

Insights into Teacher Learning about Pedagogy from an International Group of Teachers of Students with Severe Intellectual Disabilities

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Abstract

This article examines teacher professional learning about pedagogy for teachers of students with severe intellectual disabilities within broader teacher education and pedagogical frameworks for this group of learners. The article presents and discusses findings from a USA-England research project, involving classroom observations and interviews with nine teachers of students with severe intellectual disabilities from four specialist public school settings, intended to explore teachers' pedagogical decision-making and learning. The theoretical lens of situated learning and the conceptual lens of evidence-based practice are used to contextualize and examine the teachers' views about the *what, how and when* they learn about pedagogical approaches and strategies. Teachers emphasised the situated and interactional nature of their learning, particularly highlighting the personal responses of students and their relationship with these students. They use this knowledge and understanding to adapt evidence-based strategies and programmes and inform their pedagogical decisions. This affords the concepts of 'situated generalization' and 'practice based evidence' (Simons et al. 2003) an influential role in how teachers engage in the process of pedagogical decision making. An implication for teacher educators is the need to support teachers in making connections of new pedagogical understandings and skills with the individual learning profiles and responses of their students with severe intellectual disabilities.

Key Words

Intellectual disabilities, pedagogy, teacher learning, evidence-based practice, situated learning

Introduction

This article focuses upon teacher learning in relation to the pedagogical decision-making of a group of teachers of students with severe intellectual disabilities in the South West of Florida and the South West of England. Whilst the international research project reported here is set in the USA and England, in their similarities and differences these contexts are similar to many in the wider developed world. Considerations around pedagogies employed by teachers for students with special educational needs are apparent in European literature (Meijer, Soriano and Watkins 2003) and this article contributes to these discussions. We present, analyse and discuss the findings from the project which focused on teachers' views about the *what, how and when* they learn about the approaches and strategies that inform their pedagogical decisions. The *what* of teacher learning is examined in relation to current discourses around evidence-based practice and the converse position of practice-based evidence. Theories of situated learning provide the theoretical framing in relation to the *how* and *when* of teacher learning.

Contextualising the Study

Students with Severe Intellectual Disabilities and Special Education Context

Students with severe intellectual disabilities have significant cognitive impairments and experience significant difficulties in learning (Orelove, Sobsey, and Silbermans 2004; Downing 2008). They frequently have additional sensory or physical disabilities and experience communication difficulties. In the English education system the terms 'severe learning difficulties' and 'profound and multiple learning difficulties' are used (DfES 2005). In the USA, the USDoE (2012) classification system spreads learners with severe intellectual disabilities across numerous disability categories (for example, intellectual disability, developmental delay, and autism). More premature babies are surviving and medical science is prolonging lives that

would previously have been lost in infancy (Marlow et al. 2005); the numbers of children with severe disabilities is growing concomitantly (Johnson et al. 2011). The presence of these children in the school system cannot therefore be ignored, as illustrated in the opening comments of a UK government report: ‘not least because it [this category of students] includes some of the most complex, most vulnerable and indeed expensive learners in our system’ (DCSF 2010, 2).

A shifting educational landscape has seen special education provision become less separate and segregated and this is reflected in a number of different ways, for example, in placement, curriculum frameworks and expectations of students. Despite moves towards inclusion in terms of placement for students with SEN, in England and the USA the majority of students with severe intellectual disabilities continue to be educated in special schools or units, with a smaller proportion fully included in mainstream schools (DfE 2014; Almazan 2009). In terms of curricula and standards, there has been a change in focus towards access to Curriculum Standards (USA) or the National Curriculum (England). These central curricula in both countries are accompanied by age-related expectations and students with SEN, including students with severe intellectual disabilities, are encompassed within these standards policies and frameworks, even when they are applied as exceptions, accommodations, modifications and disapplications (Marshall 2008).

Teacher Education Context

This study focuses on teachers’ professional learning rather than pre-service teacher education. It is useful, however, to provide contextual background information about the different teacher education provision with regard to severe intellectual disabilities in both countries. Teacher education in special education has a particularly problematic historical chronology in the USA (Brownell et al. 2005) and in England (Hodkinson 2009). In the USA, currently there are

both standalone special education and more integrated special and general education teacher pre-service programmes (Sindelar et al. 2014). In Florida, pre-service provision includes mostly separate special education programmes; at the in-service level there are a range of optional postgraduate programmes specific for severe intellectual disabilities, which are offered across school districts and university settings. There is continued concern about the number of teachers who are fully prepared to teach students with the most complex disabilities; however, special education teacher education programmes receive particular critical attention in relation to how they contribute to improved student outcomes (Sayeski and Higgins 2014).

In England there has been no discrete pre-service teacher education for learning to teach students with special educational needs (SEN) since 1992 (Golder, Norwich, and Bayliss 2005) and general education programmes contain very variable foci on SEN. Additional training materials related to teaching students with SEN were developed (for example, TDA 2009); however, this bank of resources is now archived and may or may not be used by teacher education providers. There is also negligible in-service teacher education for teachers working with children with severe intellectual disabilities (DCSF 2010). A government report (DCSF 2010) identified many teachers as not feeling adequately prepared to teach this group of students; concerns included a host of challenges such as how teachers understand and differentiate for the distinct learning needs of individual children, working with other professionals and the ability to collaborate and lead a team in the classroom. As a result, online materials were also developed for teaching students with severe and complex difficulties (DfE 2012), but these, too, are for optional use.

There are thus differences at both the pre-service and in-service levels between the two contexts in the study reported here – with both formal pre-service and in-service programmes for severe intellectual disabilities available in Florida and very limited provision at both levels in

England. Teachers working with students with severe intellectual disabilities in both countries, however, may have varied experiences spanning dedicated special to more integrated pre-service and in-service teacher education programmes.

Pedagogical Context

As part of the debates around inclusion, there is also ongoing consideration about the distinctiveness (or not) of pedagogies for teaching students with SEN. Some argue that specialist pedagogies are required for teaching students with SEN (Imray and Hinchcliffe 2012; Narayan et al. 2010). However, Lewis and Norwich's (2005) work in England suggests that there are no distinct and separate teaching strategies for teaching different groups of students (although there may be some specialist knowledge); rather, there is a continuum and, for some students, including those with severe intellectual disabilities, the strategies, instead of being different, may be much more overt and have a more intense application.

Regardless of the deliberations around distinctiveness of pedagogy, Carpenter (2010) suggests that the complexity of learning profiles of this group of learners calls for pedagogic understandings that reflect a level of intricacy. It is argued that educating students with severe intellectual disabilities cannot be approached through a single pedagogy and that the integration of individual learning profiles and curricular demands requires a more holistic and comprehensive approach that mirrors the complexity of learner needs (Ryndak et al. 2010). Developments in the pedagogical discourse challenge the historical existence of separate, individual, functional curricula for learners with severe intellectual disabilities, often combined with traditional behavioural approaches to teaching (Bouck 2012; Byers and Lawson 2015), and call for the delivery of blended and sharply focused personalised curricula that pay attention to both standards-based curriculum content and personalised needs (Lynch and Adams 2008). This means that individual strengths and needs drive curricular decisions, while the medium for

learning has become centred on core academic subjects (McGregor 2003). This presents a pedagogical paradigm shift in teaching and learning for this group of students. From this perspective, teaching this group of learners requires teachers to have a sophisticated pedagogic knowledge and a skill base that they can apply creatively in response to student need. The multifaceted and challenging pedagogical landscape, then, impacts on individual teacher learning as teachers engage in new (and sometimes conflicting) debates about pedagogy in relation to the reality of their classroom.

Conceptual and Theoretical Framing

This article uses the conceptual lens of evidence-based practice and the theoretical lens of situated learning to develop further understandings of what, how and when teachers learn about pedagogies.

Evidence-based Practice

There is a strong drive for ‘evidence-based practices’ for all students in the USA (Marzano, Pickering, and Pollock 2001) and increasingly so in England (Nelson and O’Beirne 2014). This drive includes learners with complex and severe disabilities (CDC 2014). A discourse of evidence-based practice, with roots in the discipline of medicine, has been apparent for some time at policy level in education, but now can be seen to be playing an explicit applied role at the level of schools and classrooms. Biesta (2007, 7) notes that evidence-based practice ‘conceives of professional action as intervention, and looks to research for evidence about the effectiveness of interventions’, to find out ‘what works’. For example, in England, Higgins et al’s (2014) toolkit measures effectiveness of interventions in terms of student progress against cost and robustness of evidence. Similarly, Wong et al’s (2013) report in the USA highlights 27

evidence-based practices for students with autism, including students who also have additional intellectual disabilities. Policy-makers and teachers may make use of such information to inform their pedagogical decision-making and teacher educators (in the USA) are expected to ensure teacher education programmes represent evidence-based practices when they apply for federal funding.

The notion of evidence-based practice has attracted critical attention, for example, in terms of the sorts of evidence that are deemed permissible and with regard to the assumption of transferability (Clegg 2005). Evidence is frequently expected to involve systematic reviews and meta analyses of large scale studies, which demonstrate quantitative effect size, with a focus on experimental research. The gold standard is considered to be randomised controlled trials although single case experimental design studies are sometimes also included. Other forms of evidence, however, as Simons (2003, 305) argues, ‘such as narrative, case study, interview or observational studies’ may also be useful and relevant in relation to professional practice. Yet, the knowledge that emerges from such type of evidence is not afforded value in the current epistemological basis of evidence-based practice. The assumption of transferability and generalisability, that what works in one situation with one student or group of learners, will also apply in other situations and with other students is also problematic, particularly for learners with severe intellectual disabilities who tend to present with very complex and unique learning profiles.

Teacher Learning

In relation to teacher learning, we draw upon Lave and Wenger’s (1991) Situated Learning Theory, and Korthagen’s (2010) reconciliation of this theory with a more traditional cognitive theory of teacher knowledge and knowledge building, in order to contextualise and

explore the participant teachers' learning. Lave and Wenger (1991), the seminal researchers in situated learning, developed the theory in relation to learning in occupational contexts which are not characterised by formal training such as traditional midwives in Yucatan. Their ideas have been applied to teaching and teachers' learning (Korthagen 2010; Kelly 2006; Leaman and Flanagan 2013). From the situated learning perspective, teacher learning is viewed as a social process that emerges from teachers' own actions in a social context and in relation to others, through participation in a 'community of practice' (Lave and Wenger 1991). In situated teacher learning, then, the collaborative and community context of teaching is thus afforded high status. There is a focus upon knowledge and skill development being meaningful to and embedded 'within' the situation of the classroom and school, emphasising the teachers' own classroom practice and the teachers' own actions. Bainer and Wright (2000) found that when direct links were made with teachers' current practices, developments of the teachers' repertoire of pedagogical practices occurred. Teacher learning, in this view, involves more than mere transmission of new information to teachers, instead it involves the ongoing building and refinement of knowledge and skills (Korthagen 2010). Korthagen's model, developed and applied to 32 teachers in Dutch schools, integrates situated learning and cognitive theory approaches into three levels of teacher learning: engaging in experiences (level 1), building up schemas of those experiences (level 2) and lastly, forming and/or applying theories to the acquired schemas (level 3). He suggests that each theory/approach offers an interesting insight into teacher learning, but when reconciled they contribute a more holistic perspective.

Teacher learning is also strongly influenced by local and national social and political contexts; such contexts are continually changing and adult learning thus includes the understanding and managing of such developments (Schon 1973). Individual teacher learning

needs and wider school, district, and national needs interact to create these contexts for learning (Akiba 2012). Teacher learning opportunities occur in many forms from formal teacher education programmes including school, district or graduate course attendance to less formal learning interactions with other teachers, professionals, parents and interaction with the students themselves (Eraut 2000; Hoekstra et al. 2007).

Methodology

This international collaborative study explores how a group of teachers learn and make sense of pedagogy as it applies to their students with severe intellectual disabilities. The project adopted a qualitative research design consisting of classroom observations followed by semi-structured interviews intended to explore teachers' pedagogical decision-making and learning. The aim was to facilitate conversations with teachers about pedagogical decision-making and their learning about this. We were especially interested in the varied learning opportunities they talked about that related to the situated knowledge and practice of classroom pedagogy.

The research questions underpinning the project were:

- What pedagogies and teaching strategies do teachers of students with severe intellectual difficulties use and how do they make decisions around these?
- What, how and when do teachers learn about these?

This article particularly focuses on the second research question; findings related to the pedagogical decision-making of the teachers are reported elsewhere (Lawson et al, 2013).

Participants

The project involved four specialist public school settings for students with severe intellectual difficulties – two in the south west of Florida and two in the south west of England.

In three schools two teachers and their classrooms were involved and in one school a teacher was added in the second phase as a teacher was unavailable and another volunteered. See Table 1.

Table 1: Participant Details

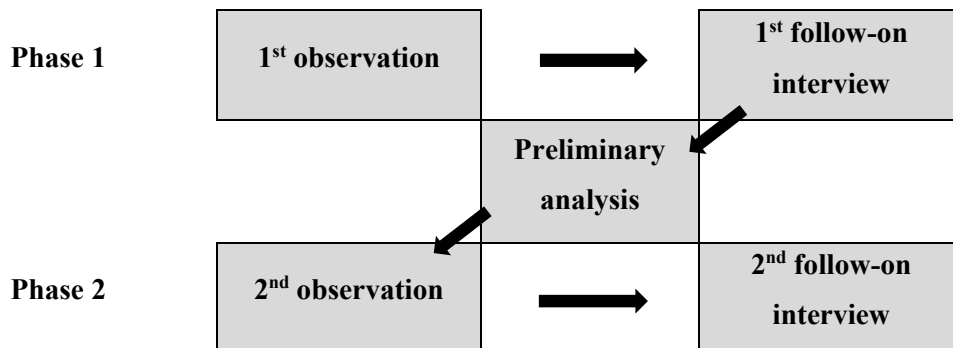
Country/ USA State	School	Nature of school	Teacher	Class age	Lessons observed
England	School A	All age special school for students with severe intellectual disabilities	T1	6-7 years	1. Getting Ready to Learn; Drawing 2. Bounce; Integrated topic activity
			T2	11-14 years	1. Maths and tuck shop 2. Morning registration; Bounce
	School B	All age special school for students with severe intellectual disabilities	T3	11-17 years	1. Registration; Sound Lotto 2. Sensology
			T4	11-14 years	1. Literacy
			T5	7-11 years	1. Science
Florida	School C	All age special school for students with severe intellectual disabilities including ASD	T6	6-11 years	1. Unique Learning System (ULS) 2. Morning Circle Time
			T7	8-11 years	1. TEACCH & ULS 2. Morning Circle Time
	School D	Elementary mainstream school with additionally resourced classrooms for students with severe intellectual disabilities including ASD	T8	6-9 years	1. Circle Time 2. Maths
			T9	7-11 years	1. Centre Time – individual programmes 2. Language Arts - Literacy

Formal institutional ethical approval was gained for the project from both Universities. Each school district and/or school also approved the project. Informed consent was gained from each teacher and consisted of the teachers understanding their role within the project and that their responses would be respected in a confidential and anonymous way (Orcher 2005).

Research Design, Data Collection and Analysis

The research design was iterative with each element building upon the previous one as illustrated in Figure 1.

Figure 1: Data Collection Sequence



Three researchers (the two authors and a further researcher in Florida) were involved in the project. Each researcher also visited data collection sites in the other country in order to be familiar with the project research contexts and build integrity into the data collection process.

Sixteen lessons of approximately 30-40 minutes were observed (see Table 1) following a classroom observation protocol, in order to record observations of the classroom environment and pedagogical practices to explore with the teacher in the follow-up interview. The protocol included information about the classroom context; teacher and student activity and pedagogical strategies used, for example, specific approaches or programme names if appropriate.

Researchers noted apparent moments of teacher decision-making: for example, if a child left the group and the teacher apparently decided to ignore this behaviour or a teacher assigned different tasks to different students within a group of learners completing the same classroom activity.

Each classroom observation was followed with an interview. This 40-60 minute interview focused upon the classroom observation and encouraged teachers to reflect on their pedagogical approaches, decisions they made and, then, how and where they learned a particular approach/strategy. Interviews with teachers were recorded, transcribed and member checked (Gall, Gall, and Borg 2007). The data analysis process is outlined in Table 2 and was founded on

a process that aimed to build consensus across the researchers. The analysis reported and discussed in this article incorporates interview data only.

Table 2: Interview Data Analysis

Step	Analysis
1	<p>The USA lead researcher reviewed the data using open-coding procedures:</p> <ul style="list-style-type: none"> • reading through individual interview transcripts for each teacher; • re-reading interview transcripts with the focus - ‘what’ ‘how’ and ‘when’ did the teacher talk about how they learned about what they do in classroom; • collating teacher interview data into the three areas of ‘what’, ‘how’ and ‘when’; • developing shared categories for each area.
2	<p>The USA lead researcher and England researcher shared the step 1 data analysis:</p> <ul style="list-style-type: none"> • re-visiting the data together to verify the initial categories and to consider any additional categories; • sharing, discussing and confirming categories and themes.

Findings and Emerging Themes

The teachers in this project contribute to our understandings of *what*, *how* and *when* teachers learn to teach students with severe intellectual disabilities. It is not intended to suggest that these teachers are necessarily different in their learning from any other teacher, but the research adds to knowledge and understandings around teacher learning from the perspective of a specific group of teachers’ learning experiences.

Content of Teacher Learning

Teachers’ comments about the content of their learning, that is, *what* they learn, are illustrated in Table 3 and this content can be divided into curriculum/strategy/programme level and individual student-focused content. In the programme-focused data teachers discussed a wide array of curriculum/strategy driven programmes. These included approaches to teaching and learning, for example, Applied Behavioural Analysis (ABA), Discrete Trial Training and Positive Behaviour Support as well as curriculum-centred programmes such as Barrs Court Early

Development Curriculum and TeachTown, a computer-based programme. There was little commonality *across* settings with reference to programmes, even within the same country, although a number of programmes were shared *within* schools and were noted as whole school initiatives, for example, the Thrive approach in School A and Unique Learning System (ULS) in School C.

Table 3: *What Teachers Learned?*

	Curriculum/strategy/programme-focused	Student-focused
School A T1 & T2	Sensory diets, deep pressure (T1 I1) Bounce programme (T1, I1; T2, I2) Team Teach (T1, I2) Circle time structure (T1, I1) Thrive (T1, I1) Positive Behaviour Support (T1, I2) Person Centred Planning (T1, I2) Narrative Intervention Programme (T2, I1) Alternative and Augmentative Communication for one student (Dynavox) (T2, I1)	Reinforcers for individual students (T1, I2) Knowledge of student (T2, I1) How each student responds differently (T1, I2) Changing needs of each student (T2, I1) 'I know he is on a diet so that is why I send him there' (T2, I2) What works for some students (T1, I1) 'For the first time, he was able to ...' (T2, I2) 'She gets a grin on her face and gets very uncoordinated with her arms and then I know..' (T2, I2)
School B T3, T4 & T5	Barrs Court Early Development Curriculum (T3, I1) Makaton (T4, I1) Times Education and Hamilton Trust lesson schemes and ideas (T5, I1)	Student response to specific activity (T3, I2) 'She loves change actually and you have to mix and match so preparation of resources can be challenging because you have to, you've got to keep it rolling, keep it rolling.' (T4, I1)
School C T6 & T7	Circle time structure (T6, I2) TEACCH (T7, I1) Edmark (T7, I1) ULS (T6, I2; T7, I1)	'I have a little profile that I send to each family and it tells me about the family, about the student and also I send a reinforcement inventory home' (T6, I1). 'those things that are on their IEPs, they are embedded there; identifying their names, identifying other people's faces.' (T7, I1)
School D T8 & T9	Sensory diets, deep pressure (T8, I1) Verbal Mapping (T8, I2; T9, I1) Circle time structure (T8, I1) TEACCH (T8, I1) ABA (T8, I1, I2) Discrete Trial Training (T9, I2) Teach Town (T9, I2) Equals Math programme (T8, I1)	Reinforcers for individual students (T9, I1) Knowledge of student (T8, I2) How each student learns differently (T9, I2)

Abbreviations: T = teacher# I = interview#

There was much stronger commonality across sites relating to individual student-focused approaches. All teachers talked about being constantly influenced by student responses, which were informed by the knowledge they developed about individual students. For example, one

teacher discussed how she knows a student with emerging communication skills (that is, no formal communication system at this time) is engaging in a learning activity and how she extends what is expected of the student by reading her body language, ‘She gets a grin on her face and gets very uncoordinated with her arms and then I know...’ (T2, I2, 5).

The Nature of Teachers’ Learning

Table 4 presents data about *how* and *when* the teachers learned: the nature of their learning.

Table 4: *How and When Teachers Learned?*

Theme	Shared category	Teachers who referenced and examples of data
Through interaction with others (in school or directly related)	Formal and informal discussions with others including other teachers, professionals, teaching assistants and parents	Discussions with others (T1, I1; T7 I1; T8, I1; T9, I1) Feedback from TAs (T8, I2; T9, I1)
	Observing and being present with others (including other teachers and professionals)	‘Through being here at school’ (T1, I1) Observing other teachers and professionals (T1, I1 & I2; T9, I2) ‘I speak to the autistic school and say send me your advanced skills teacher please’ (T4, I1) ‘Very much learning on the job’ (T4, I1)
	Collaborating and working with others	Working with others (T1, I1; T6, I2; T8, I2; T9, I1 & I2) Experience of therapists... ‘I always get the therapists to work with us...their expertise is brought in and shared’ (T4, I1) ‘When we started a new curriculum last year’ (T3, I1)
Through interaction with students	Observing students	‘Watching him in the last couple of weeks’ (T1, I1) ‘The children have taught me’ (T8, I2) It’s a lot of observation (T7, I1)
	Working directly with students	‘I know I can push him and that is how we got where we are’ (T7, I1) ‘With our experience of A...’ (T1, I1)
	Previous experience of students (including general experience of other students with SEN)	‘Trying to find out what works for children’ (T1, I1) ‘I think it is trial and error...what has worked in the past’ (T6, I1)
Through self reflection	About students	Posing questions:... ‘what are their likes, what are their dislikes, what are they getting out of this?’ (T3, I1) ‘I ask...is there something I can do to lessen your anxiety and get you focused in?’ (T6, I1)
	About curriculum	‘It brings to me an uncomfortable feeling when the

		student is doing the same thing...’ (T8, I2) ‘We’ve been really looking at our lessons and objectives and what we are doing’ (T5, I1)
Through facilitated opportunities	In school	‘Being a pilot programme for the school’ (T9, I1) Collaborative video analysis as part of in-school leadership training (T1, I2)
	Out of school	When attending district courses (T1, I1; T2, I1; T6, I1; T7, I1; T9, I2) Completing programme at University (T8, I1 & I2)

Abbreviations: T = teacher#; I = interview #

Parents, other teachers, teaching assistants, therapists and out of school specialists form the ‘other’ adults when teachers talked about how interaction with them informed their learning. This adult interaction occurred formally and informally, face to face, through observations, and through written and verbal communication both in and out of the classroom setting. The teachers also talked about how they learn directly from the students, through observation of how students respond in the learning situation; these responses are contextualised through the current knowledge teachers have. For example, one teacher discussed her decision to insist a particular student completed an activity she had set for him as she has a particular understanding of him: ‘I know I can push him and that is how we got where we are’ (T6, I1, 8). Teacher 2 also discusses her personalisation of activities for different students:

‘Each child is an individual so how they approach the work is, it's got to be individualised because they're not, there's just so many different ways – if I gave them all the same I wouldn't be meeting their [needs]..., Ben has moved on to Clicker 6 [a writing support tool] so he's using a gear stick (...) I had the most amazing work from him - all from the aid of a computer on Clicker 6, so he's able to make his own sentences up from what he's learnt.’

(T2, I2, 6)

Teachers also discussed how they learn through reflection on their classroom practice.

This reflection can relate to thoughtful consideration of individual student responses, as illustrated by one teacher, ‘I like to pose questions...what are their likes? what are their dislikes? what are they getting out of this?’ (T3, I1, 10) or can relate to classroom structures and strategies as explained by another teacher who stated that she undertook ‘professional reflection on Circle Time’ (T1, I1, 4).

Teachers discussed formal learning through professional development opportunities in their school district: for example, workshops on the Equals Math programme, the Thrive approach and Edmark Reading programme. District wide projects were also mentioned (for example, trans disciplinary working and State Endorsement initiatives). One teacher talked about her masters programme at college. Teachers also cited in-school professional development opportunities, including whole school initiatives, as described by one teacher who was learning a new computer based programme the school was considering adopting, ‘being a pilot programme for the school’ (T9, I1, 5). Another teacher discussed how she learned about the power of classroom and student observation as part of the school leadership training, ‘Collaborative video analysis as part of leadership training’ (T1, I2, 8). Other in-school opportunities for learning mentioned included being a teaching assistant in the school before qualifying as a teacher, job sharing with another teacher, formal observations of other teachers, attending student annual review meetings, and professional development sessions.

Discussion

This discussion is twofold, firstly we discuss the *what* of teacher learning, that is the content of the learning teachers talked about, in relation to notions of evidence-based practice. Secondly, we consider the *how* and *when* of teacher learning through the theoretical perspective of situated learning.

Content of Teacher Learning: Evidence-Based Practice and Practice-Based Evidence

Some of the programmes identified by teachers in Florida Schools C and D reflect established evidence-based approaches highlighted in the USA (Wong et al. 2013), for example, Applied Behavioral Analysis and Discrete Trial Training, and programmes that are informed by established evidence-based approaches, for example, TeachTown. As noted earlier, the use of evidence-based strategies and practices has an increased emphasis in current pedagogical discourse. Because of this emphasis, commercial programmes in the USA are often promoted as ‘evidence-based’ and, partly on this basis, some districts purchase curriculum packages (for example, Unique Learning Systems) for use in their schools, vigorously encouraging their schools to use these. Teachers are thus, to a large extent, obliged to take on these programmes.

Curriculum programmes and strategies in England are not currently subject to the same ‘official’ recognition processes. A number of approaches (e.g. Person Centered Planning), communication strategies (e.g. AAC and Makaton) and curriculum packages (e.g. Barrs Court Early Development Curriculum) were mentioned. Some specific commercial programmes were also mentioned by teachers at School A (e.g. Narrative Intervention Programme and Thrive) although they seem to be fewer in the English schools than in the American schools and seem to be decided upon at a school rather than local authority (district) level.

As discussed earlier, an evidence-based strategy reflects practices that have a particular supporting research base with regard to measures of effectiveness and the way a strategy becomes ‘evidence-based’ can be seen as problematic. There is either an emphasis on a large-scale experimental methodological base with an assumption that all students learn in similar ways or an emphasis on single case design methodology that is very specific and context based with an assumption about transferability. In reality there is great individual complexity and variance in learning contexts and this may be particularly so for the group of students defined as having severe intellectual disabilities. For example, a teacher of two students with severe intellectual

disabilities may find that each student responds differently due to intellectual, communicative and social/emotional variance. Indeed, each student may respond differently at different times of the day and in different classroom contexts. Teacher 6 illustrates this when she talks about different students' responses to the same ULS circle time activity:

'It is usually based on their abilities so I let them take turns so they don't get used to what they are doing so I can observe that it is not just memory, it is actually understanding of whatever they are doing. But then, I would let Nick do more because he can do more than the others so that is my way of giving him a little bit of advance.'

(T6, I2, 2)

One criterion of evidence-based strategies is their capacity to be implemented with fidelity (McHugh & Barlow 2012) such that practitioners can follow specific procedures with the likelihood of achieving similar student outcomes. However, in this way, as Biesta (2007, 5) points out, 'evidence-based education seems to limit severely the opportunities for educational practitioners to make such judgments in a way that is sensitive to and relevant for their own contextualized settings'. The influence of individual student responses on their pedagogical decisions was a shared characteristic of what the teachers in this project stated that they learned and they were considered crucial to what they learn as teachers. Teachers may be employing 'evidence-based strategies' or drawing upon specific published programmes, but what appears particularly important is how they respond to individual students and evaluate and amend the strategies in light of student responses. Teachers are thus drawing upon their own 'practice-based evidence' to adjust and complement the programmes they use. This concept of 'practice-based evidence' has emerged from the fields of psychiatry, psychotherapy and counselling (Margison et al. 2000, 124), and has been applied to schooling (Simons et al. 2003). It arose as a response to 'the poor success of RCTs [randomized control trials] in predicting outcome at the level of the

individual case' (Margison et al. 2000, 123) and the 'situated generalization' of evidence-based research (Simons et al. 2003, 4). Whilst evidence-based practice is based on externally set criteria of assessment, practice-based evidence focuses on the experiences of participants (Thomas, Stephenson, and Loewenthal 2006). In practice-based evidence teachers 'generate, validate and use research knowledge to improve professional practice' (Simons et al. 2003, 361) with their students in their classrooms at a particular time. This confirms the need to support teachers to:

'consider all aspects of a student's life in determining 'what to teach', 'how to teach it' (evaluation of evidence-based strategies) and 'how [they] will ... know when it has been taught' (what ongoing evaluative data to collect).'

(West et al. 2006, 194)

As Hedges (2012) notes, drawing on Hammersley (2005), 'teaching practice cannot be based directly on research evidence because it needs to be filtered through teachers' experiences and understandings' (8). Rather than teacher action in education following an instrumental means-end intervention model, with professional action conceived as intervention (Biesta 2007), as implicit within the evidence-based practice discourse, the emphasis teachers placed on 'the constant relationship between the teacher and the child' (T7, I1, 3) supports Biesta's (2007) understanding of education as mutual interpretation that is reflective of and responsive to the many different contexts of teaching and learning. Teaching can be informed by generalized evidence but this is mediated by local circumstances and adapted by teacher professional judgment (Pollard 2014).

Nature of Teacher Learning: Situated Learning

In relation to how and when they learn, teachers stated that they learn through interactions with other adults, interactions with the students, self-reflection and structured professional development. Teachers reflected an emphasis on situated learning that occurs in classrooms, in schools, with their students, other teachers, professionals and parents. This embodies the

perspective of situated learning discussed by Korthagen (2010, 99) where teacher learning involves ‘the process of social practice, especially the social practice in the schools’. The teachers in this study reflect this perspective of situated learning in building knowledge and skills that are meaningful to, and embedded within, the situation of their classroom. The teachers in the American schools use programmes and strategies that are informed by the current USA evidence base, but, in their ongoing learning around their responsive application of these programmes with their students, they reflect Simons et al’s (2003) notion of *situated* generalisation.

The teachers in this study also mirror the analysis offered by Korthagen (2010) in his three level model of situated learning. This model embraces an experiential and concrete foundational level (gestalt, level 1) that builds into explicit awareness where teachers reflect and ‘during this reflection process, notions or concepts of teaching become interrelated’ (schematic, level 2, Korthagen 2010, 5). The final level, the theory level (level 3), develops from the knowledge and skill building that has taken place at the first two levels, and results in a more theoretical understanding of the phenomena.

Korthagen (2010) argues that formal teacher education programmes emphasise learning at level 3, and then apply the theoretical understandings to practice, giving little credence to levels 1 and 2. He demonstrated that when teachers talk about their learning they make more reference to their concrete experiences in the classroom (level 1), how they make sense of these experiences (level 2) and then progress through to a theoretical understanding of pedagogy (level 3). The teachers in our project also predominantly reflect level 1 and 2 in statements about their learning. They talk about the impact of concrete experiences in the classroom, with their students and colleagues. For example, teacher 7 talks about her learning with a student who has a particular complex learning profile:

‘It is like he is telling me I don’t want to do that I want to do this and if you keep pushing me I am going to do worse. I am going to scream at you even more. I am still learning with that particular one. I am still trying to define what is really going to be my final way of working with him, treating him, approaching him.’

(T7, I2, 7)

This may develop into more general understandings about teaching. Teacher 5 offers an example of this when she talks about how she gathers understandings of learner preferences and applies these understandings:

‘I always try to look at others’ perspectives. There are always three versions of what is going on, yours, theirs and what is actually happening. I also know that with these students or anybody, we all learn a little bit differently.’

(T5, I1, 4)

In another example from this teacher, it appears that she begins to recognise that her daily practices are associated with a particular pedagogical approach. This teacher makes a comment about a district workshop she attended:

‘I remember one time we were at a workshop and they were giving some fancy name to something and I looked at my friend next to me and I said I just thought that was teaching.’

(T5, I1, 5)

This may be indicative of level 3 of the Korthagen where theories are developed and or applied to teachers’ current experiences and understandings.

There are a number of points that arise from this project. Firstly, teachers who teach students with severe intellectual disabilities talk in similar ways to the teachers in Korthagen’s (2010) study about their experiences of learning. They do not follow different patterns or paths

because they teach students with severe intellectual disabilities. Secondly, this project illustrates that teachers may be at different levels of Korthagen's (2010) three level model for different aspects of their learning; it is possible that there may be fluidity between the levels of the model. More research is needed in this area. It is also noted that that, as in Korthagen's work, the teachers' talk in this project represented levels 1 and 2 (gestalt and schematic) more than level 3 (theory) and we speculate this may be because they have little opportunity and experience to explore theoretical understandings of a phenomena. Teacher educators may therefore need to be cognisant of these issues when mediating teacher learning opportunities. Their role may be important in supporting teachers in their theorising and in interrupting established patterns of practice to engage with new pedagogical possibilities.

Concluding Comments

The teachers' perspectives gathered through this international project highlight the importance of context and practice in their professional learning about pedagogy and pedagogical decision-making for their students with severe intellectual disabilities. Differences emerged between the two contexts: for example, in Florida, teachers (and their schools) were influenced by published evidence-based practices whereas, in England, schools chose programmes that were curriculum and school focused rather than published in a collated evidence-base. Any effect of the different pre-service and in-service programme provision in Florida and England was not specifically evident, although further research is needed to explore this further. There was, however, a strong shared emphasis on situated learning embedded in relationships between people, that is, 'embodied social learning' (Korthagen 2010, 99). Teachers discussed the need for team learning including other professionals, parents and students themselves to meet the complex learning profiles of the students.

However, the *what, how* and *when* of their learning, whilst often relating to specific programmes or approaches, was strongly shaped by the personal responses of each of their students and their relationship with these students. This suggests the process of application of programmes and strategies may be varied and sophisticated, mediated by teacher professional judgment and action, depending on the complexity of the student learning profiles. This affords the ‘situated generalisation’ offered by Simons et al. (2003, 347) an invaluable role in the process of teachers’ learning about the approaches and strategies that inform their pedagogy for their students with severe intellectual disabilities.

Considering what to teach, how to teach it and how to know when students have learned are elements of teacher learning for all teachers, but for the teachers in this project, the value of appreciating individual student response appears particularly important. Teachers prioritised reflective observation of students and their specific individual responses to curricular experiences as central to the meaning making they make of their own learning. It is important, therefore, that teacher educators, when developing teacher learning opportunities, are aware of this connection so that teacher professional learning is designed to support teachers to engage in such reflective observations in an intentional and thoughtful way.

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