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Developing teachers' capacities in assessment through career-long professional learning

Kay Livingston¹ and Carolyn Hutchinson

University of Glasgow, Glasgow, UK

Introduction

In the context of an increasing demand for quality and equity in education to meet economic and social challenges, many countries now see assessment and evaluation as playing a central strategic role in developing education policy. An OECD review of evaluation and assessment in education, *Synergies for Better Learning: An International Perspective on Evaluation and Assessment* (OECD, 2013), identified the main trends. They include increasing focus on measuring pupil outcomes and allowing comparisons between schools and regions and over time. The review also points out that many countries now publish a national curriculum, embracing 21st century learning theories, and set associated progressive performance 'standards' (or 'levels') for what pupils should know and be able to do at different stages in their learning. This has encouraged the use of national assessments to determine the extent to which pupils are progressing and meeting these standards and to suggest how they can be supported to improve outcomes. The results are also being used as part of system evaluation to identify where schools are performing well and where they may need to improve and to hold policy makers, school leaders and teachers accountable (OECD, 2013).

If the evidence and data generated are to be used confidently as a basis for improving educational provision and learning outcomes and life chances for citizens, it is essential that educational professionals at all levels, but especially in the schools and classrooms where learning actually takes place, understand what is to be learned; how pupils learn, and how they can promote and support that learning; how best to gather evidence about learning; and how to interpret and use that evidence to plan for better learning. This, in essence, is what being 'assessment literate' means. However, some teachers have found it challenging to develop their understanding of what new curriculum and learning theories mean for their classroom practice (OECD, 2010, 2011), especially understanding assessment as part of pedagogy (OECD, 2013). Learning and teaching are complex processes and the changes needed to develop teachers' capacity in assessment to promote pupils' learning require better

¹ Corresponding author. University of Glasgow, School of Education, Glasgow, G3 6NH, UK. Email: kay.livingston@glasgow.ac.uk

understanding of the complicated and dynamic interactions among curriculum, assessment and pedagogy, pupil and teacher learning needs and the school and classroom contexts in which learning and teaching take place. School leaders, teacher educators and policy advisers, as well as teachers, need to develop this deeper understanding. Building capacities in assessment also requires teachers to understand its interrelationship with other key aspects in educational change processes, including the wider policy context and the social, cultural and professional contexts in which they work.

Three main aims are addressed in the following three sections of this paper.

1. to explore the capacities teachers need to develop in order to understand how to use assessment to promote learning, focusing on the interrelationships among curriculum, pupils' learning needs and their own pedagogical choices;
2. to consider the opportunities for building teachers' capacities in assessment through career-long professional learning (CLPL) and the challenges this process presents, in schools and in the wider education community;
3. to explore how an effective approach to CLPL based on local practice can be scaled-up, implemented and sustained across a national education system.

The development and implementation of assessment policy, approaches to teachers' professional development and curriculum and pedagogical change in Scotland provide the context to consider the challenges and opportunities associated with the three aims. Teachers have an ongoing commitment to maintain their professional expertise and they need to continually revise and enhance their knowledge and skills and teaching and learning approaches. A review of teacher education in Scotland (Donaldson, 2011) reported that there are numerous professional development opportunities for teachers but they are not always designed in ways that enable and support a coherent approach to teachers' professional learning, or are they tailored to the individual needs of teachers and their pupils. A continuum of teacher education (spanning initial teacher preparation, the induction period when teachers begin their first job and their continuing professional learning) is required (Livingston and Shiach, 2009) which provides a comprehensive framework for organizing and understanding how teachers acquire and improve their capacity to teach across their entire career (Schwille and Dembélé, 2007). The particular focus of this paper is on the professional learning of teachers at all levels beyond the initial stage of teacher education. Discussion of CLPL draws from social learning theory (Vygotsky, 1978; Wenger, 2010); adult learning theories

(Mezirow, 1996, 1997); professional learning communities (Wenger, 1998, 2010) and empirical research in the field of teachers' professional learning, including peer-mentoring (Livingston and Shiach, 2013, 2014). The paper's significance is twofold. It aims to enhance understanding of the importance of developing and scaffolding quality learning conversations among teachers that support and challenge them in making meaning of individual pupils' work and in using evidence to make decisions about next steps in learning and teaching. It also emphasizes the importance of a dynamic sustainable framework of CLPL that recognizes the individuality of teachers' learning needs and the consequent need for tailored professional learning opportunities, with different combinations of support and challenge at school, local and national levels.

Teachers' understanding of assessment to improve pupils' learning

O'Neill (2002) argues that professionals in public services should be accountable to their stakeholders and inspire their trust because stakeholders need to rely on them to act in their interests. However, if the balance of assessment for purposes of accountability and pupil learning is perceived by teachers to be skewed towards auditing performance, this may reduce teachers' trust and limit their freedom to adapt to their pupils' learning needs. According to O'Neill, to achieve a balance in audit and monitoring requires intelligent accountability. Cowie and Croxford (2007) argue that in educational settings, this implies 'trust in professionals; a focus on self-evaluation; measures that do not distort the purposes of schooling; and measures that encourage the fullest development of every pupil' (p.1). The dependability of assessment and evaluation tools and processes, and therefore the confidence that can be placed in them, also underpin intelligent accountability (Mansell and James, 2009). Newton and Shaw's (2014) recent account of validity likewise focuses on the crucial importance of quality and fitness for purpose of assessment and evaluation strategies and methods. They emphasise that the validity of assessment and evaluation tools and processes also underpins intelligent accountability since unless they are valid in the widest sense, information and data generated will be at best worthless and at worst damaging to learners and learning. Their account of validity focuses on measurement of the quality of pupil learning, interpretation plausibility and ethical considerations relating to the outcomes and impact of assessment on learners and their communities. Assessment literacy covering all of these dimensions of assessment is needed by educators to ensure that it is fit for its different purposes and to secure intelligent accountability to support improvement planning at all levels in the education system, across policy, research and practice communities.

In common with many countries, Scotland has reformed the curriculum for schools (*Curriculum for Excellence*) and developed guidance about associated pedagogical and assessment approaches (Scottish Executive Education Department, 2006, 2007; Scottish Government, 2008, 2009, 2011a, 2011b). As in many countries, the curriculum incorporates ‘21st century learning’ approaches and a wide range of learning outcomes, including the familiar cognitive components (knowledge of facts, symbols, rules and concepts and problem-solving skills and strategies for using and applying this knowledge flexibly) and personal and affective dimensions (such as positive beliefs about oneself as a learner and skills in monitoring one’s own thinking and learning, closely connected to motivation) (Istance and Dumont, 2010). Not all of these outcomes are amenable to straightforward, conventional measurement. Nevertheless, teachers’ capacity to assess all areas of pupils’ learning is important in order to understand how they are progressing across the whole curriculum and to support improvements. If teachers, pupils and other relevant stakeholders are to be actively involved in making dependable judgments about learning, there needs to be shared understanding of what is valued in learning and what can be expected of pupils in terms of progression and achievement.

The starting point for decision-making and the choice of classroom pedagogies and assessment processes will change according to the context prevailing, including specific curricular and pupil learning needs. To improve their pupils’ learning, teachers need to be able to assess what pupils already know and can do in relation to specific aspects of the curriculum, and what the next steps in learning should be. Assessment information is also needed to guide teachers as they make ongoing decisions about their next steps in teaching (Hipkins and Robertson, 2011; Livingston, 2015; Robinson, Hohepa and Lloyd, 2009). Wiliam (2010) emphasizes formative assessment’s role in improving the quality of teachers’ classroom decisions and suggests that it involves five key strategies: clarifying, sharing and understanding learning intentions and criteria for success; engineering effective classroom discussions, activities and tasks that elicit evidence of learning; providing feedback that moves learners forward; activating pupils as instructional resources for one another; and activating pupils as the owners of their own learning. Black and Wiliam argued in their seminal 1998 publication that a crucial characteristic of formative assessment is that ‘evidence is actually used to adapt the teaching work to meet the needs [of learners].’ (p2)

From the teachers’ perspective these observations about classroom assessment emphasise the interrelationship between learning–teaching and teaching–learning, which seems, on

occasions, to go unnoticed by some teachers, particularly when the focus is on delivering a syllabus of content within a specific timescale (Livingston, 2015). However, alongside pupils' learning needs, teachers must also consider the curriculum: the form or type of knowledge to be learned; the most appropriate way to structure learning and teaching of the new knowledge; and the overarching educational aims to be achieved (Winch, 2013). In teachers' selection of classroom pedagogical and assessment processes, Winch suggests that consideration needs to be given to the conditions under which specific knowledge forms are acquired and produced and how those knowledge forms should be assessed

In the wider school context, information from teachers' classroom assessments should be used to contribute to a school's self-evaluation and improvement planning; and information from self-evaluation should in turn be used by teachers to contribute to improving classroom practice, so that the two processes are inter-dependent (Hutchinson and Young, 2011). Since the overall purpose of both assessment and evaluation is ultimately to improve pupils' learning, teachers should be able to recognise the educational value of different types of assessment and evaluation practices and analyze and interpret the evidence and data they provide, in collaboration with colleagues (OECD, 2013). Simply focusing on professional learning about knowledge and skills in assessment will not adequately support teachers' understanding of the bigger picture of the inter-dependence of assessment with other key aspects in learning and teaching and the importance of shared understanding among all members of staff in school (teachers and school leaders). Further action to build these broader capacities is needed.

Challenges and opportunities of developing teachers' capacities in assessment

Building capacity in assessment to support pupils' learning has been a priority in Scottish education over several periods in the past 25 years. A national development programme for assessment in the pre-primary, primary and early secondary school years, the *Assessment is for Learning* programme (AifL) (Learning and Teaching Scotland, 2004) ran from 2002-2008, putting some emerging ideas about building teachers' capacity in assessment into practice. Its aims reflected the general concern to align assessment for learning and evaluation for accountability. It was 'designed to bring together the various purposes of assessment into a single coherent framework which would answer questions of accountability, standards and the monitoring of progress and performance, but which also emphasized the role of assessment in supporting individual pupils' learning in the classroom' (Condie, Livingston and Seagrave, 2005, p. iii). It built on the work of Black and Wiliam

(1998), particularly the emphasis on formative assessment. The programme sought to develop teachers' theoretical and practical understanding of assessment. It also quite explicitly set out to change the culture of assessment in the education system as a whole and to improve teachers' and public confidence in best fit professional judgments made on the basis of a range of evidence (Hutchinson and Hayward, 2005).

What made the programme particularly distinctive was its design, intended to help participating teachers understand how to transform their own learning about assessment. The design involved the Scottish Executive Education Department (SEED, now Scottish Government) in close partnership with other stakeholders in education, providing funding to local authorities and to teachers in local groups of associated nursery, primary and secondary schools to explore and develop various aspects of their assessment practice and document their experiences and learning in case studies (Hutchinson and Hayward, 2005). At the same time a central management group of partners focused on achieving transformational change through collaborative projects and coordinating, developing and supporting local and national networks that promoted community building. Local authority and school projects were encouraged to create new projects to further deepen the programme's common purpose (Senge and Scharmer, 2001). As the programme progressed, there was increasing focus, through seminars and networking events, on supported dialogue about assessment issues, both with colleagues in the same establishment or group of schools and among partners in communities of enquiry and wider networks across Scotland.

Feedback and case studies from participants, and from external evaluation, gradually came together to identify agreed key features of assessment to support learning that acknowledged both research and practice. These features of effective school-based assessment *for, as and of* learning were presented as the AifL triangle depicting the school as 'a place where everyone is learning together' (Scottish Qualification Authority, Scottish Executive and Learning and Teaching Scotland, 2006, p1). The triangle was designed to show how the various aspects of assessment in schools formed a coherent whole, involving teachers as well as pupils and parents (all as learners) learning together through collaborative enquiry, founded on classroom interactions characterised by thoughtful questions, careful listening and reflective responses (Learning and Teaching Scotland, 2004). A policy Circular (SEED, 2005) sent to all local authorities aimed to link the policy framework with implementation of practice as 'intelligent accountability', involving good governance; professional freedom within a broad reporting framework; clear focus on, and engagement of, stakeholders in the processes of

assessment and self-evaluation; honest reporting of strengths and development needs; and confidence in professional judgments (Cowie and Croxford, 2007). Staff in external bodies (including local authorities, schools inspectors, Scottish Qualifications Authority staff and policy-makers) as well as those in schools had responsibility for both formative and summative aspects of assessment and evaluation, and how information from each could be used to inform interpretation of information from the others (SEED, 2005).

An evaluation of the *Assessment is for Learning Programme* (Condie et al, 2005) identified a number of positive developments in assessment practices and procedures for the teachers and pupils involved in some local authorities and schools. These included funding provided to schools to enable teachers to engage in collaborative enquiry projects, giving them a sense of ownership and control over development and management of change; opportunities for focused staff development and engagement in supportive networks at local and national levels; and expert input at appropriate points to enable ongoing professional learning. Studies exploring the programme's impact after funding finished (Hayward, 2009; Hayward and Spencer, 2010) indicated that it had helped to embed the language and features of AifL and that participants valued having time to share experiences, recognising that their involvement supported their own professional learning (Hayward, Simpson and Spencer, 2006). Fraser, Kennedy, Reid and McKinney (2007) further found that transformative learning (in AifL) was facilitated 'when formal, planned learning opportunities were augmented by informal, incidental learning opportunities' (p.165).

It might be assumed from this account of the aims, design and implementation of the AifL programme that all partners involved in promoting pupils' learning in the primary and early secondary years in Scotland now share a well-developed understanding of theory and practice in assessment, supported by a policy framework that fully integrates assessment for learning and evaluation for accountability and schools are places where everyone is learning together, sharing standards through active enquiry. However, while many ideas about what matters in assessment endured after programme funding was withdrawn, they were not fully shared by all partners or embedded consistently, particularly in respect of integrating assessment *for, as* and *of* learning, or synergising assessment for learning and evaluation for accountability.

A recent OECD Report, *Improving Schools in Scotland: An OECD Perspective* (2015), while mainly positive about the current educational reforms and recognising the 'previous bold moves in constructing assessment frameworks' (p.18) and in establishing a wide range of assessment practices in Scottish schools, nevertheless observed that 'some schools and

teachers are having difficulty in prioritizing assessment tasks.’ (p.17). A lack of clarity about what should be assessed in relation to the experiences and outcomes of the curriculum was particularly identified as a challenge. These findings highlight the difficulties some teachers experience in the alignment of curriculum, assessment and pedagogy in making learning and teaching decisions in the classroom and in understanding the different uses of assessment for the development of pupils’ learning and for accountability in terms of pupil/school performance overall.

The findings also confirm what had been suggested in an earlier report, which included teachers’ views about the draft version of Curriculum for Excellence (Baumfield, Livingston, Mentor and Hulme, 2009). When faced with a new curriculum and revised qualifications, secondary school teachers in particular expressed doubts about whether the curriculum provided sufficient structure to scaffold the required planning, monitoring and assessment and many were reluctant to contemplate changes in their practice until arrangements for assessment and qualifications were clarified. This suggests a continuing lack of confidence about making dependable professional judgments about pupils’ progress in learning and in interpreting and using assessment information for reporting. Without support to build teachers’ capacities in assessment processes some teachers may continue to think of them as separate from curriculum and pedagogy rather than integral, and focus mainly on externally provided summative assessments of what has been learned. Despite research evidence (see, for example, Stobart, 2008) and explicit policy documentation (Scottish Government, 2011c), there appears to be an enduring and pervading belief, across policy and practice communities, that measurement is an exact science and only tests and examinations can accurately identify a learner’s precise point in progression through defined levels of achievement in a particular subject area.

A recently published guide entitled *Shaping career-long perspectives on teaching* (European Commission, 2015) suggests that leading and supporting pupils’ learning requires every teacher to embark on a professional, social and personal journey that involves CLPL within collaborative learning environments. Addressing teachers’ learning needs is identified as enabling coherence in learning throughout a CLPL continuum. Developing from social constructivist theories of learning, teachers’ professional learning should build on their current understandings and support and enable them to apply theoretical knowledge in real contexts and make informed decisions about ways of developing and changing their assessment practice, appropriate to their own context. Without a deeper understanding of the

specific challenges teachers face in relation to assessment, predetermined professional learning opportunities that are designed without consideration of teachers' learning needs are likely to fail to build their capacities in assessment processes. More needs to be understood about teachers as learners and the impact of changes in their learning and teaching circumstances on their professional learning needs.

Teachers in Scotland are not alone in their concerns about assessment. De Luca and Bellara (2013) point out that research suggests that despite assessment education efforts, beginning teachers continue to feel unprepared to assess pupil learning and that low assessment literacy levels among teachers continue. Korthagen (2010) draws attention to the many research studies which show the disappointing impact of teacher education on teacher learning and behavior. He argues that teacher education has an inherent problem in meaning-making from the perspective of teachers, and that while there is greater emphasis by teacher educators on situated learning, they seem to forget that educational knowledge cannot simply be 'transmitted' to teachers in the hope it will improve their actions (Korthagen, 2010, p.99). Even when professional development in assessment is provided it is not necessarily effective in changing practice or securing subsequent improvement in pupils' learning (Timperley, Wilson, Barrar, and Fung, 2007).

In Scotland, there was recognition in research and from the AifL programme that in common with learners generally, teachers learn best in supportive learning environments that enable shared learning, connections to prior learning and experience, reflective thought and action and enquiry into the learning and teaching relationships (Hutchinson and Hayward, 2005; Livingston, 2012; Timperley et al, 2007). Furthermore, that professional understanding in assessment is most effectively developed through engaging practitioners in using and adapting guidance in their own classrooms and practice (Gardner, Harlen, Hayward and Stobart, 2008). However, despite this recognition, there was a gradual shift, during the early implementation of Curriculum for Excellence, from process and engagement in professional learning back to mainly large scale training events and provision of products in the form of guidelines and resources. Individual teachers continued to gain assessment experience and expertise through situated learning in school, producing, administering, marking and moderating national qualifications and national monitoring assessments, and producing exemplification. However, nationally provided (often web-based) staff development activities focused increasingly on a transmission model involving teaching techniques, curriculum

content and external assessment and measurement, rather than developing professional understanding of theoretical ideas through participation (George Street Research, 2007).

It is also increasingly recognised that attempting to support teachers in the development of meaningful learning that transforms practice brings the challenge of uncovering their often deeply-rooted personal views, on education generally and learning, teaching and assessment specifically. The way teachers (including teacher educators) understand and use new information is likely to be shaped by the extent to which it is consistent with their existing understanding and assumptions. This idea that long-held views can inhibit change in professional thinking and practice (Brownlee, 2003; Pajares, 1992) is not new; yet support for teachers to uncover and confront their prior beliefs and reflect on the impact they have on their pedagogy (including assessment) is seldom an integral element of their professional development. Insufficient attention is given to recognising them as adult learners with their own personal beliefs and experiences (Livingston, 2015). Mezirow (1997) argues that faced with new situations and educational reforms, teaching professionals bring their own 'frames of reference', structures of assumptions through which experiences are understood, 'selectively shaping and delimiting expectations, perceptions, cognitions and feelings' (p.5). He says, 'To understand others, one must gain access to their lived experience so as to clarify and elucidate the way they interpret it.' (Mezirow, 1996, p.160).

Building teachers' assessment capacity and their capacity to understand and adapt to specific learning needs and contexts can be seen as involving 'adaptive competence', the ability to apply knowledge and skills flexibly and creatively in a variety of contexts and situations contrasting with 'routine expertise' (De Corte, 2010, p.45). De Corte cites the work of Bransford et al (2006), who argue that adaptive competence is important because it involves learners in being self-regulating, willing and able to change their core competences and continually expand the breadth and depth of their expertise, through active and experiential as well as guided learning (Simons, van der Linden and Duffy, 2000). Greater attention is needed to enable teachers to understand the way their assumptions can act as a filter or indeed as a block to adaptive ways of thinking and acting in the classroom. Adaptive competence is also important in understanding and adapting to the multiple representations of reality in the complex world of schools. Teachers' learning needs to be facilitated and supported to encourage and enable them to take an ongoing enquiry approach to their practice through purposeful dialogue, in collaboration with pupils, teachers and other partners, as part of their day-to-day professional learning in schools and across learning communities.

Experience in Scotland suggests that it is not just engaging in dialogue that matters, although the opportunities to do so are an essential prerequisite to assessment for learning. In addition, the *quality* of the learning conversations that characterize teachers' professional practice is crucial to the development of their own and their pupils' learning. In two separate studies Livingston and Shiach (2013, 2014) researched and developed mentoring skills with a total of 53 primary and secondary school teachers in Scotland at various stages of their teaching career (including teachers and school leaders who had between 1 and 35 years experience of teaching²). Both studies were pilot studies commissioned by Education Scotland (Scottish Government Agency with responsibility for supporting and improving education) as part of the actions taken to respond to Recommendation 39 in the *Teaching Scotland's Future* report, 'All teachers should see themselves as teacher educators and be trained in mentoring' (Donaldson, 2011, p.98). In the first study (Livingston and Shiach, 2013) the selection of 12 teachers from 5 primary schools and 14 teachers from 2 secondary schools in different regions of Scotland was made by the researchers to ensure a mix of teaching experience among the participants. In the second study (Livingston and Shiach, 2014), which had a stronger focus on the schools taking ownership and sustaining mentoring processes, the selection of 17 teachers from 2 primary schools and 10 teachers (including a deputy headteacher) from 1 secondary school was made by the school leaders according to their own school's needs as identified in their school improvement plans. In one primary school four teachers were selected and in the secondary school all the faculty heads were selected to engage in the training to build their capacity in leading mentoring across their schools. In the other primary school the headteacher decided that all 13 members of the teaching staff should have the opportunity to engage in the mentor training at the same time. In both studies the overarching aim was to strengthen teachers' professional development through mentoring, with a particular focus on developing teachers' capacities to engage in learning conversations with their peers. A secondary teacher in an interview conducted following the mentor training said that while he had conversations with his colleagues in school about teaching and learning prior to the mentor training, their conversations had not been focused and structured in a way that enabled them to identify specific evidence of the pupils' learning needs and

² For details of the content of the training and implementation of mentoring processes see Livingston, K. and Shiach, L. (2013) and Livingston, K. and Shiach, L. (2014).

understand more about the interactions between different forms of knowledge, assessment approaches and their own pedagogical choices. Peer mentoring in both studies enabled all the participants to actively experience being a mentor and a mentee as they mentored each other during the training process. Designated time was then identified by the participants to engage in focused mentoring conversations with a colleague in their own school to ensure that between the training days all the participants were able to practise and reflect on their mentoring skills. The selection of a mentee varied according to the individual school context. Mentees selected included a colleague who had fewer, more or the same number of years experience (e.g. a newly qualified teacher, a new colleague to the school, a colleague in their own or a different department or stage of the school). The mentoring process was recognized as being responsive to the needs of the mentee and reflexive as both the mentor and mentee engaged in reflecting on learning and teaching. The teachers reported that they benefitted from taking up the roles of mentor and mentee as in both roles they had opportunities to think more deeply about their own teaching and their pupils' learning from different perspectives. The study participants recognized that the training developed their mentoring language skills and enabled them to focus their conversations on understanding learning and teaching and using evidence from collaborative analysis of their pupils' work in ways that had previously not been understood. They said that it was the structured support for in-depth detailed dialogue and collaborative reflection with their teaching colleagues that enabled them to develop the language of learning, teaching and assessment and helped them align their learning and teaching more closely with pupils' learning needs. It also helped them to consider what the evidence from particular forms of assessment told them about what the pupil had and had not learned in relation to specific learning outcomes. Analyzing pupil work and talking about learning in greater detail with their peers in school rather than making general assumptions about progress (or lack of it) also enabled the teachers to be much more confident in giving specific feedback to individual pupils and in making decisions about how best to support and improve their learning. They were then able to use their greater understanding of the pupils' learning to plan appropriate next steps in learning and teaching, a process at the heart of assessment literacy.

Livingston and Shiach (2013, 2014) concluded that peer mentoring interpreted as structured, interactive and supported conversations as part of teachers' CLPL can provide opportunities to promote a critical constructivist perspective, enable them to articulate their thinking through social interaction, uncover their assumptions, help them to develop the language of

learning and teaching and develop their practice to improve pupil learning. However, the conditions that enable and facilitate meaningful teacher dialogue and build teachers' capacity in the language of learning, teaching and assessment must be understood if supportive and challenging conversations are to be valued by teachers and school leaders as part of CLPL and as means of improving pupils' learning.

Structures and conditions to develop and sustain teachers' CLPL

CLPL in schools may offer opportunities for teacher learning but the challenge lies in ensuring it is meaningful and sustainable, both locally and nationally. The evidence from research and practice reviewed above provides helpful insights into what teachers need to know and be able to do to promote pupils' learning, and how they might go about developing their knowledge and skills through supported and detailed conversations focused on evidence of pupil learning. Building teachers' capacity in assessment processes requires professional learning to be understood from both epistemological and ontological perspectives: teachers need knowledge to gain a deeper understanding of the what, when and how of assessment; and they need to change what they do (their way of being) in their own classrooms. Teachers, like their pupils, need to be able to make meaning of their practice for themselves through engagement with new learning, with each other and with their pupils in their own constantly changing context in school (James & Pedder, 2006; Livingston, 2012). If learning is embodied in actions, then classroom enquiry needs to be situated, carried out in and by the relevant learning community, with the guardians of quality within the learning community rather than outside it. To engage in reflective and challenging conversations about learning and teaching, teachers need to recognise their practice as ongoing enquiry. What makes the most difference to the quality of learning and can bring about transformative, sustainable change is building not only teachers' knowledge and skills in assessment but also their capacity to enquire and to engage in quality learning conversations involving communication, engagement, interaction and trusting relationships among colleagues in school. Such conversations can lead to learning developed through shared understanding, specific feedback and collaborative action, mediated by their distinctive values and personal prior beliefs (Livingston & Shiach, 2013, 2014; Senge & Scharmer, 2001). As Wenger (2010) suggests, teachers need to engage in a continuous process of creating and recreating 'regimes of competence' through dialogue and collaboration within and across their own practice communities (p.180-181).

From the education policy perspective, however, although it is relatively straightforward to

commit to an improvement agenda, to recognize that assessment and evaluation have a central role in providing an evidence base for planning for improvement, and that professional capacity in assessment at all levels in the system is therefore a priority, ‘scaling-up’ from small-scale pilot projects to sustainable system-wide, implementation is complex and difficult. It requires strong partnerships and shared understanding, focus and identification of strengths and priorities among partners. Ingvarson (2005) observes that ‘Policy makers can be quite naïve about expectations about how easy it is to bring about change, not understanding that the kinds of change that really matter in education are not structural changes but those that build teacher capacity and professional development’ (p. 63). Arresting teachers’ professional learning too soon or neglecting the ongoing support needed and the maintenance and further development of emerging local and national partnerships and networks of expertise can lead to frustration and the sense of one innovation following another with limited connection to what went before.

Starting from the inside: CLPL in classrooms and schools

Wenger (2010) emphasizes that no matter how much external effort is made to shape practice, what matters is the meanings arrived at by those engaged in it, through active negotiation of meaning in their own context. A facilitated community of practice that continues to encourage and stimulate teachers’ enquiry into learning and teaching in their own classrooms, taking account of the complex relationship between social and personal factors of learning (Wenger, 2010), is a key part of a system, culture and practice change process. The teachers in the mentoring studies (Livingston & Shiach, 2013, 2014) indicated that mentor training was essential in enabling them to uncover and amend their own beliefs and assumptions about learning and teaching (including assessment); to know how to analyze pupil learning in depth; to think about the relationship between content and their teaching and assessment decisions; and to develop the language of learning and assessment to support and challenge their peers through mentoring conversations. Yet training for mentors that goes beyond technical or ‘buddy’ support is limited and often only offered as a ‘one-off’ course rather than seen as central to enabling teachers to learn with and from one another in school in ways that support, question and challenge learning and teaching in ongoing practice.

The teachers’ engagement in the mentoring studies (Livingston & Shiach, 2013, 2014) also highlighted the importance of a collegiate culture in schools to enable mentoring and professional learning to be valued and sustained. If teachers are to change the way they approach assessment, they need to feel that they are part of a professional community that is

focused on improving outcomes for learners and responsive to learners' needs (Timperley et al, 2007). They are more likely to engage meaningfully in professional learning where they feel the issues presented are real for them and the learning is focused on exploring possible solutions they can put into place in their classrooms. Wenger (1998) suggests the drivers and levers that are needed to support meaningful learning in social contexts include mutual engagement, shared repertoire and joint enterprise. He emphasizes that the community does not exist by itself: 'It is part of a broader conceptual framework of thinking about learning in its social dimensions.' (p.179). In his view a community of practice has characteristics of systems more generally: for example, 'emergent structure, complex relationships, self-organisation, dynamic boundaries and ongoing negotiation of meaning' (Wenger, 1998, p180).

It is also necessary to recognise that learning and change have an emotional dimension (Illeris, 2009). A culture of teachers working together in enquiry, reflection, assessment and improvement must be nurtured and supported by building trusting relationships among staff, who feel able to share opportunities and challenges in learning and teaching with each other in school. The professional interactions in collaborative, collegial working beyond the classroom also need to involve more challenging conversations about the relationship between classroom practice and outcomes for learners that are at the heart of enquiry and improvement planning. These conversations should focus on analysis, reflection and changes in relation to real examples of what pupils say, write, make and do in response to their learning experiences. 'Talking about learning' in this way is consistent with approaches to the local moderation that was part of the AifL framework and emphasized as fundamental to effective assessment practice in the more recent guidance on assessment at all levels in the education system, including national qualifications (Scottish Government, 2011c). However, what is essential to recognize is that teachers need training and ongoing support. The teachers in Livingston and Shiach's mentoring studies (2013, 2014) indicated that they needed structured practice in developing the language of learning, teaching and assessment and the knowledge and skills to hold mentoring conversations with their peers in the context of CLPL to support and challenge practice.

Teaching Scotland's Future (Donaldson, 2011) proposed a framework for professional development that has potential to be developed and sustained over time and provide a flexible approach to CLPL in (spite of) a shifting educational policy environment. It was proposed that mentoring in schools should be the 'engine' of an integrated CLPL process to provide

support for such collaborative conversations, recognising it as a way of working which engages pairs and groups of mentors and mentees in interactive learning in school, respects the value of diversity and skilful communication and takes account of individual and collective strengths, ongoing development needs and collaborative accountability. The report recommends that priority be given to developing skills in mentoring in schools so that staff at all levels have the capacity to initiate, focus and facilitate high-quality learning conversations and practitioner networking, and ensure that the climate, culture and resources of each school actively support mentoring processes. There are positive signs that some teachers are being trained in mentoring and are increasingly engaging in mentoring with their colleagues in the context of CLPL. However, the recommendation still needs to be realized across all schools.

Robinson et al, 2009 suggest that school leaders have a key role in ensuring that individual and group relationships and mentoring processes are developed collaboratively by and for all staff. Leaders should be actively involved in planning and promoting professional learning for staff, especially if learning activities take place on-site. In an integrated CLPL framework, leaders of learning need not only to provide time and opportunities for teachers to engage in focused learning conversations with their pupils and peers, but also to value mentoring and professional learning as ongoing professional enquiry processes as part of the school's learning culture, ensuring that competing priorities do not lead to fragmentation of effort or mean that learning conversations are not sustained. All staff as members of a learning community should develop leadership as well as mentoring skills. Emphasis needs to be put on developing teachers as learners and leaders of learning who are able to value the views and contributions of other teachers; help others to envisage new ways of thinking, seeing and working; show a determination towards achieving the highest standards for everyone; show initiative and actively pursue their objectives; be good listeners; and serve as models to others (Scottish Government, 2009). Leadership in this sense is about all learners taking responsibility for building a learning culture, where assessment supports learning and provides evidence to inform planning for improvement.

Working outwards: a national framework for CLPL

A structured framework for CLPL in schools can offer opportunities and challenges for teachers' learning that improves pupils' work, but, if it is to be effective and sustainable, attention needs to be given not only to supporting teachers' practice within school but also to change at system and cultural levels. Donaldson (2011) made a number of recommendations that would create stronger synergies among all partners in the education system with

responsibility for teachers' professional development, across policy, research and practice communities. The proposals developed in response to the recommendations drew from the examples of effective practice already familiar in Scottish schools and from the characteristics of effective professional development identified by Timperley et al (2007) and Wenger (1998, 2010). The proposals amount to a national framework for professional learning, based on and supportive of local arrangements and requirements in schools, and have potential to provide a coherent focus on assessment and evaluation to support learning.

The proposals also emphasize the need for national policy that supports a shift in the culture of education to focus on learning and provide the resources to support this shift; and for all professionals working in education to commit to recognising themselves as learners, taking responsibility for professional enquiry in classrooms and schools as central to their day-to-day practice. However, high quality learning conversations will only become established in schools if they are recognized as a valued form of CLPL that promotes teacher and pupil learning and are supported both locally and nationally. Donaldson (2011) acknowledges that in the wider context, it needs to be recognized that school leaders are themselves learners and require support for their approach to professional learning for their staff from the wider education community. In Scotland, national standards for registration, career-long professional learning, middle leadership and headship published by the General Teaching Council for Scotland are now based on core principles of practitioner enquiry, presenting the teacher as a professional who will 'create knowledge to enhance, progress and lead the learning experiences of all their learners and work collaboratively with colleagues ... (an) adaptive expert ... open to change (who) engages with new and emerging ideas about teaching and learning within the ever-evolving curricular and pedagogical contexts in which teaching and learning take place.' (GTCS, 2012, p4). The Standards provide a nationally recognized framework for a process of regular 'Professional Update' for all registered teachers and school leaders that aim to support professionals as learners. Professional Update also offers opportunities for teachers to document their learning and learning outcomes, and for identifying how their professional learning and changes to practice could be supported and developed, in the context of the school's wider self-evaluation and development planning priorities. An anonymized synthesis of teachers' Professional Updates could be used by teacher educators, researchers and other professional development providers to inform local and national priorities for CLPL in assessment and evaluation, in a continuous cycle of local

and national improvement, in much the same way as information about pupils' learning is used by schools and teachers for local improvement planning.

The CLPL recommendations also recognised that to complement the Professional Update and self-evaluation process in schools, local coordination across establishments would be essential to promote partnerships among schools, education leaders, teacher educators, researchers and national agencies to make the best possible use of local professional expertise. Learning through working in partnership can help ensure that professionals at all levels engage in learning-focused professional conversations and build and participate in communities of enquiry and professional networks. However, stronger partnerships need to be developed to provide more structured and focused networking opportunities for practitioners as part of practice-based or school cluster-based learning. Acknowledgement is seldom given to the assessment expertise of teachers within and among schools that could facilitate specific areas of peer-learning. There is potential for making better use of and building capacity from the range of teachers' professional knowledge and skills already existing in schools and local authorities (for example through their involvement in designing and using assessment resources in national monitoring and qualifications processes). Harnessing the expertise could make a significant contribution to teachers' professional learning.

In-school mentoring and engaging in professional learning communities have potential to make important contributions to building teachers' capacities in assessment. However, like all learners, teachers also need access to a range of different professional learning opportunities, according to their own needs and preferences (Timperley, 2008). Donaldson's recommendations (2011) suggested combinations of peer and group mentoring, engaging in communities of practice within school, and external professional learning opportunities, as appropriate to professional learning needs. The experience and expertise of someone from outside their immediate peer group (or outside their school or local area) may be necessary at specific times to support and challenge teachers' existing educational beliefs, assumptions and practices and offer fresh perspectives and possibilities. This in turn requires an infrastructure to enable more effective communication about existing expertise and better identification of when external support is needed. Schools and local authorities need to work more closely with universities and other agencies to identify individuals with appropriate expertise and skills in assessment and mentoring to contribute to local provision, and to ensure that support and training is available when and where it is needed.

Conclusion

There is no single answer to building teachers' capacity in assessment. Teachers as individual learners are likely to have different understandings of assessment in relation to their pupils' learning needs, the curriculum and their own pedagogical choices. Consequently, they will need more tailored professional learning opportunities throughout their career as the contexts within and across schools change and as their own and their pupils' learning needs change. Transformational change should be recognised as a process rather than an event, and to be sustained, continuing iterative review and renewal of its processes are needed over time (Fullan, 2003). A national framework of CLPL has the potential to build teachers' capacities in assessment; however, designing such a framework to sustain ongoing meaningful professional learning remains challenging. To be sustained, CLPL needs to support and nurture teachers' professional learning in assessment and evaluation as they integrate with curriculum and pedagogy and with the teachers' and pupils' own learning needs. Teachers and school leaders need to be able to make meaning for themselves through quality learning conversations with peers within supportive and challenging collegiate cultures in schools.

CLPL of this kind needs ongoing training in mentoring and leadership to develop trusting relationships and build teachers' knowledge and skills in enquiry, use of evidence and engagement in thoughtful, structured conversations focused on pupils' and teachers' learning. Individuals and groups of staff in schools, local authorities and national agencies need to share responsibility for self-evaluation to inform planning for improvement and better outcomes for all children and young people. Single initiatives implemented in fragmented ways are unlikely to result in long-term sustainable and effective change. Rather, this requires professional, cultural and system changes to be conceptualized as multiple cogs and wheels that all have to be operational and interacting continuously to be effective. However, ultimately only teachers themselves will know if their professional learning has made a difference to their pedagogy and assessment, and to individual pupils' learning in their own classrooms.

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