inside EVIDENCE

Putting evidence into practice

LSIS LEARNING AND SKILLS IMPROVEMENT SERVICE

Once again the *Inside Evidence* team has scoured the research horizons and consulted practitioners about the topics for which they would find evidence of effectiveness to be helpful.

Inside Evidence aims to identify and communicate key messages about relevant research which can make a useful contribution to quality improvement in the sector. It is one of the many ways in which LSIS provides practitioners with research-based evidence that stimulates debate and thinking about strategic approaches to quality improvement.

We have looked at studies from around the world which could provide useful evidence in the UK context. The results range from programmes of combined academic and vocational study in the USA to research on successful approaches to teaching mathematics.

Practitioners have their voice in this issue too. More and more, learning and skills practitioners are taking on enquiry projects in their own provider environments: sometimes surprising themselves with their success and enthusing their colleagues in the process.

Literacy is an issue which concerns us all. We were pleased to find a study which explored ways in which we can use the perceptions and insights of adult learners as a resource in the practice of reading development.

We also explore what enables learner confidence and independence, both of which underpin successful learning. The research shows that it involves two main things: learners taking the lead in assessing their own learning and tutors providing them with specific advice on areas of weakness and learning needs.

The 'Take Action' boxes at the end of each feature draw out some potential implications for practice from research evidence.

In this issue

What's the evidence?

Inside Evidence is published three times a year. It is a digest of research evidence which you may find useful in your own practice. The research is assessed to ensure that the findings are trustworthy, relevant and useable across different contexts. Other articles feature news, views and roundups of current research.

Have your say

We would love to know your views of the articles we have produced for this issue of *Inside Evidence* and how they have informed your practice. Let us know by emailing us at: research@lsis.org.uk

inside EVIDENCE

Keeping the door open to further study

The impact of different pedagogies on learner participation

Organising for active learning instead of "telling": that's the message about what constitutes effective teaching and transferable learning, for which research is accumulating an increasing body of evidence (see for example the Autumn 2009 issue of *Inside Evidence* at www.excellencegateway.org.uk/research).

In one large-scale study the researchers examined the difference made by connectionist and transmission teaching practices. (See the boxes for descriptions of these different approaches). They measured connectionist, learner-centred teaching practice by asking teachers how frequently they engaged in certain activities in their teaching. Connectionist practices involved:

- discussions
- group work, and
- encouraging learners to use their own methods.

Transmission practices on the other hand, involved:

- routine practice of examples
- teaching to the test, and
- sticking to the textbook.

Having analysed classroom practices in this way, the researchers produced a scale with transmission practice at one end and connectionist, learner-centred practice at the other. Most of the practice they observed was near the transmission end, with very few classrooms showing connectionist practices. But it was these few connectionist classrooms that made a difference to the quality of learning.

When the researchers surveyed the learners they found that connectionist teaching significantly affected learners' willingness to continue studying mathematics, particularly for those with low GCSE tiers and grades. While learners' interest towards mathematics generally declined during AS level courses, connectionist teaching reduced the decline.

But the researchers also found that connectionist teaching tended to be reserved for classes where learners' GCSE grades were low and where teachers perceived that learners needed to build confidence through understanding. Similarly, the kind of colleges where connectionist teaching flourished were those that ran open access courses and which were responsive to supporting a community ethos and where the teachers were committed to an inclusive approach to students.

Evidence source
Williams, J. et al (2008). Keeping Open the Door to Mathematically-Demanding F&HE Programmes: Full Research Report, ESRC End of Award Report, RES-139-25-0241. Swindon: ESRC and TLRP briefing available from: www.tlrp.org/proj/wphe/wp_williams.html

What connectionist teaching looks like in practice

In one of the classrooms the researchers observed, they saw a social and cooperative teaching approach that enhanced learners' confidence and their ability to communicate in small groups and then with the whole class. Learners were thus gradually encouraged to publicly share their mathematical thinking, including making mistakes, to evaluate collectively and learn from these reflections.

A small incident that typified this approach involved the tutor asking the class for formulae that might represent a graph. Having elicited five or six different responses, including some misconceptions, she said "well, presumably they can't all be right, how will we decide which are correct?" Her use of the pronoun 'we' invited the class to evaluate the mathematics on offer – traditionally the teacher's function in whole class interactions. Thus mathematical procedures were publicly developed, justified or debugged by appeals to conceptual underpinning and 'connections'.

The researchers also saw public evidence of:
- problem-solving taking place in the design of the whole lessons;
- the use of memory tools (e.g. posters and whiteboards) which crystallised and socialised learners' mathematical thinking, and
- an 'inclusive' ethos of learners being 'mathematicians' – seeing themselves as people who do mathematics.

The characteristics of transmission teaching

Transmission teaching appears to generally make surface approaches publicly visible. Reference to what the examiners ('they') want from the learner in the exam is often prominent. Students who are already well-prepared and well-disposed can thus be taught apparently efficiently and teaching is fast-paced, teacher-centred and procedure-oriented. Explanations and concepts underpinning the procedures tend to be enunciated by the teacher. Students often work alone, or in pairs to help each other, or get help from the teacher one-to-one and so conceptual aspects of mathematics are 'privatised'. Those who don't understand may respond by rejecting maths as 'hard'.

Nearly 1,800 sixth form college students were surveyed on three occasions: early in the course, just before the AS exams and the following year when the results were known. The survey was supplemented by lesson observations in five colleges.

Take action

Could you consider how:

- you could develop a more open access policy in which connectionist teaching appears to flourish at your institution?
- connectionist your practices are by completing a teaching style audit/questionnaire such as the one referenced in 'Inside Track' on the back page?
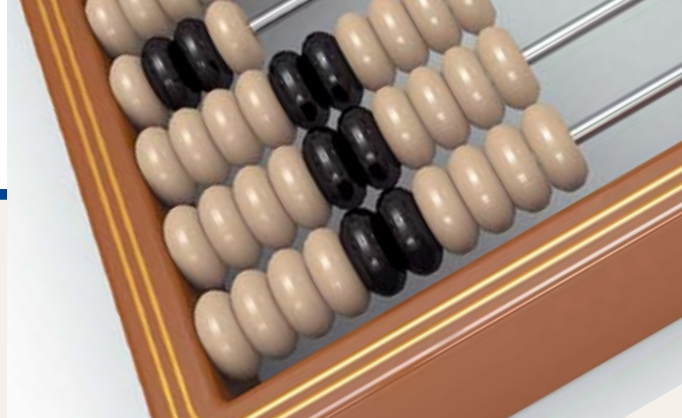
Count me in!

Making mathematics more inclusive

As well as researching different teaching methods, the researchers involved in the project reported on page 2 also investigated whether different kinds of programmes ('traditional mathematics' and 'uses of mathematics') affected students' attitudes to the study of mathematics and their success with it.

The researchers argued that mathematics is important because it provides a useful and powerful way of seeing and analysing the world. It provides access to an understanding of science and technology and also to understanding big social ideas such as change, growth, risk and complexity. But when they spoke to teachers, learners and managers, the researchers found they often saw the value of mathematics in a different light. They tended to regard mathematics as important mainly because it has 'currency' in getting the grades/UCAS points required for university (the learners), performance management (the teachers) and in acquiring league table reputations (the managers).

Sometimes the learners did address the usefulness of mathematics, but this was significantly more evident among learners on 'uses of mathematics' courses. It was much more common to hear learners talk of the currency of mathematics in terms of 'looking good for the CV', or being 'needed for getting into a chosen course at university' (i.e. to become a success).

The effect of different mathematics programmes on inclusion

The researchers' main finding was that the AS 'use of mathematics' (UoM) programme encouraged learners to persist in learning the subject, and did so in a variety of ways, especially:
- coursework assessment which encouraged learners to explain their work and understand mathematical modelling rather than simply perform
- learning with the aid of technology, and
- learners' general appreciation of mathematics as a useful subject.

For almost all traditional (TRAD) AS mathematics, learners' drop out rates were high, particularly among learners with low GCSE mathematics grades and the intermediate tier GCSE. The researchers' observations suggested that these learners find the pace of the traditional AS mathematics courses too fast because teachers commonly devote little time for developing understanding,

So, the researchers argued, the 'uses' approach to mathematics can help widen participation especially to include those with lower GCSE grades, but they warned of the danger of the 'uses' course becoming stigmatised as the course to lower grade GCSE learners, especially when there is no A2 course for these learners to progress to.

A case study

Kirsty had chosen mathematics to fill the gap in her subject choices [to go alongside chemistry and biology]. She got a B at GCSE but doesn't know how. From an early age she found mathematics difficult, especially mental mathematics, which she still finds difficult. But she was planning on going on to A2. Kirsty said: "I'm not the best student in the class, but it doesn't matter because I enjoy it". Kirsty also saw mathematics as helpful and useful: "It helps business studies and biology and chemistry, it doesn't faze me when we have a formula… and it also makes you think and be able to take a step back and think things through".

Kirsty had learned that mathematics was about solving problems and being creative in finding possible solutions. She said mathematics is "not black and white, there is always more than one way of solving the problem … you can find your own way to do it". She commented on how this was different from her experience of other subjects, such as chemistry where they were simply told knowledge: "in chemistry you do experiments, but only what they tell you to do".

Kirsty also emphasised the importance of the sociable atmosphere she found in her mathematics class. The sociable classroom was a means for support in helping her learn: "I can ask others because it's quite relaxed." As such, she believed it OK to be wrong and that she could get help when she needed it.

Take action

Could you:
- identify real world examples or encourage your learners to spot examples from newspapers or other media sources which illustrate the concepts you are introducing?
- do more to emphasise that there are different ways of finding solutions to help prevent learners seeing mathematics as black and white?

Research in view

Inside Evidence interviewed Ann Hodgson, an influential researcher in the learning and skills sector, for her views on the quality of teaching and learning and current challenges

Ann Hodgson has many years experience of conducting research into post-16 education issues, and argues that much has been achieved in the past few years. She points to the fact that investment in resources has resulted in new buildings and equipment, and smaller class sizes. She is also very heartened by the dramatic improvement in collaboration between providers (driven by government and the 14-19 agenda). And still with the 14-19 curriculum, New Diplomas, she says, are making an impact across the board, from generating innovative pedagogy to alternative approaches to timetabling. Ann also highlights the growth of professionalism within the sector which has meant everyone now has to have a qualification and a focus on apprenticeships which have helped young people to relate to a programme designed for them.

There are significant challenges ahead

However she believes that there are still significant challenges facing education professionals. For her, a major one is quality. The focus in recent years has really been on getting learners through examinations rather than on the quality of their experience. "Our research *The Impact of Policy on Learning and Inclusion in the Learning and Skills Sector, 2003-2007*[1] shows that the focus has been more on meeting targets and accountability than the quality of learning and teaching".

Ann points to another challenge, which is that "we still have a really divided system in terms of who gets what out of education and training". There continues to be more money spent on the top end of the system (level 3 learners and higher education learners) than those who are entry or level 1 or even level 2 in colleges. And there is still a big difference between the learner experience in terms of the facilities they have and the amount of money that is spent on them if they are in work based learning or a further education college rather than a school.

Another issue for Ann is that practice should affect policy, but at the moment she says, it doesn't. She claims that it seems to be always the job of researchers and practitioners to make their research known to policy makers. She argues that responsibility lies on both sides to ensure that effective policy is supported by research. "Policy makers should be interested as part of the whole political and deliberative cycle to work with the views of practitioners and researchers as part of the policy process". She cites the example of the Teaching and Learning Research Programme[2] which has shown, there are no real feedback loops that impact on policy in any kind of formalised way. "The idea that when policy is being formulated you involve practitioners because they know what will work with the learners they encounter day in day out just doesn't seem to be how things are done".

The value of getting involved in research

Reading about research is not enough: in Ann's experience there is no substitute for practitioners getting involved. "Once they get involved" she says, "practitioners can begin to see for themselves how research can be used as part of their practice and indeed how practice can inform research and policy". She adds that working collaboratively with other practitioners or researchers generates the kind of enthusiasm that only happens when practitioners are genuinely talking about teaching and learning "rather than about broken toilets, discipline or the latest policy wheeze".

But practitioners are getting more involved with research. Ann points to the PGCE post compulsory programmes carried out in conjunction with universities, which means that "staff are in touch with research in ways they never have been before. That must be an important stimulus for change and development". She believes that practitioner research should be a central part of any kind of staff development and curriculum development. "Too often it's seen as something separate, that is done outside the institution. Staff development is something which should be brought inside. More people should be involved in research whether small scale or as part of larger projects to keep them constantly refreshing their skills and knowledge and becoming better practitioners".

Research is out there in "huge amounts" and is now easily accessible in a way that even two to three years ago was not the case. It is a question of knowing particular websites where you can go to on a regular basis to see the latest updates – such as the General Teaching Council's Research for Teachers website[3], the Education Evidence Portal[4] and the Excellence Gateway[5].

[1]www.tlrp.org/proj/phase111/coffield.htm
[2]See for example, www.tlrp.org/pub/documents/FEcommentary.pdf
[3]www.gtce.org.uk/teachers/rft/
[4]www.eep.ac.uk
[5]www.excellencegateway.org.uk/research

Ann Hodgson is professor of education, consultancy and knowledge transfer / co-director, centre for post-14 research and innovation, Institute of Education, University of London.

Practitioner-led research

LSIS Research Development Fellowships

Practitioners and academics are working together on projects which are tackling improvement issues across the learning and skills sector. These range from the use of peer assessment to improve learners' independent learning skills, to engagement and progression in STEM programmes by involving industrial partners in teaching and learning. Each group of participants was awarded one of 21 Research Development Fellowships, initiated and sponsored by LSIS, advised by IfL and guided and supported by the Centre for Excellence in Teacher Training at the University of Sunderland (SUNCETT). An intensive induction event in October 2009, commenced the projects and there will be a research conference in March 2010, when fellows will present their findings to LSIS and IfL.

Sheila Kearney, LSIS' head of research and Maggie Gregson from SUNCETT realised early that the impact and success of the research development fellowships depended on getting the design of the programme right. LSIS first commissioned a review of existing and previous programmes to support practitioner research which provided a framework for the design of this programme. Hence, according to Maggie, "they took account of the importance of providing practitioners with a space where they could feel confident in talking and writing about their practice and research". The practitioners identified research issues relevant to their own practice and will work together to try out new practice and evaluate its success for their setting.

A key factor is recognising how people can help each other learn and grow – in this case by experiencing new practice together, rather than being told what 'good practice' is by an external party and expected to apply this to their own setting. A key goal for LSIS and SUNCETT is to create a 'community of researchers' in which the practitioners will feel a sense of belonging and become confident that they are well equipped to see a project through to the end. One of the objectives of the programme is to support the fellows in the design of their projects so that they stand a good chance of producing transferable learning and cultivation of research champions for the sector.

This table gives a flavour of some of the projects.

WHO	WHAT	HOW
Hilary Eyres learning resources advisor Learning Resource Centre Cambridge Regional College	Partnership working to integrate information skills into the FE curriculum	Hilary is collaborating with academic staff from across subjects and disciplines at the college to identify the appropriate information skills needed for various subjects, and intends to develop, trial and evaluate a range of strategies which aim to improve learner's applications of these skills in their learning.
John Henry/Tim Bartlett senior tutors Bedford College	Vocational Workshops for Level 3: Optimising Frequency and Duration in FE Science	John and Tim are exploring the impact of tutorial support and ideas and strategies on learner performance, independence and motivation. They are proposing to trial and evaluate different ways of organising tutorial workshops.
Marcin Lewandowski centre manager/ESOL tutor Action Acton Ltd, London	The role of technology in language development	In Marcin's project, ESOL learners are collaborating with their peers to conduct recordings of conversational practice in class. Learners are able to listen back to the recordings and are given the opportunity to constructively criticise their use of English through self and guided peer assessment. Learners will then repeat and evaluate the exercise taking into consideration feedback and identified points for improvement.
Julie Osborn manager for disability and mental health support services City of Bristol College	How effectively are disabled learners using access technology in higher education?	Through interviews with teachers and learners, Julie's project is identifying the barriers learners face in using technology, and the impact technology has on the retention and achievement of disabled learners.
Yousef Taktak/Tony Oakley STEM coordinators Rotherham College of Arts & Technology South Yorkshire	Improvement of Level 3 learners' retention rates, engagement & progression in STEM programmes by involving industrial partners in teaching & learning	Yousef and Tony are giving learners opportunities to link up with employers so that they better understand how STEM subjects are used in industrial settings. The project will help produce a framework to allow collaboration, partnerships and information flow between industry and the post-compulsory education and training (PCET) sector.
Anne Taylor lecturer/course manager Colchester Institute	Using formative peer assessment creatively to improve critical thinking skills and empower learners	Anne is investigating whether peer formative assessment can be used to improve learners' independent learning skills. Various methods of achieving this will be trialled and evaluated.

Further information about each of the 21 Fellowships is available at www.excellencegateway.org.uk/page.aspx?o=200603

Introducing the Tutor Effectiveness Enhancement Programme (TEEP)

Gillian Forrester

As head of teaching and learning development at Gateshead College, Gillian Forrester set out to introduce 16 staff to TEEP, in order to encourage them to adopt more student-centred practices.

Gillian recognised that her colleagues would need support in doing this so she also used several coaching techniques. To find out the impact of the programme, Gillian ran a structured focus group with 10 of the participants. Personal statements from the tutors showed that the knowledge and skills from the TEEP training programme were successfully transferred into practice by all 16 tutors and that there were many benefits for both the tutors and learners, such as tutors having the confidence to change their practice, greater student engagement and more active involvement in lessons.

What TEEP involves

TEEP draws heavily on research about teaching and learning. The TEEP model is underpinned by a number of strategies relating to assessment for learning, thinking skills, effective use of ICT and collaborative problem-solving. Learners are encouraged to ask their own questions, research their own answers and make use of graphic organisers and mind maps to compare and contrast information. They may be offered a carousel of practical activities (such as making a poster) which all the learners move through, or they can be offered a choice of activities from which they can select. Learners are also given the opportunity to apply what they have learned to other problems, to present their new understanding to others and to defend their views. Fundamental to the approach is the work the tutor does to create an environment conducive to learning. For example, they ensure high challenge and reduce stress by smiling and using "we" rather than "you" to refer to the learners and themselves to promote the idea of "our" learning (i.e. including the tutor's).

The impact TEEP had on the learners

Informal feedback showed Gillian that the learners enjoyed the TEEP lessons hugely compared with previous, more traditional, methods of teaching. The lessons were more fun and engaging due to the use of interactive activities and of resources such as music and video. One tutor who tried to revert back to traditional methods (due to a lack of time) found the learners complained about it being "the boring way" of learning.

The impact TEEP had on the tutors

The tutors commented on how they had changed to a more student-centred approach. One tutor said, for example, "Thinking back to my teaching before being introduced to TEEP, my main strategies involved using a lot of PowerPoint presentations in order to get theoretical information across to students". Another tutor commented: "I feel I used to run my classes, not exactly with an iron fist, but with an element of control. There were issues with my old methods – primarily that they [the learners] used to regurgitate my handouts/notes".

Why coaching support was important

The evidence from Gillian's project has led her to believe that the successful introduction of the TEEP programme was due not only to the TEEP approach, but to coaching support too:
- the tutors were organised into pairs to provide each other with support throughout the programme – using video to enable them to reflect on the impact of the new strategies
- a TEEP support group was set up to create a forum to discuss problems and share success stories, and
- the college intranet was used for tutors to share their resources and ideas.

The college had an existing culture that supported open discussion so the tutors were already aware of coaching techniques. This was a great advantage to Gillian and she felt it made all the difference when encouraging the tutors to take on new methods of teaching: "If you take the coaching element out, it will still be a success, but nowhere near as effective in transferring these skills to actual practice".

What does Gillian plan to do next?

Gillian found this project to be a phenomenal experience and it's given her lots of evidence for the accreditation in ILN Level 7 qualification. Next she plans to work with TEEP to deliver training for Learning and Skills practitioners. TEEP is already well established in the schools sector, but Gillian feels that practitioners in all phases should be able to develop their practice in this way.

"Before TEEP, my main strategy was to use a lot of PowerPoint presentations"

"My learners just used to regurgitate my handouts"

Learner voice: involving learners as co-constructors of effective teaching and learning

Yvonne Richards

Yvonne Richards, head of school Entry and Foundation at New College Nottingham, set out to work with learners to gain their opinions about learning in the college and use this feedback to enhance it.

Yvonne trained 11 learners in observing lessons, focusing on three things that went well, and three things that would be 'even better if…' The learners then had to feed back their findings to the tutor observed, and professional development was structured accordingly. Students' morale and their attitude to learning improved through the project.

Yvonne recalls how initially she thought it would be challenging to get her colleagues on board with her learner voice project, as there was potential for tension if the process was anything but professional, respectful and constructive. It was important to gain their support, as the learners would be going into their lessons and observing. Those who had worked with student voice approaches in the past were enthusiastic, and their positive experiences encouraged others to get involved too. Some still had reservations about whether the learners would behave and work constructively as observers, but by the end of the project the learners had exceeded all their expectations and the staff had been impressed with their professionalism.

How Yvonne involved the learners

All learners were encouraged to take part in the project, regardless of their former behaviour within the college. This enabled Yvonne to get views from across the range of learners. Asking learners to observe lessons involved much planning and preparation. Yvonne felt it important to stress to them that they were primarily observing the learners, and that their observations would be used to improve things and promote change in the college.

Preparing the learners also meant teaching them about what good observation and feedback was. To help them understand how to observe a lesson analytically, Yvonne gave each observer a 'checklist' which included things like 'are the learners contributing to the lesson?' and 'are they being challenged?' To prepare them for giving good feedback, Yvonne went into a lesson with a group of learners for a short time and then discussed what they'd observed afterwards – using role play to display effective feedback. It was important that the learners understood that all feedback was confidential and how to be courteous in giving it.

The learners involved were much more critical of other learners than Yvonne expected, with some getting quite irritated when some learners didn't settle down to their work straight away or continued talking when they were not supposed to. This also enabled the observers to question their own behaviour in sessions, with one saying "I didn't realise it was so hard to teach!" She explains how she was initially quite concerned that the observers would simply focus on criticisms of tutors and the college, but found that they were very much focused on the learners and what they were doing. She found it rewarding to gain these new perspectives and to look at things that the staff hadn't considered before.

Overall the student observers adopted a professional approach and took their roles and their training seriously. Yvonne remembers that one of the most valuable things was giving them all an ID badge with 'student observer' on it. They appreciated the responsibility that came with this, and the belief that they could make a difference to learning and teaching.

What the learners' observations revealed

In terms of what was already going well, in just under half (41 per cent) of the 51 observations carried out, learners were observed to be involved and enthusiastic whilst a quarter of the observations showed that aims and objectives were well explained and learners had a good understanding of lessons. The main areas for improvement identified through the observations were behaviour, which the learners felt should be challenged more, and an appreciation that the classroom environment (i.e. that it is friendly etc) is important for learning.

What went well	%
Learners involved and enthusiastic	41 %
Aims and objectives explained and a good understanding of lessons	25 %
Friendly environment	11 %
Good use of activities and resources	8 %
Constant checking of understanding	5 %
Well supported	4 %
Relaxed attitude to learning	3 %
Definite learning observed	3 %
Even better if…	
Behaviour had been challenged	45 %
Environment affected learning	24 %
Aims and objectives were explained	7 %
Differentiation	7 %
Learners had correct equipment for lessons	7 %
Learners were given enough time to answer questions	5 %
Tutor had been in lessons at all times	5 %

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Skills for life

Effective strategies to support learner persistence and progress

Persistent learners are learners who engage in learning that is intensive and long enough to ensure significant progress towards their learning goals. Research included in LSIS' "*Review of Evidence to Support the National Improvement Strategy*" identified a number of the factors linked to this persistence, and to help progress learning amongst literacy, language and numeracy (LLN) learners. Underpinning all of these factors was the importance of finding ways of enhancing LLN learners' confidence and self-esteem.

Appropriate courses

The research shows that to begin with, persistence was enabled by careful placement on courses that were appropriate and at the right level. Learners were more likely to stay on programmes when the rationale was clearly explained and understood, and where there was an achievable and appropriate outcome.

Achievement

Promoting a sense of learner satisfaction and achievement was found to be particularly important for LLN learners. Most learners described learning gain and progress in terms of what their learning enabled them to do in real life situations. Some learners defined their achievements in terms of specific skills they had acquired. An important role for tutors was that they developed processes (such as records of learning) to support learners in recognising and reflecting on their learning gains and help them identify their next learning challenges. Most learners wanted to take the lead in assessing their own learning and considered that they were able to recognise when they had learned something. They used files and records of learning to inform themselves how far they had travelled. This recognition helped them to persist with their learning.

An enabling environment

Overt appreciation of the learners' efforts was a significant factor in persistence in learning. Learners stressed the value of tutor praise as a motivational tool and a key factor in building confidence and self-esteem. Conversely, perceived lack of interest or negative attitudes from teachers caused some learners to consider leaving or actually to leave their courses.

Group work

Facilitated group and pair work allowed learners to progress faster than individual tasks and worksheet-based learning did. Group approaches enabled learners to articulate, compare and reflect on their experiences and thus recognise progress and achievement. Learners pooled knowledge in groups. They used each other as mutual experts and to work out whether they had succeeded in learning tasks, using the tutor to confirm these judgements. This process also helped build their confidence and sense of self-worth.

Technology

Technology was identified in the review as having the potential to be fun and motivating, increase confidence, offer new ways of learning and make it possible for learners to learn in new places and at new times. However, it was recognised that technology on its own was not enough. Learners needed good introductions to applications, access to technical support and the opportunity to engage personally with a teacher face-to-face or by phone or email.

Incentives

Incentives (carefully chosen rewards for sticking with learning) played a role in encouraging learners to attend regularly. Learners were less motivated by less immediate or tangible rewards, such as getting a job, but carefully chosen rewards for sticking with learning played a part in keeping learners engaged. Particularly, they encouraged learners to stay beyond the crucial first weeks of their course. Success drove success. A sense of achievement motivated learners to stick with learning. This was further promoted by teachers recognising small steps of learning, such as growth in confidence.

Embedding

The review's findings suggested that embedding LLN provision across the learning programme not only supported skills development, but also helped to overcome the stigma associated with LLN classes, which were more marked for learners at level 2. Success rates in courses where literacy and numeracy were embedded in vocational courses were 15 per cent higher than in non-embedded courses.

Assessment

Diagnostic and ongoing formative assessment that encouraged active feedback from tutors to learners was found to be an effective way of improving persistence and raising achievement. Learners overwhelmingly preferred ongoing assessment based on discussion and portfolio building supported by teacher feedback and individual reflection. Although some saw formal assessment through tests and external exams as motivating and confidence boosting, other learners said that they would leave a course to avoid testing, and some built up their confidence to face formal tests as the course progressed.

Take action

Could you:

- find out from your learners what they think would help them to persist with learning and use what you find out to refine your practice?
- involve your learners more in their own assessment?

Evidence source
Review of Evidence in Support of the National Improvement Strategy Theme 6: Skills for Life

The researchers produced catalogues of themed research evidence relevant to the learning and skills sector in England. Materials from other sectors and countries were not included. All the materials selected were quality assured.

Adult Learning

What can we learn about literacy development from adult learners' perceptions of reading?

Adult literacy learners who choose to improve their reading and writing bring their knowledge, skills and experience to the classroom in a self-aware way. So they present an important, but rarely used resource for research and practice of reading development. The researcher in this study set out to explore the perceptions of adult literacy learners to add to our existing knowledge of the learning and teaching of reading, and to highlight how it can be used to improve practice

Adult literacy learners' perceptions of *'what we are doing when we read?'* were analysed under several categories, including:
- decoding
- ways to get better at reading, and
- why we read (motivation).

Decoding included learners' ideas about the physical and cognitive processes involved in reading, such as looking at words, making connections between letters and sounds, word recognition, guessing from context, etc. The researcher observed that most learners lacked the 'metalanguage' to describe phonic decoding. They had to search for ways to describe the process, e.g. 'break it down', spell it', 'sound it out'. Given that the learners perceived phonic decoding to be their primary literary strategy, the researcher believed that using metalanguage in an adult literacy classroom could be beneficial, and create a sense of empowerment resulting from being able to describe and name these learning activities.

Ways to get better at reading

The researchers found four main ways to helping learners improve at reading.
- Reading as much as possible – Read, read, read! ...the more you practice the better you get at it, and that's the way it is.
- Reading easy books – You know, when I want to read and improve my reading, I choose a book that I can read and understand easily.
- Reading books you have strong motivation to read – If there's a book I like and find exciting, that's what gets me reading.
- Reading aloud.

Reading aloud was defined by the learners both as a type of reading for specific purposes, such as accessing stories, poems and religious texts, and as a method to improve their reading. Learners spoke of how often they read aloud when they were alone:

"[when] I'm on my own at home, I'd read out loud... so I can understand the words and the sounds as well".

Many explained that reading in pairs or groups gave them an opportunity to learn from working with others:

"I like reading loudly because I am learning something... it's good that other people can hear – if there's a mistake they can help".

The learners recognised that listening to others reading aloud clarified the connections between written words and sounds for them:

"... when someone's reading it and you're following it, it helps – if you can't say that word, don't know what the word is and someone's reading it, and then it's 'oh yeah yeah'. That helps a lot".

Motivation was seen as not just what drove the learners to join literacy classes, but what had encouraged them to learn to read (often struggling against the odds) and to continue to improve their skills. The main motivating factors included doing it for the sake of their children - being able to help their children with their learning, getting a good job, and escaping from 'real life' problems.

Evidence source

Duncan, S. (2009) 'What are we doing when we read?' – adult literacy learners' perceptions of reading. *Research in Post-Compulsory Education, 14(3), pp 317-331*

Take action

Could you:
- discuss reading with your learners, using the categories in the study, to clarify what motivates them and helps them learn and perhaps produce together an informal guide for reading development?
- experiment with using metalanguage (such as 'decode' 'syllable' and 'vowel') to describe and explore the process of decoding (i.e. recognising letters, their combinations and words)?
- try reading aloud, in groups and individually, as a tool for developing reading with your learners?

The researcher, who was an adult literacy teacher and teacher educator, carried out 21 individual interviews and four focus groups with adult literacy learners at a London further education college. Participants were selected to present a spectrum of English Adult Literacy Core Curriculum levels from Entry1 (beginners) to Level 2.

Helping learners to take more responsibility for their learning

Much research highlights the benefits of enabling learners to take more responsibility for their own learning. With this in mind, a recent study from Holland explored the benefits of a web-based development portfolio tool, designed to help learners monitor their progress and plan their future learning. They wanted to find out whether giving learners (on a hairdressing programme) advice as well as feedback on how to use the tool, was more helpful for developing independent learning skills and enhancing learning than just giving learners feedback.

The design of the portfolio tool

The portfolio tool was designed to help the learners:
- assess their own performance
- formulate their learning needs based on their weaknesses in a task, and
- select future learning tasks that would help them to fulfil the formulated learning needs.

The learners self-assessed their own performance against criteria such as 'applying hair dye in no more than 10 minutes' and 'being friendly to clients,' and used their assessments as a basis for formulating their future learning needs, for example, 'I need to learn to apply hair dye in less time'. The learner could then find out how to speed up hair dying time by:
- observing their tutor performing the skill
- dying the hair of a dummy, and
- dying the hair of a real client.

Thus, the portfolio helped to yield a working plan with learning tasks for every week.

What the supervision meetings involved

Half the learners were given advice as well as feedback by the supervisor on how to improve their self-directed learning skills; half were only given feedback (i.e. no advice). For example, when learners identified needs in a general way, such as 'I need to talk more', they were given tips on how to make them more specific – as in 'I need to think about interesting topics I could talk about with clients'. The supervisors also gave advice on how to select learning tasks that would fulfil the formulated learning needs. For example, when learners selected learning tasks they had already mastered because they liked doing them, the learners were advised to also include tasks that offered the opportunity to practise new skills or skills not yet adequately mastered.

The difference the supervisors' advice made

The study found that when compared with the learners in the feedback only group, over the 30 weeks of the study, the learners in the advice group:
- were more able to diagnose weaknesses and possible cause(s) of their weaknesses and formulated their learning needs better
- selected slightly more suitable learning tasks
- completed more practical assignments (on average around 10 in the advice group compared with six in the feedback only group), and
- acquired the equivalent of, on average, around half a certificate more.

Drawing up a year plan was important for success. Learners in the feedback only group were more likely than those in the advice group to blame any lack of success on lack of planning (62 per cent of the learners in the feedback-only group mentioned this factor as a reason for not participating in a formal examination, whereas only 17 per cent of the learners in the advice and feedback group gave this as a reason).

But the advice given by the supervisors was not effective for all aspects of self-directed learning. The researchers noted how the learners did not reach a stage where they were able to assess their own performance sufficiently – the proportion of agreement with their teacher assessments was only about 65 per cent. Consequently, the researchers recommended also training learners in self-assessment through the tutor modelling assessment skills, and discussing with the learner the differences between their assessments and their learners' self-assessments.

Take action

Could you:
- help your learners to devise a year plan that is appropriate to them personally?
- make formulating the key learning needs one of the main topics you discuss in supervision meetings to help learners practise new skills?
- model assessment skills and discuss with your learners any differences you notice between their and your ideas about assessments on tasks?

Evidence Source
Kicken, W., Brand-Gruwel, S., Van Merriënboer, J., & Slot, W. (2009) The effects of portfolio-based advice on the development of self-directed learning skills in secondary vocational education. *Educational Technology Research and Development, 57, pp. 439-460.*

The study involved 43 students and four teacher supervisors from a school for secondary vocational education in the Netherlands. The researchers observed the supervision meetings, interviewed the learners and analysed log files.

Combining vocational and academic learning
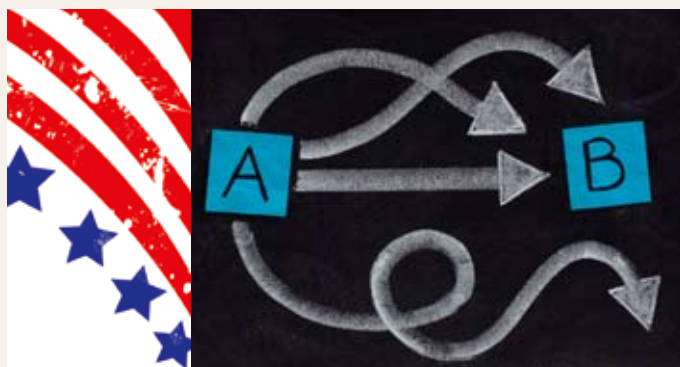
How multiple pathways work in the USA

As college and school consortia continue to develop their combined academic and vocational offer through Diplomas, what lessons can be learned from other countries? One researcher, investigating the emergence of multiple pathways courses in the United States, has found the combined route increasingly popular among learners. There is also evidence that it leads to improved outcomes.

Choosing a vocational option has become the norm among American learners in recent years. In 2005 nearly all high school students took at least one 'career and technical education' (CTE) course, and more than 60 per cent took three or more. This trend is rather surprising, given the increasing pressure on schools in the US, as in England, to meet academic targets. What American educators are finding is that the appetite for vocational learning is in addition to, not instead of, following academic subjects. The period 1990-2005 saw an increase in the amount of English, social studies, science and mathematics units learners took. This amounted in total to an average increase of one-half year of schooling per learner.

What do these 'multiple pathways' courses look like? At their core, the principles are similar to those underpinning our own Diplomas; central among them:
- the location of the programme of study within a particular industry sector, and
- the connection of academic learning to real world applications.

The researcher illustrated how this works in practice in building and environmental design, and health careers pathways. The building and environmental design course, for example, combined academic knowledge with vocational applications in the following ways:
- In geometry classes students learned the concepts and skills to build roofs and frame walls that can withstand strong winds.
- Learners applied maths knowledge to design problems such as building bridges that were seismically sound.
- Younger learners (aged 14-16) completed work-based components with mentors from such areas as construction and interior design, while older learners (16-18) took up internships where their work was assessed by professionals against industry standards.

The researcher presented evidence that applied learning of this sort releases learners' creative potential, taking their learning forward to tackle real world problems. In one case, an environmental research and technology learner designed and built a 'fire popper'. This was a device designed to fight forest fires by covering an area with carbon dioxide foam when dropped from an aircraft. In another case a team of psychology and human behaviour students developed an electronic role-playing game.

While it is hard to say how widespread cases of real world applications of learning like these are, the researcher provides a range of evidence that the multiple pathways approach enhances learning. This includes analysis of the outcomes of high school students' final exams in California, where 50 per cent of multiple pathways learners met the minimum 'A to G' course requirements, against 37 per cent of learners statewide.

Another study focusing on achievement in mathematics, found that learners who followed the integrated programme had significantly better results than control groups in mathematics tests. A feature of this particular programme was the collaboration of vocational and mathematics specialist tutors in designing and delivering the programme. This is similar to the project we reported on in Issue 3 of *Inside Evidence*, in which functional skills tutors supported vocational colleagues to embed literacy and numeracy learning in their courses (www.excellencegateway.org.uk/page.aspx?o=163837).

Evidence also points to the value of locating functional skills within real-world contexts in adult education. Soldiers who lacked basic literacy skills improved their reading skills when learning was integrated with their daily tasks. Not only did they perform better than colleagues on traditional programmes, they did this by a factor of four or five when assessed on their job-related reading.

Take action

Could you:
- contact former learners to explore how they are applying academic skills in the context of their work, and invite them to talk to your current cohort of learners?
- work with academic/vocational subject specialists to identify where academic learning can take place within real world contexts?

Evidence source
Hoachlander, G. (2008) Bringing industry to the classroom. *Reshaping High Schools, 65 (8), pp. 22-27.*

The researcher based his findings on official data releases and a review of research literature.

Second Life: a virtual world for learning and skills?

Inside Evidence interviewed Shirley Evans, an e-learning advisor who has been contemplating Second Life and its use within the sector

Second Life (SL) (www.secondlife.com a trademark of Linden Research Inc) is an online virtual world in which users interact with each other as they would in the real world. It has been popular in many facets of real life, especially business and e-commerce. Now education is beginning to see the benefits too.

Shirley, along with a number of others, was sponsored by LSIS to attend the Association for Learning Technology conference 2009 to support the LSIS objective of engaging the sector with research. Although she had been aware of SL before this time, it was here that Shirley came across research about SL and began to see the benefits and potential of using it in the learning and skills sector. "I wanted to know how it could be used in recreating environments: what are the barriers, what are the alternatives, what are the benefits?"

SL has been successfully used for teaching and learning in universities for several years. At the University of Leicester a 'Media Zoo' recreates the university setting, allowing lecturers specific areas in which to try out new teaching experiences, but also provides online learning environments in which students can participate (www.le.ac. uk/beyonddistance/mediazoo/). A college Shirley has worked with recently visited the university to look at setting up something similar for staff training and development, so using virtual worlds like SL is gradually becoming known to the learning and skills sector.

Tapping into the potential of SL as an online education tool is not going to be plain sailing, according to Shirley. But she doesn't think this should be a barrier to use as, when imaginatively concerned and focussed on real challenges, the benefits of using SL could far outweigh the difficulties of implementation. For instance, SL could be used in partnership with schools and universities to ease students' transition into and out of the learning and skills sector.

"What is needed", according to Shirley, "is collaboration between colleges", to try to establish a virtual FE world in which teaching and learning can be implemented and learners can experience aspects they might not be able to in the real world, such as what it is like to be at university. This could be especially useful for those who are still considering whether or not to go. "The transition from further to higher education can be a traumatic experience and a steep learning curve", she says, so Shirley believes that SL has considerable potential for making the move easier, reducing misconceptions and encouraging both participation and retention. Shirley also sees SL working well in distance learning so that participants can meet without travelling. "SL could be an extension of the VLE in colleges, allowing collaboration among peers that can also link in with teaching and learning."

Shirley is especially interested in SL as a tool for teaching soft skills such as communication or functional skills for example. But at present there is a lack of research into SL and virtual worlds in the FE sector and their potential benefit to learners. If like Shirley Evans, you have the vision to make it a reality and have evidence of its value as a teaching and learning tool we'd love to hear from you. Please email us at: research@lsis.org.uk

Evidence source
Jarrett, C. (2009) Get a second life, *The Psychologist 22 (6) pp. 490-493.*

Inside Track

NCETM FE magazine
www.ncetm.org.uk/resources/14609

The magazine is produced by the National Centre for Excellence in the Teaching of Mathematics for LSIS. It includes a regular feature on the mathematics involved in different jobs such as a farmer and a website designer and photographer, ideas for the classroom and suggested resources.

Geoff Petty's website
www.geoffpetty.com/style.html

This website has a useful questionnaire that will help you to analyse your own teaching style as suggested in the article on page 2. The website also hosts a variety of other useful research tools and evidence-based teaching resources available as downloads as well as details of his recent book – 'Evidence-based teaching'.

Ofsted's Good Practice database
www.excellencegateway.org.uk/page. aspx?o=goodpracticedatabase

Ofsted has always aimed to show practitioners the best of what the sector has to offer. So when Ofsted inspectors find something particularly effective during their inspection work, they go back to find out what it is that makes it so good. From this information, they have created resources that will help you improve your own provision by learning from others.