



Digital resources to support basic skills education for 14-19 year-olds

The landscape, and opportunities for development

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1. ABOUT THIS REPORT

This report, and the research upon which it is based, was commissioned by Futurelab in response to the Leitch Review of Skills, which identified that significant proportions of the population lacked basic skills by the time they reached adulthood. Three research questions guided the research, which were:

- How are digital technologies being used to support the teaching and learning of basic skills at 14-19?
- To what extent do these approaches fully exploit 14-19 year-olds' use of digital technologies?
- What recommendations should be offered to policy makers, practitioners, researchers and developers in order to improve the development of basic skills at 14-19 through the use of digital technologies?

The research comprised:

An initial review of the literature on the issue of the basic skills agenda, including the Moser Report, Leitch Review, personalisation literature from the DCSF, Futurelab, Becta, and Demos, and 14-19 Curriculum Review materials from Tomlinson.

An exploration through three activities to uncover ways in which the basic skills agenda is currently addressed for the 14-19 age group.

First, a review of the current materials available to support basic skills teaching within the 14-19 age group, with a particular focus on digital resources. This outcome is based primarily on desk-based research.

A digital survey completed by 30 TEEM teacher evaluators who are trained in the skills of evaluating software. They actively use ICT-based resources throughout their teaching practice, and responded through the questionnaire with information about the software and resources they use with students within their institution. In most cases this involved them in discussion with other teachers within their school or college as basic skills was not often an area of their direct responsibility. Eleven taught in secondary schools serving the 11-16 age group, nine in secondary schools serving the 11-18 age group, and nine in FE colleges. The subjects taught were English (5), maths (4), science (5), humanities (8), MFL (3), business studies (2) and ICT (2). The spread of locations and age group that the schools serve is shown in Appendix 1. This further informed the review of current materials used. They also indicated how they teach these courses, and how they perceive the future impact of ICT within their institution to affect the delivery of basic skills activities.

The questionnaire they completed is attached.

On the basis of this information from desk research and additional responses from the teachers, a variety of resources were identified as contributing to the teaching of basic skills to students, many of them paper-based. Eight electronic titles were reviewed in more detail, with teachers contributing their thoughts about the strengths and weaknesses of the materials in some cases. A wide range of paper-based materials were reviewed in addition to explore the relationship between the core skills being addressed and the strategies being presented.

The eight titles reviewed were:

CTAD Numbers Disc
CTAD Spelling Disc
Tribal M.Learning.org

Heinemann Sure Skills
 BBC Skillswise
 Rising Stars CD-Rom
 Altered Learning Neverwinter Nights adaptation
 West Nottingham College Basic Key Skills Builder

The evaluation process followed the TEEM content evaluation framework:

A. Description
Description
Supporting documentation
Technical support
Teacher controls
B. Curriculum relevance
Purpose of the program
Curriculum relevance
Extent
C. Analysis of contents
Appropriateness
Structure of information
Quality
Courseware (onscreen exercises) and activities
Differentiation

Interviews with ten institutions effectively delivering basic skills courses, or addressing the needs of the students operating at this level were carried out. The institutions represented a range of organisations which were working with students and delivering basic skills courses in a variety of contexts. The interviews each explored a variety of issues:

- How are basic skills addressed at the institution?
- What contexts are students taught in?
- Who delivers the teaching?
- What resources are used?
- What technologies do students use?
- What works well?
- What are the issues for delivery?
- What plans do you have for the future?

Finally, this information is synthesised into an analysis of the gaps in provision and some suggestions about the nature of the materials that might be developed to support basic skills teaching. This is based on consideration of the skills required and interests of the potential users.

The purpose of this report is:

- to explore the nature of the products that are currently available for teaching basic skills to 14-19 year-olds
- to understand something of the settings and constraints imposed on teaching these students
- to understand the characteristics of products that are perceived positively by students and teachers

- to map future directions and opportunities for policy makers, developers, researchers and practitioners in offering new and effective approaches to the use of ICT in teaching and learning basic skills at 14-19 age range.

2. BACKGROUND

2.1 What are the key issues?

Students in need of basic skills education by the time they have reached 14 years of age are likely to have experienced failure within our educational system for many years. Many of these students are likely to have been identified as having Special Educational Needs at earlier stages in their education, commonly at primary school. Continued failure to ensure that they achieve at the academic level required at secondary school often translates into disruptive behaviour, and fails to develop the students' self-esteem. The Leitch Review (December 2006) has identified the results of this situation to have affected significant proportions of the population – almost half of the adult population have difficulties with numeracy and a seventh are not functionally literate.

The challenge is clear – to promote and support activities that will engage with seriously unsuccessful and disaffected learners before they leave formal education. This may mean offering very different educational experiences, materials and environments from those that have been unsuccessful for these students for the majority of their educational history. Projects outside the constraints of school often demonstrate success whilst the learners are engaged in those projects, but translating and building on that success back in the school environment proves challenging.

Offering learners a 'new start' with different materials and approaches is attractive. However, most of the published resources that aim to address the content that these learners need in order to fulfil the curriculum objectives, have originally been developed for adults. They also present a learning model that is based on the acquisition of specific knowledge and the development of specific skills, often as a task-driven, multiple choice exercise which does not encourage the learner to make that learning durable and generalisable to other situations.

2.2 The current status of basic skills

The Leitch Review published in December 2006 has highlighted the poor outcome of our education system in terms of producing adults who have appropriate competencies in basic literacy and numeracy. The Leitch Review identifies the challenge as being one in which 17 million of the adult population (almost half) have difficulty with numbers and five million (one seventh) are not functionally literate.

These figures relate to adults and the population as a whole. They reflect a long-term failure of our formal education system to address these skills areas whilst the students are held within formal statutory education.

The effects of the National Curriculum since its initial introduction in 1988 has been to increase the numbers of students achieving either Level 4 at Year 6 SATs to 75%, or A*-C at GCSE to about 50%. However there is still a significant population of students who fall well below these expected standards.

Following a period in which substantive sums have been spent on education within the UK, the results achieved by the output of the system continue to disappoint funding expectations. The Leitch Review highlights the requirements that our society makes of its citizens in terms of the

skills needed for success, both personally and as a country overall. The Review also identifies the fact that “too many of us have little interest or appetite for improved skills”.

A fundamental focus of the Leitch Review is on the skills gained by students, with particular interest in the skills needed for involvement in the economic workplace. This focus on skills differentiates the Leitch Review from the perspective of the National Curriculum for 4-6 year-olds. The subject basis of the National Curriculum offers a contrasting model of education with a greater focus on knowledge for its own sake rather than skills.

It is not intended that this document should be a significant debate concerning the merits or benefits of a knowledge-based, or skills-based curriculum. However, the focus on the outputs in terms of skills measured or knowledge gained is of particular interest to the students most served by the Basic Skills Curriculum.

2.3 Defining curriculum and context

2.3.1 Different models of curriculum

There are three different curricula that those who require basic skills education might experience:

- National Curriculum
- Adult Basic Skills Curriculum
- ASDAN curriculum

This table illustrates the relationships between the skills levels being taught at school (National Curriculum Levels) and basic skills and key skills. The National Qualifications Framework is a structure of qualifications against which accredited qualifications can be measured, and through which one qualification can be seen to be broadly similar to another in terms of the demands they place on the learner. The Basic Skills Framework marks the entry point to the National Qualifications Framework, and defines the most fundamental skills that any student will need to achieve.

There is no formal point at which students pass from attempting to be included in the National Curriculum objectives and content onto the Basic Skills Framework. This change arises when the students move institution – starting at an FE college for example at 16.

National Curriculum/Schools qualifications	Basic Skills	Key Skills	National Qualifications Framework
			National Qualifications Framework Level 8 Doctorate degree
			National Qualifications Framework Level 7 Masters degree
			National Qualifications Framework Level 6 Honours degree
		Key Skills Level 5	National Qualifications Framework Level 5 Diplomas, HND
		Key Skills Level 4	National Qualifications Framework Level 4 Certificates of Higher Education

A-levels NVQ Level 3		Key Skills Level 3	National Qualifications Framework Level 3
GCSE Grades A*-C	Literacy/Numeracy Level 2	Key Skills Level 2	National Qualifications Framework Level 2
National Curriculum Level 5 GCSE Grades D-G Level 1 NVQ	Literacy/Numeracy Level 1	Key Skills Level 1	National Qualifications Framework Level 1
National Curriculum Level 4			
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		

Table 1: The national qualifications framework

2.3.2 Adult Basic Skills Curriculum

The Basic Skills Curriculum has been developed as one to serve the adult literacy and numeracy agenda, and as such has a very practical focus. It is part of the QCA range of curricula, and defines the activities very much from the adult perspective.

For example a comparison between Basic Skills Entry Level 1 reading objectives, and those for Level 5 English National Curriculum which might be the level of achievement expected for a 14 year-old, reflects the different approaches.

<p>Basic Skills Entry Level 1</p> <p>read and understand</p> <p>short texts with repeated language patterns on familiar topics</p> <p>read and obtain information</p> <p>from common signs and symbols</p> <p>An adult will be expected to:</p> <p>∞ follow a short narrative on a familiar topic or experience</p> <p>∞ recognise the different purposes of texts at this level</p>
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<p>Level 5 Descriptor Reading, National Curriculum</p> <p><i>Pupils show understanding of a range of texts, selecting essential points and using inference and deduction where appropriate. In their responses, they identify key features, themes and characters and select sentences, phrases and relevant information to support their views. They retrieve and collate information from a range of sources.</i></p>

The Basic Skills Curriculum places the learning in a context which is designed to be practical, and focused on tasks which the students should perceive as relevant and closely related to their experiences of life. This contrasts with the aspirations of the National Curriculum where the content and purpose of English focuses on a more literary appreciation of English. Even if the teacher differentiates the task to make it more accessible to the student operating at the level of the Basic Skills Curriculum, its focus may not inspire interest.

The Basic Skills Curriculum can be found in detail on the QCA website. There are two tables in Appendix 3 which represent a summary of the expectations of students as they progress

through the Basic Skills Curriculum from Entry Level to Level 2. As the tables show, the practical and life skills focus of the curriculum is a clear differentiator from the National Curriculum.

2.3.3 ASDAN

ASDAN is a curriculum development organisation which offers a wide range of curriculum programmes and qualifications for all abilities, "to promote the personal and social development of learners through the achievement of ASDAN Awards, so as to enhance their self esteem, their aspirations and their contribution to the community mainly in the 11-25 age group". Whilst it has been developed to assess and develop the skills of students with a wide range of abilities, in schools at the 14-16 age group, it is generally offered to the least academic students, and presents an alternative structure for the curriculum which supports and complements the Basic Skills Curriculum.

ASDAN courses usually include three distinct strands of activity – content of learning, working with others, and demonstrating communications skills.

Content - students need to complete credits by completing challenges from chosen modules, providing portfolio evidence of completion of all the activities undertaken. This evidence might include attendance at events as well as a range of mechanisms for recording activities undertaken – audio or video diary, photographic evidence as well as written work.

Working collaboratively - an important part of each course includes the need for students to demonstrate competence in the wider key skills of working with others, improving their own learning and performance, and problem solving at levels 1 and 2.

Communicating with others - students need to demonstrate competence in the units on planning and carrying out research, communicating through discussion and planning, and giving an oral presentation at levels 1 and 2.

In school, this might be seen as an activity where the students would work on a First Aid activity through which they have to develop the skills of being able to treat an injured person. This would involve collaboration within the group, and would be completed by having to explain to a different member of staff what the treatment process should be.

Schools offering ASDAN courses for Years 10 and 11 may also offer these students basic skills courses. Choosing an ASDAN course breaks the mould of National Curriculum courses, and it becomes easier to change the other parts of the school curriculum for these students.

At Post-16 FE colleges, ASDAN courses are generally positioned for those with moderate learning difficulties, or for those who have "completed Independence to Work Level A or B", and they also might involve some basic skills coursework alongside the ASDAN activity.

2.4 Why explore the potential of digital technologies for 14-19 basic skills learning?

The 14-19 year-old population is perhaps the most technologically aware within society, a significant part of the population actively using MSN, YouTube, MySpace, Facebook, blogs, and many other platforms for their own personal activities. There is also plenty of evidence of this age group actively preferring to reference the internet for learning and research rather than paper-based activities.

Each of the web services offers a particular approach to activities that invites the user to a social activity with which to engage. None of them explicitly promotes the use of the site for learning:

MSN Web Messenger: "lets you talk online and in real-time with friends and family using just a web browser"

YouTube: "hosts user-generated videos"

MySpace: "meet people from your area in the country and keep in touch"

Facebook: "a social utility that connects you with the people around you"

The user statistics for these sites are impressive – Facebook for example has six million pictures uploaded every day. This level of activity is generated by millions of people.

The social culture of these sites is something that spreads through school communities. Students describe situations in which a group starts using a particular site, and then tell their friends until this becomes the mechanism that they all use to communicate out of school. "A few people started using MSN in Year 7, and they showed others of us, and now we all use it to talk to each other" (Year 10 student at a Cambridgeshire school). The site becomes a focus for communication, and is also a discussion point between the users.

Some of the sites offer mechanisms for focusing on images or specifically photographs, with little requirement for text. Structured galleries of pictures or audio or video segments can be posted to record events, ideas or experiences. These solutions can all be used to build self-esteem and to demonstrate the outcome of a learning experience without extensively relying on text. Other users of the site can often rate what the 'author' has produced, or leave comments or views of the materials presented. Peer review is facilitated through the sites, and is generally welcomed by users. Finding out what other students think about their work is valued and important to the students. "I like to know what other people think about what I am doing. It's more important what someone like me thinks about what I do than what an adult thinks" (Year 11 student at a Cambridgeshire school).

These tools support collaborative activities – users working together to create web presentations and materials. They can support planning, monitoring progress as well as facilitating users to create outputs of which they can be proud. The use of the tools can also promote increased independence of learning and activity, which is an objective explicitly recognised by Leitch as a characteristic absent in many adults.

In theory, such digital technologies also offer opportunities for formal learning in terms of presenting students with both appropriate and relevant activities, and also with mechanisms for integrating personal support to the student through e-mail and tools for facilitating tutor support and communication.

3. WHAT IS HAPPENING AT THE MOMENT

A key strand of the research was the survey of a sample of 30 teachers who are trained TEEM evaluators from a range of secondary schools and FE colleges across England regarding their use of materials to support basic skills teaching, and their perceptions of the ways in which the use of ICT resources might develop for these students in the future.

3.1 Questionnaire responses

Staff involvement

Eighteen schools reported that a small number of teaching staff – perhaps two or three – taught students operating at the basic skills level, often individually or in small groups. This activity focused primarily on literacy but also offered more general support for the student in school, both in terms of behavioural issues, and difficulties students were having with other schoolwork.

In schools, mathematics teaching for this group of students was addressed by the maths department and through the bottom set.

Within FE colleges, student numbers varied in total from one institution to the next, but it was always the case that basic skills teaching was delivered by a large number of staff – with about half the number of full-time staff to part-time. So a college may employ five full-time staff who would be responsible for basic skills together with key skills courses, and between six and ten part-time staff who might each deliver one session of two hours of basic skills. Full-time staff rarely teach a full timetable of basic skills. In general, the students were taught in groups of ten, but this ideal often varied depending on the timetabling issues.

Use of ICT and other resources

All of the respondents used paper-based resources, seven used CD-Rom materials and 14 schools reported using internet-based activities at least once a month, whilst eight colleges indicated that they used ICT at least once a week for teaching, through the resources of a personal teacher's laptop, data projector, the internet and a network connection. Ten of the sample set weekly ICT-based homework. This homework did not include an expectation of the use of word processors or other tool-based packages. The activity set was generally some form of question and answer resource, providing the student with instant feedback which was felt to be especially important.

Seven of the group in FE colleges expected their students to use online resources for their own study. These resources were generally available through the college intranet.

ICT availability amongst students

There was some uncertainty on the part of the teachers about the proportion of students who owned a computer. Eight of the teachers in school were not able to answer this question at all. Several commented that they thought these students used game consoles rather than computers at home. Those that answered the question, believed about 60% of their basic skills students owned a computer.

Staff from six of the colleges suggested that computers were owned at home by about 50% of their basic skills students, and the other three put the figure higher at about 70%. Three lecturers commented that home ownership was possibly lower than for students on other courses in the college.

In terms of resources used, 100% described personalising resources to suit the needs of particular students, either by choosing from a bank of prepared worksheets and materials or by creating materials specifically to support the interests and needs of their pupils. Over 70% of the teachers specifically created resources (often word-processed documents) to address their students' needs.

3.1 How are basic skills taught in schools and colleges?

From the schools and colleges visited and questionnaire research carried out, the Basic Skills Curriculum was delivered in a wide range of different ways, reflecting the ethos and context of the institution. The staff involved in working with the students were focused on delivering a high quality of education, and actively seeking ways to enhance the outcomes for the students in their care.

In the five secondary schools visited, most of these students have generally been identified as needing specific help from the beginning of Year 7. Specific help with literacy has usually been provided from Year 7, often with a session a week with a Special Needs teacher. In studying mathematics, these students will generally have been taught in the lowest sets.

One of the schools visited has set up a specialist unit to cater for the needs of the lowest achievers, drawing approximately 60 students from their school and others in their geographical area. In most cases these students are taught from Year 7 outside the National Curriculum, allowing greater daily emphasis to be placed on basic skills.

At 16, students will often get an opportunity to start with a fresh institution, often undertaking a vocational course and working on their basic skills alongside their vocational training. The basic skills activities they then undertake are usually managed by a tutor, and taught with a mixture of direct teaching and through access to e-learning resources. It is generally not the case that the basic skills courses directly relate to the vocational qualification the students are undertaking, so, for example, the mathematics course will deliver the same content whether the student is studying health and beauty or construction. This fresh start can be very positive, though not universally. South Dartmoor College, which serves a large catchment area and has students to age 18, has achieved very positive outcomes with students working on catering courses within the school as well as on basic skills courses. The change in focus of the activity for these pupils at Year 12 has motivated them to succeed well in a familiar context.

Teachers and tutors working with these students often describe a general sense of the student believing themselves to be unable to learn, lacking confidence in new situations, and not being willing to try new things. These students have often experienced very little success in formal education, and where they have achieved well, this has often been in areas which the student recognises as not being particularly valued by their institution, and so the student dismisses this achievement too.

Seven of the institutions visited and surveyed had been exploring the issues of working with other schools or institutions to deliver vocational courses for 14-16 year-olds for a number of years. A number of schools work together with their local FE college to provide some FE-based training, often where facilities or resources need to be of a specialist nature – mechanics, catering, construction, or health and beauty.

The model that seems to be currently applied to the Year 10 and 11 student is that they work at the FE college for a day or two per week, and whilst there, focus particularly on the vocational element of their learning. Back in school, they carry out the rest of their timetabled curriculum, and receive all their basic skills education. This maintains a disconnection between their vocational and academic learning which is perceived as unsatisfactory by both institutions.

Some schools are now exploring models of running the vocational courses within the school, and sharing their skills with other local schools. One school visited has been running a construction course this year, and is planning to expand the offering to 15 students from a neighbouring school from the next academic year. The school had reported that the behaviour of the students in the rest of their school activity had significantly improved, and there were benefits in attainment in other subjects too. "The students like the fact that within our area

they can make tea and coffee when they want as long as they get on with their work. They see themselves being treated responsibly, and rise to meet that expectation. They know that they are privileged to be on this course, and don't want to risk that by misbehaving in the rest of their time around school" (Cottenham Village College, construction course teacher).

Some schools have carried out work with this type of student through developing an ASDAN course. This presents other issues and challenges, not least of which are the implications of timetabling for the cohort. In running an ASDAN course, most schools offer their students at least one day out of school in some workplace environment. In order to support this, the school cannot timetable core subjects for that school day. This becomes a major issue for the whole school, and has made it more difficult to support the project as a whole, as some members of staff feel that timetabling issues have negatively affected other students within school to accommodate the needs of a few.

Whilst the school might feel that ASDAN would be the best course for the particular pupil, there can often be considerable resistance to the course from the parents, who feel that they have worked hard to keep the student within a mainstream setting, and see the ASDAN course as being second rate or less valued. They therefore need a significant amount of convincing that this is a good approach, even if it is clear that GCSEs offer little to that student.

This table summarises the range of contexts in which the students are taught these skills in this age group, and these contexts are fundamental to the nature of the materials used to then engage with the student. Small group work, and groups organised within small classes provide social settings for the activities carried out. As a result, teachers use resources that can be shared and discussed either in paper-based or game form.

School-based settings 14-16 for basic skills lessons			
Setting	Likely hours taught basic skills	Specialist setting	Likely class size
Lower sets for English and mathematics	3 hours per week per subject		15-20
Individual or small group literacy teaching		1 or 2 hours per week	2-6
Some specific basic skills activity, in association with a specialist unit	3 hours per week per subject	1 hour per week for literacy	2 or 3
ASDAN course for part of timetable	3 hours per week per subject	2 days per week	12-20
Vocational education, of which basic skills is a part		2 days per week	12-20
Specialist unit within the school	2 hours per day	Full-time	20
Part-time attendance at FE college for vocational courses		2 days per week	10
FE-based setting 16-19 for basic skills lessons			
Setting	Likely hours taught basic skills		Likely class size
Basic skills courses operating alongside other elements of full or part-time education	4 hours per week		10-15
Apprenticeships	4 hours per week		6-12
MOD training schools (eg Harrogate)	3 hours per day for the second term of a 42-week training course for 16 year-olds		10

3.3 Use of ICT in schools and colleges

Evidence from questionnaires suggests that there is a greater use of ICT at FE colleges than in schools in teaching this population of students. Fifteen of the 21 school respondents use ICT for teaching at least once a month, whilst a similar proportion in FE colleges used ICT for teaching once a week. Classes in school regularly have teaching assistant support, and so several different group activities led by an adult become possible within the classroom. ICT provision within the classroom might support one of these groups of students working at the computer.

Anecdotally, within schools there seems to be a greater use of ICT-based resources for teaching mathematics, and also a greater use of ICT for students to practice skills through ICT-based activities. Whole-class teaching is used less than for teaching other classes of students. Quizzes, multiple choice questions, and the reward of immediate feedback were valued components of ICT resources that were being used. These very much reflect the model of learning outcomes as the acquisition of specific knowledge and skills, rather than an experiential view of learning.

Student self-esteem was seen as critical to successful learning, and this was often best achieved through positive personal reinforcement and response from the teacher. Once confidence had been gained in the teacher, the use of ICT to practice and further reinforce the learning was generally seen as an activity to reinforce the personal teaching that had taken place. This model was seen to be popular with students to complete the learning task.

Using a word processor was always seen by the students as a better option than handwriting, and reading internet-based materials better than books. It was not clear from the conversations or questionnaires why MSN, Facebook or other communication software were not seen as appropriate for use in school. Teachers did not see them as appropriate.

There was no reference to these types of resource from teachers, and it would seem that they are rarely used within a school context. A handful of teachers described using e-mail as a way of writing for a wider audience.

3.4 Teachers' awareness of students' use of ICT

There is a general lack of clear knowledge on the part of the teachers and lecturers about the sort of technologies that their basic skills students actually use outside their learning institution. The question asked in the survey about computer ownership amongst the students was answered much less competently than has been found in past surveys carried out with primary schools, for example. There are some general assumptions that teachers and lecturers make about access to mobile phones and game consoles, but very little direct knowledge of students' PC access or use.

Institutions are all clear that there are facilities available that students can use, both at college, school and in the community. However, who uses what and with what effect is not actually known by most teachers and tutors. Access to VLE information should indicate what activities students are undertaking online, but anecdotally it would seem that this data is not systematically used by some institutions.

An interview survey of 107 FE college students carried out by Guroo Ltd found that when students are asked what resources they access for learning, about half reference Google as their e-learning resource of choice. The survey found that students who are following an academic course (as opposed to vocational course) at college are twice as likely to use the college's VLE, especially to catch up on missed lessons or learning activities.

Students with lower previous achievement are very difficult to engage in e-learning, and VLE systems do not seem to offer a solution for them. The practical challenges of getting logged on and finding the course content that is appropriate is often a sufficient block to these students accessing VLE-based resources at college. The initial interface experience often has a text-heavy appearance which these students find intimidating, and then they give up. These students are not very forgiving, and if the e-learning experience is not a positive one on the first occasion then they are unlikely to try it again.

One tutor in an FE college commented, "Expecting these students to go into a busy ICT room full of people they don't know, log on to a text-rich interface that is unforgiving of mistakes, and then find the materials that they have been asked to use, is several steps too far. They might be persuaded to try it once, but lack of success will put them off trying it again."

3.5 What ICT-based products are available for teaching basic skills?

This list of products draws on evidence from the questionnaire and conversations with professionals at the institutions visited. Many of the teachers described print-based materials that they successfully used – reading schemes that addressed a higher interest level with a low reading age, for example. These printed materials were seen as core to teaching these students.

The ICT resources were generally seen as supplemental resources by the professionals consulted. The following list identifies publishers providing specific resources to support the Basic Skills Curriculum. They include both paper and ICT-based materials.

Series of materials	Medium	Numeracy and ICT	Literacy and ICT
Axis Education	Largely publishes resources as photocopiable worksheets, but also some student books. Its resources attempt to put the subject into meaningful contexts	Everyday ICT series Maths and Transport	Txt it!
		Everyday Maths series	Do WP
		Maths and Health	
		Maths for Sport	More WP
		Maths for the Kitchen	
		Maths on a Date	
		Maths on the Road	
Basic Skills Agency	Publishes a large range of text-based resources; most of its developments into technology have been in terms of downloadable paper-based materials		Livewire books - low reading age high interest level materials
CTAD (part of the Tribal Group)	Worked in the field of digital media for many years. Created a number	The Numbers Disc, part of a range published in 1996, addresses number skills through games, videos, and	The Spelling Disc, developed in association with Birmingham Core

	of high quality resources addressing basic skills	activities	Skills Development Partnership. Approaches spelling as a core activity through games as well as activities. More at key skill level, than basic skills
		Target Skills is an extensive and powerful suite of learning resources, aimed at young adult/adult literacy, numeracy (and ESOL) students. Included are: <ul style="list-style-type: none"> • ICT-based initial assessment • ICT teaching materials (audio, animation, graphics and interactive activities) • an optional web-based tracking and management system 	The series also has a number of work-based titles: Retail, Care, Manufacturing, Hospitality, Construction, Cleaning, Logistics, Passenger Transport. These develop the literacy and numeracy skills required to work in such industries
M-learning.org	Part of the CTAD portfolio, developed in association with LSDA and EU investment, the products are designed for use on mobile phones and PDAs	The content has tools for staff to develop their own materials, as well as a range of published modules for a few skill areas. The development of resources for the two platforms differs and reflects the capabilities of the different media	
Heinemann	Traditional publisher, which also has published digital resources, though rarely innovatively	Heinemann has recently introduced Sure Skills - a suite of online e-learning activities to help older teenagers/young adults with numeracy and literacy from Entry Level 3 to Level 2	This is a VLE with extensive e-learning materials that can be tailored to match the learner and also be directed by the tutor
BBC Skillwise site bbc.co.uk/skillwise	Has comprehensive range of free materials designed to address basic skills. However, all are embedded within an interface that is not likely to support self-directed learning. Many of the games have considerable text introductions	Factsheets, worksheets, quizzes and games to help improve skills. The games area includes 50 activities, but these are generally more 'exercises' than games as such	The materials support maths and literacy, and offer a range of printable reference materials as well as interactive activities
Hodder Murray	A traditional publisher with resources widely used in institutions	The photocopiable worksheets contain activities for use in the classroom or at home. They help to teach traditional skills	

	for students of basic skills	progressively, and then reinforce new knowledge through classroom-based games. These resources have ideas that might be useful in trying to create some complementary materials for students	
Rising Stars	A publisher which works with NASEN, and largely focuses on the production of readers with a high interest age and very low (RA 6) reading age		The products also have a CD-Rom component, which offers some very basic questions and answers, and comprehension-type activities
National Extension College	This organisation has a long history of experience of providing course materials for students to use for self-study as well as in directed learning. Its materials have traditionally been paper-based, but it has begun to produce some multiple-choice materials	<ul style="list-style-type: none"> • Prepare for key and basic skills qualifications • Gain confidence and basic skills in the use of English <p>Topics include:</p> <ul style="list-style-type: none"> • What is grammar and why is it important? • Parts of speech • Choosing the right word • Using verbs correctly and being consistent <p>Others courses under the NEC Getting Started banner include Back to Basics: Punctuation, Reading and Spelling; Develop your English Levels 1 and 2; Develop your Maths Levels 1 and 2; How to Write Essays</p>	This course is designed for self-study or to be used by a tutor in college. The curriculum content and coverage is very sound, but its presentation is very unexciting, and it must ask a lot from the students to work their way through it
Altered Learning	Developed by computer programming lecturers at West Nottinghamshire College, this program has the appearance of a dungeons and dragons computer game, but demands key skills learning to progress through the game	Takes the program Neverwinter Nights from Atari and amends it to explore and promote key skills. Comes accompanied by printed materials on which the students record what they have achieved. The skills developed would be too hard for those who need basic skills learning; the reading level is quite high, but the concept is interesting	
West Nottingham College	Basic and Key Skills Builder is a platform that FE colleges buy into, that delivers a range of materials.	For students and teachers of basic skills Entry 1 up to Level 2 These materials really do start at a very basic level. Used by around 1,000	

	The current version has been launched in autumn 2006	employers, community organisations, prisons and armed forces - as well as schools and colleges. Award-winning and recognised as best practice by DCSF, LSDA and a range of awarding bodies	
	bksb has been developed, tested, and fine-tuned over a period of a decade. This constant development has led to a product with a wide breadth of coverage and a flexible price policy, making it one of the most impressive and attractive products available for basic and key skills education	Fully referenced to the Adult Literacy and Numeracy Core Curriculum and supporting the national 'Skills for Life' strategy. In three parts: Screening and Initial/Diagnostic Assessments Resources – used independently by students or teacher-led assessment. A sophisticated array of functions which allow, for example, tutors to upload additional resources, suitable exercises to be allocated according to students' identified weaknesses, managers and coordinators to quickly review and retrieve results for performance reports	

Many of the individual skills and knowledge that form the objectives of the Basic Skills Curriculum are amenable to the feedback mechanisms that digital technologies readily supply.

However, there are very few titles that have been particularly developed to address the 14-19 age group and skills requirements. This would seem to be a failure of the market, which is perhaps perceived by publishers to be a very small niche. The software that is available is almost exclusively supporting very specific learning outcomes in terms of knowledge to be gained or practiced, or skills demonstrated. It can be best characterised as individual learning activities which are rarely placed in a context, and so whilst the benefits of immediate feedback and scoring are provided, the learning rarely becomes durable or meaningful in the student's particular context.

The vision of a VLE to deliver this sort of learning activity is much more evident in FE colleges - where these systems have been developing for some years - than they are in secondary schools. Only five schools out of 26 reported using a VLE in this sort of way.

The products that have been reviewed to date all have a characteristic model of content and assume a single user who answers questions or chooses options to demonstrate knowledge or skill. There are usually initial assessments to identify the starting points for the students, followed by exercises and activities, each of which explores a particular idea or concept, often with an e-learning component as well. Sometimes these activities are wrapped up in a more 'game'-like presentation – shooting aliens bearing number bonds or words with certain word patterns before they land, for example.

Once an exercise of this kind has been completed, all the user can do is move on to the next exercise. The software rarely offers mechanisms for the student to integrate their new skill or

achievement with another, so synthesising their learning into a more meaningful competency is not supported by this approach.

The content often has no relationship to the students' interests, and they generally have a sense that they have tried to learn this before, unsuccessfully, so why will it be different this time? The students need a high level of personal support and encouragement in order to progress with their education, and these games or learning modules leave no opportunity for player-to-player interaction, or involvement with the tutor or teacher.

If you look for software titles that deliver the same type of skills and curriculum content for much younger children, it is apparent that there are plenty of ways of delivering those activities digitally. They set the tasks in contexts – shopping activities to practice money-handling skills, puzzles to engage the learner in deductive comprehension tasks, an integrated approach to activities in which information and tools are both presented.

The TEEM database for Key Stage 1 and 2 titles has a total of 15% which support maths teaching, and 30% of Key Stage 1 titles and 20% of Key Stage 2 titles that support literacy teaching. Nearly all of these titles would be inappropriate for an older age group due to the presentation style used to motivate younger children, but have tasks and activities that might be developing the skills required and at the appropriate task level for the basic skills student, if the format and context was altered to be more relevant.

Resources that have been published by many of the mainstream publishers have not benefited from the investment and updating that other course materials have undergone. The software development required has rarely been undertaken, and where it has, the funding has generally come about as a result of initiatives from government rather than commercial imperatives (LSDA funding of the M-Learning initiative for example.)

Of the software identified, the M-Learning project is different in that it offers software that can be accessed either by mobile phone or PDA. Whilst the examples are similar in construct to other titles, in that they support question and answer formats, the personalisation of the activity being on the student's own phone significantly changes the nature of the learning experience from the student's point of view. "You see I've got it here, and I can do it when I want – if I'm free or want to" (17 year-old student, FE college).

3.6 The role of materials in schools and colleges

The role of the materials used is often seen by the tutor as actually the least important part of the equation. "If the relationship between the people is right, then the materials that can be used could be almost anything, as the trusting relationship gives the students belief that they will be able to use the materials the teacher presents" (maths lecturer at Peterborough FE college).

For most of these students, computer-based learning is likely to be more palatable than pen and paper exercises. However, a lot of the resources used by many institutions still involve paper-based activities that have been developed over a considerable time, and have been found to work. Some of these materials are delivered electronically, but in effect are digital worksheets.

The model that has generally been used is one in which a basic worksheet activity has been adapted in some way to be delivered electronically. They generally offer multiple choice questions and answers or cloze procedures which may be answered with drag and drop exercises. Occasionally the programs use time to motivate students to give answers; for example CTAD's The Spelling Disc uses a space invader game to shoot down words of a certain spelling pattern, and The Numbers Disc to shoot down numbers of the correct number bond.

Many of the programs have been available for a long time – for example the CTAD games were developed in the late 90s. The market is not perceived as a significant one for most publishers. In other areas of publishing, changes to the curriculum or to formal testing or accreditation processes have had the effect of stimulating new resources to be created. This has not been the case for basic skills.

4. WHAT WORKS?

In each of the different contexts, the teacher or trainer talked about the need to build self-esteem and to give confidence and personal feedback to the student. Each particular student has experienced a history of failure which is quite sufficient to make raising the student's self-esteem a significant task. Within the school contexts the teachers all talked about finding ways of treating the students as though it is a new start for them.

Until the student feels positively enough about themselves as learners in any context at all, learning basic skills is not seen as viable. The MOD training school in Harrogate for example, has 16 year-old students on a 42-week placement. For the first term, almost no written work is expected, and the students spend their time in team-building activities as well as in learning basic drill and care of themselves and their equipment. The school is very successful in getting otherwise difficult students through basic skills work, and does so almost exclusively in the second term of the course. The students go into the basic skills work with a renewed belief in themselves which has been found to influence their formal written learning greatly. The basic skills course is managed by Nord Anglia, which uses a mixture of VLE-based materials as well as personal and online learner mentoring to ensure that the student is motivated to complete the range of tasks set. The course is then very concentrated, taking place over a few weeks of the total time the student is at the college. As a result, the intensity seems to have an effect of developing the student's skills in ways that they can identify and recognise. This again raises motivation and self-esteem, leading to a spiral of success rather than the failure these students had often experienced before.

Schools fall into two camps in terms of their views of the student's learning – those that accredit every activity in some way or other, and those that seek to build student confidence through authentic activities without any formal accreditation.

The first group accredit students within every possible activity, practical as well as written, and find ways of using pen and paper activities that result in certificates of all sorts, often school-generated. These schools believe that providing a level of accreditation reinforces the students' belief in themselves. It also provides positive encouragement to complete written tasks that the students find meaningful and which are tangibly rewarded.

Other schools and institutions believe that students have got to be encouraged to carry out basic learning tasks, and that writing about these activities is often a very artificial exercise which demotivates the students. The students see that there is little merit in writing about these activities – which might include fishing, motorbike maintenance, sport of various sorts, cooking and so on, but recognise that there are real skills to be developed in being successful at each of them. For these schools, literacy and numeracy are skills that are addressed in the curriculum, but not fully integrated with the other activities carried out.

In a unit attached to one school, students spend two hours each morning in school working in groups on literacy and mathematics activities. The rest of the day, they spend carrying out a variety of activities – a First Aid course, motorcycle maintenance and riding course, fishing, football, tennis, swimming and so on. Students are accompanied by instructors on these activities, most of whom are male, and the personal interaction between the instructor and

student is seen as a vital component of the success of the activities followed. The continuity afforded by the instructor having been with the students in the school in the morning and then working with them for the rest of the day is invaluable. "Where a student has behaved inappropriately in their lessons, instructors can often have a quiet word with the student during the afternoon. That personal one-to-one can often diffuse situations and problems before they escalate unacceptably" (Head of The Centre, Cambridgeshire).

In another school setting, a group of 15 boys are working on a construction course within the school for eight hours per week. They have their own room with comfortable chairs as well as workbenches and are allowed to make tea or coffee during their sessions as they wish. They see these factors as very important and supportive of their needs for developing self-esteem. They also know that if they abuse these privileges they will lose them. The importance of the relationship in this context is significant in the teacher's eyes – the student wanting to please the tutor is a major influence on the positive outcomes to be achieved.

In addition, staying on the construction course has had a positive effect on their behaviour for the rest of the school week. Taking 15 boys out of a single year group of 195 students and increasing their sense of purpose and valuing at school, has made a very significant difference to the amount of disaffection in the school. The teacher in charge of the construction course found that the boys were growing in their self-esteem and really appreciated the 'adult' treatment they felt they were getting within the construction classroom. The fact that this space was specifically devoted to them and personalised to their group was also seen to be a very powerful factor in the success of the course.

Within an FE college, the mathematics curriculum of basic skills is one that is often approached through games and practical activities. Playing Monopoly, Uno and other number-based boardgames are ways of addressing the basic skills agenda, as well as offering a social focus for learning. Where students have opportunities to use numbers in their vocational activities, this forms a practical route into learning. It is not a reliable way of planning basic skills teaching, however, as some vocational subjects actively use mathematics skills more than others.

Teachers of all phases of students report less emotional cost associated with past failure at mathematics than they do with literacy. As in the rest of society, failure at mathematics seems to be less of a concern to these students than an inability to read. Within the literacy component of the curriculum attempts are made to relate the materials being used to the pupils' perceived interest areas – motorbikes, relationships, pop groups and so on - whilst maintaining delivery of content designed to generate skills of phonic awareness, word-building and word-recognition.

ICT is successfully used in mathematics when students have access to resources that model and illustrate mathematical concepts. The use of interactive whiteboards can be particularly helpful with these students. One teacher talked about the benefits of being able to create a sequence of activities that the students worked through during the lesson. "It's a bit like the value of a hymn sheet in church – students can see how far they have got through the lesson by the links that are still left, and this keeps the lesson well-paced and moving on." This was seen as particularly motivating for these students.

Factors that are critical to the success of materials for this group of students are these:

- they should be different from resources they have tried before; a new start is critical
- they should have humour, and a little 'edge'
- where possible they should have some content that is of direct interest to the teenager – lifestyle issues, and social situations they recognise
- the reading age should be very low indeed – RA of 5 to 7 years is the area where there is the greatest need and the greatest shortage of resources

- high quality and relevant graphics or diagrams are very important
- whilst it is not easy, it is valuable if the learning can be in a social context, and play scripts are a great way into this for literacy skills and games for mathematics skills.

Another factor that is critical in working with this group, is the short timespan that is appropriate for the activity. Breaking activities down into 20-minute elements is found to be effective across a wide range of settings. This is at odds, though, with the practical use of ICT. If the ICT resources have to be booked by the hour, then the setting of an ICT suite is often not appropriate for the rest of the allocated lesson time.

4.1 Where ICT contributes well

The more successful models of activity through m-learning.org or Altered Learning's games both have characteristics that contribute more effectively to learning, though have a limited application to basic skills specifically. To create resources that are appropriate for 14-19 year-olds at a beginner's reading level is very challenging, and it is not surprising that there are more materials that have been developed for the key skills curriculum rather than basic skills.

In the case of m-learning.org the benefits arise from the very personal effect of the questioning which is transmitted directly to the individual's phone or PDA. Where PDAs have been used, these have generally been supplied to the student by the project of which they are a part. The fact that the project has given the student a PDA also raises the student's self-esteem, which has already been identified as core to the student's success. The resources available through the medium have been designed to support students' learning for the theory driving test. This is a test that students are very keen to pass, and so their motivation for learning is high. Using this technology to set up the exercises as supporting grammar, numeracy skills or spelling would not automatically have such a positive effect. It might be appropriate to explore ways in which specific students could build on their positive experience.

Altered Learning's approach of using the Neverwinter Nights game to embed activities for key skills would be worth exploring further as an approach that might work with basic skills students. The motivation that applies to the players seems to be significant and to elicit valuable work away from the computer as well as at it. Conversations that share strategies and approaches also build on team-working and communications skills between the key skills learners, and the high-stakes value of these conversations are appreciated by the staff.

Some of the outcomes from the game also support collaborative learning away from the game context, which can be beneficial for this group of students. The collaboration needs to support both student to student working as well as student to tutor, and should facilitate communication between them.

5. KEY MESSAGES AND RECOMMENDATIONS

5.1.1 Context for learning resource use

The challenge is clear – to make activities that will engage with seriously unsuccessful and disaffected learners. The drive for a personalised agenda is something which could positively impact on these students. Many of the teachers have a history of personalising paper-based resources for these students. They rarely have the skills to create high quality digital media, however, and so rely on choosing resources for the students from a developed range of activities.

Those working successfully with young people who need basic skills teaching recognise that the curriculum for these students requires a clearly developed sense of purpose and functionality if the students are to engage with it. Overcoming past failures is an essential step in implementing the basic skills teaching, and a lot of time is taken reinforcing positive relationships between the staff and the students.

Within school, the personal relationship between the teacher and pupil is very important. Teaching is often delivered to small groups, where the importance of the personal interaction outweighs the use of resources. The activities undertaken are often group-based, and the social learning viewed as being as important as the knowledge or skill being learnt. This perception does not yet translate into the use made of ICT resources, where the potential for collaboration, either between students or between student and teacher could be more actively exploited.

Where personalisation has been shown to be successful with disaffected students, this is often where the traditional curriculum has been suspended in some way – through projects run at football clubs or media centres, for example, where students might work on a promotional video for the club, or design a piece of sports kit and so on. One of the real challenges is to bring the excitement these projects engender back into schools with the 'standard' curriculum. There are many projects which demonstrate real learning gains and benefits for students during their time out of school, but which experience considerable challenges when the students go back into the school context again. Jo Armitage of Hounslow LA discussed this at the Becta Personalisation Conference on 15 February 2007.

In many FE institutions, the overall responsibility for basic skills delivery lies with one person who then manages a significant number of lecturers who deliver the courses, each one of which might only teach one class of basic skills students. Maintaining quality of teaching is then a matter of managing the success of a significant number of lecturers, each of whom might use learning resources and materials differently. As a result, developing a uniform strategy for the use of resources accessed by a number of different lecturers is a significant challenge, especially as there is little opportunity for teamwork amongst the professionals involved.

5.1.2 Product models – questions and answers

Materials alone are not going to engage this group of learners. Without exception, the educators all talked about the need the students had to engage with an adult who they trusted and who could build their fragile self-esteem. The nature of the resources that the educators can draw upon can be a significant component of the learning process. However, the current range of materials provided is limited in its range, generally relying on the benefits that instant feedback provides to the learning process.

A significant shift might be made towards models of ICT product that build on and develop dialogues between students or between student and teacher/mentor. Few of the staff met during this research were active users of Facebook or MSN or similar sites themselves. As a result, their knowledge and expectation of what these websites offer is limited, and they had little awareness of their potential value for education.

Much greater use could also be made of ICT resources that support the use of image, video and audio materials to demonstrate understanding. This would match the Basic Skills Curriculum requirements and would encourage a focus and a purpose for extending the learners' literacy skills.

5.1.3 Personal relevance

Mechanisms to support the individual are key to success in supporting the basic skills learner. Personal relevance is often achieved by the support the individual teacher or lecturer affords the student. If this is to be extended to support offered through digital media, then some of the features that are observed in non-educational resources or community-led activity sites such as Facebook, MSN or Piczo should be incorporated into the resources used in the formal educational context.

Similar effects have been achieved in projects where students are supplied with their own PDA or have access to resources through a mobile phone. In both of these cases, the software is not particularly sophisticated, but is delivered to a resource that is owned directly by the student, and this gives it a level of personal relevance that is valued by the students.

The other factor in making the resource 'personal' is to facilitate the support of an activity that is perceived by the student to be of high stakes – passing the theory driving test clearly falls into that category as a facilitator.

5.1.4 Issues for VLE user interface

A VLE can facilitate effective communication between the tutor and the student. This has rarely been described as effective in reaching basic skills students in particular. In fact many tutors and teachers described the difficulty they had in helping the basic skills students to use the VLE as a resource. The interface at the access entry level for the VLE is often very text-heavy and forbidding, and it would be valuable to consider how best to engage these students with log-on information and help them to access the resources they need.

Whilst VLEs generally allow for work to be ascribed to particular students, this does not seem to be consistently common practice in FE colleges, and so whilst the resources are available for the students, the challenge of finding them can be significant.

Whilst VLE resources are widespread in FE colleges, those students who require basic skills courses seem to consistently use them the least. The level of responsibility for their own learning that VLEs demand seems to be a major issue for students requiring basic skills materials, as does the impersonal nature of their use. One tutor described the emotional difficulty that walking into a room with computers in it, recognising no-one, logging on to a machine and then finding resources to use, as a sequence of prohibitive steps for these students. As a result, little teaching of basic skills happens using ICT rooms, and most contact sessions arise in classrooms often without ICT facilities.

5.1.5 Developing consistent practice

Tutors all talked about the importance of personal contact, and in conversation it was apparent that one tutor's approach might differ considerably from another. However, there was often very little communication between different basic skills teachers within an institution as well as between institutions. In delivering basic skills through colleges it was generally the case that there were seven to ten full-time staff and 15-20 part-time staff for student numbers of less than 600 students. In conversation it would seem to be the case that the part-time staff might teach only one basic skills group for two hours per week. In this context it can be very difficult to ensure similar practice across the tutors, and it would seem that providing consistent information to all the tutors might be particularly challenging.

It was interesting to note that none of the colleges involved in the research were aware of the bksb resources from West Nottinghamshire College. Also, the m-learning materials from CTAD were not widely known, though some other colleges were aware of them as trials of portable ICT resources. Better routes for disseminating marketing information and best practice should

be considered; it is also important to be aware of the large numbers of staff that might be involved.

5.2 Recommendations

5.2.1 Considerations for developing high quality basic skills products

From the experience of reviewing a range of basic skills products, both paper-based and in ICT formats, there are some dos and don'ts that successful products should aspire to.

They should:

- not be text-heavy
- be engaging
- present the learning activities in a meaningful context, not simply as a series of disconnected exercises
- encourage students to communicate with each other
- be problem solving, but in such a supportive way as to give students confidence and enhance their self-esteem
- allow others to help them, and to work together
- allow use of video and audio media, not simply text
- focus on an activity, outcome or purpose that the students value
- if they use a games paradigm, it should be a real one, not just a variant of self-checking.

In terms of VLE development, greater consideration should be given to the processes required for log-on to the system. The nature of the process can be a sufficient disincentive for some basic skills students failing to use the systems that are available to them.

5.2.2 Improve the marketing

From the point of view of the materials available to teach Basic Skills to students between 14 and 19, publishers will respond that the market is actually a small one, and therefore one in which large investment cannot be justified. A number of effective products have been created as a result of LSC investment.

Consideration should be given to ways in which the teaching and training professionals are informed about these materials. Even those that might be considered good practice are not reaching their designed market effectively. Where projects are funded to develop materials, thought might be given to the effectiveness of their commercial exploitation. Even if the product is available free to the end user, knowledge of its existence has to be provided to other institutions. Marketing costs by commercial companies are in the order of 50% of the product's sales revenue over the product lifetime in order to achieve widespread take up by institutions.

5.2.3 Improving self-esteem

Products that are part of VLEs or larger systems should support built-in mentoring and tutoring. These students need considerable amounts of feedback for every small activity they have undertaken. Their learning will benefit from systems that can support them with feedback from people for whom they are working.

New products that are developed should put raising students' self-esteem at their core. If they work at achieving that, then they will be valued by the student and their teachers.

An official from the MOD, who runs many services training events in secondary schools, commented with frustration and disappointment at the failures our schools have in raising the self-esteem of the young people they see. This is clearly a significant factor, and one which the system might profitably address through resources that support the personalisation agenda.

5.3 What role ought technology to be playing?

There are some big gaps between the role that ICT could fulfil, and teachers' and tutors' senses of how they should deal with students with basic skills needs. Several of the teachers described these students as being "very in-your-face". The students would seem to be often deeply frustrated by their past failures, and, perhaps rightly, have little confidence that it is going to be any better with a new teacher, new situation or context. As a result, the teachers who are being successful in working with this group of students generally seem to do so in a context in which the personal relationship between the teacher and the student is good, and/or the student has begun to address the issues of self-esteem, and is willing to start again.

In contrast, technology is often emotionally neutral in the eyes of these students. They are usually more accepting of the computer scoring their work, and trying again if they get it wrong, than teachers making the same judgements. Using the computer does not feel like 'work' in the way that writing definitely does.

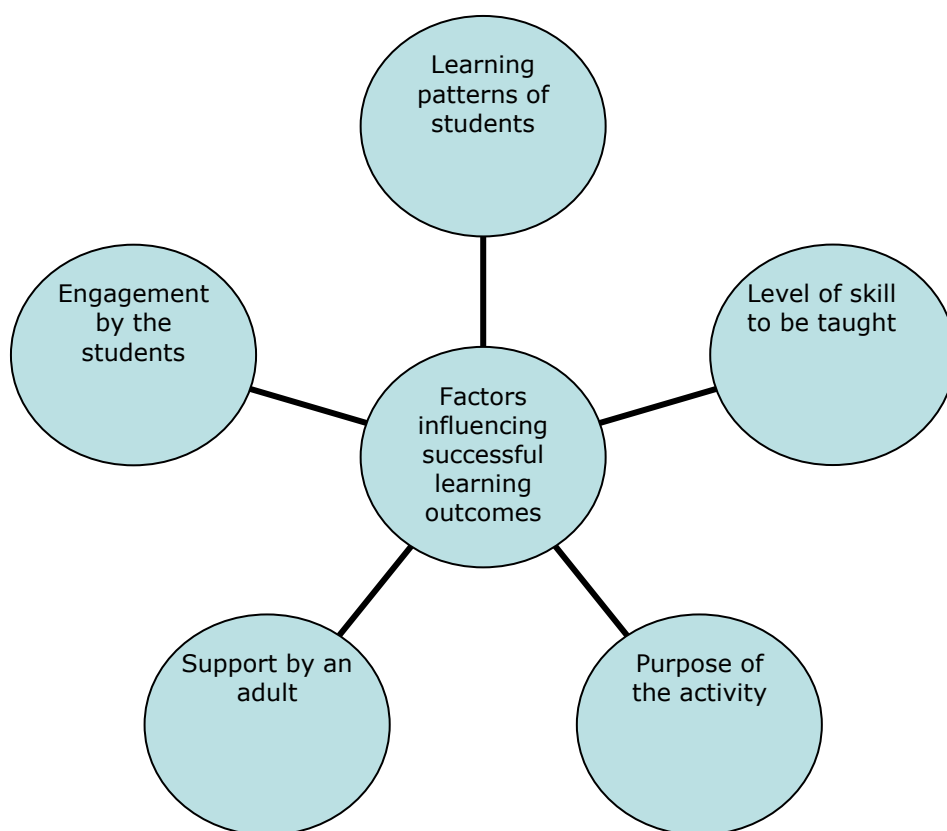
The materials reviewed all begin with the starting point of a clear model of the knowledge that needs to be transmitted, and present at best some sort of self-checking interactive activity often referred to as a game. It might be safer to think of the materials as a series of interactivities with immediate feedback rather than as games per se. The focus of products starts with a clear content-led objective, and is based on the expectation that the students will be more engaged and motivated because the activities avoid specific writing tasks and give immediate 'reward' through prompt feedback. The nature of the task as being to do with numeracy or literacy tasks is generally very much 'up front'. The resources do not attempt to wrap up the learning into an engaging context as products exploring similar issues for younger children seem to do, and therefore rely on the teacher/student relationship to drive the task forward.

The relationship that is generally expected is that a single learner will be interacting with the materials presented on the computer, and the computer will be scoring or judging the effectiveness of the learner's answers. The value of a community context, or of peer-to-peer activity, has rarely been incorporated into the learning model presented by the software. Teachers often use the software with pairs of students working together, but the model the software presents does not use or support this learning context.

ICT has often been 'accused' of only increasing students' motivation to develop their own learning. That would seem to be a very valuable contribution to the learning of students operating within the Basic Skills Curriculum agenda. This lack of self-motivation for learning is something that was highlighted frequently in the discussions with practitioners contributing to this research. However the materials on offer by and large seem to lack a vision of how technology might do this.

The products often seem to hide behind the notion that presenting the questions in a more adult fashion, without graphics to lighten them for example, is sufficient to appeal to these learners. A question designed for a 6 year-old such as, 'How much money would you need to buy five oranges costing 23p each' would be presented with graphics of oranges, and perhaps a character making the purchase on a market stall. The same question might be an appropriate task for a student on a basic skills course; when presented on screen it would have been deemed appropriate simply by the removal of the graphics.

The only product which has concentrated on the context within which to embed the literacy or numeracy tasks is one designed for key skills and takes the Neverwinter Nights game by Atari as a scenario in which to embed key skills activities. West Nottinghamshire College reports considerable success in using this with key skills students. Experimentation might show evidence of whether a similar approach could be made to work at the basic skills level.



Factors influencing the outcomes of digital learning for basic skills students

The diagram above attempts to describe the inter-relationship between students and their learning. The interplay between the student, the skill or information to be learnt and the adult supporting them is critical for success and is reflected by all the professionals spoken to who support these learners.

Many of the resources developed take a traditional learning approach, one that has been especially prevalent in the use of ICT in FE sector, where learning objects and e-learning models have been used for a considerable time. The task is identified on the basis of its content – how to use capital letters, number bonds to 50, ‘there, their and they’re’ and so on. Once you have started on an exercise, the value of the ICT lies in providing prompt feedback. Few products seem to try to address the students’ motivation issues apart from providing feedback promptly. This model of learning does not support a more context-centred learning approach, and so the resources by and large contain a set of disconnected activities which the students work through one at a time. This does not lead to a situation in which one activity leads on smoothly from the last, and so the student has to be re-motivated to start each resource.

Basic skills has not been an area where mainstream publishers have invested significantly. The course content has not been particularly developed or exams changed to prompt a

redevelopment of materials, either from the content or the approach point of view. For example, where the national strategies have advocated a starter, main activity and plenary session for lessons, this has spawned substantial publisher activity preparing new resources that can be used in this way.

Where developments have taken significant investment, for example in m-learning.org from Tribal and bskb from West Nottinghamshire College, the money has been invested through government-funded projects. Much less investment goes into informing other institutions in the market about the availability of the new materials, and therefore changing resources across the range of institutions working with this population of students is slow and piecemeal.

So in conclusion, exciting ICT resources could be created to:

- support students' learning through a credible context
- provide opportunities for groups of students to work together, either within the same institution, or through electronic communication
- build self-esteem through defined, but short, learner journeys
- use mobile technologies to give learners autonomy
- create very small steps of learning that break the cycle of failure.

These characteristics are described by many developers as core to their beliefs about software development. Implementing them for this target market would offer the potential of significant reward for a population that has experienced failure too long.

APPENDIX 1: TABLE OF INSTITUTIONS AND LOCATION OF TEEM EVALUATORS RESPONDING TO QUESTIONNAIRE

County	Age group of school	Key Stages taught	Subject taught
Cambs	11-16	3, 4	English
Dorset	11-16	3, 4	Humanities
Lancs	11-16	3, 4	Science
London	11-16	3, 4	Geography
W Midlands	11-16	3, 4	English
Lincs	11-16	3, 4	Geography
Cambs	11-16	3, 4	English
Lancs	11-16	3, 4	MFL
Beds	11-16	3, 4	Geography
Norfolk	11-16	3, 4	Chemistry/science
N Yorks	11-16	3, 4	Maths
E Yorks	11-18	3, 4	Business studies
Gloucs	11-18	3, 4	Maths
London	11-18	3, 4	Science
Leics	11-18	3, 4	ICT
W Yorks	11-18	3, 4	MFL
E Sussex	11-18	3, 4, FE	History
E Yorks	11-18	3, 4, FE	ICT
Cambs	11-18	3, 4, FE	Geography
Norfolk	11-18	3, 4, FE	Maths
Nottingham	16-18	FE	English
Bedford	16-18	FE	Geography
Teeside	16-18	FE	Science

Manchester	16-18	FE	History
Cheshire	16-18	FE	Business studies
Leeds	16-18	FE	English
Leeds	16-18	FE	Science
Brighton	16-18	FE	MFL
Surrey	16-18	FE	Maths

APPENDIX 2: INSTITUTIONS INTERVIEWED

Cottenham Village College and 'The Centre' Cambridgeshire, a community school for 11-16 year-olds. 'The Centre' is a unit for 60 students drawn from a wide area of South Cambridgeshire who have a wide range of learning difficulties. Conversation with the Acting School Head, and main literacy teacher at The Centre, 17 January 2007.

Hinchingbrooke School, Huntingdon, a community school for students aged 11-18. The school was an early provider of ASDAN courses for its students. Conversation with Deputy Head responsible for SEN provision, 18 January 2007.

Peterborough College of Further Education, a college of almost 3,000 students with a large cohort of students receiving basic skills courses. Conversation with Head of Basic Skills and also with lecturer in charge of maths including basic skills, 18 January 2007.

Cambridge Regional College, a college serving a significant proportion of post-16 students who did not qualify to attend the local sixth form colleges. As an institution it works extensively with the local village colleges and community schools in Cambridge at 14-16, and has been reviewing its provision of basic skills education to these students post-16. Conversation with Head of Basic and Key Skills provision, 19 January 2007.

South Dartmoor College, a community school for 11-18 year-olds serving a very large area of South Dartmoor. This was visited as part of the SSAT Futures Tour, and a subsequent telephone interview conducted with teachers met on that occasion. Visited October 2006, conversation with Deputy Head responsible for Curriculum development, 25 January 2007.

MOD official in charge of education developments on behalf of the MOD. He described the process by which the MOD delivers work to students, and about the work of the Harrogate Army College, where 16-17 year-old students receive a 42-week course in which basic skills forms a component in the second term. Following an interview with him, this approach was discussed with the member of staff responsible for the course at Harrogate.

EDS is a global organisation delivering ICT services to companies around the world. Whilst most of the students it interviews are expected to be high achievers, it also runs basic skills courses for some students. Its Education Officer was interviewed, who is responsible for making recommendations about methods for interviewing students and identifying appropriate courses for them to take, 4 January 2007.

West Nottingham Regional College has developed a set of resources in response to its students needs. These have been funded in part by monies from the LSC, and seek to address many of the issues that these students face. The interview combined a discussion of the ways in which the students were taught, together with a discussion of the nature of the materials used. A separate branch of this college has developed resources to use with key skills students. Discussion with Head of Development and Head of Basic Skills Development, 30 January 2007.

Tribal is an organisation that has won a wide range of projects to create digital resources for basic skills to be used by adults as well as by 14-19 year-olds. It has had a long tradition of being an early adopter of ICT as a means of delivering materials to this market sector. Of late, it has been developing a range of resources to be delivered over mobile phone or PDA technology. My interview was with the team responsible for the development of these resources and for training students in their use, 8 February 2007.

Nord Anglia is an organisation that has developed a large variety of electronic course materials for a variety of courses including basic skills. It is responsible for creating the materials that are used at the Harrogate Army College. These resources are also published and available more widely. The team responsible for development and implementation of these resources was interviewed, 13 February 2007.

APPENDIX 3: ADULT BASIC SKILLS CURRICULUM

Literacy progression

Entry level		Level 1		Level 2	
Entry 1	Entry 2	Entry 3			
<p>Speaking and listening At this level, adults can:</p> <p>listen and respond to spoken language, including simple narrative, statements, questions and single-step instructions</p>	<p>Speaking and listening At this level, adults can:</p> <p>listen and respond to spoken language, including straightforward information, short narratives, explanations and instructions</p>	<p>Speaking and listening At this level, adults can:</p> <p>listen and respond to spoken language, including straightforward information and narratives, and follow straightforward explanations and instructions, both face-to-face and on the telephone</p>	<p>Speaking and listening At this level, adults can:</p> <p>listen and respond to spoken language, including information and narratives, and follow explanations and instructions of varying length, adapting response to speaker, medium and context</p>	<p>Speaking and listening At this level, adults can:</p> <p>listen and respond to spoken language, including extended information and narratives, and follow detailed explanations and multi-step instructions of varying length, adapting response to speaker, medium and context</p>	
<p>speak to communicate basic information, feelings and opinions on familiar topics</p>	<p>speak to communicate information, feelings and opinions on familiar topics</p>	<p>speak to communicate information, feelings and opinions on familiar topics, using appropriate formality, both face-to-face and on the telephone</p>	<p>speak to communicate information, ideas and opinions adapting speech and content to take account of the listener(s) and medium</p>	<p>speak to communicate straightforward and detailed information, ideas and opinions clearly, adapting speech and content to take account of the listener(s), medium purpose and situation</p>	
<p>engage in discussion with another person in a familiar situation about familiar topics</p>	<p>engage in discussion with one or more people in a familiar situation to establish shared understanding about familiar topics</p>	<p>engage in discussion with one or more people in a familiar situation, making relevant points and responding to what others say and to reach a shared understanding about familiar topics</p>	<p>engage in discussion with one or more people in familiar and unfamiliar situations, making clear and relevant contributions that respond to what others say and produce a shared understanding about different topics</p>	<p>engage in discussion with one or more people in a variety of different situations, making clear and effective contributions that produce outcomes appropriate to purpose and topic</p>	
<p>Reading At this level, adults can:</p> <p>read and understand short texts with repeated language patterns on familiar topics</p>	<p>Reading At this level, adults can:</p> <p>read and understand short straightforward texts on familiar topics</p>	<p>Reading At this level, adults can</p> <p>read and understand short, straightforward texts on familiar topics accurately and independently</p>	<p>Reading At this level, adults can:</p> <p>read and understand straightforward texts of varying length on a variety of topics accurately and independently</p>	<p>Reading At this level, adults can:</p> <p>read and understand a range of texts of varying complexity, accurately and independently</p>	
<p>read and obtain information for common signs and symbols</p>	<p>read and obtain information from short documents, familiar sources and signs and symbols</p>	<p>read and obtain information from everyday sources</p>	<p>read and obtain information from different sources</p>	<p>read and obtain information of varying length and detail from different sources</p>	
<p>Writing At this level, adults can:</p> <p>write to communicate information to an intended audience</p>	<p>Writing At this level, adults can:</p> <p>write to communicate information with some awareness of the intended audience</p>	<p>Writing At this level, adults can</p> <p>write to communicate information and opinions with some adaptation to the intended audience</p>	<p>Writing At this level, adults can:</p> <p>write to communicate information, ideas and opinions clearly using length, format and style appropriate to purpose and audience</p>	<p>Writing At this level, adults can:</p> <p>write to communicate information, ideas and opinions clearly and effectively, using length, format and style appropriate to purpose, content and audience</p>	

Numeracy progression

Entry level					
Entry 1	Entry 2	Entry 3	Level 1	Level 2	
<p>Understanding and using mathematical information</p> <p>At this level, adults can:</p> <p>read and understand information given by numbers and symbols in simple graphical, numerical and written material</p>	<p>Understanding and using mathematical information</p> <p>At this level, adults can:</p> <p>read and understand information given by numbers, symbols, simple diagrams and charts in graphical, numerical and written material</p>	<p>Understanding and using mathematical information</p> <p>At this level, adults can:</p> <p>read and understand information given by numbers, symbols, diagrams and charts used for different purposes and in different ways in graphical, numerical and written material</p>	<p>Understanding and using mathematical information</p> <p>At this level, adults can:</p> <p>read and understand straightforward mathematical information used for different purposes and independently select relevant information from given graphical, numerical and written material</p>	<p>Understanding and using mathematical information</p> <p>At this level, adults can:</p> <p>read and understand mathematical information used for different purposes and independently select and compare relevant information from a variety of graphical, numerical and written material</p>	
<p>specify and describe a practical problem or task using numbers and measures</p>	<p>specify and describe a practical problem or task using numbers, measures and simple shapes to record essential information</p>	<p>specify and describe a practical problem or task using numbers, measures and diagrams to collect and record relevant information</p>	<p>specify and describe a practical activity, problem or task using mathematical information and language to make accurate observations and identify suitable calculations to achieve an appropriate outcome</p>	<p>specify and describe a practical activity, problem or task using mathematical information and language to increase understanding and select appropriate methods for carrying through a substantial activity</p>	
<p>Calculating and manipulating mathematical information</p> <p>At this level, adults can:</p> <p>generate results which make sense and use given methods and given checking procedures appropriate to the specified purpose</p>	<p>Calculating and manipulating mathematical information</p> <p>At this level, adults can:</p> <p>generate results to a given level of accuracy using given methods and given checking procedures appropriate to the specified purpose</p>	<p>Calculating and manipulating mathematical information</p> <p>At this level, adults can:</p> <p>generate results to a given level of accuracy using given methods, measures and checking procedures appropriate to the specified purpose</p>	<p>Calculating and manipulating mathematical information</p> <p>At this level, adults can:</p> <p>generate results to a given level of accuracy using methods, measures and checking procedures appropriate to the specified purpose</p>	<p>Calculating and manipulating mathematical information</p> <p>At this level, adults can:</p> <p>generate results to an appropriate level of accuracy using methods, measures and checking procedures appropriate to the specified purpose</p>	
<p>Interpreting results and communicating mathematical information</p> <p>At this level, adults can:</p> <p>present and explain results which show an understanding of the intended purpose using appropriate numbers, measures, objects or pictures</p>	<p>Interpreting results and communicating mathematical information</p> <p>At this level, adults can:</p> <p>present and explain results which meet the intended purpose using appropriate numbers, simple diagrams and symbols</p>	<p>Interpreting results and communicating mathematical information</p> <p>At this level, adults can:</p> <p>present and explain results which meet the intended purpose using appropriate numbers, diagrams, charts and symbols</p>	<p>Interpreting results and communicating mathematical information</p> <p>At this level, adults can:</p> <p>present and explain results which meet the intended purpose using an appropriate format to a given level of accuracy</p>	<p>Interpreting results and communicating mathematical information</p> <p>At this level, adults can:</p> <p>present and explain results clearly and accurately using numerical, graphical and written formats appropriate to purpose, findings and audience</p>	

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