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STIMULATING LEARNING – CREATING CRe8

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Introduction

"In times of change learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists."

Eric Hoffer

Education is changing. This paper describes the development of a curriculum framework designed to support a learner-centred approach across a university committed to widening participation, student development and employability. The aim is to create an environment for effective curriculum design in the 21st century which supports a move away from a delivery model of higher education to one where the needs of the learner are paramount and where they are supported in the move from novice to lifelong learners. This paper describes the ideas behind the approach adopted and discusses the main learning-centred features of the resulting curriculum.

The framework is an attempt to focus on learner development and the challenges presented to higher education in the 21st century. Hersh and Merrow (2006), in a critique of modern American higher education, identify problems associated with the production of graduates who are 'narrowly educated and often 'trained' for work in fields that will have changed before the ink on their diplomas is dry'. But how do you adopt a learner-centred approach when student numbers are increasing, making it difficult for tutors to know and understand their students, and resources constrained? How do you encourage a move from traditional lectures and seminars to more interactive, and we would argue effective, active learning when the cheapest way to teach (and we use this term advisedly) is through formal lectures? How do you support staff in a move from didactic teaching to being a facilitator of learning when this is a much more challenging role and there is increasing pressure on their time for research and consultancy? How do you address the increasing diversity of the learner not only in terms of gender, nationality and ethnicity, but in terms of prior educational experience and attainment, hopes and aspirations, motivations and priorities? How do you ensure a close alignment between students' needs and interests and the curriculum they are studying? How do you induct often 'fragile' learners into the community of practice of leading academics?

What is the role of technology when students' capabilities can be ahead of that of staff and resources for investment scarce? And, to answer Hersh and Merrow's challenge, how do you prepare students not for employment but for employability – the ability to take charge of their own destiny and for multiple jobs within an ever-changing global environment where the ability to continuously learn is more important than what you know (it has been estimated that 85% of all learning takes place outside of formal settings; Cross, 2006).

There are no simple solutions to these dilemmas; however, recognising the issues is the first step to developing potential solutions or at least towards the trade-offs that inevitably need to be made. This paper explores one institution's response through the development of an overarching curriculum framework that emphasises higher education as a partnership between the University and its students.

Background and context

The University of Bedfordshire was formed in August 2006 from the merger of the University of Luton with the Bedford campus of DeMontfort University. The University is at the forefront of developments within the UK to open access to higher education. It recruits a culturally and educationally diverse range of students from the UK, the EU and internationally to a wide range of programmes across four faculties: Education and Sports Sciences; Business; Health and Social Studies; and Creative Arts, Technology and Science. The University's mission places an emphasis on vocational education, student employability and maximizing the potential of its diverse population.

The University of Luton's curriculum delivery was strongly informed by an approach based around personal development planning (PDP) defined as 'a structured and supported process undertaken by an individual to reflect upon their own learning, performance and/or achievement and to plan for their personal, educational and career development' (QAA, 2000). For its work in this area it had received recognition as a Centre for Excellence in Teaching and Learning (CETL). Development of the new curriculum framework was led by the CETL team which included academic staff drawn from a wide range of disciplines (see the acknowledgements at the end of this paper), and involved extensive discussion with the wider university community.

A graduate for the 21st century

An initial priority for the new university was to identify the nature of the learning process that would be at the heart of its approach to teaching and learning and which supported its mission.

The approach to learner development

One aspect when developing the new framework was to explore what learning theory tells us about how students learn at HE level and hence how

we should best structure the curriculum. As discussed by Nygaard and Holtham (2008), learner development includes changes in knowledge, skills and competence-in-practice. These elements were at the heart of the approach adopted but adult human development also involves changes in the organisation of the learner's self (Rogers, 1951, cited in Knowles, 1990), understood as the 'consistent pattern of perceptions of characteristics and relationships of the 'I' and the 'me' (Rogers, 1951, cited in Markus, 1980). A sign of a developed adult is having a 'differentiated perception' of the world more generally (including oneself). As an individual develops into an adult there is an increased awareness of assumptions (those of others and oneself) underlying beliefs, values, judgments and feelings, and the recognition of these assumptions enables the individual to critically assess them and eventually replace an old framework with a new one. Thus learning has a very 'personal' dimension.

'Transformative learning' takes place through self-reflection and thus the challenge facing the education of adults is to be 'learner-centred, participatory, and interactive, and [to] involve group deliberation and group problem solving' (Mezirow, 1997, p. 10). A fundamental principle is that learning and development occur in socio-cultural settings (family, 'classroom', workplace, etc.) where activities are regulated by cultural rules and roles. Furthermore, the activities and interactions that are involved in learning and developing take place and make sense in communities of practice (Lave and Wenger, 1991; Wenger, 1998). Hence, the learning processes and the levels of attainment vary depending on how marginal or integrated a learner is in her or his community of learning. Theory suggests that the learner should gradually move from a position as an outsider (knowing very little) to becoming an insider (knowing more) and eventually to being party to moving the community itself forward. While being part of a community may initially be imposed at registration, participation happens through active engagement with the community through set tasks, independent research and study, and through interaction with peers and tutors. How we construct the curriculum and interact with students affects how rapidly and effectively students become incorporated into their community of learning. The implications of this for the developing framework were the need to:

- explicitly address how students are integrated into their community of learning;
- recognise the achievements of learners to validate their progress into the community, increase their sense of belonging and encourage further learning;
- acknowledge that different learners engage in different ways and at different rates and thus offer a range of ways of becoming part of the community (participating in learning if you prefer), as long as non-engagement is not an option; and
- take students contributions seriously recognising that they are part of our community from the day they register.

The research evidence also suggests that effective teaching (and hence effective learning) starts with understanding where the students are in their development (see for example Schulman, 1999; Bransford, Brown and Cocking, 1999)

"If I had to reduce all of educational psychology to just one principle, I would say this: the most important single factor influencing learning is what the learner already knows." (Ausubel, Novak, and Hanesian, 1978).

Thus, within the context of mass higher education and a diverse student body, any curriculum needs to explore precisely what this means and how time and effort is invested in ensuring that students and tutors move forward with a shared understanding of what is to be achieved.

As well as knowledge, skills and competence-in-practice, to provide a learner-centred curriculum for a diverse student body we also need to help students consciously develop two additional factors; awareness and motivation.

Awareness is broader than, although not entirely independent from, knowledge in that it can indicate a higher order of knowing: knowing that you know something. It implies breadth rather than depth. It refers to discovering something that you did not know was there before. In this sense, it can precede a more explicit process of knowledge acquisition and also can be a very important by-product of it. The learner is expected to increase his or her awareness of the subject, the self and the social world (e.g. as a context for applying knowledge) and can increasingly monitor their immersion into their community of practice becoming increasingly self-regulating as they do so (Schunk and Zimmerman, 1998). Developing wider awareness takes time and requires curriculum designers to move away from a content-driven approach where students move from topic to topic, to providing time and activities which support students locating their development in the wider community of practice.

Motivation here is understood as referring to the acquisition of knowledge or the development of skills. It includes reasons or motives for studying, as well as goals (what one expects to achieve), plans and projects. In the context of widening participation, student motivation leading to engagement is an important issue. There are several useful concepts such as intrinsic and extrinsic motivation (Deci and Ryan, 1985) 'performance' and 'mastery' motivation (Dweck, 2006; Elliot and Dweck, 2005) which can guide the actions we take.

Whilst developing knowledge and skills may be relatively easy, it is more difficult, but not impossible, to change the 'habits of mind' associated with the notions of awareness and motivation (Dweck, 2006; Dweck and Leggett, 1988; Larkin 2002). Self-awareness and metacognition are important dimensions of PDP and have a key role to play here.

The implications of the review of learning theory for being learner and learning-centred and for the development of the curriculum framework were:

- learning is 'personal' to the learner and we need to consider how this can be supported.
- the activities that are intended to encourage learning (formally or informally) such as teaching, are guided by a host of cultural assumptions about how people learn, what is important to learn, who is entitled to instruct, etc. and we may need to critically examine these assumptions;
- the language used in the interactions between learner and tutor play a crucial role in enabling learning and we need to review how we use language and how we convey meaning;
- learning largely takes place through social interactions where the learner is presented with tasks that require a solution which is new for the learner, and therefore requires a significant effort, a hypothesis and a risk ('what if') on his or her part (cf Vygotsky's zone of proximal development.)
- the role of the tutor is to encourage and support the learner in framing the problem in useful ways, trying out new solutions or exemplifying (modeling) the process.

Learning as a process

Often modular curricula lead to students seeing education as a collection of isolated learning activities; 'if I pass this assessment or complete this task then I can progress'. Effective education emphasises learning as a process and students making connections between past, present and future events. One of the premises of the new curriculum was that students should develop this ability to be capable of learning in and from their multiple experiences. It should help and support students in making sense of their experiences through making the link between past, current and future experiences explicit at lower levels and encouraging students to see those links for themselves as they develop and progress. A structured personalised learning process, such as the SOAR process (Kumar, 2007) which asks students to think about any activity in terms of Self, Opportunity, Aspirations and Results can help structure and support learning in this way and can be applied at various levels of granularity and in a variety of contexts.

Self	What attitude, skills, knowledge and experience do I bring to this activity?
Opportunity	What does this activity give me the opportunity to develop, experience?
Aspirations	What do I, personally, want to get out of this activity?
Results	What did I learn? What will I carry forward? What would I do differently if I was to do this again?

Through building these basic building blocks of the learning process explicitly into the curriculum, the intention is to help students become more effective learners and better prepared for life beyond the university. Not every activity needs to adopt the SOAR approach but applying it in

appropriate situations helps to personalise activities to the needs and aspirations of individual students through providing purpose, process and personalisable content.

Developing the curriculum framework

As well as the nature of the curriculum framework itself, anyone seeking to affect teaching and learning practices on an institution-wide scale needs to consider their approach to change (Atlay, 2006). The approach adopted is beyond the scope of this paper, and at the time of writing it is too early to evaluate its effectiveness, but central to any change process is reflecting the priorities of the key stakeholders. Thus, as well as learning theory, formulating the new curriculum framework was informed by a review of the perceived 'challenges' faced by the institution, staff and students – the context in which the learning would be taking place. For students, financial pressures mean that many have part-time, low level, jobs. Thus balancing the conflicting pressures on their time of study and work is a key factor. Diversity and widening participation bring issues associated with language skills, conflicting and uncertain motivations, learning approaches poorly suited to the requirements of higher education and doubts about the advantages of investing time and money in a university education. For academic staff, increasing pressures to balance teaching with research and consultancy, the difficulties of keeping abreast of your subject, of teaching practice and technology in a fast changing world were highlighted as problematic as well as those associated with the nature of the student body. Institutionally, a declining unit of resource at a time of increasing competitiveness in the recruitment of students in a global market place was a core issue as well as cementing the identity of the new university. In addition, a newly introduced fees regime meant that all students were now paying directly towards the costs of their studies; hence increased student expectations were seen as important. Efficiency and effectiveness combined with distinctiveness and quality were thus key drivers.

Whilst understanding the context was important in defining the framework, intense 'navel gazing' can lead to 'paralysis by analysis' where the problems and issues seem too intractable to be solved and discussions become concentrated on day-to-day operational issues rather than the bigger picture of what is to be achieved. To break out of this mind-set, the development team considered the idealised nature of the University's graduates. This resulted in the following statement:

Our vision is of a University of Bedfordshire graduate who is knowledgeable, articulate, critical and creative, who understands who they are and what they want to achieve, who can evidence his or her attainments, function in context and who has the skills, self-confidence and self-regulatory abilities to manage their own development. Such a graduate is eminently employable, capable of working with and learning from others, of adding significantly to their local community and prepared for life in an ever-changing environment.

This vision guided the development of the curriculum framework and led to the identification of five key strands which would contribute to creating an environment which would sustain the achievement of this vision. These were:

- Personalised learning;
- The curriculum;
- Realistic learning;
- Employability; and
- Assessment.

The resulting curriculum framework incorporating the SOAR learning process was developed alongside a set of regulations for the new University which involved a move away from semesters to year-long units. It was due for implementation in September 2008 and became known as the Curriculum Review for 2008 – or CRe8 for short. CRe8 is a manifestation of one of the issues to which the University is responding (changes driven by the increased use of technology and students' changing experiences and expectations), and also one of the core ideas - the need to create the time and space for staff and students to be creative with and within the new curriculum.

Learner-centred features of the framework

CRe8 sets a direction of travel for the University towards a goal of personalised, reflective and collaborative learning designed to equip students for an uncertain and ever-changing world. It is not the intention that each strand stands alone but that it relates to and supports the complete framework. Adopting a learning-centred approach such as that embodied in CRe8 has implications for the whole university impacting on staff roles, the learning environment (real and virtual) and the learning process. The remainder of this paper discusses some of the more learning-centred aspects of the CRe8 framework.

Personalisation

Personalisation can be seen as a response to the issue of the impersonal 'massification' of higher education, highlighted as one of our core issues, but there are other reasons for emphasising this aspect.

- Personalising learning meets the needs and aspirations of individual learners supporting the notion that effective teaching starts with where the learners are.
- Identifying the constraints on students through understanding their personal circumstances and ambitions can help tutors focus feedback and guide future learning. Thus, whilst tutors cannot legislate for the effort that students can and will invest in their learning, they may be able to influence it.

- Personalisation recognises increasing student choice, for example about the time and place of study.
- Students themselves need to be skilled to use the resources that universities provide to support their learning; and recognise their personal responsibilities for engaging with these.
- Students have personal approaches to learning, they need to understand these and how they learn in different contexts in an ever-changing world.
- There is an increasing emphasis on personalised learning in the pre-university curriculum in the UK (Leadbeater, 2005) to which universities will need to respond
- With students paying for their tuition, they will expect a more personal service; although students are not customers in the traditional sense the relationship is changing.
- Technological developments assist making personalised learning a possibility. Students and tutors can use a variety of tools to aid the personalised learning agenda but it should be the pedagogy that drives the learning process. Having a clear pedagogical stance and seeing how technology supports this is vital otherwise its use becomes haphazard and unfocussed.

The development team explored the notion of 'personalised learning' to arrive at a definition appropriate to higher education and its aims within the curriculum framework:

'Personalised learning is a partnership which connects pedagogy, curriculum and learning support with responsibilities, needs and aspirations, to enable the personal and academic development of learners.'

There are a number of important aspects to this definition. Firstly, the emphasis on partnership, one of the University's core values, means that the relationship is not simply that of customer and provider. Personalisation not only implies actions by the University but it expects the active engagement by the student in his or her own learning and development. Secondly, all parties (students, staff, the university) have responsibilities, needs and aspirations which need to be recognised. Personalisation does not mean that students obtain everything they want precisely when they want it (although some elements of the curriculum may be negotiable) but that the University has considered how to make the curriculum as accessible as possible. Allied to this, personalisation has a social dimension. Learning is a social process, and there needs to be opportunities within the curriculum for social engagement and an environment (physical and virtual) which enables social interaction to happen. Furthermore, there is a social context to students' study and future careers and they have a responsibility to the communities of which they are part thus personal values and ethics are important. Thirdly,

personalisation is aspirational; it is about challenging and supporting *all* students to achieve their potential. Finally, personal, career and academic development go hand in hand. Effective education is about developing the whole individual.

Addressing learner motivation and engagement

If students don't see learning as relevant then we are unlikely to engage them in the deep and meaningful learning we value. For some students it is the apparent lack of personal drive and motivation to engage with their studies which leads to reduced performance and, ultimately, poor retention. One way of addressing this issue is enabling students to understand what motivates them and what they want to achieve and recognising that this may change and develop with time and experience. Conation, 'the personal, intentional, planful, deliberate, goal-oriented, or striving component of motivation, the proactive (as opposed to reactive or habitual) aspect of behaviour' (Huitt, 1999) is an important but often neglected aspect of the learning experience. Some students already have well-developed and grounded views whilst for others part of the value of a university education is opening their eyes to new possibilities; and for a few it may be about making their ambitions more realistic. This means incorporating into learning and assessment, activities which consciously help and support students to explore new possibilities and raise their self-esteem and self-efficacy (Bandura, 1997) and which enable them to become more self-confident and self-aware.

Articulating the effective behaviours we expect of students so that they understand what they need to do to be more effective and can realistically self-assess is thus an important aspect of the framework. Self-assessment questionnaires may be a starting point in delivering this (there are many of them - a quick Google search returns over a million hits), but they are unlikely to be effective in really refocusing attitudes and behaviours unless they are part of a structured and supported learning process tailored to the needs of students - that is as an integrated and thought-through part of the curriculum linked to university systems for student support. PDP and SOAR aim to provide such a process.

Reflection assists with self-awareness and is a core component of PDP. Reflective practices such as diaries, journals and logs, reflective essays, blogs and portfolios all provide opportunities for students to make the connections between theory and practice in ways which are personal to them and which support their development and ambitions. However, the act of recording observations is not sufficient on its own, students need to be given guidance and support through frameworks which structure this learning (for example Gibbs 1998, Johns 2004) and which help them to recognise and evidence their learning and situate this within the communities of which they are part.

Addressing self-regulation and learning

Self-regulatory, reflective practitioners consciously or unconsciously adapt their learning to meet the situations in which they find themselves. CRe8 aims to assist this process by enabling students to increase their awareness of the learning approaches that work for them.

Whilst there is much criticism of the various 'learning styles questionnaires' currently available (Coffield, 2004), students do have different approaches and some enter higher education with approaches that are not effective at HE level or find it difficult to adapt and change to the new requirements. Thus the framework expects that, as part of a structured and supported process, students should explore and develop their learning styles and improve their meta-cognitive skills (Johnson-Glenberg, 2005).

Many students believe that their 'intelligence' is fixed and that they can't learn to be more effective learners. The research literature (Jarvis, 2005) suggests that this is not the case and tutors need to communicate this to students, and help them make their learning more effective and responsive to different situations. However, understanding how students can improve their learning is a complex issue. The University, together with a group of other UK HEIs is working with the notion of 'learning power' to explore active interventions (see <http://www.ellionline.co.uk>). This identifies seven dimensions to effective lifelong learning: changing and learning, meaning making, strategic awareness, creativity, learning relationships, critical curiosity and resilience. Work is continuing to evaluate the effectiveness of this approach but the dimensions and the language used, have the potential to provide a structure to planned interventions with students.

Implications for teaching - Realistic Learning

'Learning is not a spectator sport. Students do not learn much just sitting in classes listening to teachers, memorizing prepackaged assignments, and spitting out answers. They must talk about what they are learning, write reflectively about it, relate it to past experiences, and apply it to their daily lives. They must make what they learn part of themselves.' (Chickering and Gamson, 1987)

As we explored earlier, a learner-centred curriculum which develops knowledge, skills and competence-in-action and which supports motivation and awareness, requires students to be actively engaged in the learning process not just passive recipients. 'Realistic learning' encapsulates the key components of the learning experience at the University of Bedfordshire and has the following dimensions.

Meaningful learning: learners should see the social, professional, intellectual and practical relevance of the curriculum. This is a two-way process where the curriculum has deliberately been designed with the learners in mind and the learners are encouraged to interpret or make sense of the knowledge in their own terms.

Active learning: learners actively engage in the learning processes and are not passive recipients of knowledge. Tasks are structured, but allow the learners to engage in problem-solving rather than provide the correct answers. Students are made to feel that they share the responsibility for their learning and the running of the curriculum. Participation should be encouraged allowing for multiple forms of engagement: interactive lectures, discussion groups/forums, presentations, feedback, problem-based learning etc. all have a role here.

Challenging learning: activities should challenge existing constructs, knowledge and assumptions. Critical thinking is encouraged from the beginning rather than left to the final stages. Students should be clear that it is their understanding and evaluation of knowledge that counts, not the repetition of what authors or texts say. Students should be required to voice their views, make claims, and rigorously justify these. They should also be allowed and encouraged to take risks and to enjoy learning rather than be guided by fear of failure.

Reflective learning: occasions for reflection are structured within a process of development that allows students to internalize their experiences and make connections across boundaries, e.g. between learning activities and with the demands of the outside world. Reflective tasks should not be presented as an add-on to learning, but as effective means of learning – emphasising and supporting the learning process.

Collaborative learning: is part of a social process where students learn co-operatively with peers, tutors and other 'learning enablers' creating a learning community. As the process of significant learning can be challenging (and can be resisted), it needs to be supported by tutors who are accessible and do not make students feel incapable or ashamed to ask for help. Students should learn to see their peers and their tutors as a community engaged in learning themselves.

Realistic learning, as described above, should inspire teaching and learning and encourage tutors and students to give careful consideration to learning processes not only outcomes. It is also an opportunity to make the curriculum relevant (realistic) in that it is linked to a context: the discipline, the outside world, the students' own needs and aspirations.

Functioning in context

Competence-in action requires students to understand how to function effectively in context. Professionals move between different contexts in which their roles and behaviours differ; researcher, communicator, team leader, team member, subject expert, consultant, manager etc. Students need to be exposed to the values and ethical expectations of their subject and of the occupations and professions to which it can lead, and be expected to display these characteristics in their behaviour as part of their curriculum. Often students do not understand that acceptable behaviour in one context is not acceptable in another. Setting ground-rules (ideally with students), structured work placements and simulations have a role to play here through giving students an awareness of context and the experience to

be able to pick up on the external, often unarticulated, 'clues' which provide feedback on what is acceptable.

Implications for Assessment

Much has been written on the importance of assessment in supporting student learning which is why it has a strand to itself within the CRe8 framework. The importance will not be reiterated here in detail except to note its role in relation to some of the issues highlighted earlier in this paper. Assessment has a significant impact on how students engage with the curriculum and how they view themselves. Acknowledging this in how we respond to students and ensuring assessment provides a positive learning experience which reinforces the important curriculum elements is an important part of being learner-centred.

Graduates who are self-regulatory are able to assess accurately their own performance and their own learning and respond accordingly. In developing students as self-regulated learners we need to explain why this is an important part of being a graduate and put processes in place to help and support student engagement with constructive feedback (Nicol and Macfarland-Dick, 2006). Too often students don't gather the feedback they receive and if they do, they don't read beyond the grade not seeing the value to their learning process. An effective learner-centred curriculum ensures that assessment processes consolidate and extend learning. This means considering the balance between formative and summative assessment and the ways in which students are supported in using feedback to improve. Self and peer assessment processes are important here.

The framework in practice

Many areas of the University already undertake many of the approaches advanced in the CRe8 curriculum framework. Some of the key issues for staff and students arising from emphasising personalised learning are summarized in the following Table.

	Issues for students	Issues for staff
Students understanding themselves and their strengths and weaknesses	Accept that they can change and develop. Realistically consider their aims and ambitions. Understand how their knowledge, skills and attitudes can develop and transfer to their chosen futures. Evidence their achievements.	Provide a means to enable students to identify their personal level of confidence and ability in skills, attitudes, aims and ambitions. Emphasise the positive to build self-esteem and self-belief.
Responding to different learning approaches	Find learning approaches which work for them in different situations.	Teach core and difficult issues through multiple means (lectures, seminars, mind-maps, podcasts, etc. etc.).

The diversity of students' experiences	Willingness to contribute to and learn from others.	Draw on and value students' experiences.
Making sense of learning	Consciously relate learning to their world and ambitions.	Make explicit the behaviours, actions and end-goals that are expected. Structure learning activities to make connections between activities and the outside world.

Table 1: Issues for staff and students from emphasising personalisation

The first year (or introductory period) is an important vehicle for setting out the expectations of the partnership, establishing a common baseline, ensuring that students have the requisite skills and for identifying individual needs and ambitions. An example of the application of the approach embodied in CRe8 has been the redesign of the first year curriculum in Business. This has moved away from the traditional model of students studying each of the sub-disciplines (marketing, finance, business systems etc.) as separate modules to an integrated, project-based, 'realistic learning' approach where students are actively and collaboratively engaged in addressing real-world problems. To support this development two new learning spaces, 'business pods', were designed and built specifically to support the approach. Each pod can accommodate up to 50 students and includes a formal board room, a social space combined with a resource and internet area, a creative space and a group working area. Already a number of significant advantages to this approach have emerged:

- the tutor/student relationship is much closer (more personal);
- students feel more valued
- individual problems can be readily identified and students supported;
- student attendance can be more readily tracked and interventions applied;
- student identity with their cohort is increased.

Initial feedback on this development from staff and students has been very positive. Tutors working in this space have found that it has changed their roles and relationship with students. The key characteristics of 'teaching' in the space are:

- Empathy - to enable them to understand and work with the needs of the diverse student cohort.
- Group working skills - the ability to manage and motivate students in groups within a dedicated learning space.
- Technological skills - experience and mastery of teaching and learning technology, the Virtual Learning Environment and associated applications including databases.
- Conflict resolution – the ability to be able to spot and resolve inter and intra group conflict

- Team teaching skills – working with other tutors to ensure that the curriculum is supported
- Spatial awareness – the ability to track around the facility to monitor individuals and groups, keeping them on task.

In its first year of operation teaching in this way is more resource intensive but this may be reduced as experience of the space develops. At the time of writing it is too early to say what impact this has had on student retention and attainment but the initial indications are positive.

Conclusion

Stimulating student learning for the 21st Century requires us to reconsider the purpose and nature of higher education. The curriculum is not merely a vehicle for the 'delivery' of subject-based content and skills. It needs to embrace the development of the whole individual as a means to equip him or her with the knowledge, skills, understanding and attitudes to actively engage in continuing development and lifelong learning.

We started by identifying a range of issues that needed to be addressed to enable a more learner-centred approach to be put into practice. This paper has suggested some possible answers to these which are summarized in Table 2.

Issue	Students	Academic staff	The University
<i>Declining unit of resource</i>	Take an increasing responsibility for their learning as they progress.	Development of student responsibility is structured and supported through the curriculum.	Mechanisms in place to identify and support students who are not coping
<i>Changing teaching practices to emphasise employability</i>	Attend and actively engage to develop skills and apply knowledge to practice.	Accept a role in delivering 'employability'.	An infrastructure (real and virtual) which supports the teaching of an employability-focused curriculum.
<i>The move from didactic teaching to the tutor being a facilitator of learning</i>	Recognise that 'studying' is not about being given simple answers and rote learning.	Respond to the change in emphasis from teaching to learning.	Support staff in developing new practices without a fear of failure.
<i>Increasing student diversity</i>	Understand and apply different learning styles in different contexts, and identify and take responsibility for meeting own goals.	Use the diversity of students as a strength. Threshold concepts and difficult issues presented in alternative formats.	Training on dealing with diversity issues provided. Impact on diverse groups is monitored.

<i>Induction of 'fragile' learners into their community of practice</i>	Actively engage with the support opportunities available.	Recognise that students are members of their community and use strategies that encourage them to feel included.	Student support and tracking mechanisms in place and working effectively.
<i>The role of technology</i>	Willing to explore the active use of technology in supporting their learning.	Open to exploring the use of technology in teaching and developing their expertise.	Ensure that technology supports the pedagogy. Development for staff (and students) provided.

Table 2 Summary of issues and actions

Adopting a learner-centred approach requires changes to the curriculum, to the learning environment and to the role of students and tutors. If higher education is to address the needs of learners in an ever-changing world, we would contend that it must focus on the provision of personalised learning as a continuous process of knowledge acquisition, transformation and integration which results in deep and meaningful learning rather than the mere acquisition of technical skills. The CRe8 framework at the University of Bedfordshire has been designed to support such an approach – time will tell whether it is successful in meeting its goals.

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