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Assessment, Teacher Education and the Emergence of Professional Expertise

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This paper describes a new assessment tool that situates school literacy as a specific cultural, social and emotional practice. It reports evidence of the extent to which this tool seems to have helped student teachers to broker and balance different kinds of data and knowledge flows. The study shows that the tool was helpful in encouraging student teachers to deepen their understanding of individual domains and orchestrate across domain knowledge to account for why some children experience difficulty in learning to read. However, it also indicates that engagement in impactful, dynamic teaching situations helped the assessment tool to generate situated, meaningful knowledge and pedagogical understanding. This suggests that initial teacher education might need to re-think the range of student teachers' practical experiences. The study suggests benefits in considering assessment tools and data that attend explicitly to the evidence of the wider learning context.

Key words: teacher learning; professional learning; teacher identity; literacy as social practice; assessment; professional expertise

Introduction: Expert literacy teaching, knowledge and assessment
Studies of teaching show that teachers can make a difference to attainment (see for example Nye et al 2004). They also show literacy classrooms to be complex learning environments that impact on literacy learning in direct and indirect ways. Yet despite many large-scale studies of mandated teaching programmes and interventions, there are no large-scale representative studies of classroom teaching environments to understand how highly-effective and less-effective practitioners shape classroom interactions and tasks, or how they weave assessment into their daily practice in responsive ways (Pianta and Hamre 2012 p.657).

The lack of large-scale studies is surprising given that smaller studies show that certain teacher actions make a difference to literacy attainment. Pianta et al (2008) used 'growth mixture modeling' in a longitudinal field study to identify the characteristics of literacy teachers that resulted in most progress for early-years and primary children: a warm emotional quality to teaching, positive and tailored one-to-one interactions, high-quality feedback that prompts conceptual development, time on task, and interesting and challenging tasks rather than worksheets and tests. Kathy Hall (2013), in a best-evidence synthesis of small-scale studies, reports that literacy gains result from the quality, contextualisation and responsiveness of teaching rather than specific teaching programmes, activities or content. In fact, Hall's review shows that highly effective and less effective literacy teachers tend to do similar activities but the highly effective teachers contextualise them, with clearer purposes and stronger links to pupils' out-of-school lives. They prioritize literacy and time on task, create tailored literacy environments for their pupils and offer more precise explanations. They are well planned but not bound by their planning and respond to evidence that emerges during teaching. They integrate and balance teaching the codes of literacy with activities that demonstrate meaningful uses and purposes for becoming literate and offer varied learning experiences that are intellectually, socially and emotionallyengaging. Whilst they provide overt modelling, they are also responsive and flexible - adept at seizing the 'teachable moment' and at creating instructional density by incorporating multiple goals into a single lesson. The highly effective teachers teach a range of reading cues (grapho-phonic, picture, syntactic and semantic), coaching children to use them in the context of reading actual texts rather than simply modeling, explaining or practicing them as decontextualized skills. Importantly, they judge the challenge of tasks well, and are expert at getting pupils to work at a level of 'easy difficulty'. Their classroom management is good with well-established routines that teach pupils to be self-regulated and independent (Hall, 2013).

These studies evidence literacy teaching and literacy assessment as intricate, entwined behaviours. As such, they require nimble, knowledgeable professionals who retain the agency to respond to evidence whilst working in a complex landscape, one where new information about learners can emerge during teaching and where diverse knowledge flows must continually be balanced and prioritised in different ways. Although it appears a seamless 'regime of competence' (Wenger-Trayner and Wenger-Trayner, 2015) such expertise draws on a "whole landscape of practices involved in research, teaching, management, regulation, professional associations, and other contexts…" (Wenger, 2010 p.4). These practices may reflect, harmonise, ignore, supplement, or conflict with each other, but the multiple voices are a source of innovative teaching as practitioners use and reconcile the knowledge flows in new ways for new situations. Seen in this way, assessment is a fluid activity rather than the application of a fixed protocol.

Positioning assessment as drawing on many kinds of professional knowledge suggests the role that assessment can play in professional development. The process of aligning and re-aligning different knowledge domains and practices arises from, but also deepens and expands, professional knowledge. The new understandings of learners, of teaching and of professional knowledge that results can impact on professional identity as a teacher. (Wenger-Trayner et al. 2015). However, it also emphasises the uncertainty of teaching and learning, and the complex ecology of the classroom. Young readers may arrive at the same outcome by different learning pathways, with different tasks, framing, teaching and support. Assessment tools and a focus on 'evidence-based practices' can help to mitigate the uncertainty, at least in part, by harnessing evidence to professional knowledge and actions.

However, assessment tools and evidence-based practices can result in unintended, toxic, outcomes. One reason for this is because many assessment tools reify aspects of the relationship between professional knowledge, evidence and practice in ways that overlook the social basis of teaching and constrain teacher agency and identity.This can have negative impacts on both teachers and learners. Reifications commodify and offer a short-cut. In doing so, they privilege certain knowledge domains, evidence and practices. They can change what teachers think about, what they notice and what they value making them disposed to act on alternative evidence streams, or not. Narrow literacy assessments, applied sporadically in a high-stakes environment can create a compliance mentality that distorts both the curriculum and the experience of learners (see, for example Porno 2016; Polesel et al 2014; Cormack and Comber 2013). They exercise this influence by constraining the agency and professional imagination of teachers, distorting their knowledge and identity. However, negative distortion is not inevitable. Assessment can help drive a positive and innovative professional environment, one characterized by

professional inquiry, agency and professional knowledge generation (see for example Jimerson, 2014; Wayman and Jimerson 2013; Hubbard et al 2013).

Given this, it is important to think carefully about how teachers and student teachers encounter assessment and the tools and practices that feed professional thinking, knowledge-development and activities. This is particularly important for student teachers to ensure their experience is "not only about learning to do, but as a part of doing, learning to be" (Lave & Wenger, 1991 p.4). Student teachers are at the earliest stages of learning about the psychological, sociological, literary, linguistic and pedagogical aspects of literacy development. Well-designed assessment tools could support their understanding in ways that develop adaptive expertise. In real teaching situations, where professional knowledge is situated and shifting, aligned differently in different contexts, a well-designed literacy assessment tool could support how student teachers engage with professional knowledge so that they learn how it feels, and what it means, to be a literacy teacher.

Kaur et al (2017) characterise this as "a gradual shift in the centre of gravity away from the University-based, "supply side", "offline" forms of knowledge production … towards an emergent school-based, demand-side, online, in situ form of knowledge" (Kaur, 2017 p. 169). It is a delicate process, envisaged by some social practice theorists as an apprenticeship that involves moving from 'legitimate peripheral participation' to full participation in the community of practice (Lave and Wenger 1991). However, pathways to professional competence can be diverse and indirect. In reality some students may well be apprenticed to teachers or schools that are not ideal - where rigid assessment tools or teaching programmes constrain the curriculum and teaching, for example. Moreover, because it is a social process, the nature of student teachers' participation on placements cannot be guaranteed. Hall et al. (2012) report that the social dynamics of school placements marginalised rather than legitimated student teachers' identity as learners. It led to narrow definitions of teaching that characterised professional competence as 'class control' and children's learning as 'skill development'. They did not showvulnerability, ask questions or negotiate meanings, which constrained how professional understandings developed. This chimes with other research showing that student teacher learning is shaped by a range of social and cultural factors, including: the power and authority relationships (Jacobs 2010); course design features,

collaborative and inquiry-based activities (e.g. Darling-Hammond, 2006; Cochran-Smith and Lytle, 2009); pre-existing beliefs on issues such as inclusion and poverty (e.g. Thompson et al 2016) and the formal and informal networks where they make sense of their work (Coburn et al 2012).

Professional identity and learning are clearly not forged solely in school placements or universities but across a range of learning sites and learning cannot be guaranteed from any one context. The overall learning mix on an ITE course may be as important as any single experience, and experiences may be differentially important for individuals. Given this, universities need to offer a variety of tools, sites and contexts for professional knowledge to be understood and used by student teachers. This paper describes an assessment tool for this whilst retaining broad and flexible understandings of teaching and identity.

Rationale for the literacy assessment tool

The assessment tool explored in this paper is captured by the Three-Circle Venn diagram reproduced in Figure 1. It draws on three central theoretical tenets about literacy and literacy learning: First, that literacy is inseparable from the social contexts of families, homes and communities and this requires professional thought about literacy learning and teaching to extend beyond the classroom and classroom pedagogies (Barton and Hamilton, 1998; Street, 1995). This is captured in the domain of *Cultural and Social Capital*. Second, that autonomous skills developed in the context of use are absolutely important and necessary, albeit insufficient on their own, for sustained literacy progress (Brandt and Clinton 2002; Clay 2001; Cain 2008; Smith 2012). This is captured in the *Cognitive Knowledge and Skills* domain. Third, that a literacy learner's personal and social identity as a reader/writer matters, as does their identity more generally as a learner (Moss 2011; Dweck 2000). Both forms of identity are important for literacy progress and thus deserving of serious professional attention. This is captured in the *Personal Social Identity for Learning and Literacy* domain.

The assessment tool thus incorporates three very different knowledge domains, with different epistemological foundations. They embody theoretical paradigms that enact different definitions of what matters, generate different kinds of data and different ways to capture,

think about and respond to evidence.   The challenge is to help student teachers notice and learn to orchestrate these different knowledge flows when working out how to provide effective literacy teaching for specific individuals and groups.

INSERT FIGURE 1 ABOUT HERE

There is considerable research in each of the three domains about the mechanisms that constrain or enable literacy learning, how they operate, how they influence each other, and what teachers can do to effect progress in each. The *cognitive knowledge and skills* domain is perhaps the one most closely and overtly linked to curriculum content and classroom schemes of work. The research that underpins this domain is hotly contested both because it is politically salient, and because conversations tend to focus on discrete skill development rather than the best learning and teaching mix (for discussion of this see Ellis and Moss 2014). The National Reading Panel (NICHHD 2000) identifies as core, 'Five Pillars' of reading: phonemic awareness; phonics; vocabulary; fluency and comprehension. Literacy teachers need also to attend to the research showing how readers bring these together, including how readers attend to grapho-phonic, syntactic and semantic cues, when reading continuous text. We are aware that this research perspective may be inconvenient for some government, commercial and political lobby groups. However, a mathematics work-card that asks 'How many triangles?" requires knowledge of the likely meaning if a reader is to judge that 'How' is likely to rhyme with 'cow' rather than 'low'. Teaching readers to orchestrate such cues and bring a variety of decoding and comprehension strategies requires knowledge of the research on responsive coaching, running records and miscue analysis (Clay 2001; Fountas and Pinnel 2010), as well as on text difficulty (Schmitt et al 2011; O'Connor et al 2010), concepts about print (Lomax et al 1987), and comprehension habits (Smith 2012).

Cultural and social capital draws on Bourdieu (1986) and refers to the forms of knowledge, skills, education, experiences, resources and other non-economic home/community advantages that together can account for social mobility. It includes the relationships and social networks that can provide support, as well as the influence on the attitudes, sense of entitlement and linguistic resource children bring to school. Heath (1982), for example, highlights differences in the quantity and type of children's home language and literacy experiences that lead to differences in their beliefs about what literacy is for, what it entails and the nature and quantity of talk about literacy events as well as their world-knowledge (which impacts on both comprehension and decoding). Whilst middle-class literacy practices were an almost seamless match with

those in school, children from other backgrounds were not so lucky. A bad fit affected how teachers engaged with children and how children engaged with school literacy activities, what sense they made of them, what they recognized, how they could demonstrate their knowledge, and how they felt about school literacy. This matters because, as Stanovich (1986) highlights, small differences can result in spirals of advantage or disadvantage that result in big attainment gaps. Moll and Cammarota (2010) suggest that, if schools acknowledge and use the funds of knowledge all children bring from their homes and local communities, children find school activities more meaningful, are better-positioned to demonstrate their knowledge, and teaching can 'bridge' from family and local funds of knowledge to wider-world/school knowledge. Laureau (2011) documents how poverty itself puts pressure on family life and makes education a challenge. She also documents how differences in childrearing, cultural knowledge of how institutions work, language use, the pace of family life, time for informal play, and adult interest in children's activities, create for some, the knowledge, a sense of entitlement and a skill-base that enables middle-class adults and children to bend systems to their own advantage and get professionals to do their bidding.

This research helps to explain why social class and poverty are so strongly associated with literacy attainment (OECD 2010). The assessment tool prompts literacy teachers to collect data about this and use it to teach literacy differently. Professionals who recognize the issues for those who do not swim in 'schooling's mainstream', can act as advocates, networkers, enablers and curriculumdesigners to prevent and address cumulative disadvantage. They will be: knowledgeable and realistic in their expectations of families (e.g. Hartas 2012); demonstrate the purposes, power and usefulness of literacy (e.g. Comber and Kamler 2004; 2005); recognize how comprehension and vocabulary link to knowledge of the world (e.g. Luke et al 2010); embed community knowledge in their teaching (Moll and Cammarota, 2010); and ensure that literacy fosters choice, entitlement and voice. Importantly, they provide a curriculum that is interactive, outward-looking, knowledge-rich, language-rich, and socially-rich to echo the experiences that well-educated, well-networked, middle class parents provide.

The domain *Social identity as a learner and literate being* explores how children position themselves, and are positioned by others as learners and as literate beings. Understanding identity involves understanding how children 'story themselves' as

literate beings, literacy learners and learners more generally in and out of school. It captures how children *feel* and how they see themselves, their sense of belonging, their sense of what learning involves, and how far literacy practices are central to who they are and who they will become. Esteban-Guitart and Moll (2014) indicate that identity is complex and shifting. It is affected by constructs around gender, race and class and by social context. Classroom practices can impact on aspects of identity through the social context; the nature of reading opportunities they offer, the activities and texts, the social spaces and networks around reading/writing, how these are promoted, how individuals participate in, and feel about them, as well as how a learner is positioned by teachers and by other learners.

A literate identity cannot be forced or imposed by teachers but requires open, social spaces where learners can define themselves as readers/writers in relation to their peers and to texts (Moss 2011). Identity is a complex and shifting construct, but prompting positive change is not an exact science. Meek stated, "Being at home in a literate society is a feeling as well as a fact" (Meek 1991 p. 2) and suggests that teachers attend to, and shape, how the social dynamics of the classroom are entwined with individual identities.. The extent to which children feel part of a reading community affects what they read, how much they read, how they approach texts and tasks, and the engagement, persistence and motivation they bring (Guthrie and Klauda, 2014)

Academic success also depends on learners' theories about intelligence, and this is also part of learner identity. Dweck (1983; 2000) shows that learner beliefs about themselves and about learning impact on how they engage in learning activities and respond to failure. Those with a 'growth mindset' believe learning capacity depends on effort and practice. They are not put off by having to struggle or by making mistakes, butinstead try harder. Those with a 'fixed mindset' believe learning capacity is fixed, largely independent of effort and that mistakes show a lack of 'talent'. Teaching to promote 'growth mindset' prompts statistically significant increases in attainment and in reading engagement by changing how children understand themselves as learners (Blackwell et al 2007; Wilson et al 2002).

<u>Use of the assessment tool</u>

The assessment tool detailed in Figure 1 and above was developed to support student teachers in adaptive teaching and develop situated knowledge. It is a 'boundary object' (Star 2010) to help them navigate across knowledge communities operating with different epistemologies, understandings of what matters and definitions of evidence. It also has potential to focus data collection, promote grounded observations, metacognitive understanding, facilitate shared narratives and collaborative discussions. This could prompt student teachers to be more 'noticing', consider what data and evidence actually mean for teaching and hold ground conversations about learning priorities, pathways and teaching. As a boundary object to support 'coordination without consensus' across the different domains, it is lightly specified to anchor and preserve theoretical integrity whilst affording sufficient plasticity to be useful.

The assessment tool is used with students on the four-year undergraduate *BA in Primary Education with Teaching*. The student cohorts in this study, were introduced to the assessment tool in Year 1 in a 20-credit Early Years Literacy module. Towards the end of the year, all student teachers used the assessment tool to construct a 'case study' of an 'middle-ranked' reader in their placement class as the module summative assessment.

InYear 2, another 20-credit module addressed literacy teaching for older children. The assessment tool was used during lectures but had no direct link to placement or the assignment. Year 2 and Year 3 student teachers can volunteer to take part in the 10 week 'Literacy Clinics', a team-based, one-to-one withdrawal teaching intervention run by the university. It is aimed at children aged 7-10 yrs who (so far) have demonstrated poor literacy progress. Student teachers work in teams of four, each team assigned to one child. Typically children are from high-poverty backgrounds and two to three years behind in reading, based on standardized assessments. Each team member gives one half-hour, one-to-one, lesson per week . Tuition is organised as a teaching chain: one team-member teaches on Mondays, another on Tuesdays, and so on. The clinic promotes responsive, real-time teaching

with a coaching model based on the Assessment Tool and responding to evidence across all three domains. There are no lesson plans but observations use the domains of the Assessment tool as a graphic organiser.

About half the Year 4, student teachers participate in the Literacy Clinic as a 20-credit assessed module on the intellectual, cultural, social and emotional barriers that schools may create for learning.

Research questions

The research asked two questions: How do final-year student teachers' engage with the assessment tool and did it impact on their professional learning and What was their experience of working in the clinic . This paper reports evidence related to the first question.

Participants

The evidence is drawn from experiencesvolunteered by 98 student teachers, drawn from three final-year student cohorts. All were preparing to teach in Scotland.

Methodology

The data sample was collected in two ways: 30 student teachers, from two cohorts described their experiences in interviews (n= 8 men; 22 women). 68 student teachers from 3 cohorts provided written reflections (n=4 men; 64 women).

The semi-structured interviews explored the student teachers' professional learning. Student teachers were asked to talk about what they learned about literacy learning over the ten weeks, what they did, how the experience could be improved, and what, if anything had changed about their knowledge, feelings and values as literacy educators.

An experienced researcher who did not teach on the literacy team or BA course conducted the interviews. She was unfamiliar to the student teachers and had no

particular expertise in literacy. The interviews were conducted in the university but away from the Department. Anonymity for interviewees was assured and participants gave written consent. Before the interview participants were reminded that they had the right to withdraw their contribution at any time without explanation or reason.

The interviews lasted between 25-40 minutes. The interviewer took detailed notes, capturing the interviewees' exact language where possible. These were copied and sent to the interviewee to confirm or amend. Atthis point interviewees were again reminded of their right to withdraw and that all data would be anonymized.

The 68 written reflections were volunteered by three cohorts. Students were shown a powerpoint slide with the questions and invited to place their written responses to any or all of the questions in a box provided at the reception desk in the Department. Contributions were anonymous but they completed a written consent form, placed in a separate box. A secretary checked that the number of written contributions and consent forms matched. Where there was a discrepancy (more commentaries than consent forms) all the commentaries for that day were disregarded for the research purposes. The commentaries varied in length from a few sentences to a few paragraphs.

These processes and tools were approved by the University ethics committee. Investigating one's own student body can be problematic. Student teachers may provide university staff with what they think they want to hear and researchers may over-interpret the data. However, there are also advantages: the researchers understand the context of implementation and can bring a shared understanding to the things student teachers say. We minimised this by divorcing the data collection from the module.

Analysis

Analysis sought to capture the situated meanings student teachers gave to their professional learning and the assessment tool and how this related to the more general theoretical constructs of engagement, alignment, imagination, and identity. Three researchers conducted the analysis, which took the form of iterative content analysis to create an analytic hierarchy of concepts (Ritchie et al. 2003).

The first analytic task devised an initial coding frameworkbased on grounded theory. Open coding identified descriptive categories directly from the interview data. Three researchers read the first ten interviews and created an initial coding framework and glossary of terms. Two then coded the first interview together and thereafter coded interviews separately, each adding to the coding framework and glossary as they worked. This created a descriptive account of the data in the first ten interviews.

Three researchers then grouped the coding categories according the research questions and then, within each question identified links and relationship to higher-level, themes and concepts concerning the assessment tool student teacher learning and identity. This was an iterative process. Where necessary, the original interview data were re-visited and categories re-defined to ensure a 'line of synthesis' between the initial close-to-data analysis and thematic constructs. A final analytic tier considered how these categories related to theoretically informed concepts of engagement, alignment, imagination and identity (Wenger-Trayner et al. 2015).

Once these coding constructs were iteratively devised on the basis of the first ten interviews, they were applied to the further 20 interviews and then to the 68 student teacher written submissions.

This approach to coding is distinct from traditional content analysis coding where an a priori coding framework is developed prior to analysis and codes are mutually exclusive. The codes in this analysis were not mutually exclusive, meaning that a piece of text could be assigned to more than one thematic or theoretical coding. This allowed coding categories to represent both the indicative thematic content of items, but also their context and, through this, capture implicit meanings.

Results

The initial coding process created three thematic categories of meaning. These related to the student teachers situated understandings and the assessment tool, student teachers assessment into actions and their identity.

Situated understanding and the assessment tool

The theme 'Situated understanding through the assessment tool' examined what the student teachers said about each of the individual domains and how these were brought together.   The sub-categories highlight how contextualised understandings created new meanings for the student teachers in terms of their understanding of the individual domains and how each domain may evidence itself in real life teaching.

Examples of deeper, more situated, understandings could be found in relation to the 'cognitive' domain where new understandings were broader, more connected and less atomistic. For example, a student described how her own faith in phonics had been undermined when they realized that their child had no concept that reading should make sense. Another said:

> "I realised phonics wasn't straightforward. It wasn't just doing the programme We needed to help her put it in context [of reading a book] and make it real to her".

The importance of this situated, more complex knowledge was also illustrated in the 'identity' domain, where one student reported that she now recognized the 'fixed mindset' as something to be directly addressed in the context of literacy teaching rather than as "a general 'background' issue". The identity domain emphasised that how children feel about both themselves and the book is a powerful determinant of progress and suitable reading material is an serion issue for the literate identities of struggling readers:

> "His reading book was about bunnies going 'hop, hop, hop'. He was embarrassed so we used '*Harry Hill's Joke Book*': it was still just two easy lines per page, but he lapped it up."

They also recognised how seemingly small incidents indicated a seismic shift in children's attitudes and identity:

> The last time we visited he told us, "I wrote to Santa and asked him to get me 'Giraffes can't dance' cause that was my favourite".

In the 'cultural/social capital domain', student teachers realised that home understandings of 'learning to read' could be seriously at odds with those assumed by the school. One told the interviewer:

> "She said her grandpappy did the reading homework with her. He read [the reading book] to her twice, then she read it to him, and then she read it with her eyes closed".

Other understandings came from gaining deeper insights into children's actual lives,

understandings and experiences out of school. One student wrote:

> "This has widened my understanding of the different experiences and environments pupils have. It's "opened my eyes" to the experiences that some have at home. They do not get the chance to read and needed a lot of encouragement. As [pupil's name] became more confident I realized how encouragement was so important."

Awareness across the domains illustrated that reading problems rarely spring from just one source. There was a shift in focus from 'delivering the curriculum' to a more situated, impact-focused definition of professional knowledge:

> "I feel that that on a placement I am looking at children's work but I've never really focused on the wider learning process for one child. It is important to find out what "makes the child tick" and think intricately about how to use what he knows and cares about to help him learn the things he hasn't grasped yet. That wasn't my priority when I was teaching a class of 33, but what I think now is that it helps everything else"

The student teachers did not talk directly about metacognition, but it was implied in comments on their professional confidence. One said:

> "Our knowledge of [the child] was up there – it was there, growing, on the chart. You really do know more than you think you do and it comes out when you get this experience."

Individuals are on their own professional learning pathways connectedness between the domains was linked to comments about the role of engagement and confidence. For some student teachers it was a revelation but for others it seemed a further illustration of what they already knew:

His confidence in reading had progressed along with his engagement and his knowledge and implementation of strategies in reading. In the first sessions he was reading a stage two reading scheme book but with us he progressed onto a comfortable stage four. He is now self correcting when reading and is capable of sustained reading so he is able to engage in more continuous text.

Theme Two: Assessment into actions

The second analytic category concerned the links between the student teachers' diagnostic assessment knowledge and their professional actions. Two sub-themes here related to the the role of student teachers' emotional engagement in developing what could be called 'professional grit', the determination and persistence to find a pathway that delivered success for the child. This was linked to an understanding of the precariousness of learning, realising that no pathway to impact is guaranteed and that a teaching plans is a speculative call to action. The second sub-theme was the role that impact-focused assessment played in expanding technical teaching knowledge: matching teaching activities to assessed need and more subtle pedagogical skills such as the framing of tasks and finding 'ways in' to reading that worked for the child.

Professional grit was linked to understandings that learning can never be guaranteed, that there is always more than 'one way', and more than one pathway to impact. This was evidenced in general comments about 'going back to the drawing board' and in specific commentsabout trying activities such as reading aloud to the child as new ways in to learning. Working across domains in this way was uncertain, but afforded the possibility of re-alignment to create an alternative learning mix, professional optimism and determination. One student teacher explained: 'If 'Plan A' didn't work, we knew we could go back and formulate a 'Plan B'.

The second sub-theme linked assessment to an impact-focused, participatory teaching context. The assessment tool prompted technical teaching knowledge about sourcing and selecting resources that aligned with the child's needs, but also

aligning pedagogical skills such as framing tasks and 'ways in' to reading:

> It was a huge learning curve and experience. I felt the experience taught me new knowledge and how to use resources. Also, it's being able to pick up on a child's difficulty. Understanding how long certain things actually took to do…

The need to link assessment and impact seemed to promote fluent teaching. This came through in comments such as:

> It was really intense. You had to make a rapid response that mattered. You were the one there. Thinking on your feet and on the spot teaching was absolutely required.

and:

> I enjoyed the challenge of having to connect with [the child] quickly. And we had to develop learning activities which would have a quick impact

Students used their data on cultural and social capital to provide better bridges to home experiences by contextualising explanations, suggesting that pupils read for younger brothers and sisters and using children's talents as artists or joke-tellers. As routes into reading these built on a child's identified strengths and gave them agency. One student teacher said:

> Talk was how we went in. That's what worked [he's] more comfortable with discussing texts and it helped him view reading as enjoyable, not a task.

The three domains of the assessment tool focused student teachers on prioritising spaces for genuine conversations and building broader funds of knowledge. One student explained how they tackled their child's limited vocabulary:

> "He was reading 'The Litter Queen' and I had to explain 'litter' was rubbish. He didn't see it was funny she had a manky [smelly/torn/patched] old sofa

because he didn't know what a 'throne' was – he's nine! We talked about the thrones in 'Shrek'… [The group] decided to let him choose something we'd read to *him* as part of our lessons and chat about it. We pushed the vocabulary, general knowledge and tried showing him it's smart saying when you don't understand -that's what we all do at uni …"

Theme Three: Professional Identity

Identity matters because it shapes what student teachers believe is possible and important. It is shifting, context-dependent and difficult to capture. However an important sub-theme concerned how the assessment tool domains heightened student teachers' sense of children's rights. It made some student teachers more alert to the disadvantages children faced. They spotted injustices that impacted deeply on children but went unnoticed by adults: One child could not borrow a library book because his illiterate mother did not sign the form; another sat separately from his friends in class because (in his words) 'they could all read and he couldn't'.

Identity ultimately concerns their visions of the future; professionals with knowledge that could make a real difference to children's lives. They recognised the challenges but none implied it was impossible:

> … abig reminder of how important it is to look at how children learn <u>how</u> to read when you are about to approach reading in a big class. It underlines the importance of how to make it suitable for everyone because they all have different home experiences."

<u>Discussion</u>

This raises several issues important for involved in initial teacher education. Learning to teach literacy is complex and this data indicates the need to attend to the nature of assessment tools and to links with practice and situated knowledge.

The kinds of student teacher engagement that develop situated knowledge and understanding of assessment is not well understood. The data indicates that our Year 1 'case study' did not grow an understanding of assessment as dynamic knowledge production. Yet this seems important to move student teachers from a 'curriculum delivery' to a 'sense-making' lens. Year 4 student teachers are still grappling with the idea that teaching is about both curriculum and the child although linking their use of the assessment tool to dynamic teaching and impact seems to have helped. The emphasis on curriculum and lesson plans develops certain kinds of understandings, but not situated knowledge. We need space for dynamic, purposive and social contexts in which student teachers can learn how to 'be' as a teacher.

The focus on using the assessment tool to make an impact to a single pupil over three months, offered an opportunity for student teachers to develop focused and situated understandings of literacy and to question some previously held truths about learning and teaching. The evidence of this study is that situated understandings do not always occur spontaneously, and that there is merit in designing different kinds of learning situations and tools to support this. There may also be benefits to recasting assessment and the professional knowledge that underpins it, as problems of alignment.

The assessment tool seems to have facilitated change as a boundary object but how adequately assessment tools support the analysis of complex issues has repercussions. An expanding body of research explores how teachers handle data, but assumes the kinds of data. Standardised tests are prioritised as 'hard data' leaving teacher judgment rather nebulous and ill-defined. Were assessment studies

to unpick this, making clear the kinds of evidence new assessment tools make possible to rule in, it could create more grounded understandings of what test data means for teacher action. It would highlight the situated knowledge to be brought into play and promote better conversations between educators, parents, politicians and the media.

Katz and Dack (2014) identify the role "recognition heuristics" play inrelation to assessment. They find easily recognized aspects of learning are accorded most value and call for educators to take longer analyzing before leaping to action. England's recent move to 'assessment without levels' may prompt this. But taking longer for analysis is only useful if the evidence-base is adequate, so assessment tools need careful design. Careful design would question why teachers are repeatedly directed to curriculum interventions built around the cognitive domain when social class/economic deprivation and gender, which are most closely correlated with attainment but are linked to cultural/social capital and identity domains. Standardised testing can reveal patters, but assessment knowledge needs a longer reach to generate solutions.

This matters as teachers facing high-pressure accountability agendas are pressed to make more visible frequent use of data. To respond in ways that benefit learners, we need assessment tools that cross domain boundaries. Such tools may offer the necessary ballast to effectively counter-balance the internal logic of standardized test scores and enable professionals to raise literacy attainment quickly, decisively and humanely.

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