

Rapid review of literature

Focussing on the
delivery of
numeracy in a
work place setting

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For:
Learning and Skills Council (South East)

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Executive summary

Introduction and background

The Policy Research Institute at Leeds Metropolitan University has been commissioned by the Learning and Skills Council (LSC) in the South East to conduct a rapid review of literature in relation to Skills for Life. The aim of the review is to present some innovative methods of delivering numeracy in a work place setting as the South East LSC is specifically concerned about meeting the regional targets in relation to the Skills for Life numeracy achievements for 2008/09 particularly because there are not enough numeracy tutors to teach the number of learners required. In addition the review encompasses comparisons between the UK and the wider international arena - with successful examples of Skills Life programmes and an overview of the requirements for tutors and actual teaching qualification levels.

A number of organisations have conducted a range of research into the Skills for Life programme in a wide variety of contexts – a significant amount of which is not directly relevant to this literature review. For example, a large amount of research has been undertaken about the demographics of Skills for Life learners, Skills for Life progress in a range of settings outside of the work place and studies which focus on literacy and ESOL (English for Speakers of Other Languages) within the Skills for Life framework. Although some of this literature was used for background information and knowledge, the research team kept the focus on numeracy in a work place setting.

In terms of international literature, the searches provided references that were from mostly English speaking countries such as the United States, Canada and Australia. The American literature provided the most reports of relevance, though there was little specifically on numeracy teaching. In spite of explicit follow-up searches, there was a notable lack of studies of good practice in France, Germany and other European countries. The literature offered information on trends in international adult literacy which provided some useful context for the development of policy programmes in various countries. There was also some allusion in the international literature to the issue of the requirements of good adult literacy teachers and the need for their professional development, though no concrete examples of practice in this area.

Skills for Life

Improving Literacy and Numeracy: A Fresh Start (DfEE, 1999), was a catalyst for change and the DfEE launched the *Skills for Life Strategy* in March 2001 as a response to tackle low basic skills levels. Since then, Skills for Life has become an integral part of the DfES five year strategy and has featured in a range of other policy documents. The strategy set out an initial target of improving the literacy and numeracy of 750,000 adults by 2004, and the government's current target is working towards 2.25 million adults improving their literacy, numeracy and language skills by 2010.

The SfLSU, within DfES was tasked with implementing and evaluating the overall strategy and overseeing developments at national and regional levels and the LSC was allocated the role of planning and funding the majority of training provision and plays a key role in working towards the government's target. The SfLSU published 'Skills for Life Materials for Embedded Learning' in 2006 to support teachers in vocational contexts; this was following research undertaken by the NRDC which raised the importance of embedded delivery.

The ANCC was introduced in 2001, addresses teaching and learning numeracy, remains central to the numeracy element of Skills for Life (BSA, 2001) and is based on the national standards for adult numeracy developed by the QCA. The ANCC is essentially a map of the numeracy skills which adults need and the curriculum elements are presented as being context free. The SfLQI research paper on numeracy (2006) suggests that the ANCC needs to be revised to allow more flexibility and be more relevant.

Since 2001 the BSA has led the implementation of the Financial Literacy Project. The aim of this project has been to develop literacy and numeracy in the financial context, as part of the Skills for Life strategy. The key findings from the *Financial Literacy Education and Skills for Life* report (NRDC, 2004b) illustrated that provision and accreditation of financial literacy education is patchy despite several developments in accreditation.

Skills for Life delivery: UK

In practice, the way in which LLN is incorporated and delivered varies widely across projects, initiatives and training providers. Five broad approaches were identified as models for the delivery of Skills for Life in the work place. These include **embedded delivery, team teaching, team planning, front-end approach and discrete**. However, they are not exclusive to numeracy teaching. A significant amount of research has already been undertaken in relation to embedded delivery as opposed to the other approaches and it appears to be the most progressive and accepted approach to date. The literature, policy documents (Leitch, 2006) and the LSC have acknowledged this approach as being the best way to move forward with the delivery of Skills for Life in the work place context. It has also been recognised that this approach may work better by combining with other approaches in some contexts. The level of embedding is determined by the tutor and/or delivery organisation and although there are no fixed models for embedding, there are a range of flexible and adaptable models available. Despite this, no systematic approach to embedding or embedding specifically for numeracy teaching in a work place context has been devised.

A number of barriers to work place learning still exist which include: the extent to which employers understand the concept and importance of Skills for Life in the work place, poor employment relations, recognition at operational management levels, the organisation of staff release, location and timing of provision with learners who may work shifts, the identification of people who may benefit most from Skills for Life training in the work place and the brokering of relationships between employment organisations and training providers was also seen as a process that faced a series of difficulties and constraints.

A range of factors have been identified as good numeracy teaching. However, the literature has been dominated by one specific attribute in relation to numeracy, which is about making the teaching meaningful, relevant and applicable to the learner's context.

Skills for Life delivery: International

Internationally, the influence of major international surveys on the direction of national-level policies related to adult

literacy and numeracy has been significant, though it is worth noting the difficulties of comparing programmes in different countries - particularly considering varying definitions of adult literacy.

Although few specific models of programmes have been reported, some themes emerge from the literature that suggest possible approaches to adult literacy or numeracy. Firstly, the success of an adult basic education programme may be determined by levels of **participation** by learners. These levels vary in different countries and are influenced by the levels of public support that they receive. Factors in participation in work-based learning may be the attitudes of managers or the institutional arrangements of employers and unions. The next theme relates to requirements for **assessments** and the acquisition of **qualifications** to be a flexible process that is sensitive to the needs of learners. An example of this is the use of formative assessments. Thirdly, programmes should be **customised** to the specific goals and **needs of learners and employers** with both groups being involved in the design of courses. This may involve contextualising the learning or integrating basic skills instruction with more advanced training. How the professionalism of adult **teachers** could be strengthened with recognition of what makes them distinct from others is the fourth theme. The fifth theme of **numeracy** discusses the limited amount of research available on adult numeracy initiatives and attempts by the Adult Numeracy Initiative in the United States to find out more on the issue. Finally, barriers to the development of adult basic education programmes can be overcome through well organised **partnership working** between government, employers and learning providers. Strategies that are developed through such collaborations are particularly effective when they are fully committed to employers and learners.

Tutors qualifications levels

Prior to the review *A Fresh Start* (DfEE, 1999), there were no formal requirements for tutors of numeracy, literacy and ESOL to be qualified in the same way in which teachers of other subjects are. In November 2000, the DfEE declared that from September 2001, all tutors employed to teach basic skills would be required to achieve a specialist basic skills teaching qualification, this was reinforced by the *Skills for Life Strategy* (DfEE, 2001), which stated that tutors

specialising in literacy and numeracy would be expected to undertake new professional qualifications. The *Skills for Life Strategy* (DfEE, 2001) introduced a new framework and from 2002 all new tutors in the post-16 sector specialising in literacy and numeracy were required to gain qualifications that meet FENTO subject specifications for literacy, numeracy.

The vision for the reform of further education was stated in *Success for All* (DfES, 2002). It stated that all teachers should be qualified to teach by 2010 (new entrants to teaching in FE Colleges would be exempt on the proviso that they are expected to achieve appropriate qualifications. A range of initiatives have been developed to support the training of Skills for Life tutors.

Research undertaken by the NRDC (2004) indicated that a high proportion of Skills for Life tutors are qualified at Level 3 and Level 4 and that only a small proportion have no qualifications at all. These findings are contradictory to a survey carried out by the Times Educational Supplement (2004) which illustrated that many training providers rely on under-qualified tutors and ALI (2004) which reported that few trainers were skilled at teaching numeracy.

Effective Teaching and Learning: Numeracy (NRDC, 2007) stated that considerable improvements are required in training specialist numeracy tutors if greater progress is to be made. Research (NRDC, 2004) also identified the oversight of subject related pedagogy in the Subject Specifications for Teachers of Adult Literacy, Numeracy and ESOL originally published by FENTO in 2002.

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List of Acronyms

LSC	Learning and Skills Council
EU	European Union
NRDC	National Research and Development Centre for literacy and numeracy
SfLSU	Skills for Life Strategy Unit
NIACE	National Institute for Adult Continued Learning
DfES	Department for Education and Skills
DfEE	Department for Education and Employment
BSA	Basic Skills Agency
ANCC	Adult Numeracy Core Curriculum
FSA	Financial Services Authority
QCA	Qualifications and Curriculum Authority
BSA	Basic Skills Agency
LLN	Language, Literacy and Numeracy
NVQ	National Vocational Qualification
OfSTED	Office for Standards in Education
ESOL	English for Speakers of Other Languages
ALI	Adult Learning Inspectorate
SfLQI	Skills for Life Quality Initiative
ICT	Information Communication Technology
KSSP	Key Skills Support Programme
NAO	National Audit Office
FE	Further Education
WOA	Whole Organisation Approach
SfLIP	Skills for Life Improvement Programme
NVQ	National Vocational Qualification
IALS	International Adult Literacy Survey
ALL	Adult Literacy and Life Skills Survey
OECD	Organisation for Economic Cooperation and Development
AELS	Adult Education and Literacy System
ISCED	International Standard Classification of Education
HCD	Human Capital Development
LFA	Labor Force Attachment
WES	Workplace Essential Skills
CERI	Centre for Education Research and Innovation
WELL	Workplace English Language and Literacy
GED	General Education Development
SUNIVOT	Supporting Numeracy in Vocational Training
NWLP	National Workplace Literacy Program
FENTO	Further Education National Training Organisation
LLSSC	Lifelong Learning Sector Skills Council
NCETM	National Centre for Excellence in Teaching Mathematics

1. Introduction and Background

1.1 Introduction

The Policy Research Institute at Leeds Metropolitan University has been commissioned by the Learning and Skills Council (LSC) in the South East to conduct a rapid review of literature in relation to Skills for Life; with a specific focus on the delivery of numeracy in the work place. The literature includes a review of policy documents, academic research, policy oriented papers and publications, good practice guides, books and journals. This rapid review of literature does not attempt to be exhaustive, but provides an indicative overview.

1.2 Objectives of the review

The aim of this rapid review of literature is to present the South East LSC with some **innovative methods of delivering numeracy in a work place setting**. The South East LSC is particularly concerned about meeting the regional targets in relation to the Skills for Life numeracy achievements for 2008/09. In addition the LSC also specified the following areas are included in the review:

- comparisons between UK/England and the wider international arena with a focus on EU (European Union) countries including **France and Germany**;
- an emphasis on qualification levels and in particular numeracy, targeting and engaging of adults to raise awareness and ensure **best practice is shared between each EU country**;
- to identify **successful and positive examples** from different countries where employees participate in Skills for Life programmes;
- the impact which **Skills for Life numeracy teaching has had on the standard of education in each country** and link this to adult achievement; and
- consider whether the tutors themselves hold **professional Skills for Life qualifications** and establish what level a tutor needs to reach in order to teach adults.

The review aims to inform future thinking about the delivery of Skills for Life numeracy training in a work place setting.

1.3 Literature search - methods

The aim of the search strategy was to find documents that provided examples of practice in the provision of Skills for Life. Searches were conducted on several online databases. These included the Social Science Citation Index, International Bibliography of the Social Sciences, Cambridge Scientific Abstracts (incorporating ASSIA, ERIC, Sociological Abstracts, Social Services Abstracts and Worldwide Political Science Abstracts), British Education Index, Educational Research Abstracts and the IDOX Information Service Database. Search strings were initially developed according to three themes. These were: general searches on Skills for Life, effective models of practice and the qualifications of trainers. From these, the following strings developed:

- (basic skills or skills for life) and (numeracy or math* or literacy or esol)
- (basic skills or skills for life) and qualification* and (adult* or employee* or worker* or workforce)
- (basic skills or skills for life or numeracy or math* or literacy or esol) and (policy or policies or target* or initiative* or innovat* or program* or intervention or strateg*) and (good practice or best practice or effective* or impact* or evaluate*)
- (basic skills or skills for life) and (teach* or tutor* or trainer* or practitioner*)
- (basic skills or skills for life or numeracy or math* or literacy or esol) and (policy or policies or target* or initiative* or innovat* or program* or intervention or strateg*) and (good practice or best practice or effective* or impact* or evaluate*)

These strings were organised in a variety of ways and occasionally using title or keyword limiters to obtain as many relevant hits as possible. In all, these initial searches led to approximately 880 references being downloaded from the various databases. There were also some follow-up searches conducted that aimed to fill gaps in the literature that had been identified relating to numeracy, regional initiatives and examples of practice in France and

Germany. Only a handful of new references were identified from these searches.

Further references were identified and obtained through trawls of the websites of various UK-based government agencies and other international organisations.

The main websites were:

Adult Numeracy Core Curriculum:

http://www.dfes.gov.uk/curriculum_numeracy/intro/nqf/

QIA Skills for Life Improvement Programme:

<http://www.sflip.org.uk/>

National Institute of Adult Continuing Education (NIACE):

<http://www.niace.org.uk/>

DCSF read write plus:

<http://www.dfes.gov.uk/readwriteplus/>

Organisation for Economic Co-operation and Development (OECD)

<http://www.oecdbookshop.org/oecd/index.asp?lang=en>

1.4 Literature content

Overall the searches identified a large amount of literature in relation to the Skills for Life programme and numeracy teaching. Although the National Research and Development Centre for Literacy and Numeracy (NRDC), the National Institute of Adult Continuing Education (NIACE), the Skills for Life Strategy Unit (SfLSU), the Department of Education and Skills (DfES) and the Skills for Life Quality Initiative (SfLQI) have undertaken a range of research into the Skills for Life programme, this has been undertaken in a very wide range of contexts – a significant amount of which is not directly relevant to this literature review. For example, there has been a large amount of research undertaken about the demographics of Skills for Life learners, Skills for Life progress in a range of settings outside of the work place (i.e. Adult Community Learning Centres, Further Education (FE) colleges, Prisons etc) and studies which focus on literacy and ESOL (English for Speakers of Other Languages) within the Skills for Life framework. Although some of this literature was used for background

information and knowledge, the research team kept the focus on numeracy in a work place setting.

The NRDC (2003) has identified that more research is required on learning and teaching numeracy in the work place. As a result, some research has been undertaken in this field and there are many good practice guides about how to teach numeracy. A range of websites also offer practitioners tools and materials for delivering numeracy. However there is still little literature available in relation to actual models of delivery specifically for numeracy within a work place context. This is reinforced by a numeracy research paper (SfLQI, 2006) which concluded that the teaching and learning of adult numeracy is still in the exploratory stages of development.

In terms of international literature, the searches provided references that were from mostly English speaking countries such as the United States, Canada and Australia. In spite of specific follow-up searches, there was a notable lack of studies of good practice in France, Germany and other European countries. This may have been due to reports and articles on those countries not being published in English and therefore not appearing in predominantly English language databases. Some of the European-based literature that did emerge was not directly relevant to the project. For example there was some mention of the exemplary nature of mathematics education in French schools, but not on basic numeracy teaching for adults in France.

The searches identified literature that offered information on trends in international adult literacy which provided some useful context for the development of policy programmes in various countries. There was also literature from the OECD (2006) that discussed policy perspectives on skills upgrading. This was only partially relevant to Skills for Life as it covered issues to do with skills acquisition at all levels. The American literature provided the most reports of relevance, though there was little specifically on numeracy teaching. The US Department of Education's Adult Numeracy Initiative represents an attempt to fill this gap (Condelli, 2006) with possibly more relevant information to come from this source in the future.

Finally, there has been some discussion of the requirements of a good adult literacy teacher and studies from Australia (McKenna and Fitzpatrick, 2004 and Berghella, Molenaar and Wise, 2006) have highlighted the need for professional development of these teachers.

2. Skills for Life

2.1 Background and national policy context

The pioneering report *Improving Literacy and Numeracy: A Fresh Start* (DfEE, 1999) which followed from the review chaired by Sir Claus Moser, identified seven million people with poor literacy and numeracy skills, including approximately half a million or more who struggle with English because it is not their first language. The report recognised that there could be no quick fix to this issue and that a long-term national strategy was necessary to tackle a resulting "legacy of underachievement". The challenge was to address issues of both supply and demand so that there would be an improvement in the quality of provision on offer as well as an increase in the number of adults coming forward to engage in this provision. It was suggested that the Government would need to be spending approximately £680 million a year by the year 2005 if it was to achieve the recommended target of halving the number of people considered functionally illiterate by 2010.

It has been estimated that the cost to industry of poor basic skills among the workforce is 10bn annually. Seven million people cannot read or write at the level expected of an 11 year old; furthermore there are even more problems with numeracy and a quarter of all adults are unlikely to be able to undertake very simple calculations (DfEE, 1999). The review defined basic skills as:

"...the ability to read, write and speak English and use mathematics at a level necessary to function and progress at work and in society in general" (p8).

This has had devastating consequences not only for the individuals concerned but also the impact which this is having on the country's ability to compete in an increasingly competitive global economy.

2.1.1 Skills for Life: The national strategy

Improving Literacy and Numeracy: A Fresh Start (DfEE, 1999), was a catalyst for change and the Department for Education and Employment (DfEE) launched the Skills for Life Strategy in March 2001 - a long term programme to tackle the low literacy and numeracy skills in England - as a response.

It was recognised that people with poor literacy, numeracy and language skills tend to be on lower incomes or unemployed and are much more likely to suffer from ill health and social exclusion (DfEE, 2001). Therefore, the national strategy for improving adult literacy and numeracy skills prioritised where needs were considered to be the greatest and where most impact could be made, the following groups were recognised:

- unemployed and benefits claimants;
- prisoner's and those supervised in the community;
- public sector employees;
- low-skilled people in employment; and
- other groups at risk of exclusion.

The strategy set out an initial target of improving the literacy and numeracy of **750,000 adults by 2004, and the government's current target is working towards 2.25 million adults improving their literacy, numeracy and language skills by 2010**. The longer term vision is for England to have one of the best literacy and numeracy rates in the world and to eventually eradicate the problem.

Key priorities in the national *Skills for Life strategy* (DfEE, 2001) include:

- **Engaging learners**
 - Giving all adults an entitlement to free literacy, numeracy and language training, reflecting their needs and available when and where they need it.
 - Establishing a clear route to qualifications that help learners and teachers understand what is needed to progress.
 - Launching and sustaining a promotional strategy targeted at those who could improve their skills and those who can support them
- **Raising standards**
 - Establishing national standards, screening and diagnostic assessment, a national core curriculum

- and new National Tests, and commissioning new learning materials to support them
- Enhancing the status of teachers by introducing professional qualifications for all literacy and numeracy teachers from September 2001.
- Improving inspection arrangements to provide a rigorous and robust quality framework.
- **Coordinating, planning and delivery**
 - Setting targets and increasing funding so that all providers receive funds for learners following a literacy or numeracy course.
 - Targeting key priority groups and making sure all parts of government are focussed on common goals.
 - Establishing regional pathfinder areas to test how best to increase retention and achievement rates. A new centre of research will commission more analysis including a baseline survey of need.

The strategy highlighted the need for every relevant organisation to make a contribution to delivering these objectives both at a local and national level. The SflSU, within DfES was tasked with implementing and evaluating the overall strategy and overseeing developments at a national and regional level. The LSC was allocated the role of planning and funding the majority of training provision. In addition to these key roles, a number of other organisations were foreseen as playing a critical role; Office for Standards in Education (OfSTED), Adult Learning Inspectorate (ALI), the Employment Service, Connexions, employers, unions, further education colleges and adult learning centres.

The *Skills for Life strategy* document was updated and published in 2003 which reaffirmed and highlighted that the skills problem is one of the government's key priorities and the need for all relevant organisations to work together to achieve the targets set. It focussed on the achievements to date and the work needed to continue the development of Skills for Life policy and practice. The key themes within the strategy included:

- putting employers needs centre stage and creating a more demand-led system;

- helping employers use skills to achieve more ambitious, longer term business success;
- motivating and supporting learners – making it easier for those adults who most need extra skills to upskill by offering a new entitlement to learning;
- enabling colleges and training providers to be more responsive to employers' and learners' needs by reviewing the framework for planning, funding and monitoring provision; and
- joint Government action in a New Skills Alliance, linking up the work of key government departments involved with economic and skills issues.

On implementation of the Skills for Life programme the government committed significant amounts of funding. In 2004, it was estimated that £3.7 billion would be spent on literacy, language and numeracy training for adults by 2006 (NAO, 2004). In January 2006, the Public Accounts Committee produced a report (House of Commons, 2006), which reviewed the progress made against the Skills for Life Strategy's aims and objectives. The first milestone set out in the *Skills for Life strategy* for **750,000 adults achieving qualifications was achieved by July 2004**. It concluded that although a great deal of progress had been made, there were still areas which need to be improved. These included the need to better plan funding resources to support the adequate delivery of provision, a need for better joined-up working between government agencies, to ensure that "hard to reach" learners were accessing support and to encourage more adults to access learning opportunities.

2.1.2 Key policy developments

Since March 2001, Skills for Life has become an integral part of the DfES five year strategy and has featured in a range of other policy documents, including; *Success for All: reforming further education and training*, *the Skills strategy*, *Youth Matters*, *Every Child Matters*, *the 14-19 Implementation Plan* and *Further education: raising skills, improving life chances*. Skills for Life has also featured in a number of additional Government strategies, including the Foster Report and perhaps more significantly the Leitch

Report. All of these documents have highlighted the importance of the underpinning skills of literacy, language and numeracy in order for overall achievement and economic progress in the UK to be sustained and improved upon in the future. Leitch (2006) recommended that the UK commits to a compelling new vision to become a world leader in skills by 2020 in order for the UK to remain economically competitive, this means doubling attainment at most levels of skill. In order to accomplish this vision, the following would have to be achieved:

- 95% of working age adults to have basic skills in both functional literacy and numeracy - rising from 85% and 79% respectively in 2005;
- more than 90% of adults skilled to GCSE level or to vocational equivalents - rising from 69% in 2005;
- the number of Apprentices in the UK boosted to 500,000 each year, with improved quantity, quality and esteem for intermediate skills; and
- more than 40% of adults skilled to graduate level and above - up from 29% in 2005.

The government White Paper (2003), *21st Century Skills: Realising our Potential*, confirmed that the Skills for Life programme would provide the foundation for England's skills development. It also stated that ICT would be the third basic skill and would be embedded into the Skills for Life programme.

2.2 LSC and South East context

The LSC has a key role in working towards the government's target of 2.25 million adults improving their literacy, numeracy and language skills by 2010. The LSC's Statement of Priorities (2008/09) states that one of the key targets is:

"some 95 per cent of adults should have basic functional literacy and numeracy skills" (p7).

Further detail was presented in the following statement:

"From 2008/09, the targets are for an additional 597,000

people of working age to achieve a first Level 1 (or above) literacy qualification, and for 390,000 to achieve a first Entry Level 3 (or above) numeracy qualification. These interim targets ensure that we continue to work towards meeting the target to improve the basic skills of 2.25 million adults between 2001 and 2010" (p7).

The South East LSC has regional Skills for Life targets which contribute to the national targets. There are 22,400 Skills for Life achievements counting towards targets in 2008/09 of which 9,300 are Literacy Level 1 and 7,300 are Numeracy Entry Level 3 (draft figures provided by South East LSC). The South East LSC Skills for Life team are specifically concerned about meeting the regional numeracy target, particularly because there are not enough numeracy tutors to teach the number of learners required. However, they have already identified that the majority of those adults which still need to achieve numeracy skills are already in the work place. Therefore the focus of this literature review is an investigation into the delivery of numeracy and Skills for Life training the work place.

2.3 Development of Skills for Life in the work place

The SfLSU was set up in November 2000 to implement and evaluate the Skills for Life strategy and oversee any developments at a national and regional level. The Unit works with a range of key partners to address poor basic skills and develop successful practices and procedures to encourage adults with low levels of literacy and numeracy back to education and training.

A report by the NRDC (2006) raised the importance of embedded delivery. Following this, the SfLSU published 20 files of the 'Skills for Life Materials for Embedded Learning' in a bid to tackle the difficulties that can often be faced by teachers and trainers in vocational subjects. These files ensure that the learning programmes include the teaching and development of the literacy, language and numeracy skills that underpin overall vocational achievement. Each file provides teachers and trainers with ideas and new approaches for embedding literacy and numeracy in vocational contexts. The subjects included are: Trowel occupations; Social care; Horticulture; Family Health; Effective communication for international nurses 1-2;

Effective communication for international nurses 3-6; Catering; Hospitality; Retail; Warehousing; Entry to Employment; Sports leadership; Painting operations; Production line manufacturing; Cleaning; Skills for construction; Food Hygiene; Health and safety; ICT and First Aid. A further 6 files were launched in 2006: Early years; Hairdressing; Get on in the community; transport; Family life – the growing child; Family life – focus on parenting and ESOL support pack for catering .

The Key Skills Support Programme (KSSP) is funded by DfES and its main purpose is to assist practitioners, training providers, schools and colleges to improve the quality of Key Skills and Skills for Life provision and to support the preparation of young people for the Key Skills qualifications (DfES, 2006). The Learning and Skills Network is a consortium of organisations appointed to manage the programme for the work based route and work with those actively in the field to improve the overall delivery of Key Skills and Skills for Life.

The Leitch Review (2006) attempts to develop the voluntary model which currently operates for employers to engage in work place learning by proposing the 'Skills Pledge' where employers commit to helping their low skilled employees. Evidence to date suggests that only some employers will commit to this.

2.4 Development of the Adult Numeracy Core Curriculum

The Adult Numeracy Core Curriculum (ANCC) was introduced in 2001 and addresses teaching and learning numeracy. It remains central to the numeracy element of Skills for Life (BSA, 2001). It is based on the national standards for adult numeracy developed by the Qualifications and Curriculum Authority (QCA) in 2000. The standards are in a framework that specifies details of the content that should be taught at each of the levels: Entry 1, 2 and 3; Level 1 and Level 2.

The ANCC is intended to be a map of the numeracy skills which adults need and the curriculum elements are presented as being context free and although it is not statutory it is normalised through funding mechanisms geared to accreditation. Newmarch (2005) states that it is

up to the tutor and learner to provide the context within which the learning takes place. The SfLQI research paper on numeracy (2006) suggests that the ANCC needs to be revised to allow more flexibility and be more relevant. It also highlights the need for the ANCC to be more appropriate to the 21st century and to take into account the way maths is losing its visibility because of the embedding of technology into all aspects of work and home life.

2.5 Development of Financial Literacy

Since 2001 the Basic Skills Agency (BSA) has led the implementation of the Financial Literacy Project. The aim of this project has been to develop literacy and numeracy in the financial context, as part of the Skills for Life strategy. The Financial Services Authority and the Basic Skills Agency devised the Adult Financial Capability Framework (FSA/BSA 2003). The document covers a broad range of money management and consumer issues and is designed for all those involved in financial capability education, including money advisers, teachers, trainers and helpers, who are interested in improving financial capability skills, knowledge and understanding. The framework aims to bridge the gap between personal finance education which is taught within the school curriculum and full engagement with financial services systems through the Financial Services Authority adult learning programme 'Learn Online'.

Financial literacy education provision has been mapped against the areas identified in the Adult Financial Capability Framework by the NRDC. The key findings from the *Financial Literacy Education and Skills for Life* report (NRDC, 2004b) highlighted that provision and accreditation of financial literacy education is patchy despite several developments in accreditation. Financial literacy has been delivered as discrete units and embedded within numeracy, ESOL (English for Speakers of Other Languages) and literacy programmes. Provision is frequently linked to basic skills, sometimes financial literacy education is used to support basic skills and vice versa. Numeracy is perceived to be a critical component of financial literacy, however many of those teaching financial literacy education lack relevant qualifications. In recent years there have been many new initiatives in financial literacy education provision, but they have been mostly on a small scale.

Employers and trade unions generally do not support or provide financial education for employees.

Developing financially capable young people (OfSTED, 2008) discusses features of good practice in personal finance education and discusses how financial capability can be developed through mathematics, as well as identifying the difficulties involved.

"The main barriers to developing personal finance education were pressures on curriculum time, teacher's lack of subject knowledge and expertise in this area, a lack of awareness of resources and other forms of support on the subject, and the very wide variation in the nature of post-16 provision, particularly in colleges of further education. Training and development for non-specialist teachers involved in teaching personal finance education was rare" (p 6).

The literature indicates that that the area of financial literacy, and how this should be embedded into current maths and numeracy provision (across all learning contexts) is in the development stages and is an ongoing debate.

2.6 National Qualifications Framework

The national standards for adult literacy and numeracy are specified at three levels: Entry level, Level 1 and Level 2. Levels 1 and 2 are aligned to the key skills of communication and application of number. Entry level is further divided into three sub-levels: Entry 1, Entry 2 and Entry 3. Entry level has been set out in this way to describe in detail the small steps required for adults to make progress. This sub-division also signals a clear alignment of the skill levels with levels 1, 2 and 3 of the National Curriculum, as illustrated in Figure 1 .

Figure 1: National Qualifications Framework

		Key Skills Level 5	National Qualification Framework Level 5
		Key Skills Level 4	National Qualification Framework Level 4
		Key Skills Level 3	National Qualification Framework Level 3
	Literacy/Numeracy Level 2	Key Skills Level 2	National Qualification Framework Level 2
National Curriculum Level 5 National Curriculum Level 4	Literacy/Numeracy Level 1	Key Skills Level 1	National Qualification Framework Level 1
National Curriculum Level 3	Literacy/Numeracy Entry 3		Entry Level
National Curriculum Level 2	Literacy/Numeracy Entry 2		
National Curriculum Level 1	Literacy/Numeracy Entry 1		

2.7 Summary of Skills for Life

Improving Literacy and Numeracy: A Fresh Start (DfEE, 1999), was a catalyst for change and the DfEE launched the Skills for Life Strategy in March 2001 as a response to tackle low basic skills levels. Since then, Skills for Life has become an integral part of the DfES five year strategy and has featured in a range of other policy documents. The strategy set out an initial target of improving the literacy and numeracy of 750,000 adults by 2004, and the government's current target is working towards 2.25 million adults improving their literacy, numeracy and language skills by 2010. The SfLSU, within DfES was tasked with implementing and evaluating the overall strategy and overseeing developments at national and regional levels and the LSC was allocated the role of planning and funding the majority of training provision and plays a key role in working towards the government's target. The South East LSC has regional Skills for Life targets which contribute to the national targets and are currently concerned about meeting the regional numeracy target, particularly because there are not enough numeracy tutors to teach the number of learners required.

The SfLSU published 'Skills for Life Materials for Embedded Learning' in 2006 to support teachers in vocational contexts; this was following research undertaken by the NRDC which raised the importance of embedded delivery.

The ANCC was introduced in 2001, addresses teaching and learning numeracy, remains central to the numeracy element of Skills for Life (BSA, 2001) and is based on the national standards for adult numeracy developed by the QCA. The ANCC is essentially a map of the numeracy skills which adults need and the curriculum elements are presented as being context free. The SfLQI research paper on numeracy (2006) suggests that the ANCC needs to be revised to allow more flexibility and be more relevant.

Since 2001 the BSA has led the implementation of the Financial Literacy Project. The aim of this project has been to develop literacy and numeracy in the financial context, as part of the Skills for Life strategy. The key findings from the Financial Literacy Education and Skills for Life report (NRDC, 2004b) illustrated that provision and accreditation of financial literacy education is patchy despite several developments in accreditation.

3. Skills for Life delivery: UK

3.1 Introduction

On launch of the Skills for Life Strategy, the majority of learning programmes adopted a generic approach. As the strategy has matured, a variety of learning contexts have been explored to help engage and include as many young people and adults as possible. As a result a wide range of options are now available for learners to develop their language, literacy and numeracy (LLN), for example Skills for Life is taught in Further Education, Adult and Community Learning, Offenders Learning and Skills Unit etc. It is worth noting, that in practice, the way in which LLN is incorporated into programmes varies widely across projects, initiatives and training providers. This following sections draw upon models and methods relevant to the teaching of Skills for Life in a work place context.

3.2 Models for work place learning

There are five broad approaches to providing Skills for Life within the framework of a wider vocational programme or in the work place. The following approaches are used for delivering LLN and are not exclusive to numeracy teaching.

3.2.1 Embedded delivery

Embedded delivery is where Key Skills and Skills for Life are taught and learnt within the context of a wider learning programme, and the teaching is organised in a way which is central to the programme. This approach has been designed to tackle learners who are interested in learning new vocational skills but are perhaps less motivated to learn LLN. Although the approach is considered to be relatively new, it has formerly been known as 'link learning' and 'integrated learning'.

In the context of the work place, the learning is directly linked to daily tasks undertaken and the employer's overall objectives. The SfLSU (NRDC, 2005c) defines embedded learning and teaching as that which

"combines the development of literacy, language and numeracy with vocational and other skills. The skills acquired provide learners with the confidence, competence and motivation necessary for them to succeed in qualifications, in life and at work" (p5).

Although there are no fixed models of embedding, the following are working definitions which the NRDC use to define the degree of 'embeddedness' within the relevant vocational context:

- **Separate elements** (discrete) – Learners will experience their LLN training separately from their vocational studies. LLN is taught through a separate programme and any connections between the two are made by the learner.
- **Partly embedded** – Learners experience their LLN development and vocational studies as integrated to a small degree.
- **Mostly embedded** – Learners experience their LLN development as an integral part of their vocational studies, but some aspects of the LLN development and vocational studies may remain unconnected.
- **Fully embedded or integrated** – Learners experience their LLN development as an integral part of their vocational studies. The teaching of LLN is organised as a central element of the vocational programme, but may include explicit work on LLN.

The level of embedding is determined by the tutor or the organisation leading the training and there is no prescribed model of embedding. NIACE (2005) describes three models for embedding which have been used by providers. These are outlined below:

MODEL TYPE	Details
Fully Integrated	This model appears most frequently at pre-entry level and is usually a short programme, delivered by one tutor who has host subject knowledge but is trained in literacy, language or numeracy. There is one learning aim, which may or may not be accredited, along with other individually negotiated learning outcomes in the associated literacy, language or numeracy.
A Sandwich Model	A split approach between the vocational subject and literacy, language or numeracy which can be provided as a strict division between the two areas or more flexibly from session to session. This approach is used on short and longer programmes. Some organisations use one teacher, skilled in both areas or a vocational tutor who is supported by a language, literature or numeracy specialist. Some providers may use two teachers. The added value from using two staff is associated with gains in knowledge and teaching and learning styles and methods, from which learners and teachers can benefit.
Overlapping Model	This model emerges as applicable to both short and longer courses. Typically the two subject areas are delivered separately but very quickly overlap so that a level of integration does take place. Staffing models vary but two areas of specialism are vital and two teachers are normally involved.

NRDC (2006) research recognises good practice in delivering Skills for Life and suggests that the following features and characteristics are paramount to successfully embedding work based learning with LLN:

- learners' purposes and motivations are paramount;
- teamwork and collective responsibility for learners between vocational and LLN tutors;
- embedding should be a strategic priority for the provider and should be part of the ethos of the organisation;
- organisations should develop their own models to embedding and have organisational features at a institutional level, this will ensure support for both staff and curriculum development;
- learning outcomes should be identified in the vocational subject and LLN;
- teaching and learning should take place in both subject areas;

- the model developed should be influenced by the vocational subject but both subjects can influence each other; and
- LLN is recognised as a complex area to teach therefore expertise from a vocational tutor and LLN tutor must be included.

The NRDC (2006) has undertaken a range of research about embedded learning and there continues to be strong research activity about this relatively new approach which is still developing. All the evidence to date suggests that embedding Key Skills and Skills for Life into vocational programmes and into work place learning promotes learners progress and achievements. The research suggested that vocational programmes which embed Key Skills and Skills for Life learning within them have:

- higher retention - 16% increase;
- better success rates - 26% increase on Level 2 courses;

- higher achievement of Key Skills and Skills for Life qualifications:
 - 43% increase in literacy and language (92.8% of learners)
 - **23% increase in numeracy (93.4% of learners);** and
- learners who feel better prepared for work in the future.

The Skills for Life Improvement Programme (SfLIP) supports providers with the embedded approach to skills development and increased the retention and achievement of learners;

"early examples from external evaluation flag up dropout falling from 30% to 19% in a work based learning provider and achievement of qualifications increasing to 30% higher than the national average in another".

The *Leitch Implementation Plan – World Class Skills* (2007) has emphasised the importance to deliver Skills for Life through an embedded approach and highlighted the importance of work place delivery. The LSC (Fact sheet 8, 2007) states that as we work towards the challenges of Leitch (2006), the embedding of LLN within vocational subjects will become the norm rather than the exception. It also recognised in order to do this consistent change will be required to many institutional and professional practices. The Whole Organisation Approaches (WOA) for Delivering Skills for Life Project is designed to embed Skills for Life across all post compulsory education aiming to explore how best to develop a whole organisation approach to Skills for Life. However, despite all this, a systematic approach to embedding has not yet been developed.

3.2.2 Front-end approach

Front-end delivery involves learners starting their key skills or Skills for Life learning up front. Key Skills teaching and learning makes up a significant part of teaching and learning during the early months, then gradually lessens as time goes on. Research (KSSP, 2006) has highlighted that the combination of the front-end approach with embedded delivery can be particularly effective in work place learning.

"The combination of front-end with embedded delivery can be a particularly effective model for training. This approach prioritises Key Skills, making it clear that such skills are central to all portfolios, whilst drawing on all the advantages of embedded provision where key skills are delivered throughout the vocational course within the contexts provided by the vocational training" (p8).

The good practice guide insists that flexibility is essential when planning how to introduce Key Skills or Skills for Life. It also states that how the two approaches are combined will depend on the sector, the employers that the tutor works with and the learners.

"Providers are more likely to be successful when they combine embedded and front-end approaches" (p8).

3.2.3 Team planning

The 'team planning' technique requires those involved in teaching and learning Key Skills and Skills for Life should be familiar with the order in which learners will master the different skills and tasks involved in the job, the NVQ (National Vocational Qualification) and/or the technical certificate (KSSP, 2006). Vocational staff and LLN staff need to get together to plan ahead in order to map teaching, learning and practice sessions to any existing schemes of work linked to the NVQ or technical certificate. In addition they need to identify the main vocational and/or work tasks that learners will be learning and make formal links to the LLN provision as well as sharing new ideas and good practice.

3.2.4 Team teaching

Team teaching is advocated as an effective method to ensure that Key Skills and Skills for Life teaching takes place during the early weeks of work place learning, this can happen in the following ways (KSSP, 2006):

- Joint sessions – where the Key Skills specialist works alongside the vocational tutor, helping with key skills learners are taught vocational skills and knowledge, this method allows for the Key Skills tutor to have some input into the vocational session – especially where a learner may not be able to carry out a task without the Key Skill.

- **Coaching: off the job** – Where learners have specific literacy and numeracy needs, specialists come into vocational sessions and coach learners as necessary. This may be a particularly useful method to tackle learners with special needs or learning disabilities.
- **Coaching: on or near the job** – Again, where learners have specific numeracy or literacy needs, specialists come into the work place and coach learners using a specific project or work task.
- **Organising staff release** – Releasing staff is a common problem and is related to the inability to find staff to cover for those engaged in learning. This problem was recognised as more common among small and medium sized enterprises.
- **Logistics** – Specific problems relating to the location and timing of learning were considerably greater than those associated with traditional FE settings. Finding a suitable location and coping with shifts were particularly problematic.

3.2.5 Discrete / non-embedded

Discrete learning (also known as non-embedded) is where LLN is provided through a support programme which is additional to the vocational course. This may be provided to the individual or a group based on a general diagnostic assessment of LLN needs within a work place. In this provision the LLN teaching takes the form of generic support rather than being based on the vocational subject. A learner might consider this as an extra component to the main part of the study. Discreet provision more commonly takes place outside of vocational programmes and work based learning contexts.

3.3 Barriers to work place learning

Whilst this literature has remained focussed on models of delivery in the work place, it is necessary to acknowledge that in addition to the spectrum of barriers which exist in adult learning, a number of supplementary barriers have been identified specific to work place learning in Sussex by Bates & Aston (2004). These are summarised below:

- **Employer recognition** - The extent to which employers understand the concept and importance of basic skills in the work place.
- **Poor employment relations** - Where a history of poor employer relationships exists and lack of a learning culture has been prevalent this is likely to act as a barrier to work place learning.
- **Operational management** – Resistance to promoting skills and development at an operational level even where support from senior managers may exist.

- **Resources for learning representatives** – Union learning representatives are one of the best routes available to identify people who could benefit from LLN training. However unions require sufficient support from employers and other agencies in order to be able to operate at their full potential.
- **Work place brokerage issues** – Brokering relationships between employment organisations and training providers was also seen as a process that faced a series of difficulties and constraints.

3.4 Features of good practice in numeracy teaching

Newmarch, (2005) outlines what good numeracy teaching should include in relation to teaching in the classroom. Much of this is transferable and applicable to work place learning as the following list demonstrates.

- Build learners' confidence in themselves and remove their fear of failure
- Make learning and engaging in maths an enjoyable and satisfying social activity;
- Encourage intellectual curiosity about maths issues and topics
- Encourage learners to talk about maths
- Develop reflective thinking and reasoning
- Offer challenging problems

- Develop problem solving skills and strategies
- Help learners to interpret mathematical situations, make decisions about how to tackle them and choose which mathematical skills they need to use;
- Emphasise that exploration and reasoning are more important than just getting correct answers;
- Encourage learners to move away from rote memorisation and drills and to develop understanding of concepts;
- Motivate learners to measure their success by reflecting on what they have learned and understood;
- Encourage learners to take responsibility for their learning;
- Use contexts which are relevant and appropriate for the learners;
- Use appropriate resources and develop learning materials which relate to the interests and contexts of the learners.

The Skills for Life Pathfinders show that imaginative responses to learners needs, perceptions and circumstances are necessary – including ‘bite-sized’ programmes, work with employers and specialist programmes (DfES, 2002b).

Models of adult learning (NRDC, 2003b) and pedagogical methods have been explored, but these were not directly relevant to the delivery of work place numeracy teaching. Instead, many of the pedagogical models of adult learning developed within adult education move beyond examinations of learning as a decontextualised process, to address questions relating to the meanings of and the motivations for learning in people’s lives. The report did however make the following useful point:

“learning for adults is always related to their real lives, their real problems and their real issues, and that we therefore need to try to understand and make links with these, in order for adult literacy, numeracy and ESOL provision to be meaningful, relevant and effective” (p53).

This point was further reinforced in *Beyond the daily application: making numeracy teaching meaningful to adult learners* (NRDC, 2005b) and *You wouldn’t expect a Maths Teacher to teach Plastering* (NRDC, 2006) where research has illustrated that not only do adults use very little mathematics in their everyday lives but it becomes more meaningful to learners when it is related to their own purposes or when they can see an explicit reason for learning.

A number of small scale action research projects (NRDC, 2007) found that the use of ICT enhanced numeracy teaching by encouraging a more creative approach from the learners and by enabling tutors to produce more professional learning materials. These materials allowed more flexibility and could be personalised to better adapt to individual needs. The tutors also added that the use of ICT helped to energise their numeracy teaching.

3.4.1 Good practice within delivery models

Within the practice of **embedded delivery**, a range of points have been recognised as **good practice for the successful delivery of Skills for Life**. At an organisational level, models of embedding should be designed and incorporate organisational features at an institutional level to ensure support for both staff and curriculum development. Embedding should be a strategic priority for the provider and should be part of the ethos of the organisation. In relation to delivering skills for life, LLN has been recognised as complex areas to teach and therefore expertise from both the LLN tutor and the vocational tutor should be present. Tutors are required work as a team to address learning outcomes and take collective responsibility for learners. The model which is developed should be influenced by the vocational subject but both subjects can influence each other. In doing this, the learners’ purposes and motivations must remain paramount to the process of embedding.

The **front-end approach has been recognised as being more successful when combined with embedded delivery**. This joint approach prioritises Key Skills and makes it clear that these skills are central to all portfolios, whilst drawing on all the advantages of embedded provision.

3.5 Summary of Skills for Life delivery: UK

In practice, the way in which LLN is incorporated and delivered varies widely across projects, initiatives and training providers. Five broad approaches were identified as models for the delivery of Skills for Life in the work place. These include embedded delivery, team teaching, team planning, front-end approach and discrete, however they are not exclusive to numeracy teaching.

A significant amount of research has already been undertaken in relation to the embedded delivery approach as opposed to the others and it appears to be the most progressive approach to date. Significant policy documents (Leitch, 2007) and the LSC have acknowledged this approach as being the best way to move forward with the delivery of Skills for Life in the work place.

A number of barriers to work place learning still exist which include: the extent to which employers understand the concept and importance of Skills for Life in the work place, poor employment relations, recognition at operational management levels, the organisation of staff release, location and timing of provision with learners who may work shifts, the identification of people who may benefit most from Skills for Life training in the work place and the brokering of relationships between employment organisations and training providers was also seen as a process that faced a series of difficulties and constraints.

A range of factors have been identified as good numeracy teaching. However, the literature has been dominated by one specific attribute in relation to numeracy, which is about making the teaching meaningful, relevant and applicable to the learner's context.

4. Skills for Life delivery: International

4.1 Introduction

This section focuses on issues relating to skills for life internationally. Some context is provided through the results of international surveys on adult literacy and there is a discussion on the problem of definitions in making international comparisons. This is followed by a look at the specific issues that have emerged from the international literature. These relate to participation in adult basic education programmes, the assessment and qualifications that such programmes may offer, the issue of customising programmes to the needs of learners and employers, the need to recognise the precise requirements of adult basic skills teachers, the extent to which numeracy is specifically covered in the international literature and the importance of partnerships between organisations in the success of programmes. The section ends by highlighting what the literature suggests as the key elements in exemplary adult basic education.

4.2 International context

Skills for Life has been the subject of some large international surveys, notably from the Organisation for Economic Cooperation and Development (OECD). The *International Adult Literacy Survey* (IALS) (OECD, 2000b) found that in 14 out of the 20 countries that took part in the study at least 15 per cent of all adults have literacy (defined as including numeracy) skills at only the most basic level. Its findings highlighted a very uneven distribution of skills both within and between countries and the report called for policies directed at workplace settings as a means to improving the literacy skills of the population. McKenna and Fitzpatrick's (2004) extensive study of adult basic education policies in Canada, the Republic of Ireland, New Zealand, the United States of America, the United Kingdom and Australia, noted that the IALS has been a catalyst for reviews of literacy policy in several countries. Furthermore, in light of the results, the federal government of Canada has made the acquisition of basic skills central to its workforce development agenda (OECD, 2006).

A paper written by international adult education consultant Thomas G. Sticht (2001) analysed some of the findings of

the IALS report. He noted that 23.7% of US adults were assigned literacy level 1 (lowest), while the figure for Canada was 18.2% and the UK was 23.3%. Some of the features of adult literacy education in the three countries were observed, noting in reference to the UK the target of reaching 750,000 adults that have difficulty with literacy and numeracy by 2004. In Canada, adult literacy education is primarily a provincial activity and involves providers working under different rules and procedures. Calls were made in 2000 for an integrated, pan Canadian system of adult education and lifelong learning. In the United States, the main body of providers were grouped into the Adult Education and Literacy System (AELS) which serves those most in need of education. Sticht observes that skills, content and curriculum standards have been the focus of government and professional agencies in all three countries. He states that

"the delivery of adult basic skills education for adults is a highly complex activity because of the great diversity of adults in ages, native languages, years of education, and experiences across the life span" (p.4).

The OECD's (2005) Adult Literacy and Life Skills Survey (ALL), study built on the IALS study and measured the foundation skills of prose literacy, document literacy, numeracy and problem solving. It used a point scoring methodology to measure skills. The countries covered were fewer than in the IALS study, but some comparisons were drawn between the two surveys. The ALL survey included the following findings:

- Many adults have difficulties coping with literacy and numeracy related demands that are common in modern life and work.
- Average performance levels and the distribution of skills among adults vary greatly between countries.
- Some countries have a relative advantage in a particular skills domain.

- Compared with the IALS study, skills inequality appears to be falling.
- There has been a marked increase in the rate of participation in adult education.
- Significant differences in participation patterns between countries suggest that differences in adult learning policy do matter.

Alongside these international surveys, the OECD has conducted thematic reviews of adult learning in various countries. The purpose of these was to understand adults' access and participation in education and training. They provide a useful context in which to compare developments across national boundaries. For example, it is worth noting that learning opportunities for low skilled adults in Germany is considered to be impressive, though this is in the setting of an adult population that is considered to be among the most skilled in the world (OECD, 2005c). In contrast, the US has low participation and persistence rates in federally funded adult education programmes (OECD, 2004) and Canada appears to have low levels of adult training happening, though this may be due to an above average amount of informal learning taking place which may distort the figures (OECD, 2002).

In terms of Europe, the NEWSKILLS project documented and analysed factors affecting groups at risk from low skills and aimed to make conclusions about future policy to address the challenge (McIntosh, S. & Steedman, H., 2006). Using the International Standard Classification of Education (ISCED) to define 'low skills', the aims of NEWSKILLS were to:

- understand changes to low-skilled labour market;
- investigate the extent of and reasons for a fall in employers' demand for low-skilled workers;
- investigate the factors affecting the supply of skills, particularly low-skilled adults in the workforce; and
- put research findings to the test through policy forums and case studies of employers employing low-skilled labour.

The European countries that were studied were France, the Netherlands, Portugal, Sweden and the UK. The proportion of the at-risk group was found to have declined between 1985 and 1995 – mostly due to more young people receiving further education and training. The at-risk group received less employer-provided training than higher skill groups, except in Germany where apprenticeships dominate.

McIntosh and Steedman (2006) noted that more incentives were needed to encourage the low-skilled to accept employer-provided training. They argue that the labour market position of the low-skilled has declined and those in employment are more likely to be based in sectors experiencing declining employment than those in higher skill jobs. Technological change explains much of the labour market demand and concerns were found about social skills and basic employability with an increase in expectations due to growth of service industry. The report called for institutions of learning to be diversified and become more flexible and it noted that all of the countries studied are making steps towards establishing a minimum learning entitlement. Differences were also detected between countries in the role that the education system is expected to play and in the emphasis placed on the respective roles of government and business/industry in delivering a minimum platform of basic skills. However, in spite of these differences, a general conclusion is offered that there has been "*serious policy failure ... at the level of education and training for mature adults*" and that the formal adult education system fails because it does not appeal to low-skilled people already in employment. It argues that there can be no 'one size fits all' recommendation.

Much of the international literature on literacy and numeracy comes from the United States of America where a national adult literacy survey in 1992 found nearly half of the adult population to not be functionally literate (Peterson, Ott and Wilson, 2002). Bos et al (2002) from the Manpower Demonstration Research Corporation in New York have looked at how different types of programmes affect the educational and economic outcomes of welfare recipients. They charted trends in welfare-to-work policy in the United States, noting that Human Capital Development (HCD) strategies in the 1980s for increasing welfare recipients' basic academic skills were replaced in the 1990s

by Labor Force Attachment (LFA) programmes that focused on rapid job entry. It is observed that the LFA approach was more effective in the short-term, but also that it is uncertain whether providing such job-search programmes leads to long-term self-sufficiency or employment stability. The report suggests that the apparently limited impact of adult education programmes may be due to welfare recipients not sufficiently making use of the classes they were offered. Therefore, the full potential of such programmes may not have been fully realised.

4.2.1 Definitions

One of the main difficulties in comparing approaches to Skills for Life in different countries is in taking account of the various definitions of adult basic skills that form the basis of policy. In a simple sense, this may concern whether or not computer literacy or language skills are included alongside literacy and numeracy. For example the Lisbon summit of the European Union identified new basic skills as including IT, foreign languages, technological culture, entrepreneurship and social skills (Cedefop and Eurydice, 2001). In Greece, adult education focuses on basic skills required for social and professional development, such as citizenship, speaking and writing and technical skills. In the United States, the 21st Century Workforce Commission's definition of '21st century literacy' included "*strong academic skills, thinking, reasoning, teamwork skills and proficiency in using technology*" (Ott, 2001). Moreover, Snyder, Jones and Lo Bianco (2005) discuss using ICT in adult literacy education, arguing that "*literacy education is equally and simultaneously digital literacy education*". They present findings from case study analysis that shows adult literacy learners requiring a broader technology curriculum than is currently available to them. While this report does not focus on information technology skills programmes, it is clear that they have an important place in the context of adult basic skills. The Cedefop and Eurydice (2001) survey reveals how initiatives are adjusting educational systems to the requirements of the economy and the knowledge society and it gives the example of France ensuring that ICT is used in all subject areas in colleges.

A further example of the use of ICT in adult basic education is in a working paper from the National Center on Adult Literacy at the University of Pennsylvania

(Sabatini, 2001). This paper analysed results of a formative evaluation of the United States Department of Education's LiteracyLink *Workplace Essential Skills* (WES) learning system. The project used video and Internet computer technology to provide adults with literacy instruction and gain a high school diploma or equivalent. The methods involved applying adult learning theory to the design of technological learning systems. The translation of principles such as planning for learning across the lifespan and identifying the distinctive characteristics and goals of adult learners are considered according to the strengths of each technological medium. The paper concludes by stating that the programme has raised new issues of course and classroom structure and teacher training and preparation.

Beyond issues of technology, methods of comparing literacy across populations have come into question in an article by Kevin Denny (2002). By using methods developed for the measurement of poverty, measures of literacy are calculated that are sensitive to the distribution of literacy within those defined as illiterate. Rather than a standard head count of people below a certain level of literacy, this method takes into account the severity of low literacy and then notes the subsequent affect on the rankings of individual countries. For example Germany improves its position and the USA fares much worse.

4.3 International models of delivery

4.3.1 Participation

A significant factor in the success of adult basic skills programmes is the levels of participation that they can achieve. The international literature shows this through the notable successes in Scandinavia. Sweden has particularly high levels of participation in adult education and training in comparison with other countries and this is most pronounced at lower literacy levels (OECD, 2000c). Public spending on education in Sweden is very high and therefore there are significant cultural and economic motivations for participation including financial incentives, different access points to education and a broad range of programmes available to adults. There is also an emphasis on improving programmes and there have been recent attempts to make learning more flexible.

The consistently high literacy proficiency scores of Nordic countries have made them interesting benchmarks for other countries that participated in the International Adult Literacy Survey. Tuijnman (2003) has conducted a comparative analysis of the distribution of adult literacy skills, participation and adult education and labour market outcomes in order to discover whether there is any such thing as a "Nordic model" of adult education. He suggests that rather than the existence of a well-defined model, there is a general Nordic 'approach' that is characterised by high participation rates and a supply driven role of the public sector in targeting funding, provision and operations. The results show that there are two important factors in those high rates, namely the level of public support for adult education for the low-skilled and emphasis on equal access. Tuijnman offers reasons for the Nordic region's greater apparent success in reaching out to disadvantaged groups that usually participate less than better off people. These include the high quality of the system of initial schooling, the relative openness of tertiary education to adults and the system of municipal based public adult education provision.

The difficulties of reaching vulnerable groups is acknowledged in a report from Cedefop and Eurydice (2001) that observes that policy is moving in the direction of encouraging individuals to assume responsibility for their own lifelong learning whilst considering how firms and government can support. Many initiatives aim to reach vulnerable groups that have little training and few qualifications. However, studies have demonstrated that the most educated are more likely to sign up for lifelong learning and this may lead to 'lifelong inequality'. The report cites examples from various European countries of the types of programmes that exist. These include the provision of 'basic adult education' in Belgium for people with little or no schooling plus 'second chance education' for over-18s to obtain secondary education diplomas. Furthermore, in Greece adult education in basic skills is offered which involves teaching literacy, numeracy and personal development to people in general and particular socially excluded groups.

Sticht's (2001) study of adult literacy policy in Canada, the United Kingdom and the United States, highlights three

commonly identified barriers to participation in adult literacy education. These are situational barriers (such as work schedules, transportation issues etc), dispositional barriers (personality and attitudes of the potential student) and institutional barriers (instructions, policies, practices and requirements of programmes). Sticht notes that drop out rates were high in all three nations, though those programmes that were more intensive, of shorter duration and highly focussed on jobs experienced greater levels of persistence amongst learners.

An example of the influence of institutional factors comes from a comparative study of the basic skills strategies of steel company Corus in the UK and the Netherlands. Leisink and Greenwood (2007) studied the factors that shape workplace training practices and influence workers' participation. In the Netherlands, line managers were found to have significant influence on the participation of their workers in spite of the formal and collective training arrangements that are in place. Training is determined by what best suits the workers. In contrast, UK line managers arrange for training dependent on operational needs and training is not regulated by agreements, making participation more variable. Considering that steel production facilities in the two countries exist in similar circumstances of competition, it is interesting that there are such differences in training arrangements. Leisink and Greenwood suggest that differing institutional frameworks are only part of the reason with union activities and the attitudes of managers and workers also significant.

An OECD (2005b) report on promoting adult learning calls for a stronger emphasis on financial incentives and on policies to increase the participation of low-skilled adults. It states that governments should focus their attention on establishing regulatory and institutional arrangements that help to encourage investments by firms. As employers tend to think that more will be gained from training the higher educated, governments should develop incentive programmes to increase workplace learning of the low educated and low-skilled.

It notes the substantial variation in participation rates and observes that there are two models of participation and duration of training. There is the 'extensive' model which

has a low volume of training to a large number of adults and an 'intensive' model that concentrates training efforts on a smaller number of people.

4.3.2 Assessment and qualifications

The question of assessment in adult basic education offers few straightforward answers. An OECD thematic review of adult learning in the United States (2004) has observed that the nature of adult education programmes complicates assessment issues as learners have a wide range of goals and participate for different amounts of time. Furthermore, local curricula vary widely and therefore it is difficult to ensure assessments are aligned with instructional content.

An OECD (2007) policy brief looks at how national qualifications systems can be used to promote lifelong learning. It states that the ultimate goal is a system that provides high-quality recognition of learning. A study of approaches in 15 countries has revealed 9 broad policy responses to help in refining lifelong learning strategies. These are: increased flexibility and responsiveness, motivating young people to learn, linking education and work, facilitating open access to qualifications, diversifying assessment processes, making qualifications progressive, making the qualifications system transparent, reviewing funding and increasing efficiency and better managing the qualifications system.

It also lists mechanisms to trigger more and better lifelong learning. The most successful of these are: establishing a qualifications framework, providing credit transfer (gaining credit for existing skills), creating new routes to qualifications, recognising non-formal and informal learning and optimising stakeholder involvement in the qualifications system.

Although the policy brief covers a wider subject area than adult basic skills, it does argue for qualifications systems to create entry points for those with few initial qualifications, for example by recognising basic employability skills learnt in the workplace. It also comments that it would also be useful to find ways of measuring informal learning in the workplace.

The OECD's Centre for Educational Research and Innovation (CERI) has recently been engaged in a multi-country review of formative assessments of adult LLN programmes (Looney, 2007). It builds on their previous research (OECD/CERI, 2005) which found that higher levels of student achievement could be achieved through formative assessments. These are defined by the OECD as

"frequent, interactive assessments of learner progress to identify learning needs and shape teaching" (p.373).

Findings from several countries illustrate current practice and key issues for the development of formative assessment in adult LLN settings. Even though most of the countries do not have high profile policies for formative assessment, such approaches are implicit in policies that attempt to determine learner capacities and needs. It is noted that an important condition for effective formative assessment is for certification to be based on a criterion-referenced approach, rather than being in reference to learners' peers.

In terms of current practice, the paper compares different countries' diagnostic assessments, with some procedures being more formalised than others. It then discusses the importance of building positive relationships with and among learners through approaches that may involve accounting for their feelings about the education setting and ensuring a relaxed atmosphere where learners can come and go as they please. The research also looked at Individual Learning Plans (ILPs), which are considered vital for ensuring that learners are deeply engaged in the learning process. These can be found operating in several countries with the rationale that LLN programmes should be relevant to the learner's needs and goals. A similar approach is that portfolios or checklists which are popular in Norway and Denmark. The research suggests that most LLN learners are working toward some kind of certification, though there is a need to make sure that the tests that go with this do not create excessive anxiety or 'teaching to the test'.

4.3.3 Customising programmes to the needs of learners and employers

A noteworthy area of discussion on the structure of adult basic skills programmes is to do with achieving the correct balance between academic/classroom-based learning and learning that is based in the workplace. In fact, Fisher and Martin (2000) have outlined three types of programme available to practitioners of work-related learning and literacy. Firstly, the academic approach focuses on academic skills such as reading, writing and arithmetic. Although it is a dominant form of adult literacy education, there is evidence that it might be inappropriate for those with the lowest literacy levels. Secondly, the situated context/cognition approach is the idea that placing learning in a context of work, rather than learning for its own sake, may aid learners. One of the main methods in this approach is where teachers model tasks and students are encouraged to perform the tasks independently. The third approach involves integrated programmes that try to counter the limiting aspects of the situated cognition approach by combining it with an academic approach in order to teach skills that can be generalised to a wider range of contexts. It is argued that such training may offer occupational or soft skills training.

The Workforce Strategy Center (2003), based in New York, has produced research that supports the idea of contextualising basic skills learning for adults. It states that there is growing evidence that workforce and education systems should be reorganized around career pathways that integrate education, training and work, suggesting that

“contextualised basic skills instruction is often more successful than traditional models of adult education in engaging disadvantaged individuals and linking them to work” (p.1).

The study drew lessons from community colleges that have made such connections by teaching contextualised basic skills to disadvantaged adults. The colleges went beyond other adult education programmes by integrating developmental and academic content, developing new curricular materials, maintaining active links with employers, finding resources to fund the programmes and producing programme outcomes in terms of job placement and earnings.

Challenges were faced in balancing relevance and content in classroom instruction, enrolling and engaging lower-skilled students, providing evidence of long-term programme impact and serving more than a small portion of the potential student population.

Issues in promoting company-funded workplace basic skills programmes have been addressed in a paper from the National Institute for Literacy in the United States (Levenson, 2001). These issues include companies' rationale for investing in workers' basic skills, the factors that need to be in place for a workplace basic skills programme to be adopted, customising the programme to the needs of the business and its employees and the limitations of programmes based in the workplace. The results are reported from qualitative research into programmes at eight different organisations in the United States. These lead to recommendations being made for basic skills practitioners, companies and policy makers, including:

- practitioners being highly flexible in meeting a company's needs, particularly when first engaged;
- for companies to integrate basic skills training with more advanced offerings it can be beneficial;
- state level workforce development departments or equivalent can be useful sources of financial and technical assistance in the provision of basic skills training; and
- policy makers need to consider placing too many conditions on the provision of grants may lead companies refusing them.

4.3.4 Teaching

The issue of the required training and experience to be an effective teacher of adult basic skills is covered in several reports. Sticht (2001), states that the professionalism and preparation of teaching staff has been a major concern in the UK, US and Canada. All have developed teacher training methods and procedures with the US Department of Education having implemented the Pro-Net project to develop competencies and performance indicators for adult literacy educators. Bos et al (2002) have found (in a study of the effect of adult education in welfare-to-work

programmes) that there is more chance of gaining from participation, the higher the levels of teachers' experience and education in adult education programmes. In addition, one of the lessons from Levenson's (2001) study of company-funded programmes was that some adult educators may have strong skills in teaching, but they may have little experience of working in a business environment. Similarly, a separate report on the US has noted that adult educators often come into the field without specific training in teaching adults (OECD, 2004). Therefore, Levenson argues that building networks of practitioners for the purposes of professional training and knowledge sharing could be very useful and help to make workplace basic skills programmes more sustainable.

McKenna and Fitzpatrick (2004), in a review of international trends in adult literacy policy, concluded that literacy teaching workforce issues need particular attention in Australia. This view was supported by a slightly later study that looked at training services provided through the Workplace English Language and Literacy (WELL) programme which aims to support language and literacy training that enables workers to meet the demands of their employment (Berghella, Molenaar & Wyse, 2006). This examined the professional development needs of WELL practitioners and proposed ways of making sure the needs of new and existing practitioners are met. Key skills of WELL practitioners are listed as including experience of working with adults, understanding workplace culture, flexibility, integrity, empathy, ability to work independently, ability to deal with a range of stakeholder needs and good communication skills. Induction support for practitioners was found to be haphazard and appropriate entry-level qualifications were thought to be required to deliver language, literacy and numeracy in the workplace. Furthermore, with opportunities for professional development limited and needing to be improved, the report called for the provision of such professional development to be embedded within the vocational education and training system. It also asserted that a shortage of WELL practitioners emphasises the need for a national minimum education standard. The absence of a recognised qualifications pathway means that new entrants are being severely limited by an entry pathway based on experience.

A recent OECD (2008) report on teaching, learning and assessment for adults offers further requirements of the teachers of adult learners. These are considered to be strong subject knowledge and expertise in assessment combined with softer skills such as flexibility and empathy. The report acknowledges that meeting such high expectations is a challenge considering financial constraints, the precarious and often part-time employment status of instructors and the lack of instructors holding specialist adult LLN qualifications.

4.3.5 Teaching Numeracy

There has been little international literature that specifically covers the issue of adult numeracy or programmes focussed in this area. Gal (2002), states that in the United States, the numeracy component of adult skills has received relatively little visible attention. Only sporadic information is available on the prevalence of mathematics-related instruction in adult education programmes. Condelli (2006) supports this view, observing that the US has received limited attention to numeracy instruction and little research on how local adult education programmes teach mathematics or numeracy. Reasons include there being little agreement on what constitutes numeracy and poor professional development in numeracy. Gal (2002) sees this as a key issue in numeracy provision, arguing that

"Many position papers summarizing recent national initiatives or ABE policy recommendations continue to employ umbrella terms such as literacy or basic skills without acknowledging the complex and multidimensional nature of numeracy skills or exploring the implications of the links and differences between literacy and numeracy for practitioners and programs" (p.29).

Condelli (2006) describes the US Department of Education's Adult Numeracy Initiative as the first major attempt to improve research and practice in adult numeracy. Among its aims are to identify the type of professional development and teacher certification that should be required and also to identify assessment instruments appropriate for measuring adult numeracy skills. Condelli's literature review is part of the first phase of this initiative.

Connected with this work is an 'environmental scan' (Escan) of adult numeracy professional development initiatives conducted by Sherman et al (2007) with the aim of providing programme features worthy of replication, making recommendations for sustaining professional development initiatives and developing a research agenda. It found that there has been a limited number of adult numeracy professional development initiatives. They speculate that this may be due to contributing factors such as the part-time nature of the adult education field, limited resources for competing professional development initiatives and the fact that numeracy is often included as part of adult basic education.

Research has also shown a lack of qualified instructors with knowledge of maths and instructional strategies for teaching maths to adults. The report states that adult maths teaching should be decontextualised. In other words, there should be more focus on manipulation of numbers than on critical thinking and problem solving skills. Professional development delivery models are suggested including training workshops, individually guided professional development, observations and assessment, product or process development and other learning embedded in a programme (such as study circles or mentoring/coaching).

The majority of initiatives examined provided adult numeracy professional development through multiple workshops extending over a period of time. Many were facilitated by adult education numeracy experts. Professional development content tended to be aligned with either state or national mathematics standards or the content from the General Educational Development (GED) test.

One other finding of interest is reported by Bos et al (2002) who researched the effects on welfare recipients of entering a welfare-to-work training programme. While stays of less than a year in adult education in general did not improve reading skills measurably and longer stays were associated with substantial gains, improvements in maths would be much quicker, but gains in those skills would tend to halt after about six months of adult education.

As far as Europe is concerned, Turnball (2006) describes a pan-European drive to improve numeracy skills. Providing EU funding since October 2003, SUNIVOT (Supporting Numeracy in Vocational Training) aims to develop numeracy skill levels within vocational learning through collaboration between partners around the EU. Wakefield College in the UK is a lead partner and is partnered by organisations in Finland, Germany, Greece, Lithuania and Sweden. Partners have found the international aspect of the project to be rewarding. Meetings revealed marked differences in how numeracy had been addressed in the UK and other countries.

4.3.6 Partnerships between organisations

A common element in adult education programmes relates to the nature of partnerships between the organisations involved. Lessons learned from Askov's (2000) evaluations of three projects of the National Workplace Literacy Program (NWLP) in the United States, included the importance of a state structure to provide support for staff training and curriculum development and also the importance of involving trade unions in working towards a common purpose.

In response to the 21st Century Workforce Commission's prediction that America's economy depends directly on the extent to which Americans reach a new level of literacy, a report from the Institute on Family and Neighbourhood Life in the United States describes innovative approaches by states, communities and organisations in forming systems of workforce development (Ott, 2001). The report states that there are many models of workforce development systems and it describes approaches to systems change that range from community to national level. Involvement in partnerships is common to all models aimed at supplying employers with workers that have the appropriate skills. Examples of models are:

- **Nonprofit intermediaries and lead agency partnerships.** For example, the Centre for Employment and Training which retrained displaced (Mexican) immigrant farm workers in California with a focus on the lowest educated and those with little English language skills. Job training was customised to meet employers' requirements with no prerequisites for

enrolment and training lasted for an average of three to four months, though it can be longer if necessary. An evaluation found that eighty per cent of graduates were employed six months later with above average earnings. The long term commitment to trainees and employers is cited as the reason for the programme's great success. Another example is a coalition for new manufacturing education which provides trainees with basic refresher education before allowing them on a manufacturing skills based course where time is split between classrooms and the shop floor.

- **Business and Industry Coalitions and partnerships.** These often involve small and medium-sized enterprises sharing the costs and benefits of training. Examples include a job brokering service that links job seekers with low incomes to high demand jobs and also assists in creating work-based learning opportunities. The service also coordinates the development of short-term job training courses and apprenticeship programmes at community and technical colleges.
- **Public agency lead partnerships.** Key elements of this relate to public agencies cooperating with workers and firms in addressing the literacy and skills deficits of local workforces. The examples given document the benefits of coalition building between firms and public educational providers.
- **Integrated service systems and one-stop center models.** These were often originally developed in response to a local economic crisis and involve one stop access points for universal and lifelong learning. Individual job seekers are assisted through core services that provide information on job listings and intensive services targeted at people qualifying as 'not job ready'. Training services are also offered on-site for those struggling to find employment.
- **State reforms and systemic models of change.** These are changes that aim to simplify and coordinate the components of the workforce development system and to link job training programmes to education reform and economic development strategies.

Research by the OECD (2006) has investigated initiatives that aim to fill the gap between labour market policy and vocational training in order to correct workers' weaknesses and meet employers' evolving needs. Its report on 'Skills Upgrading' describes how various actors lead these initiatives, including local government, unions and community organisations. They are supported by the instruments and funding sources of central (and European) government. The example of educational planning in Denmark saw case studies of 3 enterprises illustrating 'the proper circumstances for adopting competence development strategies in the workplace'. Denmark has a track record of success in providing opportunities for skills upgrading for the low-qualified with policies aiming to promote employment and economic growth. Experiences in one Danish region shows that initial barriers faced by employers and low-skilled workers can be overcome through a well-devised strategy of educational planning. Although the three firms studied in the region differed in terms of their experiences and motivations, they all relied on brokers to get things going. The report also cites examples in the US and UK where the main driver to participation by employers in initiatives to encourage skills acquisition is the availability of free, brokered training. In the case of workforce intermediaries in the US, some state and local measures have been targeted to help low-wage workers overcome barriers to receiving training. Local workforce intermediaries help local businesses stay competitive and find solutions to their workplace problems.

4.4 Features of good practice: international

Although there are few examples in the international literature of specific models of good practice in delivering adult basic skills, there are some references to what features that good practice in this area should have. For instance, the OECD (2008) have recently stated that exemplary practice should see learners progress through five steps. These are: diagnosis of learning needs, developing strong relationships within the classroom, the use of assessment to provide information on learning (and feedback), a focus on building learner autonomy and tracking learner progress.

A framework for strengthening policy and practice was also asserted with the following suggestions:

- promote active debate on the nature of teaching, learning and assessment;
- strengthen professionalism;
- balance structure and flexibility: formative assessment as a framework;
- strengthen learner-centred approaches;
- diversify and deepen approaches to assessment and programme evaluation for accountability;
- devote the necessary resources: people, time and money; and
- strengthen the knowledge base.

Other attempts in the literature to highlight the requirements of a **successful adult basic education programme** include that of Fisher and Martin (2000). They cite the common characteristics of eight **exemplary educational programmes** aimed at low-literate welfare recipients in the United States. These characteristics include:

- a focus on employment-related goals;
- hands-on experience – work-based practical demonstration of the use of skills taught in the classroom;
- collaboration with welfare agencies and other community organisations so that programmes are connected with needs relating to child care, health, housing, abuse, transport;
- early intervention and personal attention in addressing problems; and
- a commitment to continuous staff development.

Peterson, Ott and Wilson (2002) look at things from a more work-based perspective. They describe the **key elements** in a successful workplace literacy initiative. These include the ongoing involvement of various interested parties and partners, employees involved in all aspects of programming, analysis of on-the-job literacy requirements, instructional materials developed that are related to the specific literacy skills required on the job. The report goes on to describe the following different **models** that have been **successful** in the state of South Carolina and nationally in the United States:

- **Basic workplace programmes** - These are generally in-house, generated by employers' observations of need and teachers are hired-in.
- **Modified workplace programmes** - These consist of a combination of general workplace and literacy skills. For example the Midland Literacy Initiative developed a generic workplace curriculum used in a number of businesses.
- **Customised workplace programmes** - These entail full scale educational programmes aimed at retooling and revitalizing the entire workforce.

The authors indicate some potential challenges in creating an adult literacy system relating to demography, technology and lack of public support. They also offer **five steps** in developing a workplace programme. The steps were to: create awareness in order to gain community support, prepare the businesses involved by building understanding of workplace literacy needs, analyse business needs and the capacity to address the literacy problems present, negotiate and establish a plan for providing literacy services and implement the workplace literacy programme with established partnerships and systems of support.

4.5 Summary of Skills for Life delivery: international

This section has looked at coverage of Skills for Life related issues in the international literature. It has noted the influence of major international surveys on the direction of national-level policies related to adult literacy and numeracy. The difficulties of comparing programmes in

different countries - particularly considering the various definitions of adult literacy - have been highlighted. Although few specific models of programmes have been identified, some themes have been drawn from the literature that suggests possible approaches to adult literacy or numeracy. These can be summarised as follows:

- The success of an adult basic education programme may be determined by levels of participation by learners. These levels vary in different countries and are influenced by the levels of public support that they receive. Factors in participation in work-based learning may be the attitudes of managers or the institutional arrangements of employers and unions.
- There is a requirement for assessments and the acquisition of qualifications to be a flexible process that is sensitive to the needs of learners. An example of this is the use of formative assessments.
- Programmes should be customised to the specific goals and needs of learners and employers with both groups being involved in the design of courses. This may involve contextualising the learning or integrating basic skills instruction with more advanced training.
- The professionalism of adult teachers could be strengthened with recognition of what makes them distinct from others and a commitment to their continuous development.
- There is a very limited amount of research available on adult numeracy initiatives, though more appears to be happening in America to improve research and practice in adult numeracy.
- Barriers to the development of adult basic education programmes can be overcome through well organised partnership working between government, employers and learning providers. Strategies that are developed through such collaborations are particularly effective when they are fully committed to employers and learners.

5. Tutors qualification levels

5.1 Background and overview

In November 2000, the DfEE declared that from September 2001, all tutors employed to teach basic skills would be required to achieve a specialist basic skills teaching qualification, this was reinforced by the *Skills for Life Strategy* (DfEE, 2001), which stated that tutors specialising in literacy and numeracy would be expected to undertake new professional qualifications. The strategy made a commitment to enhance the quality of learning by introducing a new qualifications framework and by dedicating more resources to those who lead the teaching. Prior to the review *A Fresh Start* conducted by Moser (DfEE, 1999), there were no formal requirements for tutors of numeracy, literacy and ESOL to be qualified in the same way in which teachers of other subjects are or any government initiatives to improve the education of teachers.

The *Skills for Life Strategy* (DfEE, 2001) introduced a new framework for tutors and other staff teaching and supporting adult literacy, numeracy and ESOL. The new specialist qualifications were designed to ensure that tutors have the same access and opportunities as those who teach other disciplines. From September 2002 all new tutors in the post-16 sector specialising in literacy and numeracy in any context were required to gain qualifications that meet Further Education National Training Organisation (FENTO) subject specifications for literacy, numeracy and from September 2003, for ESOL (DfES, 2003). FENTO was responsible for teaching and education standards and was superseded by the Lifelong Learning Sector Skills Council (LLSSC). LLSSC has had much wider responsibilities than FENTO, such as the professional development of those working in FE, work based learning, and community learning and development.

The vision for the reform of further education was stated in *Success for All* (DfES, 2002). It stated that all teachers should be qualified to teach and it proposed that by 2010 only new entrants to teaching in FE Colleges would not be qualified and this would be on the proviso that they are expected to achieve appropriate qualifications within a given timeframe. A range of initiatives have been developed to support the training of Skills for Life tutors. These include dedicated development programmes leading

to qualifications and associated schemes which aim to provide resources and signposting facilities for existing and aspiring tutors. A few examples include the SflQI led by the LSC, the Workplace Basic Skills Network and BBC Skillswise.

In 2007 the 'New overarching professional standards for teachers, tutors and teacher educators in the Lifelong Learning sector came into place. These standards are now used in all generic post-compulsory education courses, and were a result of some of the recommendations in the *Skills for Life Strategy* (DfEE, 2001) which stated that tutors which specialise in numeracy or literacy would be expected to work towards specialist qualifications.

The conclusion of the Public Accounts Committee (2005) highlighted the concern about the quality of teaching and the qualifications levels of Skills for Life tutors:

"The quality of learning is still too low and a more skilled teaching workforce is the key to improvement. Adult literacy and numeracy teachers were previously neglected and under trained. But there is no data on the numbers of practising teachers who are not qualified. Teaching qualifications for new teachers and continued professional education for existing teachers were introduced in 2002. The department intends that all teachers should be qualified by 2010. The Learning and Skills Council should assess the extent of non qualification among practising teachers and set a date by which all the providers in receipt of public funds use only qualified teachers" (paragraph 9(ii)).

In its response to this Public Accounts Committee's conclusion, DfES confirmed that it would undertake a survey in 2006 to ascertain the proportions of qualified to non-qualified staff currently practising and that this will be followed by a similar survey in 2009, which will demonstrate progress made towards the 2010 target.

5.2 Who is teaching Skills for Life and standards

A review undertaken by the NRDC (2004) provided some indication about the demographics and qualifications of tutors. The review considered tutors who took part in Skills for Life training programmes for literacy, numeracy and

ESOL teachers from 2001 to 2003. The review found that:

- more than 80% literacy, numeracy and ESOL teachers are female;
- more than half of literacy and numeracy teachers are aged over 46;
- 75% of ESOL teachers, and over 90% of literacy and numeracy teachers are white;
- 79% of teachers have a qualification at level 4 or above, 90% at level three and above;
- 56% have recognised teaching qualifications, such as Cert Ed/PGCE, but many have other specialist professional teaching qualifications;
- 7% have only an introductory teaching certificate in the form of C&G 9281, and no other teaching qualifications;
- 5% have no teaching qualifications at all; and
- many of the organisations in which teachers of ESOL, literacy and numeracy are employed have a high number of staff on fractional or agency contracts.

The findings in relation to tutors levels of qualifications stated above are contradictory to those in the following paragraphs.

A survey carried out by the Times Educational Supplement (2004) illustrated that many training providers rely on under-qualified, hourly-paid and part-time tutors. It also found that 71% of work based learning providers, FE colleges and adult and community centres **reported shortages of tutors qualified to teach basic numeracy**. These findings mirrored those reported by ALI (2004) on the teaching of LLN support across the post-16 sector. Some of the key findings from the report follow:

- few trainers were skilled at teaching literacy, numeracy or ESOL;

- good practice in teaching and learning was rare;
- trainers relied on paper based materials too much;
- most of the additional support in work based learning was provided during off the job training, very few trainers arranged for learners to receive support at work; and
- managers were aware that there was a shortage of good literacy, numeracy and ESOL tutors, but few had adequate strategies to deal with this.

There is a need for greater expertise in teaching numeracy (ALI & OfSTED, 2003), too often numeracy is taught by rote learning rather than by developing numerical concepts.

Effective Teaching and Learning: Numeracy (NRDC, 2007) found that considerable improvements are required in training specialist numeracy tutors if greater progress is to be made. It also recognised that there is a lack of training opportunities and professional development opportunities available within this field. Within the study teachers were generally well qualified to teach at Skills for Life levels, **however some teachers lacked sufficient grounding and had not been training to use and deliver basic mathematical concepts**. This is not surprising considering there is no formal requirement in the current Subject Specifications for Adult Numeracy teachers to have a firm understanding of basic concepts. General teaching qualifications in the sector (e.g. PGCE) only deal with generic concepts rather than subject specific pedagogy. This is reinforced by Loo (2007) who explores adult numeracy education as a way of investigating the multifaceted area of learning to be a teacher, and highlights the importance of teacher education programmes to continuously link subject and pedagogic knowledge. Research (NRDC, 2004) has also identified the oversight of subject related pedagogy in the Subject Specifications for Teachers of Adult Literacy, Numeracy and ESOL originally published by FENTO in 2002.

Loo (2006) suggests an *adult numeracy typology*, and provides a platform to critically assess how adult numeracy

teacher training courses maybe structured and classified and insists that

"...a debate on this area of adult learning be started in England" (p476).

The varied course structures and delivery styles currently present in teacher training courses of adult numeracy are examined by Loo (2006). The 'ideal' adult numeracy course draws on good practices which have been uncovered in the research undertaken and it recommends a 'joint adult numeracy' course as opposed to a subject specific course. The course will offer the trainee a better all round training approach where the mathematics content can be related to teaching knowledge. This type of course will cater for trainees with no teaching qualifications, experiences and/or perhaps subject knowledge and those which already have teaching experience but lack subject knowledge. The course would be responsive to the trainees teaching past and previous experiences and will attempt to

"...engage the trainee with a professional approach beyond the current requirements from subject specifications and teaching standards" (p475).

The course adopts a modular approach and includes one large subject specifications core module which is delivered in parallel to the teaching skills core module. There are also a range of additional modules which address 'how to be a teacher of adult numeracy' and teaching practices.

A new adult numeracy plan is being developed in conjunction with the National Centre for Excellence in Teaching Mathematics (NCETM). The plan will deal with areas such as **teaching and learning issues in numeracy**, raising demand, and ensuring capacity⁴.

5.3 Summary of tutors qualifications levels

Prior to the review *A Fresh Start* (DfEE, 1999), there were no formal requirements for tutors of numeracy, literacy and ESOL to be qualified in the same way in which teachers of other subjects are. In November 2000, the DfEE declared that from September 2001, all tutors employed to teach basic skills would be required to achieve a specialist basic

skills teaching qualification, this was reinforced by the *Skills for Life Strategy* (DfEE, 2001), which stated that tutors specialising in literacy and numeracy would be expected to undertake new professional qualifications. The *Skills for Life Strategy* (DfEE, 2001) introduced a new framework and from 2002 all new tutors in the post-16 sector specialising in literacy and numeracy were required to gain qualifications that meet FENTO subject specifications for literacy, numeracy.

The vision for the reform of further education was stated in *Success for All* (DfES, 2002). It stated that all teachers should be qualified to teach by 2010 (new entrants to teaching in FE Colleges would be exempt on the proviso that they are expected to achieve appropriate qualifications. A range of initiatives have been developed to support the training of Skills for Life tutors.

Research undertaken by the NRDC (2004) indicated that a high proportion of Skills for Life tutors are qualified at Level 3 and Level 4 and that only a small proportion has no qualifications at all. These findings are contradictory to a survey carried out by the Times Educational Supplement (2004) which illustrated that many training providers rely on **under-qualified tutors** and ALI (2004) which reported that **few trainers were skilled at teaching numeracy**.

Effective Teaching and Learning: Numeracy (NRDC, 2007) stated **that considerable improvements are required in training specialist numeracy tutors** if greater progress is to be made. Research (NRDC, 2004) also identified the oversight of subject related pedagogy in the Subject Specifications for Teachers of Adult Literacy, Numeracy and ESOL originally published by FENTO in 2002.

⁴ <http://www.dfes.gov.uk/readwriteplus/news.cfm?page=168®ion=1&CFID=84330828&CFTOKEN=15067366>

References

ALI (2004) *Chief Inspectors Annual Report 2003-2004*.

London: Adult Learning Inspectorate.

ALI/OfSTED (2003) *Literacy, Numeracy and English for Speakers of Other Languages: A Review of Current Practice in Post-16 and Adult Provision*.

London: Adult Learning Inspectorate/OfSTED.

<http://www.ofsted.gov.uk/assets/3410.pdf>

Askov, E. (2000) 'Workplace literacy: evaluation of three model programmes'. *Adult Basic Education*, 10(2), Summer, pp.100-107.

Bates, P. and Aston, J (2004) *Overcoming Barriers to Adult Basic Skills in Sussex*.

Brighton: Institute of Employment Studies.

<http://www.employment-studies.co.uk/pubs/report.php?id=1552slsc>

Berghella, T., Molenaar, J. and Wyse, L. (2006) *The Professional Development Requirements of Workplace English Language and Literacy Programme Practitioners*.

Adelaide: National Centre for Vocational Education Research.

<http://www.ncver.edu.au/publications/1682.html>

Bos, J.M., Scrivener, S., Snipes, J. and Hamilton, G. (2002) *Improving Basic Skills: the Effects of Adult Education in Welfare-to-Work Programs. National Evaluation of Welfare to Work Strategies*.

New York: Manpower Demonstration Research Corporation.

http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1a/00/d6.pdf

BSA (2001) *Adult Numeracy Core Curriculum*.

London: Cambridge Training and Development on behalf of The Basic Skills Agency.

http://www.counton.org/resources/adultcc/pdfs/resource_130.pdf

Brookes, B (2006) *Skills for Life and Work: The Journey from Policy through Practice to Progress and Promise for All*.

Tribal Group.

<http://www.ctad.co.uk/files/Skills%20for%20Life%20and%20Work%20%20the%20journey%20from%20policy%20through%20practice%20to%20progress%20and%20promise%20for%20all.pdf>

CEDEFOP and EURYDICE (2001) *National Actions to Implement Lifelong Learning in Europe*.

Brussels: EURYDICE.

http://www.eurydice.org/ressources/Eurydice/pdf/0_integral/026EN.pdf

Condelli, L. (2006) *A Review of the Literature in Adult Numeracy: Research and Conceptual Issues*.

Washington: American Institutes for Research.

<http://www.ed.gov/about/offices/list/ovae/pi/AdultEd/numlitrev.doc>

Condelli, L. and Baker, H. (2002) *Developing Performance Assessments for Adult Literacy Learners: A Summary*.

Washington: US Department of Education.

http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/60/06.pdf

- Denny, K. (2002) 'New methods for comparing literacy across populations: insights from the measurement of poverty'. *Journal of the Royal Statistical Society*, 165(3), pp.481-493.
- DfES (1996) *Getting Started with Key Skills and Skills for Life, Guide to Good Practice*. Bristol, Key Skills Support Programme.
- DfEE (1999) *Improving Literacy and Numeracy: A fresh start*. Report of a working group chaired by Sir Claus Moser. Sudbury, DfEE Publications.
<http://www.lifelonglearning.co.uk/mosergroup/>
- DfEE (2001) *Skills for life: the National Strategy for Improving Adult Literacy and Numeracy Skills*. Nottingham, DfEE Publications.
http://www.dfes.gov.uk/readwriteplus/bank/ABS_Strategy_Doc_Final.pdf
- DfES (2002) *Success for All*. London, DfES.
http://www.dfes.gov.uk/consultations/downloadableDocs/SOR_189_1.pdf
- DfES (2002b) *Skills for Life: The National Strategy for Improving Adult Literacy and Numeracy Skills 'What Works' – Early findings from the pathfinder projects*. Nottingham: DfES.
<http://www.dfes.gov.uk/research/data/uploadfiles/RR342.pdf>
- DfES (2003) *21st Century Skills: Realising our Potential. Individuals, Employers, Nation*. Cm 5810. Norwich: HMSO.
- DfES (2003) *Skills for Life: the National Strategy for Improving Adult Literacy and Numeracy Skills – Focus on Delivery to 2007*. Nottingham, DfES Publications.
<http://www.dfes.gov.uk/readwriteplus/bank/SfL%20Document.pdf>
- Evans, C. and Pye, J. (2004) *Tutor Training: Building Capacity in Skills for Life*. Marchmont Observatory: University of Exeter.
http://www.swslim.org.uk/documents/themes/lt7_final.pdf
- Fisher, J.C. and Martin, L.G. (2000) 'The welfare-to-work transition in the United States: implications for work-related learning'. *International Review of Education*, 46(6), pp.529-544.
- FSA/BSA (2003) *Adult Financial Capability Framework*. London: Financial Services Authority/Basic Skills Agency.
<http://www.bba.org.uk/pdf/58072.pdf>
- Gal, I. (2002) 'Systemic needs in adult numeracy education', *Adult Basic Education*, 12(1), Spring, pp.20-33.

House of Commons Committee of Public Accounts (2006) *Skills for Life: Improving Adult Literacy and Numeracy – Twenty-first Report of Session 2005-06*,

London: House of Commons.

<http://www.publications.parliament.uk/pa/cm200506/cmselect/cmpublicacc/792/79202.htm>

KSSP (2006) *Getting Started with Key Skills and Skills for Life, Guide to Good Practice*.

Bristol: Key Skills Support Programme.

<http://www.key-line.org.uk/documents/Getting%20started%20guide%202006.pdf>

Leisink, P. and Greenwood, I. (2007) 'Company-level strategies for raising basic skills: a comparison of Corus Netherlands and UK', *European Journal of Industrial Relations*, 13(3), pp.341-360.

Leitch, S (2006) *Review of Skills*.

HM Treasury.

http://www.hm-treasury.gov.uk/independent_reviews/leitch_review/review_leitch_index.cfm

Levenson, A.R. (2001) *Investing in Workers' Basic Skills: Lessons from Company-Funded Workplace-Based Programs*.

Washington: National Institute for Literacy.

http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/19/dd/ee.pdf

Loo, S (2006) 'Adult Numeracy Teacher Training Programmes in England: a Suggested Typology'.

International Journal of Lifelong Education, 25(5), pp463-476.

Loo, S (2007) 'Learning to be teachers of adult numeracy'. *Journal of Education for Teaching*, 33:4, pp425 – 440.

Looney, J. (2007) 'Formative assessment in adult language, literacy and numeracy', *Assessment in Education*, 14(3), pp.373-386.

LSC (2007) 'Delivering embedded literacy, language and numeracy in the post-16 vocational programmes'.

Learning and Skills Council Fact Sheet 8, September 2007.

http://readingroom.lsc.gov.uk/lsc/National/nat-factsheet8-_embedded-learning250907.pdf

LSC (2007) *Our Statement of Priorities: Better Skills, Better Jobs, Better Lives*. Coventry:

Learning and Skills Council.

<http://readingroom.lsc.gov.uk/lsc/National/nat-statementofpriorities-nov07.pdf>

McIntosh, S. and Steedman, H. (2006) *Low Skills: A Problem for Europe. Final Report to DGXII of the European Commission on the NEWSKILLS Programme of Research*.

European Commission.

http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/19/44/89.pdf

McKenna, R. and Fitzpatrick, L. (2004) *Building Sustainable Adult Literacy Provision: A Review of International Trends in Adult Literacy Policy and Programs*.

Adelaide: National Centre for Vocational Education Research.

<http://www.ncver.edu.au/publications/1515.html>

Millar, P. (2001) *Concepts of Literacy: the Role of WELL*.

Launceston: University of Tasmania.

<http://www.crlra.utas.edu.au/files/discussion/reports/WELLreport.pdf>

NAO (2004) *Skills for Life: Improving Adult Literacy and Numeracy*.

London: National Audit Office.

http://www.nao.org.uk/publications/nao_reports/04-05/040520.pdf

Newmarch, B (2005) *Developing Numeracy, Supporting Achievement*.

Nottingham: National Institute of Adult Continuing Education.

<http://www.niace.org.uk/Publications/D/DevelopingNumeracy.asp>

NIACE (2005) '*Language, literacy and numeracy*' - *Briefing Sheet 64*,

National Institute of Adult Continued Learning.

http://www.niace.org.uk/information/Briefing_sheets/64-BW-Embedding-LLN.pdf

NRDC (2003) *Adult Numeracy: Review of Research and Related Literature*.

London: National Research and Development Centre for Adult Literacy and Numeracy.

http://www.nrdc.org.uk/uploads/documents/doc_2802.pdf

NRDC (2003b) *Models of Adult Learning: A literature review*.

London: National Research and Development Centre for Adult Literacy and Numeracy.

<http://www.nrdc.org.uk/content.asp?CategoryID=424&ArticleID=380>

NRDC (2004) *Skills for Lifecore Curriculum Training Programmes 2001/03: Characteristics of Teacher Participation*.

London: National Research and Development Centre for Adult Literacy and Numeracy.

<http://www.nrdc.org.uk/content.asp?CategoryID=424&ArticleID=388>

NRDC (2004b) *Literacy Education and Skills for Life*.

London: National Research and Development Centre for Adult Literacy and Numeracy.

http://www.nrdc.org.uk/publications_details.asp?ID=34

NRDC (2005) *Success Factors in Informal Learning: Young Adults' Experiences of Literacy, Language and Numeracy*.

London: National Research and Development Centre for Adult Literacy and Numeracy.

<http://www.niace.org.uk/projects/successfactors/>

NRDC (2005b) *Beyond the daily application: making numeracy teaching meaningful to adult learners*.

London: National Research and Development Centre for Adult Literacy and Numeracy.

http://www.nrdc.org.uk/publications_details.asp?ID=29

NRDC (2005c) *Embedded teaching and learning of adult literacy, numeracy and ESOL – Seven Case Studies*.

National Research and Development Centre for Adult Literacy and Numeracy.

http://rwp.qia.oxi.net/learning_material/reports/embed_cs_report.pdf

NRDC (2006) *You Wouldn't Expect a Maths Teacher to Teach Plastering*.
London: National Research and Development Centre for Adult Literacy and Numeracy.
http://www.nrdc.org.uk/publications_details.asp?ID=73

NRDC (2007) *Effective teaching and learning: Numeracy*.
London: National Research and Development Centre for Adult Literacy and Numeracy.
http://www.nrdc.org.uk/publications_details.asp?ID=86

OECD (2000) *Knowledge and Skills for Life. First Results from the OECD Programme for International Student Assessment (PISA) 2000*.
Paris: Organisation for Economic Co-operation and Development.

OECD (2000) *Literacy in the Information Age. Final Report of the International Adult Literacy Survey*.
Paris: Organisation for Economic Co-operation and Development.

OECD (2000) *Thematic Review on Adult Learning: Sweden*.
Paris: Organisation for Economic Co-operation and Development.
<http://www.oecd.org/dataoecd/23/2/2697896.pdf>

OECD (2002) *Thematic Review on Adult Learning: Canada*.
Paris: Organisation for Economic Co-operation and Development.
<http://www.cmec.ca/international/oecd/adult.note.pdf>

OECD (2004) *Thematic Review on Adult Learning: United States*.
Paris: Organisation for Economic Co-operation and Development.
<http://www.oecd.org/dataoecd/60/23/35406014.pdf>

OECD (2005a) *Learning a Living. First Results of the Adult Literacy and Life Skills Survey*.
Paris: Organisation for Economic Co-operation and Development.
<http://www.statcan.ca/english/freepub/89-603-XIE/89-603-XIE2005001.htm>

OECD (2005b) *Promoting Adult Learning*.
Paris: Organisation for Economic Co-operation and Development.
<http://www.oecd.org/dataoecd/14/54/35268366.pdf>

OECD (2005c) *Thematic Review on Adult Learning: Germany*.
Paris: Organisation for Economic Co-operation and Development.
<http://www.oecd.org/dataoecd/44/5/36341143.pdf>

OECD (2006) *Skills Upgrading: New Policy Perspectives*.
Paris: Organisation for Economic Co-operation and Development.
http://www.oecd.org/document/47/0,2340,fr_2649_201185_36427887_1_1_1_1,00.html

OECD (2007) 'Qualifications and lifelong learning'. Policy Brief, April 2007.
<http://www.oecd.org/dataoecd/10/2/38500491.pdf>

OECD (2008) *Teaching, Learning and Assessment for Adults: Improving Foundation Skills*.
Paris: Organisation for Economic Co-operation and Development.
http://www.oecd.org/document/42/0,3343,es_2649_37455_40026026_1_1_1_37455,00.html

OfSTED (2008) *Developing financially capable young people*.
London: OfSTED.

Ott, J.A. (2001) *Improving Workforce Literacy for 21st Century Jobs*.
Clemson: Clemson University, Institute on Family and Neighborhood Life.

Peterson, E., Ott, J., & Wilson, K. (2002). *Promoting Workplace Literacy and Basic Skills Development*.
Lancaster, SC: J. Marion Sims Foundation.
http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1a/36/88.pdf

Sabatini, J.P. (2001) *Designing Multimedia Learning Systems for Adult Learners: Basic Skills with a Workforce Emphasis, NCAL Working Paper WP00-01*.
University of Pennsylvania.
http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/16/e9/f9.pdf

Safford-Rumus, K. (2007) '*The USA Numeracy Initiative*'. Numeracy Briefing, 11, September 2007.

Sherman, R., Safford-Ramus, K., Hector-Mason, A., Condelli, L., Ollinger, A. and Jani, N. (2007) *An Environmental Scan of Adult Numeracy Professional Development Initiatives and Practices*.
Washington, DC: American Institutes for Research.
<http://www.ed.gov/rschstat/research/progs/adulted/mathescan.doc>

Skills for Life Quality Initiative (2006) Research Resources
http://www.nrdc.org.uk/publications_list.asp?Keywords=skills+for+life+quality&CategoryID=&ContactID=&SearchSubmit=1

Snyder, I., Jones, A. and Lo Bianco, J. (2005) *Using Information and Communication Technologies in Adult Literacy Education: New Practices, New Challenges*.
Adelaide: National Centre for Vocational Education Research.
<http://www.ncver.edu.au/publications/1608.html>

Sticht, T.G. (2001) Reforming Adult Literacy Education. *Transforming Local Programs into National Systems in Canada, the United Kingdom and the United States*.
http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/19/46/12.pdf

TES (2004) *Special Supplement on Adult Learning*. May 14th; Times Education Supplement.

Tuijnman, A.C. (2003) '*A "Nordic model" of adult education: what might be its defining parameters?*'
International Journal of Educational Research, 39, pp.283-291.

Turnball, T. (2006) '*Skills for Life – the European perspective*'. Numeracy Briefing, January 2006, pp.15-17.

Workforce Strategy Center (2003) *Building Bridges to College and Careers: Contextualized Basic Skills Programs at Community Colleges*.

New York: Workforce Strategy Center.

http://www.workforcestrategy.org/publications/Contextualized_basic_ed_report.pdf

