

## Professional Development of the Adult Numeracy Teaching Workforce

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During the past 5 years, there has been a growing awareness of the need to focus attention on the development of those who teach adult numeracy. However, our theoretical frameworks are varied and our knowledge of what works or what its impact is remains limited (See, for example, Condelli et al, 2006). This presentation explores some of the issues involved in moving that agenda forwards for teachers of adult numeracy. (In using 'numeracy' I include the full range including mathematics).

### **The workforce**

The Adult Numeracy Teaching Workforce (ANTW) across the world is diverse, has entered the adult education and training workforce from a range of backgrounds from educational to vocational to simply having concerns for the socially excluded. In many countries, there is no agreement about minimum criteria for doing the job and across many continents those doing it are paid very little or indeed are volunteers. The Mackay et al (2006) study into the professional development needs of the sector in Australia acknowledged the lack of reliable data on the workforce itself, let alone its level, qualifications or development needs. This in itself is a major challenge.

Studies of the characteristics of the workforce (Mackay et al, 2006; Young et al, 1995; Lucas et al 2004) indicate that those involved in Adult Education programmes are predominantly part-time, ageing females with diverse qualifications and experience. Interestingly in the Lucas et al study, of a subgroup of the workforce aiming at an HE level qualification, most were already qualified as teachers, with only 12% having no or minimal training.

### **Adult Numeracy Teaching – a semi-profession**

The adult numeracy teaching workforce could not yet be described as a profession and views about professionalism differ. Professions are occupations that usually require extensive training and the study and mastery of specialized knowledge. Many have established regulatory Professional Bodies. They have codified their conduct, and what they require for entry into their profession. Some of these codes are detailed with a strong emphasis on their particular area or expertise. Most have an overlap of ethics and quality standards. Typically many professions *require* members to continue to engage in professional development activity and ongoing professional learning in order to retain their membership of that profession and their 'licence to practice'.

There are of course both benefits and problems associated with the formation of professions. On the positive side, members acknowledge and use a formal knowledge base, they share an explicit value base and make a commitment to high standards of practice with an acceptance of accountability for their actions.

On the negative side, membership of a profession can be exclusive and elitist, with expectations of special perks and privileges, the creation of barriers to those not members of the profession, and potentially a failure to identify with clients from a different social background.

Historically in technologically advanced countries, vocational and adult teachers have been held in significantly lower esteem than school teachers. For example, school teaching has secured itself as a graduate entry profession across Europe, whereas the same is not true of vocational/adult teaching. In part it is a result of the different contexts in which individuals work, with much of vocational education being provided historically from within the workforce itself.

The current workforce reform movement in English schools has led to the creation of new roles, including the teaching assistant role. The teaching assistant role is gradually moving from a status of 'volunteer mum's army', to that of professional – with the establishment of qualifications frameworks, career structures negotiated with employers' bodies, and the establishment of a professional development framework. *Crucially*, teaching assistants themselves are embracing their roles as professionals in their own right, rather than merely teacher apprentices

For adult numeracy teachers within the UK, the Institute for Learning (IfL) has established itself to play a leading role in creating a new professional status. It claims that:

*The Institute is in the process of creating a new professional identity for teachers in the post-compulsory sector, based on shared values, a unified expectation of behaviour and conduct and a career long commitment to professional development. This response to the White Paper draws heavily on the Institute's experiences including;*

- *Developing the framework for the conferral of Qualified Teacher Learning and Skills (QTLS) professional status.*
- *Creating the mechanism for the award and renewal of the Licence to Practise.*
- *Establishing the requirements for remaining in good standing.*
- *Designing a supportive model of continuing professional development, linked to the requirements for remaining in good standing and the renewal of the Licence to Practise.*
- *Developing a code of values and practice to underpin professional identity.*
- *Setting up the technical architecture (database, secure hosting, online tools and CPD portal) for the registration of teaching practitioners and relationship management.*

Alternative approaches to professionalism can be found in both the literature about expert practice and in the literature about communities of practice. Early literature about expert practice focuses on the development of cognitive skills, the development of complex and rapid memory recall and the key function that practice plays in developing expertise. Later research acknowledged the importance of self regulation and personal belief systems in development as an expert teacher. Such research shows that experts continuously

Set new goals and design new tests for themselves

Look for new ways of doing things and monitor the work setting

Engage in deliberate planning for flexibility

As participants in a 'community of practice', individuals can be viewed as initially peripheral to that community but, as they engage in discourse and practices of that community, moving more to the centre of that community they become expert. Crucially, in this approach to expert practice, members have to interact and mutually engage in the discourse and activities of that community if learning and development is to take place. They have to be active participants in the community and construct their identities in relation to that community for expertise to grow (Wenger, 1999).

In these interpretations of professionalism, qualifications are not seen as a prerequisite, and 'official' membership is not required, rather membership is something the individual chooses and progresses as s/he becomes more expert or more engaged in the particular discourses and practices of that community.

The IfL (2007) suggests that adult numeracy teachers operate within a context of *dual professionalism*. They define personal development as important for fulfilling social expectations professional development as important for fulfilling economic expectations. They go further and suggest that current funding regimes for developing teacher expertise tend to focus on the latter at the expense of the former. In articulating this concept, the IfL highlights some of the tensions posed by the varying interests of different stakeholders in the professional development of the ANTW.

### **Stakeholder interests in professional development**

Governments across the world are concerned about levels of adult literacy and numeracy and almost all now have a range of adult numeracy education provision, in colleges, in the workplace and in the community. However, as O'Donoghue & Maguire (2004) identified, few countries yet have a comprehensive national provision for the training and development of the adult numeracy teaching workforce.

National interest in raising the quality of numeracy and mathematics teaching stems from an imperative to improve skills of the population which in turn is driven by a desire to improve economic advantage and performance. Increasingly governments acknowledge the need to improve social cohesion and also emphasise adult numeracy within a lifelong learning approach. The European Commission, for example, launched a work programme in 2002, on "the open learning environment, active citizenship, equal opportunities and social cohesion" (European Council of Ministers, 2002). In the UK, the ALI/OFSTED report (2003) and the Smith report (2004) have accelerated the provision of training and development opportunities as part of the 'Skills for Life' Strategy. Similar activities can be seen in Denmark, Holland and Norway.

Individual Communities are largely concerned to raise the knowledge and skills of the local population to enhance both social cohesion and economic capacity. Here at ALM we have heard over the years, of a range of community based projects with such goals. The interest of individual communities in professional development of the teaching workforce is less consistent, their voices harder to hear. Cowan (2006) suggests that for communities to make progress on adult literacy promotion, 'coalition building' between organisations within that community is needed.

Employers focus on professional development as a strategic approach to increased productivity and growth, particularly within a knowledge economy. Their prime motive

is to ensure that their employees have and develop the skills needed to enhance performance. The teaching workforce within such organisations is relatively small and largely provided by those whose prime work function is different. Hence, whilst companies have a strong commitment to employee development overall, this may focus much more significantly on the development of higher level skills and leadership with the commitment to development of teaching workforce within the organisation much less obvious.

In some countries, workplace professional development engagement is at particularly high levels.

*Competence development has a high priority in Denmark. 9 out of 10 companies offer competence development to their employees within a year of employment*

*Competence development can take many forms in Danish workplaces:*

- *External courses*
- *Courses and training periods at the workplace*
- *Longer courses and programmes, such as MBA programmes*

**(Danish Ministry of Science, Technology & Innovation)**

**Voluntary Sector Organisations** such as UNESCO or the International Commission on Workforce Development<sup>3</sup> are establishing themselves in the global professional development market, through the provision on on-line training and development opportunities. In the latter case, ICWFD's mission is to redress social disadvantage:

*The ICWFD is committed to bridging the digital divide in marginalized and disadvantaged sectors of society worldwide by providing training in vital job skills to reduce poverty and unemployment, enhance employability, empower youth to become productive citizens, enable entrepreneurship, stimulate broad-based economic development, and accelerate social transformation. (ICWFD, 2007)*

**Activists/Researchers/PD providers/ Professional Bodies** have a commitment to adult maths learning, belief in the importance of capacity building through professional development, but with varying stakes in the different approaches to achieving this and with varying access to funding which in turn drives other interests. So we might view the paucity of research into development of this workforce, not because this group has no commitment to such development, rather because funding mechanisms have to date precluded such a focus. Often such bodies are key drivers for professional development and may themselves be registered as voluntary sector organisations. Again, in the UK the Joint Annual NIACE & UCU Conference in May 2007 was entitled 'Professionalising the literacy, language and numeracy workforce' and provided

*“an opportunity for all staff working in literacy, language and numeracy whether part-time or full time, managers, providers and planners to hear about planned changes as well as current practices which are effective in raising standards of teaching and learning”. (Conference flier)*

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<sup>3</sup>

ICWFD is a California based 501(c)(3) non-profit public charity organization.

Individual adult learners have a key stake in teacher development, needing the best possible teaching to improve their numeracy/mathematics skills. Like individual communities their voices are difficult to hear, and their interest may often be represented by governments or work organisations, with a consequent focus on functional numeracy (eg Wake, 2005) and the need to have teachers who can prepare them effectively for relevant qualifications or work skills.

Like teachers themselves, learners want to have teachers who can teach them effectively in ways and in contexts that meet their individual needs. Hence a key stake for learners is in developing the capacity of teachers to respond to their individual needs in meaningful ways.

**Teachers** themselves appear currently to have a limited stake in professional development. Whilst research suggests that teachers are committed, want to do a good job and want to know and learn more about their students, investment in professional development may have few other tangible rewards.

TeacherNetUK suggests that for schoolteachers:

*CPD is relevant to all teachers. It is about making progress in the teaching profession — increasing teachers' skills, knowledge and understanding*

For this workforce, without a profession and without obvious career pathways, the relevance of CPD may not be so obvious!

### **Effective professional development**

Over the past 20 years research into teaching (as opposed to learning) has been an increasing focus of educational research, although the majority of this work has focused upon school teaching, rather than teaching within adult education.

Two foci of professional development are briefly discussed in what follows:

- Development by individual acquisition of skills and knowledge
- Development through participation in activity

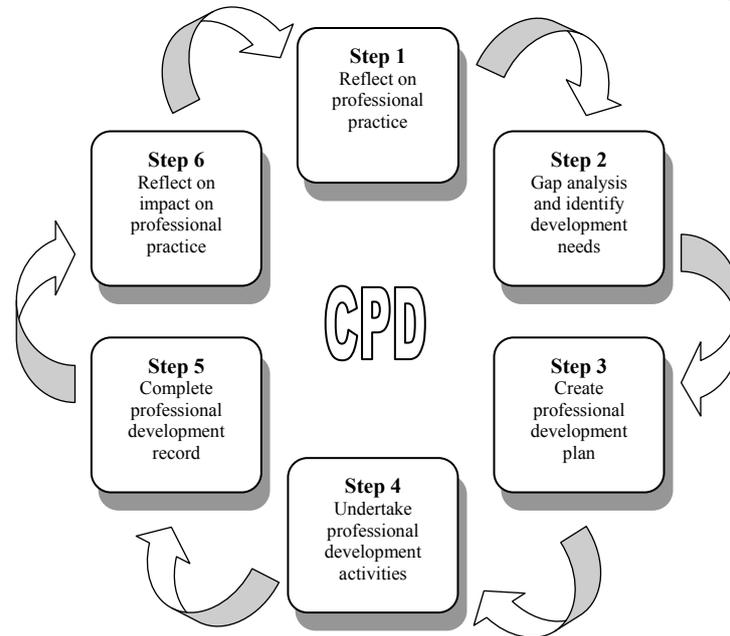
From Adult Education literature, Knowles (1980) six fundamental assumptions about the unique characteristics of adult learners surely apply equally to the teaching workforce as they do to their students:

- The learner's self-concept.
- The role of the learner's experience.
- Readiness to learn.
- Orientation to learning.
- Need to know.
- Motivation.

Much of the literature on adult learning highlights the central role of the reflective process which is generally seen as an essential factor for constructing teacher knowledge. Schon's (1996) work on 'the reflective practitioner' laid the foundations for much focus upon this notion within teacher education and Kolb's (1984) framework for

experiential learning is much used by providers as the basis for approaches to professional development.

So for example, the IfL Consultation on CPD (2006) offer the following model:



### **Towards a New Professionalism**

*From 'Establishing a Model of Continuing Professional Development for Teaching Practitioners in Post-Compulsory Education and Training' (IfL, 2006)*

Tools to support the reflective process such as the maintenance of learning diaries, reflective evaluation writing, use of videorecorded/webcammed teaching sessions and the like are commonly in use across teacher development programmes. Availability of activities which meet the particular development needs of individual teachers is variable and one of the challenges for providers and a common focus for research activity is how to do this effectively.

Research and literature on Learning Styles (Sadler-Smith 2004) or multiple intelligences (Gardner 1989) would suggest that design of development or processes, need also to take account of the preferred learning styles of individual teachers, and address a range of their intelligences. Interestingly, recent thinking about leadership focuses on the way leaders use their emotional intelligence (see for example, Emmerling & Goleman 2003).

Professional development literature with a different focus centres on professional development within organisations and the concept of the learning organisation.  
( See for example, Argyris & Schon, 1996, and Senge et al, 2000)

This whole organisational approach to learning underpins the approach of many private sector organisations who increasingly value the competitive advantage gained through

engagement of all employees in ongoing professional development creating a transformational learning system.

Senge's five disciplines – personal mastery, mental models, shared vision, team learning, systems thinking, suggest professional development must encompass both individual and team development based on dialogue and within a shared vision.

The ideas implicit within this approach have also been extended to thinking around the growth of social capital, informal learning and lifelong learning and the educative power of organisations and groups. Field (2005) claims that the concept of social capital underpins the educational and training policies of the European Commission.

In the context of the adult numeracy teacher workforce, individual teachers can use their social capital to gain access to skills and knowledge in various ways. The literature on schooling and social capital suggests that strong networks and educational achievement are mutually reinforcing. We may conclude therefore that the greater the stock of social capital in the adult teacher workforce, the greater the capacity for mutual learning and improvement.

Such a line of argument suggests that more efforts need to be made to encourage networking amongst the workforce and a greater emphasis on organisational approaches to professional development.

Within the vocational field, the concept of apprenticeship is common and accepted as an effective way in which novices learn their trade –a model of initial development in Teacher Education used in many countries. Mentoring and coaching approaches to development has been adopted more widely within Education, not just for teaching roles. The role of the advanced skills teacher, or numeracy consultant as an expert within the school classroom context has been documented. (Brown & Coben, 2007) This suggests that adult teaching might have more to learn and research about the way in which novice teachers can learn, in situ, to become more experienced through the role of the visiting expert who can offer mentorship and coaching and direct feedback on practice.

### **The 'what' of teacher development**

#### **Teacher Knowledge**

From a situation where expert teachers' practices were accepted as being based on tacit knowledge and taken for granted understandings of their actions and those of their students, there has been an attempt in many countries to try to 'uncover that tacit knowledge' and to articulate what it is that people need to learn in order to become effective teachers; to articulate what good teaching is.

A broadly used, though still contested and oft modified framework due to Schulman & Grossman (1988) forms the basis of many current approaches to initial and continuing teacher development. Their model defines 7 domains of knowledge:

- knowledge of subject matter,
- pedagogical content knowledge,
- knowledge of other content,
- knowledge of the curriculum,
- knowledge of learners,
- knowledge of educational aims, and

- general pedagogical knowledge

Enhancing teacher knowledge is the focus of much professional development activity (and research) with the following not untypical:

Depending upon your philosophic standpoint, what constitutes knowledge in each of these domains, what it means for teachers to have knowledge and the ways in which they might gain knowledge- if indeed they do- is a contested debate!

### **Teacher Practices**

Teachers acquire/develop knowledge and through their practice demonstrate observable skills and behaviours.

This can be seen reflected in the articulation of ‘competences’ for teaching, expressed in many countries’ professional accreditation requirements which place an emphasis on, for example, clarity of exposition, attention to questioning techniques, approaches to engaging attention etc.

Teaching approaches and styles include three described by Askew et al (1997)

- the connectionist approach, where the teacher makes connections between different areas and representations of mathematics
- the transmission approach, where individuals teach skills mastery in discrete steps, emphasising procedure
- the constructivist approach, where the teacher scaffolds learning and asks questions to help learners articulate their meaning making

as well as others which have been documented,

- discovery approach, where the teacher establishes an appropriate environment where learners discover for themselves
- mentoring and coaching approaches, where the teacher works in (usually) a one to one context with the learner supporting specific skill development and reflection

Teacher behaviours and skills, and hence attempts to change behaviours are a common focus for professional development but often embed unclosed values for particular approaches. (See for example Malcolm Swann - active teaching, TERC etc)

### **Teacher beliefs, values, emotions and self concept**

In her book ‘Differentiated Coaching: A Framework for Helping Teachers Change’, Jane Kise (2006), puts forward a framework for teacher development based upon a conviction that the most meaningful change takes place when teachers’ beliefs, feelings and personality are taken into account. This aligns with a growing body of research into teacher beliefs and development of self efficacy (See for example, Fang, 1996). The concept of self and role are fundamental notions within Symbolic Interaction theory which suggests that adult teachers’ role identity provides a set of behavioural expectations which motivate them to act in specific ways that are maintaining and protective of that role and hence self esteem. Requiring teachers to change their behaviours requires them to re-evaluate their role and hence their self concept. This

may require them to resolve tensions that arise and to reconstruct their fundamental beliefs – not a fast process.

Such matters appear to be rarely addressed by professional development programmes.

### Contexts for Teaching

Educators work with learners along a continuum

Informal

Formal

Conversation based	Negotiated curriculum	Set Curriculum
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Much of the adult numeracy teaching workforce is engaged in teaching in contexts which are non formal and often in situations where students have gained mathematical knowledge and skills through non-formal learning contexts.

This suggests that in designing development we need to consider the extent to which individuals are working within formal or non formal contexts and our approaches differ accordingly. So for example, recommendations to match teacher development with curriculum needs may not be relevant in informal learning contexts.

This spectrum also applied to development activity itself and teachers may engage in a diverse range across the informal-formal continuum, with the more formal leading to specific qualifications. One challenge is how to facilitate the acquisition of the formal qualification through engagement in informal development activity. In that context the report *Making Learning Visible (Cederfop 2000)* provides an overview of the position of non-formal learning across Europe.

The importance of development activity relating to authentic teaching experiences for the ANW is reported in well documented. This is more difficult to ensure when development takes place away from the normal workplace. The abstract vs embedded nature of numeracy is a further differentiator in context for the teacher. In some situations, teachers are preparing learners to deal with external tests which may require them to perform in abstract contexts. In others, all the numeracy may need to be embedded. Many development activities are unlikely to be appropriate for both teaching contexts.

Finally, teachers operate within different political and financial contexts. There is some evidence (Smith & Gillespie, 2007) that these constraints do have an impact on what teacher development is even possible at the outset. Certainly, the lack of serious funding for teacher development in this sector is a major barrier to progress.

## **What do we know about what teachers themselves want?**

Evidence about the expressed development needs of teachers is rather thin at present although what there is has some common features and shares some features with those needs expressed by school mathematics teachers, teachers in other subject disciplines and other workforce groups.

In Australia, Mackay, Burgoyne, Warwick and Cipollone (2006) investigated the current and future professional development needs of the Language, Literacy and Numeracy Workforce and considered the particular needs of three sectors – vocational trainers, specialist teachers and volunteer tutors and found that attitudes to professional development and the issues surrounding effectiveness were strongly related to the sector in which teachers worked.

Numeracy specialist and volunteer teachers viewed development of their teaching practice as the most pressing need. To improve both their current and future practice, all sectors want to learn more about managing the changing profile of learners and hence access to appropriate resources and learning materials to meet the needs of specific learner groups. They also saw information and communications technology skills development as an emerging need, use of which could help them be more effective teachers.

All groups favoured face to face development activities and had a strong preference for short ‘hands-on’ training sessions given by expert facilitators together with opportunities for informal sharing of ideas with peers. Significantly, they were very concerned that they themselves had a stake in designing the development activities – a view shared by teachers in the USA (Smith et al, 2002).

The motivations of adult specialist numeracy teachers was also highlighted by the results of a recent UK study (Hudson et al, 2006). Participants gave a wide variety of reasons but these focussed on

- Career development
- Developing their own mathematical understanding
- Increasing their pedagogical knowledge

More generally, a research report carried out by academics at Manchester Metropolitan University and Education Data Surveys in 2002 for DfES on teachers’ perceptions of continuing professional development (CPD) found that. Key features of worthwhile CPD were considered to be

- perceived relevance and applicability to school / classroom settings
- focus on teaching skills and subject knowledge; (few took part in research, secondments, international visits or award bearing courses, although these were highly valued)

Teachers also felt there should be a better balance between meeting individual and organisational needs.

In 2005, the Wellcome Trust commissioned a survey of science teachers and managers in state maintained schools in England to determine teachers' views about CPD. The resulting report, "*Believers, seekers and sceptics: what teachers think about continuing professional development*", revealed strong support for CPD particularly to update subject knowledge.

The overall message from these (and other) studies of teacher conceptions of professional development is one where development to improve skills and performance in current role is associated with 'events' which are of high quality and which provide new knowledge about the subject, about learners or teaching strategies. Also valued is the opportunity to share experience with peers – often seen as the most valuable part of course or conference attendance.

### **What is on offer?**

#### **Formal Qualifications**

A number of countries are working to establish formal qualifications frameworks for the adult numeracy teacher workforce as part of a wider suite of qualifications for teaching in the lifelong learning sector. As an example, in the UK, qualifications include:

Level 3/4 Award in Preparing to Teach in the Lifelong Learning Sector

Level 3/4 Certificate in Teaching in the Lifelong Learning Sector

Level 5/6/7 Diploma in Teaching in the Lifelong Learning Sector

These cover the following general domains:

Domain A Professional values and practice

Domain B Learning and teaching

Domain C Specialist learning and teaching

Domain D Planning for learning

Domain E Assessment for learning

Domain F Access and progression

and the following Specialist Maths/Numeracy domains:

Social reasons for learners gaining mathematics skills and knowledge

Personal factors influencing learning of mathematics

Topics in Maths (Subject Knowledge)

Interestingly, a different but related set of professional standards are being developed for those engaged in teaching numeracy and mathematics within the work based learning sector and is due to report in November 2007.

#### **Informal Learning Approaches:**

Much more common are informal development activities which do not lead to a qualification. A brief survey of professional development offerings advertised recently, or described in projects revealed a wide range of methods in use although the predominant approaches to professional development for the adult teacher workforce are those starred below:

Workshops on mathematics and/or pedagogy (individual or series) \*  
Short courses \*  
Conferences  
Study materials \*  
Apprenticeship  
Mentoring  
Coaching  
Internships  
Workshadowing  
Maintaining learning logs/learning diaries \*  
change of role  
Peer review and observation  
Learning sets  
Study circles  
Reading groups  
Practitioner research  
e-discussion boards and forums\*  
social e-networks  
engagement in curriculum development and/or other projects  
examining/assessing for an external body

### **How do we know whether Professional development has been effective?**

Establishing criteria that help us to know whether professional development has been effective is perhaps the most significant challenge, particularly in the light of a lack of clarity about the purposes of professional development.

In their study of Teacher Change and the implications for Adult Basic Education, Smith & Gillespie (2007) identified individual, organisational and contextual factors which influenced the degree to which teachers changed and developed.

Individual characteristics included: teacher motivation, teacher concerns, teacher self efficacy, teachers' cognitive styles/ways of knowing, reflectiveness, formal education and experience.

Organisational factors included: System within which Teachers operated, Leadership, Coherence between PD and curriculum change demanded, Collegiality and Working conditions.

They noted that the degree of change which teachers could make was often heavily influenced by the wider context and cultural and organisational expectations including those of parents, administrators etc.

They went on to examine how change was related to the content of professional development and the process by which it was delivered. They considered at two types of teacher development – more traditional forms which tended to comprise 'events' that by an large took place outside the workplace context, and forms which they called 'job-

embedded' where development was located within the workplace as part of an effort to create ongoing professional communities.

They noted that research has shown approaches of the former type were more effective if they:

- Were of longer duration
- Make strong connections between what is learned and the teacher's own work context
- Focus on subject knowledge
- Include a strong emphasis on reflection and analysis
- Include a variety of activities
- Encourage teachers from the same workplace to attend together
- Focus on quality and features of professional development

By contrast Job-embedded professional development approaches which included such techniques as study circles, learning sets, action research groups etc. were more effective if they:

- Focus on helping teachers study their learners' think, rather than just trying out new techniques
- Involve collaborative learning activities among teachers
- Involve activities where teachers make use of learner performance data
- Are supported by facilitators who organise development framework

In an earlier study, Smith et al (2002) had investigated the relative merits of three specific types of professional development intervention with ABE teachers. They found, and were surprised that teachers who learned and did more to address learner persistence, after participating in the professional development, were more likely to be those who:

- began their teaching in the field of ABE,
- had fewer years of experience in the field,
- did not have master's or doctoral degrees.

It appeared that it was not the model of professional development that had a major impact on learning, rather impact related to length of time engaged and the quality of the provision. Furthermore, teachers who had some voice in decision-making seemed more able to advocate for and take action than teachers who had little voice in program decisions.

### **What has not been considered?**

- Some approaches – shadowing, e-learning, peer review of LTA, internships, use of consultant experts
- Change implies re-evaluating beliefs, values, roles
- Embedded values within current offerings
- Changed practice or better at current practice?
- Teacher control

- Understanding impact on learners
- Role of learner feedback
- Timeliness of perspective enlargement

### **What does all this imply for Professional Development planning in the future?**

Earlier sections have identified a number of factors that need to be taken into account in considering the future planning of and research into professional development of the workforce:

- a) We do not really know who comprises the workforce. Encouraging governments to collect data on this would appear to be an important step.
- b) We do know that workforce is diverse, and we do know that professional development crucially must meet their individual needs. This has to imply flexibility of provision.
- c) An approach being developed by some countries is the formal professionalisation of the workforce. For some this may provide advantages, for others disadvantages. A starting point could be greater universality of initial training provision.
- d) Such formalisation leads to the creation of formal qualifications. In a context where much development happens in informal contexts through informal mechanisms, we need to find effective ways to formalise the informal without destroying its nature.
- e) Professional development can meet individual personal needs of the teacher but it also meets both social and economic needs. This can lead to tensions.
- f) Some approaches to development are seen as more effective than others by providers and researchers, but these may not be the same as those preferred by teachers themselves. Approaches which focus on short workshops remain the most common.
- g) The content of development may focus on mathematics or on pedagogy or both. Rarely does content appear to address issues of belief, values and self efficacy despite these issues being acknowledged as crucial for personal and team development.
- h) There is an implicit assumption in most of the discussion about teacher development that teacher change is sought. We need to be clear about what we are seeking to do in promoting professional development and to acknowledge that at times, enhancing current practice may be more effective an outcome than changing practice.
- i) We know almost nothing about the impact of professional development on student learning. Evaluating effectiveness must surely take account of this dimension.

Gravani (2007) suggests that for teachers and tutors, professional learning is characterised by a number of dimensions including professionalism, mutuality, emotionality and formality. She suggests that we need to shift our attention from the delivery of short courses to an understanding of the complexity of the process by which professional learning is developed. This view argues for a more comprehensive framework of professional development.

## **Developing a Framework for the professional development of the workforce**

Underpinning any framework for professional development must lie some agreement about the vision, some shared values and some agreement about the purpose and expected outcomes.

At a local level we might wish to see

- Confident, competent teachers?
- Noticing, learner focussed teachers?
- Teachers who have an impact?
- Teachers who share and develop their social capital?
- Shared values and ethical approaches?

Regionally we might wish to see

- increased funding for professional development
- commitment from employers and communities for professional development
- policy developed by governments that supports professional development
- increased funding for research so that we can make best use of resources

Whilst some teachers will wish to develop themselves for personal satisfaction or for wider benefits to society, others will need to see that this provides some personal reward. Hence, the development of mechanisms of formal recognition and career paths will need to form an element of the framework. Achieving formal recognition through informal means will be a parallel requirement. Having such a framework has the potential to enhance the status of the workforce and the work towards professional development entitlements. It could restrict the workforce and so the hurdle for initial entry must not be high.

Teachers want relevant professional development. Successful activity starts with their needs and evolves as their needs change. It results in outcomes which have been sought facilitating this requires expertise. If the needs of the individual teacher and the needs of their 'employer' and both the social and economic needs of nations are to be met, a partnership is needed where goals, outcomes and desired impacts can be established and through which evaluation can of effectiveness can be made.

Approaches will need to be negotiated and appropriate methods selected according to need. Above all, the selves of the workforce will need to be central and their values and beliefs disclosed.

Teachers value connectivity with their peers. Ensuring that mechanisms are in place to facilitate this will be a crucial part of the framework. It is clear that professional development is a long-term enterprise that presumes changes in what teachers know and how they practice. Establishing mechanisms that enable teachers to maintain engagement over time will need to be a priority.

## **A Research Agenda**

Researching the professional development of the adult numeracy teaching workforce is in its infancy and we have much to do.

We need to integrate our theoretical perspectives on professional development if we are to advance our professional development practices. Somehow we will need to find a way to integrate theories which focus on ‘acquisition’ and theories that focus on ‘participation’. We will need to be clear about the purpose of professional development and the outcomes we are expecting. We will need to reach some common ground over the duality of purpose for adult numeracy teaching. We will need to establish some common values.

Whilst we have some insights into the effects of different approaches to professional development, we need more knowledge about the effects these have on teachers themselves, on their knowledge gains and on their skills.

We will want to find out more about which approaches have the capacity to change teachers’ beliefs and transform their practice.

Technology has the capacity to transform our global social and educational networks. As ICT skills develop and access becomes more widespread we will need to understand more about how teachers and their students can benefit from engagement in on-line communities and how this helps them learn and develop.

Beyond that, we know little about the impact on learners of teacher development. Whilst we in ALM may favour particular approaches to teaching, there is little evidence that these lead to better student outcomes or to collective growth.

As professional development frameworks start to emerge and the workforce becomes more professionalised, we may expect that teachers get better at their jobs and that the population at large becomes more numerate. We will need to evaluate the effects of large scale professionalisation, both on teachers themselves and on learners, their communities and their workplaces.

Finally, we need to examine the ways in which we can scale up particular initiatives which appear to be effective. So for example, Ann McDonnell’s peer coaching approach may prove to be very effective. How and with what impact could this scale up if indeed it can scale up.

### **The role of ALM**

As an international practitioner-researcher network, ALM is particularly well positioned to begin to address these issues. It can:

- Share formal qualifications frameworks
- Establish ways to formalise the informal
- Seek funding to run a global, coaching, mentoring and supervision network
- Facilitate Information and Knowledge exchange amongst the workforce in partnership with e-providers

- Establish research programmes focussing on professional development and its impact

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