range of professional experience in teacher education combined with prior vocational and teaching experience in colleges. The schedule for the semi-structured interviews included a prompt question asking about the place of 'modelling' within their approach to teaching student teachers and this provided a data source for the current paper.

The second group of teacher educators (n=9) were volunteer participants based in a case study university department who train teachers for early years and school age phases up to secondary school, which in England means 11 to 18 year olds. For the purposes of this paper these teacher educators are referred to as 'University based teacher educators'. The student teachers in this group are a mixture of undergraduates on three year degree programmes and postgraduates on one year courses who are training to be school teachers. The study of these university based teacher educators used the semi-structured interviews of nine lecturers in a longitudinal case study of a large teacher education university department. The lecturers had between five and ten years of experience in higher education roles combined with prior teaching experience in schools. The interview process asked them to bring and discuss a session plan or teaching resource and to discuss the relevant teacher education session in relation to their chosen teaching strategies.

CONGRUENT TEACHING

Both groups of teacher educators recognised their use of congruent teaching. They claimed to employ congruent teaching strategies, approaches and behaviours that they hoped their student teachers would experience and apply, with different degrees of reconstruction required, in their own classrooms and wider practice. The main focus of the teacher educators is on modelling of a range of strategies that may be used directly or after reconstruction by their student teachers in their own classrooms.

'...as a Teacher Educator I want to be using the best, up to date, current practice in my teaching. Anyone who comes into my class I would like to think will see examples of to coin a better phrase 'Rolls Royce teaching' so in every way using all the inclusive practice, differentiating where I can but also embracing the best current practice as regards technologies'

(HE in FE teacher educator)

HE in FE teacher educators training teachers for post compulsory phase hold one conception of modelling as demonstrating what is accepted in their institution as 'good practice' in teaching:

'...College has its own Teaching and Learning Model [for Further Education] that, as teacher educators, we are expected to promote...'

(HE in FE teacher educator)

This model of 'good practice' is usually seen as a local set of College rules about how to teach well but it is acknowledged by the teacher educators that it is strongly influenced by the views and criteria of the government appointed quality review body who observe and assess teaching during inspection visits. The review body have direct influence on teacher education practice, for example in one further education college:

'[the programme's teaching observation proforma was] designed with those [external quality review body criteria] in mind and there is a link...and part of that was feeling a responsibility to our Trainee Teachers that when they finish with us...and they're cast out into the Institution that [external review body] type observations by...internal quality teams, isn't then a shock and we're not grading them in 1's and 2's and then the audit team come crashing in and say 'well actually you're inadequate'...'

(HE in FE teacher educator)

The analysis suggests that for these employer-based teacher educators there are very strong and direct quality assurance contextual pressures and systems on teacher education practice. Quality assurance was also important to the

University based teacher educators, but in their workplace the institutional ‘rules’ for what constitutes good practice were more distinctly related to expectations for higher education of adults. However, many of these University based teacher educators use role play and congruent teaching as occasions when they feel they are demonstrating the ‘good practice’ of school teachers as defined by the national quality review body for teaching in schools.

Although these teacher educators mainly see modelling in relation to teaching strategies some also claim to model values such as being student-centred or supporting the diversity of learners. Some HE in FE teacher educators did not use the term ‘modelling’ but when probed they described elements of congruent teaching as part of their practice. Some HE in FE teacher educators considered modelling to be only appropriate to student teachers in the early stages of training. The teacher educators linked their constrained use of modelling to the fact that many of their student teachers are in vocational subjects and teach in practical workshops and workplaces. They did not consider their modelling of taught sessions to be directly relevant to these student teachers. In some ways this reflected their limited conception of modelling which was often focused on demonstrating ‘good practice’ in classroom teaching rather than emphasising critical reflection as a teacher.

University based teacher educators training teachers for school age phases often introduced the term ‘modelling’ unprompted into discussion of their taught sessions and were familiar with the term even if they did hold a varied range of conceptions of what it involves. These teacher educators frequently used a lesson within a session. In these cases to some degree they appear to take roles and treat the group of student teachers as a class of pupils in order to demonstrate school teaching and school classroom management:

‘...so I tended to model effective practice in secondary (school) classes, but I’m still wondering if modelling that is necessarily the right way that adults learn...’

(university teacher educator)

These teacher educators do not distinguish clearly in their descriptions of practice between modelling and role taking.

Members of both groups of teacher educators claim to sometimes include an element of metacognition, learning to learn, for example in the plenary of their taught sessions. However, for the purposes of analysis this is not

considered to be explicit modelling unless some kind of stepping out by the tutor is described in which the process of metacognition is reflected on as a teaching strategy. In other words there needs to be an additional layer to the tutor's approach in order for the practice to become explicit modelling. In part this is related to the lack of distinction made by the teacher educators between their own higher education practice and the academic and age phase level of teaching by their student teachers. If this distinction is not made by the tutors in their description of modelling they are not considered to be using explicit modelling. This lack of distinction by tutors appears likely to confuse the student teachers because the purpose of the teacher educator within a complex pedagogy is not made clear to the learner.

EXPLICIT MODELLING

About half the members of both groups of teacher educators describe explicit modelling within their teacher education practice:

'...it's very easy to watch someone who knows what they're doing and who's good at it but not actually realise what they're doing...so I try and make it as explicit as I possibly can...what I'm doing, how I'm doing it, why I'm doing it which is the most important thing...'

(university teacher educator)

These teacher educators claim that to different degrees they think out loud and unpack the session or a learning activity within it to explain to the student teachers the choices they made in planning and facilitation. This involves some degree of 'stepping out' of the taught session and some emphasis on the impact on student teachers as learners.

Only two of the teacher educators claimed to link their explicit reflection to learning theory and most appear to only explain their practice in terms of practical wisdom. One of the colleagues explicitly introducing learning theory explained that they would specifically consider this in planning so that their choice of strategy for a session would reflect the learning theory content of the session:

'The organisation [and] management of the session mirrors the content, so for example if I'm doing a session on Social Constructivism...to actually get the students to talk to each other to construct their own knowledge as part of the session...'

(university teacher educator)

Many of the teacher educators referred to 'practice what we preach' as an explanation of this common sense approach, this is really part of their practice of congruent teaching. For example many of the teacher educators would use assessment for learning strategies in a session whose content is assessment for learning. However, only one teacher educator, unprompted in the interviews, claimed that they would include reference to learning theory in their explicit modelling.

In the data there was little significant evidence of teacher educators finding time for activities in which the student teachers were required to use critical reflection and reconstruct (or reject) the modelled strategy in relation to their own classroom practice:

'...it will either be through questioning...why do you think? - or it will be me actually explaining why I'm carrying out a particular task - it's teacher education - I'm explaining the process and the advantages so that the group can not only get that those benefits which I've just alluded to but also in terms of perhaps applying it to their own teaching...'

(HE in FE teacher educator)

The teacher educators appeared to expect student teachers to undertake this kind of reconstruction during their planning for teaching or their reflection between taught sessions or their work on written assignments. This reconstruction is the underlying purpose and intended outcome of the modelling and is at the heart of realistic teacher education (Korthagen et al., 2001) so that its absence from teacher educator practice seems questionable. In this sense then taught teacher education sessions might consist of a content focused session or activity using congruent teaching followed or interrupted by explicit modelling activity including one or both of the refinements presented in the framework.

SUMMARY

This analysis of teacher educator perspectives may be summarized as follows:

- Congruent teaching appears to be widely used by teacher educators
- Congruent teaching is sometimes blurred by use of role play
- Explicit modelling is used by some teacher educators
- Teacher educators model teaching strategies but also professional values
- The workplace setting and quality assurance context influences what is modeled
- Teacher educators may struggle to 'apply theory to practice'
- Teacher educators provide only limited time and support for reconstruction by trainees

Clearly more research is required. It should include observation of teacher educators at work and also gather and analyse the voices of trainee teachers. However, despite the limitations of the interview based study it does provide some basis for developing the use of modelling by teacher educators.

Modifying modelling

Broadly speaking this analysis of UK based teacher educators supports the findings of European studies. The framework for modelling based on current literature and presented in Figure 3. provides a useful base to guide the pedagogy of teacher educators. However, as indicated by previous studies, there certainly seems to be a need for further development of modelling by teacher educators (Lunenberg, Korthagen & Swennen, 2007).

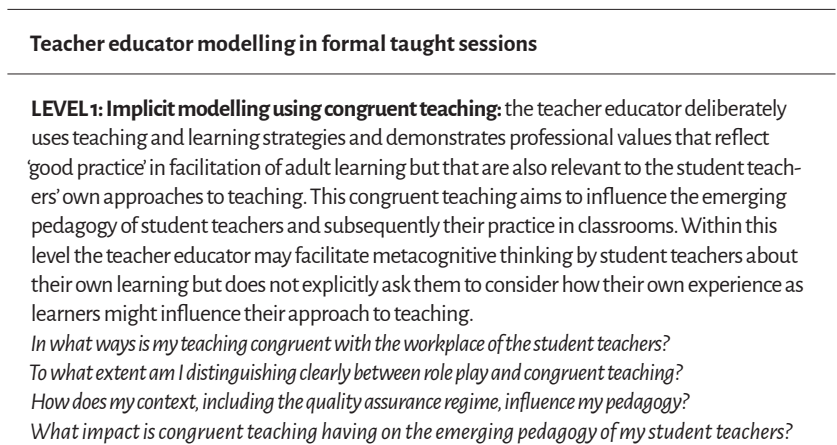
Many teacher educators appear to rely mainly on implicit modelling through congruent teaching and they need to consider to what extent this has an impact on their trainee teachers. Practitioner research, including analysis of trainee teacher perspectives would help teacher educator teams to better understand their practice. Congruent teaching as a strategy may become blurred with role play by some teacher educators and this seems likely to confuse trainees. Congruent teaching may also be strongly influenced by the workplace setting, including the quality assurance regime. Teacher educators need to develop awareness of their context and consider how it influences their strategies and professional values. Moving towards more explicit modelling might help many teacher educators to clarify their position, not least by forcing them to confront and reflect on their own pedagogical design choices.

In refining explicit modelling teacher educators appear to struggle to ‘apply theory to practice’ although a small scale study found that coaching was useful (Swennen et al., 2008). It may be useful for teacher educators to adopt alternative metaphors for professional learning. Positioning teacher learning as interplay between vertical and horizontal domains of knowing may help to more highly value the practical wisdom of teachers but critically consider it in relation to public knowledge including policy. In facilitating this interplay teacher educators will need to be knowledgeable, confident and skilled in critically engaging with public knowledge as well as with practical wisdom. School-university partnership in teacher education brings together teacher educators who are likely to have different strengths in each domain. The level of scholarship required of teacher educators in school-based teacher education programmes where the input of a university is minimal is a contested issue (Boyd & Tibke, 2012; White, 2013).

The refinement of reconstruction also deserves attention by teacher educators. Students may reconstruct their learning experiences in different ways as they move across in to their own classrooms as beginner teachers (Struyven et al., 2010). Allowing time and providing support for reconstruction, following explicit modelling, may not always be necessary or feasible but it certainly seems worthy of some consideration and of further investigation by teacher educators.

The analysis raises some questions for teacher educators in relation to their use of modelling and the framework based on the literature has been enhanced by including some prompt questions in Figure 4.

Figure 4. A framework for modelling, by teacher educators, in formal taught sessions



Teacher educator modelling in formal taught sessions

LEVEL 2: Explicit modelling of critical reflection on practice: the teacher educator steps out of the session and thinks out loud about their approach to teaching. If another teacher educator is in the session then a reflective dialogue between the two teacher educators may take the place of this 'think aloud'. The teacher educator aims to provide insight into the practical wisdom that underpins the design and facilitation of the taught session. They may refer to their underlying beliefs and values and will position the session as an example of adult education.

To what extent am I prepared to explicitly and critically reflect on my teaching?

What impact is explicit modelling having on the emerging pedagogy of my student teachers?

LEVEL 2a: Building from explicit modelling the teacher educator considers how their practical wisdom relates to public knowledge: the teacher educator extends their explicit modelling to make some connections from the choices they have made, representing their practical wisdom as a teacher, to public knowledge (published work including learning theory, research evidence, professional guidance and policy).

To what extent is it possible or helpful to relate my design choices to public knowledge?

How does my modelling help student teachers to reflect on their own classroom practice?

LEVEL 2b: Building from explicit modelling, the teacher educator encourages reconstruction by student teachers: the teacher educator may introduce an activity that requires student teachers to respond to the issues raised in the modelling by reflecting on their own classroom practice. The student teachers begin to consider how they may be able to reconstruct the approaches to teaching or professional values that have been modelled within their own classroom practice.

When and to what extent do my student teachers reconstruct their personal learning experiences to inform their own classroom teaching?

How does explicit modelling provoke such reconstruction?

Explicit modelling appears to be a strategy for linking 'learning to teach' to 'teaching to learn' (Loughran, 2006) and so for taking advantage of the position and experiences of new teachers as learners. Modelling may also be a strategy for linking layers of learning within teacher education, for example from teacher educator learning to student teacher learning. As a speculative thought, with further investigation and development, it might help student teachers in turn to model 'being a learner' for their pupils or students.

Figure 5. A layered pedagogy for teacher education

Teacher educator learning to teach (scholarship and research)	Teacher educator teaching to learn (critical reflection / enquiry)
Teacher educator uses explicit modelling of being a teacher learning from practice	
Trainee teacher learning to teach (taught sessions)	Trainee teacher teaching to learn (workplace learning)
Trainee teacher uses explicit modelling of being a learner	
Pupil / student learning	Pupil / student learning to learn

The proposal set out in Figure 5. suggests a more explicit acknowledgement by teacher educators of the domains of their complex and layered pedagogy. The teacher educator models ‘being a learner’ for the trainees. The trainees in turn model ‘being a learner’ for their pupils or students. The teacher educator is modelling being a learner and ways of knowing within the professional field of teacher education and development. The trainee teacher is modelling being a learner and ways of knowing within a particular curriculum subject discipline, for example modelling being a Historian or being a Scientist.

In conclusion, it seems clear that further research and development work is needed on the impact of explicit modelling by teacher educators on the learning and practice of new teachers, not least because modelling appears to be a strategy in teacher education that takes advantage of the explicit position and experience of the trainee teacher as a learner. It may be possible to develop ‘modelling’ beyond the framework based on the current literature to provide the glue that will improve the coherence for trainee teachers between the domains of knowing and layers of purpose within their complex ‘learning experiences’. Meanwhile, it appears that Russell’s helpful statement of ‘How I teach IS the message’ (1997) might need to be refined to the perhaps less exciting but more precise ‘How I continue to learn to teach IS the message’.

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