New professionals in formation:
how do student teachers conceptualise their own learning?

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Teacher training / education routes continue to diversify

Postgraduates — Guardian Students

Teacher training moves into the classroom

Classroom-based training and paid placements are giving budding teachers more training options

Stephen Hoare

Friday 24 January 2014 14.00 GMT

© Classroom-based training and paid placements offer new routes to qualified teacher status. Photograph: Alamy

A postgraduate certificate of education (PGCE) from a university department of education has long been the preferred route into teaching.

But with the development of paid placements in teaching schools, as well as the leadership fast track Teach First and the government's School Direct programme, the focus of teacher education is shifting towards classroom-based training.

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Teaching training reforms 'critical' in Wales - review

9 March 2015 | Wales

Caroline Newman of the National Association of Head Teachers Cymru says trainees need more classroom experience

Teacher training is at a "critical turning point" and needs to be changed, according to a major independent review for the Welsh government.

Prof John Furlong said looked at it nearly 10 y

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South Scotland

Dumfries and Galloway 'grow your own' teachers bid thrives

30 June 2015 | South Scotland

A scheme to fill rural teaching vacancies launched by Dumfries and Galloway Council has seen a surge in applications.

The "grow your own" plan lets education department staff who already have a degree take a postgraduate diploma.

That, in turn, allows them to make a move into the classroom.

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Context and basis for research

Teacher training / education routes continue to diversify globally

- In UK (especially England) new ITT programmes are being designed and approved in haste to meet policy imperatives

- Balance between university and school-based components has shifted towards school experience ('routes' e.g. 'school-led' proliferation and 'requirements' e.g. number of days in school for QTS)

- In Wales a national review of teacher education is underway which will challenge the current university dominance of provision

Researchers and research questions

The researchers are employed by HE departments where teacher education is adapting to these changes.

We would *hope* that the policy changes are research-informed, and we want to contribute to the relevant knowledge base.

We believe that relevant research could reveal more about how student teachers learn, and how they conceptualise their learning. We believe this has significance in policy and practice.

Questions relevant to these policy and practice changes:

What conceptions **of their own learning** do student teachers use to guide their practice?

How are changes in these conceptions related to the context in which they are learning?

Relevance of these questions

The importance of student teachers' learning is generally taken for granted.

The conceptual change perspective has not previously been used to make sense of student teachers' learning.

There are have been numerous assertions (e.g. Gilroy, 1993; Edwards et al., 2002) that HE-led pre-service training encourages deep learning through reflection.

Existing evidence does not show any clear relationship between context for student teachers' learning and the quality of outcomes.

The 'Conceptual Change' Approach

Assumption is that learning involves a *shift* eg. from naïve to scientific thinking

learner shifts between frameworks which highlight and reinterpret different pieces of evidence

learners may resist new ways of thinking if this requires a shift of framework from which to view the phenomenon

social context may be relevant, including learners' sense of self and identify & attractiveness of different ideas

(Vosniadou & Brewer 1992, & Vosniadou 2003, Kuhn 1957)
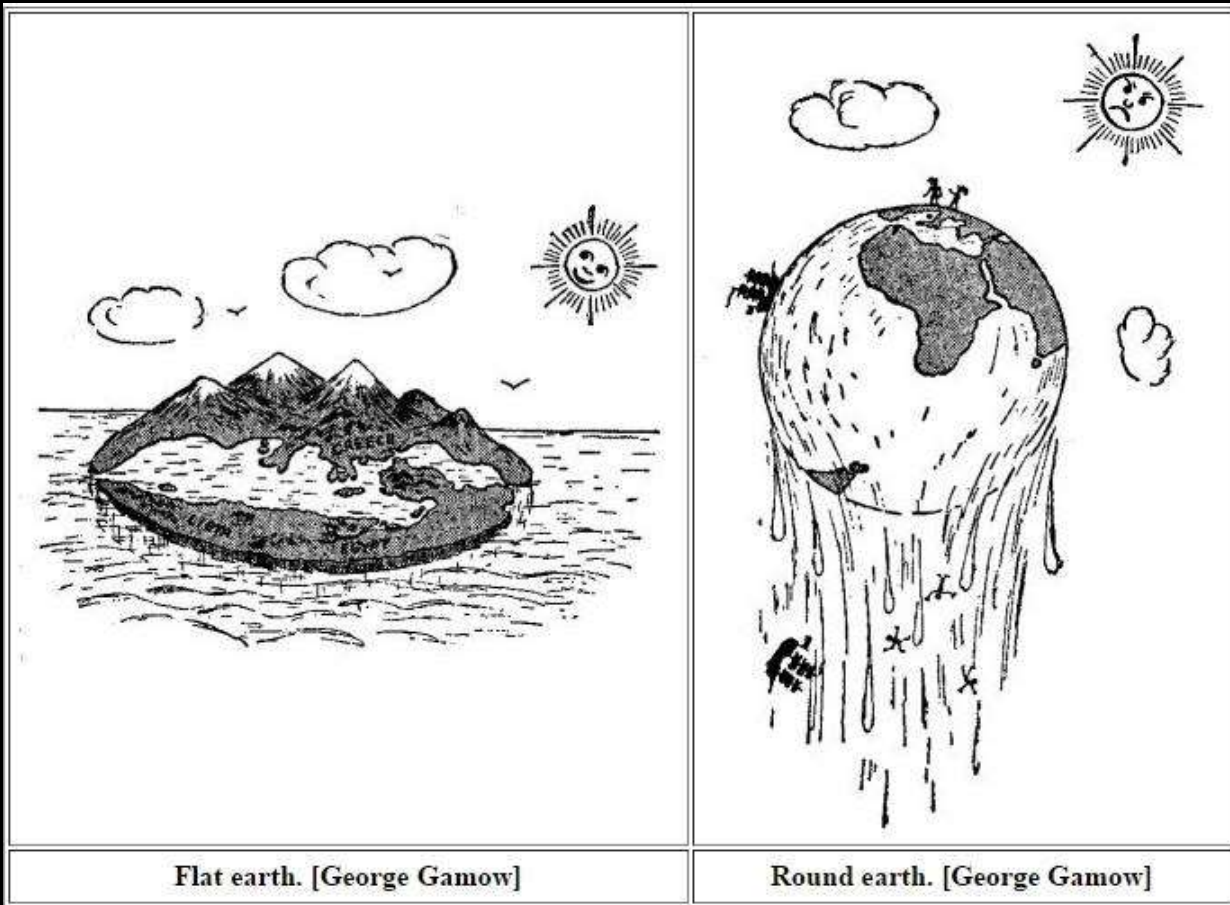
Learning as
'Conceptual Change'

Flat earth. [George Gamow]

Round earth. [George Gamow]

(based on Vosniadou & Brewer 1992)

The 'Conceptual Change' in Learning to Teach

Complications in learning to teach

Student teachers have vast experience of *teaching* through being taught, but modest experience of teaching *as* teachers.

This may lead to a strong but naïve conception of what it means to learn as a teacher, thus they may resist systematic theoretical analysis of this phenomenon.

Student teachers are active participants in the phenomenon of '*how* I learn as a student teacher'

During training period student teachers develop a sense of self in relation to the career, and this may influence their readiness to shift

What do we know from the literature?

Conceptions of teacher learning in a social context

Teacher learning as knowledge 'for' practice, knowledge 'in' practice and knowledge 'of' practice (Cochran-Smith & Lyte, 1999).

New teachers' conceptions of their own learning will be framed by beliefs about roles of university tutors, school mentors & themselves as reliable judges of 'good teaching'.

Approaches to learning

Deep, surface or achieving approaches to learning (in HE), influenced by way they are taught (Trigwell et al, 1999).

Interventions in ITE suggest that whether Student teachers focus on surface learning (an array of challenges) or deep learning (overall sense of teaching) depends on their beliefs about expertise and certainty of knowledge for teaching and their developing practice. (e.g. Gordon and Debus, 2002, Struyven et al, 2006)

What do we know from the literature?

Personal epistemologies

Personal epistemologies influence how learners engage with and enact learning in the learning environments (Brownlee et al, 2011, Billett, 2011).

Student teachers have a sense of own role and that of others in supporting learning (Cochran-Smith & Lyte, 1999).

Learning from others in the workplace includes work processes, learning processes and learning activities (Eraut, 2007).

Self-determination & self-regulation

Self determination: Humans direct behaviour to satisfy three needs: autonomy, competence and relatedness (Ryan and Deci, 2000). In Student teacher learning these may be complementary or in tension.

There is more research on self-regulation (rather than self-determination) in learning to teach. SR can be both constructive (eg. self-initiated discussion with mentor) and harmful (e.g developing avoidance strategies).

Method

In depth interviews: one part-way through and one at end of course [x(x)]

◦ Aim to establish student teachers' conceptions of their own learning to teach

◦ Drew out concrete human experiences and offered opportunity to recognise conceptual change (if it existed)

Sample		Research intensive universities (England)		Teaching intensive universities
		(A)	(B)	Wales
Primary postgraduate	*University-based*		4(4)	5(5)
	School Direct	6(5)		
Secondary postgraduate	*University-based*	7(6)	2(2)	5(5)
	School Direct	2(2)		
Primary undergraduate	*University-based*			2(0)
	University-based			4(2)
Total		15(13)	6(6)	16(12)

Analysis

Coding of transcripts iterative over several phases as we examined variations in student teachers' conception

- In accordance of conceptual change traditions we identified broad themes (dimensions of learning to be a teacher) and variations in these dimensions

- We analysed transcripts to investigate patterns of difference and similarity in student teachers' conceptions

Illustrated stages in understanding learning to teach as 'Conceptual Change' from transcripts

Revealing 'Dimensions of learning' to teach

Investigating 'variances' in dimensions, and relationships between these

e.g. 'Contexts for learning' & 'Mode of learning'

e.g. Variance in interactions which students highlight e.g. school mentor, others in school, university tutor, peers

e.g. Variance in how students describe themselves learning e.g. recipient, lone enquirer, co-constructor

Dimensions in analytical frame

1 Reflection:
- What does the Student talk about reflecting upon in their learning?

2 Self-determination:
- To what extent does the Student talk about their learning as learning to do the right thing, or learning to understand and direct her actions related to teaching?

3 Gestation of learning:
- How does the Student describe their process of development over the year?

4 View of knowledge for teaching:
- What perspective does the Student have of professional knowledge?

5 Contexts for learning:
- Which interactions does the Student highlight in support of their learning, and which tools seem to be used?

6 Mode of learning:
- How does the Student's description suggest they are learning?

Self-determination

To what extent does the student teachers about directing their own learning?

Exemplification	Categories
"I think I just went in there, I just followed what the teacher said to do for the lesson, it wasn't really me thinking"	No self-determination
"Well, I would give it a go, but I won't necessarily take it as truth and keep working with it even if it doesn't work for me, I think."	Adaptor of methods
"At the beginning it was how I teach and what I could do, whereas now it is how my teaching is affecting students and the reasoning's for that."	Self-determined

Gestation

Does learning happen in the moment or over time?

Exemplification	Categories
"I had to do something quickly on the board and I used it and it worked, so it was kind of nice and I felt comfortable because that was something I was used to doing and they did understand, so it was nice."	In flight
"I think you quickly realise the challenges that teachers face and I think it's a combination of everything, so you try and take in what you've been talking to with your mentors and your peers at the start of the course."	Struggle over time

View of knowledge	What is the student teacher's view of knowledge for teaching

Exemplification	Categories
"I don't know, you know, I think it's just a personal thing, you know, different teachers teach in different ways."	Personal knowledge
"It's like every school has different circumstances and I guess teachers who have been at that school for, in surplus of 10 years, they've probably seen students like it, they've had similar situations with their classes and they have developed these strategies."	Knowledge for context
"Good ideas for teaching are floating around out there and you have to try to spot them."	Generalisable ideas
"Someone who said that they thought the way in which they taught grammar was the best way ...and other people said, oh, it's all just implicit teaching, but I've kind of thought, no, I don't think you should just stick with one area, you should mix it and yeah, use it both ways."	General ideas need to be reworked

Contexts for learning

Who do student teachers learn with and from?

Exemplification	Categories
"The first mentor I had in the second placement, I could really share my thoughts about my teaching and really be open and not have to be defensive and we could have really good discussions about, you know, new ideas, strategies to try, what I did well, so I was really pleased with that."	School mentor
"I think the most important learning experience has been watching good practitioners."	Other teachers in school
"Our tutors told us once that if it takes longer to create the activity than to do it with the pupils it wasn't a good idea"	University tutor
"I think it was working with a peer especially, I felt you could have a more open and honest discussion about your lesson and what happened and what hadn't, because it was someone who was on your level ."	Peers

Mode of learning	What role does the student teacher take in learning with others?

Exemplification	Categories
"They're giving us ideas and things to try out"	Recipient
"We have to read a lot of, for instance, I'm always taking the example of grammar because that's basically the most difficult one, but we do read a lot and know better how it is explained in the books and then try to make it as simple, but you always practise and test it on the pupils Getting ideas from reading."	Lone enquirer
"I think the process of actually sitting down outside of a classroom with other Students as well to draw off, it does kind of clarify where you're going wrong as such and why you're not doing so well, so yeah, having that interaction with the other people, who've gone through the same thing you have and maybe found different things difficult, it's quite nice to hear how they took on the challenges that you found difficult. I've learnt a lot just from that interaction."	Co-constructor

Relationships between dimensions of variation

	(SD)	(G)	(KB)	(C)	(M)	
Reflection (R)	***	**	*		*	
Self-determination (SD)		***	***	*	***	
Gestation (G)			***	***	***	
Knowledge beliefs (KB)				**	**	
School or School/HEI context (C)					†	
Mode of Learning (M)						

Relationships between dimensions of variation e.g. 1

One student teacher displaying an 'adherence' conception: learning to do the right thing:

... to ensure that they get started in the first five minutes, that they have understood the task, that they have picked their pen up, that they are sitting comfortably, that they have their book, they have all the resources they need, and they can get going **(reflection on events)**
I don't know if I've done it right, I don't know if I've done what's being expected of me, but this is my take on it **(no self-determination)**
I found myself mirroring the things she was doing because I just found that they worked so effectively **(recipient)**

Relationships between dimensions of variation e.g. 2

One student teacher displaying an 'enquiry' conception of learning to become a teacher:

So I kind of just wanted to try it on my own, instead of just being told, ..I need to take it all into my own hands, so I did actually say, this is what I want. **(self-determination)**
I think to myself, right, okay, I can really exploit that activity, the exercise and I can use that, instead of trying to think of loads of different things, I'm now thinking I guess in teacher mode more than I was before maybe. **(reflection)**
… there will be many other ways of doing it, so don't just go with your first instinct. **(knowledge as uncertain)**

Emerging Conclusions

Student teachers' conceptions of their learning are multi-dimensional.

Extending previous research, our research highlights important variations in

(i)   the focus of reflection

(ii)   student teachers' level self-determination

(iii)   'learning in flight' vs 'learning as a struggle over time'.

Student teachers' conceptions of their learning are highly dependent on the context in which they are learning to teach.

Their accounts of their learning varied most strongly according to the school in which they were placed and the attitudes to learning and teacher development in those schools. There was some variation according to whether school-led or HE-led, but this was restricted to 'gestation of learning'.

Emerging Conclusions

These results may be interpreted through the theory of conceptual change.

Student teachers' conceptions of learning are framed by their understanding of what it means to be a teacher and what it means to learn. Since they experience pre-service teaching as novices there are strong pressures for them to accept a role as a learner which fits in with the thinking and practices of the school in which they are placed. This could account for the apparent switching between a conception of their learning as adherence and a conception of their learning as enquiry.

Changing *how* student teachers learn is yet more important than changing *what* they learn – stability or regression in mode of learning may be forced by context

Both school and university based 'Teacher Educators' need to guide reflection and facilitate co-construction of knowledge about teaching.

Thank you

Perhaps this has made you think about your own conceptions of your own professional learning, or those likely to be held by the student teachers you work with and teach?

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