Deep learning – 1

A new shape for schooling?

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THIS PUBLICATION

Audience
Teachers and leaders at all levels in education

Aim
To explain the interactions between the deep learning gateways to personalising learning, and the conditions for deep learning; and to provide pertinent questions to help school leaders to achieve it

Contents

1 The interactions between the deep learning gateways

Our working definition of deep learning is this.

Deep learning is secured when, through personalisation, the conditions of student learning are transformed

In terms of our specification of the learner in a school where personalisation is embedded (see *A new shape for schooling?*), deep learning refers to the section in bold:

An articulate, autonomous but collaborative learner, with high meta-cognitive control and the generic skills of learning, gained through engaging educational experiences with enriched opportunities and challenges, and supported by various people, materials and ICT linked to general well-being but crucially focused on learning, in schools whose culture and structures sustain the continuous co-construction of education through shared leadership.

Over the past decade there has been a shift in emphasis in many schools from teaching towards learning. Excellent teaching must be complemented by excellent learning. This leaves the profession with the issue: how do we secure the move from teaching to learning? And then from learning to the deep learning that will equip students for the 21st century world of work?

It should be stressed at the outset that we are not seeking to establish a new theory of learning. There are many theories of

learning available and the complexity of the issue is such that it could not be covered in a short pamphlet. Instead we are concentrating on the ways in which the gateways interact and overlap to change the conditions of learning and to create opportunities for deeper learning experiences.

The term 'deep learning' first came into common usage in the 1980s when Noel Entwistle and colleagues published research that distinguished between deep and surface learning. Their distinction is outlined below.

Deep approach

Intention: to understand ideas for yourself

• Relating idea to previous knowledge and experience

• Looking for patterns and underlying principles

• Checking evidence and relating it to conclusions

• Examining logic and argument cautiously and critically

• Becoming actively interested in course content

Surface approach

Intention: to cope with course requirements

• Studying without reflecting on purpose or strategy

• Treating the course as unrelated bits of knowledge

• Memorising facts and procedures routinely

• Finding difficulty in making sense of new ideas presented

• Feeling undue pressure and worry about work

The recent trend in schooling appears to have been towards surface learning. In part this is due to the current examination system (at key stage 3 and key stage 4 in the UK). This puts teachers under greater pressure to teach to the test and students to cram relevant facts that will be regurgitated – and then often promptly forgotten. The system and the teaching methods used to enable students to succeed foster student dependence on the teacher and lead to surface rather than deep learning. However, through working across the gateways in the

deep learning cluster, schools are finding that they can rectify this issue and help students to become deeper learners.
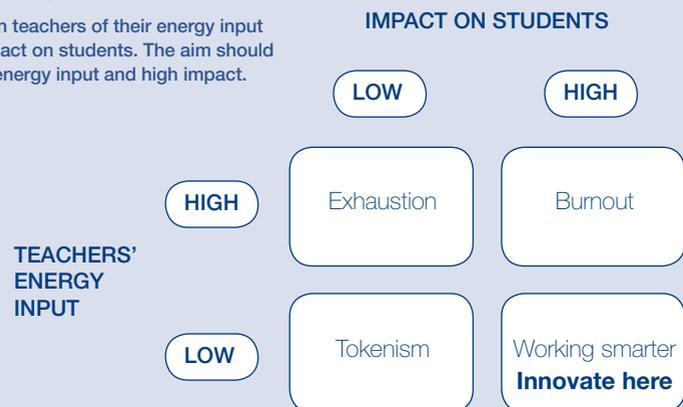
The deep learning cluster contains student voice, assessment for learning and learning to learn (undoubtedly other gateways also have a role to play in the development of deep learning). These gateways are clearly focused on the learner and the development of learning. They require students and teachers to work in partnership, while placing emphasis on students taking more responsibility for their own learning and progress.

Over the last two years SSAT's personalising learning team has encountered many schools carrying out ground-breaking work in one or two of these three gateways. Some schools have made excellent progress through working in two gateways at the same time. What has been less common is to find schools working across all three gateways in a coherent manner. Only now are a small number of examples starting to emerge. It is clear that where schools are working on two or more of the deep learning gateways, the effects are more profound. Work across at least two of these gateways demonstrates what David Hargreaves describes as high leverage innovation: it requires teachers to work smarter rather than harder, removing the danger of their becoming exhausted or burnt-out. Better still, such work leads to a greater impact on students as it is likely to be long-term and embedded.

FIGURE 1
Leverage for teachers

Effect on teachers of their energy input and impact on students. The aim should be low energy input and high impact.

	IMPACT ON STUDENTS	
	LOW	**HIGH**
TEACHERS' ENERGY INPUT **HIGH**	Exhaustion	Burnout
LOW	Tokenism	Working smarter **Innovate here**

The deep learning gateways

Student voice is a crucial gateway. It is the means by which students articulate their needs and become involved in the business of schooling.

Most schools would claim that they give opportunities for student voice, usually through student councils. However, many students report that such councils are largely tokenistic and ineffectual, and their voices are not heard. Teachers and school leaders may see councils as focussing on issues such as school uniform, toilets and canteen arrangements – which have little impact on the core business of schooling, that of teaching and learning. These factors can lead to both students and teachers becoming frustrated at the level of discussion. In fact the evidence suggests that until students have tangible wins on these apparently peripheral issues, which are in fact extremely important to them, they will not trust staff to engage with them on the important issues of teaching and learning.

Student voice, at its best, involves a significant number of students in the more challenging areas, such as students as researchers, students as lesson observers and students interviewing prospective members of staff.

An example of the impact of involving students in these areas can be seen at Greenford High School, Ealing, where students are lesson observers. They report that embedded student voice changes the relationships between students and staff in subtle ways – students feel more valued, and when they are listened to they are more likely to engage in co-construction. The value this school places on student voice is seen in its plans to appoint a student voice co-ordinator, a recent graduate who will focus solely on this area of work. Schools that incorporate such types of student voice believe they are developing as genuine learning communities in which students and teachers learn from one another.

Assessment for learning has received a lot of attention over the last decade, largely due to the work of Black and Wiliam. The government has produced a national strategy for assessment for learning; however there is concern that the strategy document largely ignores some of the key evidence on teaching and learning methodology and instead focuses on targets. In spite of this, assessment for learning in its true sense has captured the imagination of many teachers and become a common feature in many classrooms.

Assessment for learning seeks to develop learners through handing over to them areas of teaching and learning that have traditionally been regarded as the intellectual property of the teacher. Lymm High School has demonstrated that by sharing with students lesson objectives, outcomes and the criteria by which their work will be judged. This sharing has engaged and empowered the students. Earls High School is using assessment for learning to drive the whole school's teaching and learning agenda. The use of open questioning techniques, formative assessment models and peer- and self-assessment all help schools to shift the emphasis from teaching to learning.

Learning to learn: increasing numbers of educators are supporting learning to learn programmes. Many schools now deliver learning to learn through discrete lessons, in a crosscurricular programme, and even by spending an entire year of schooling on developing skills and competencies, of which learning to learn is a part. For example at John Cabot school, Bristol, year 7 is spent on the Cabot Competency Curriculum (CCC), designed to equip all students with the learning skills they will need to succeed as they progress through the school. These programmes include elements such as learning styles, multiple intelligences, emotional intelligence, how the brain works, the development of confidence, study skills and often Guy Claxton's '4 Rs' (resilience, resourcefulness, reflectiveness and reciprocity).

Key to the effectiveness of learning to learn programmes is the development of meta-cognitive skills, in other words thinking about and reflecting on one's own learning. Through the development of meta-cognition students are encouraged to monitor, evaluate, control and reflect on their own learning, thus making a powerful contribution towards their development as confident and independent learners.

Interactions between the gateways

The overlaps and interactions between the three gateways are complex. The three gateways in isolation can have positive impacts on students and on the relationships between students and teachers. However, when schools explore the interactions between the gateways, they move towards deep learning. For example, student voice has clear links to both learning to learn and to assessment for learning. If a school is to implement assessment for learning successfully, it is essential that students and teachers develop successful working relationships. They also need a shared language

of learning (developed through learning to learn), which enables students to engage with the process. Such relationships and the confidence to speak with teachers about learning issues can be developed through student voice.

The links between learning to learn and assessment for learning require the development of meta-cognitive skills. Both gateways encourage students to think about their learning and the ways in which it is developing. Both concentrate on the learner as an individual and seek to explore the key questions: Where are you now? Where do you need to be? How are you going to get there? Through the dynamic dialogue of assessment for learning (in part developed through student voice), and through the insights and understandings gained through learning to learn, students gradually gain the meta-cognitive control that helps them articulate their needs and develop as responsible, confident, independent learners.

So, what do these interactions look like in practice? A school making extensive progress towards deep learning through working on both learning to learn and student voice is Villiers High School, Ealing. The school began to focus on learning to learn three years ago. Since then it has committed 75% of all Inset time to developing staff in this area. Outside consultants have helped train staff and establish their ASK (attitudes, skills and knowledge) curriculum. As a result all teachers explicitly teach learning skills and knowledge in their key stage 3 lessons. In this way students are taught a variety of generic learning skills and have a vast amount of knowledge about the ways in which learning takes place. Through this work staff and students have developed a shared language of learning and begun to take steps towards co-construction. This work provided a springboard for the school to make progress on a second deep learning gateway, student voice.

The headteacher felt that the shared language of learning the school had created was being underutilised; the students' voice had to be harnessed for the school to emerge as a genuine learning community. With this in mind the school took the decision to train 24 pupils from year 7 as lesson observers. The rigorous training programme concentrated on lesson observation criteria and techniques; delivering constructive feedback; formulating lesson observation schedules; ethics; confidentiality and the development of a code of conduct for lesson observers. Although student lesson observers can be controversial, the thoroughness of the training

combined with the school's coaching culture meant that there was no shortage of teachers volunteering to take part in the programme. One year on, the programme has been very successful. A joint staff / student teaching and learning forum has been established and the student observers have become expert in their field, regularly delivering presentations to senior leaders from visiting schools, and to groups of school leaders and LA officials at SSAT conferences. The decision to attend to more than one of the deep learning gateways has had great returns for the school, its students and staff.

The work on learning to learn and student voice has led students to become more involved and engaged in their learning and it has empowered them to become more independent:

• Through learning to learn, a shared language of learning developed between students and staff

• Through student voice they created positive working relationships and joint commitment to the creation of a genuine learning community, which has formed the foundation for co-construction within the school
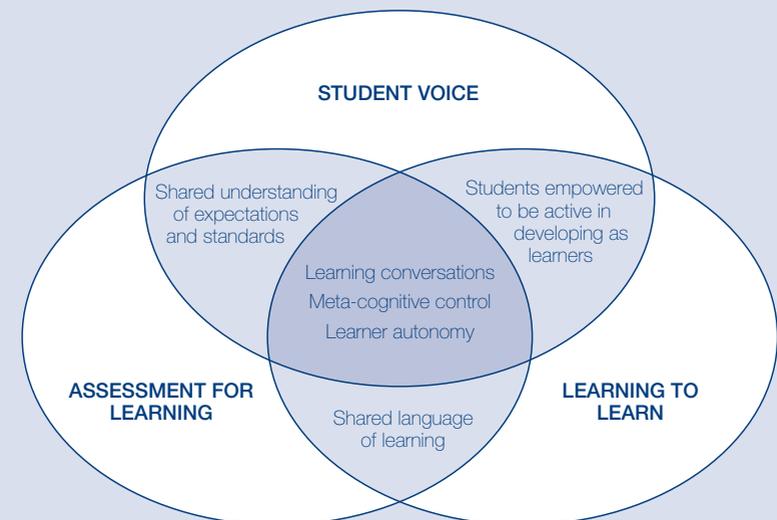
Villiers now proposes to maximise the benefits of the deep learning gateways by further developing and embedding this through the use of assessment for learning strategies.

The three gateways that are clustered to form deep learning interact in highly complex ways. Critically, all three gateways create conditions and opportunities for staff and students to engage in co-construction. Student voice research projects can quickly lead to student suggestions for improvement to systems and structures. In assessment for learning, close partnerships between students and staff can lead to the co-construction of assessment criteria and lesson planning. In learning to learn students are encouraged to reflect on their own learning; at its best this enables them to develop individual learning plans with staff with a high degree of confidence. Working on any one of these three gateways makes it easier to progress on one or both of the others. In chapter 3 we will examine the progress made by a Northamptonshire school in all three gateways.

Clearly the interactions between these gateways are fundamental to the development of deep learning. All three help to develop specific learning needs, and place engagement at the heart of the process. Together they help to develop confidence, independence and

responsibility along with meta-cognitive control. In turn these are indicators of the student for whom learning has been successfully personalised. They contribute to the capacity for co-constructed approaches to teaching and learning. The three emphasise that learning is not something that is done to you, it is an active process in which you participate with your teachers. More crucially, when put together all three help to develop what we are calling 'the conditions for learning'. This is summarised in figure 2.

FIGURE 2
Deep learning's interacting gateways

STUDENT VOICE

Shared understanding of expectations and standards

Students empowered to be active in developing as learners

Learning conversations
Meta-cognitive control
Learner autonomy

ASSESSMENT FOR LEARNING

Shared language of learning

LEARNING TO LEARN

Key questions

1. How could you work across the gateways in a more systematic way to ensure they complement each other to secure deep learning? (see *Deep leadership -1*)

2. What can you learn from the example of Villiers school?