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Development of Lifelong Learning Skills by Embedding E-learning into the Curriculum

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Aim

To analyse how the implementation of e-learning into the curriculum has enabled the development of students' lifelong learning skills by providing active learning opportunities for higher level of engagement based on the constructivist paradigm.

Content

Design and implementation of an innovative e-learning package

> **Pedagogical rationale**

> **User analysis**

> **Knowledge / information analysis and communication**

> **Structure and representation**

> **Interface and navigation design**

Evaluation methods – users, experts

> **Questionnaires and observational analysis**

Development of lifelong learning skills, e-learning, personalised learning

SCE Pedagogical Research group

JISC – reports on the design and management of teaching and learning spaces

	JISC Designing spaces for effective learning [www.jisc.ac.uk/ eli_learningspaces.html]	SFC Spaces for learning [www.sfc.ac.uk/library/06854fc203db2fbd0000010a02403b0a]	SMG Impact of future changes in higher education [www.smg.ac.uk/resources.html]
Drivers for change	**1. Learner needs and expectations** – need for motivational technology-rich learning spaces supporting collaborative, personalised and blended models of learning **2. Pedagogy** – trend towards active, learner-centred approaches based around use of digital technologies including mobile and wireless learning **3. Inclusivity** – institutional requirements for widened access **4. Efficiency** – demands for increased space utilisation; multipurpose	**1. Shift to knowledge-driven economy** – need for creative and flexible workforce **2. Diversity of student populations** – need for range of learning styles and approaches **3. Pedagogy** – focus on learning by reflection, learning by doing and learning through conversation **4. e-Learning** and blended learning opportunities **5. Efficiency** – drive towards efficiency in space utilisation in HE	**Exogenous and endogenous factors eg:** **1. Social, economic and disciplinary pressures** & **diversification** amongst HEIs **2. Upgrading** – remodelling of spaces to meet new standards and needs **3. Pedagogy** – changes in teaching and learning methods and research approaches **4. Social expectations** of learners; increased demand for student-centric learning spaces; changes in students' choice of courses **5. New modes of knowledge production** **6. Increased quality of estate** – institutional marketing needs

Based on the following reports: Designing spaces for effective learning, JISC (2006);
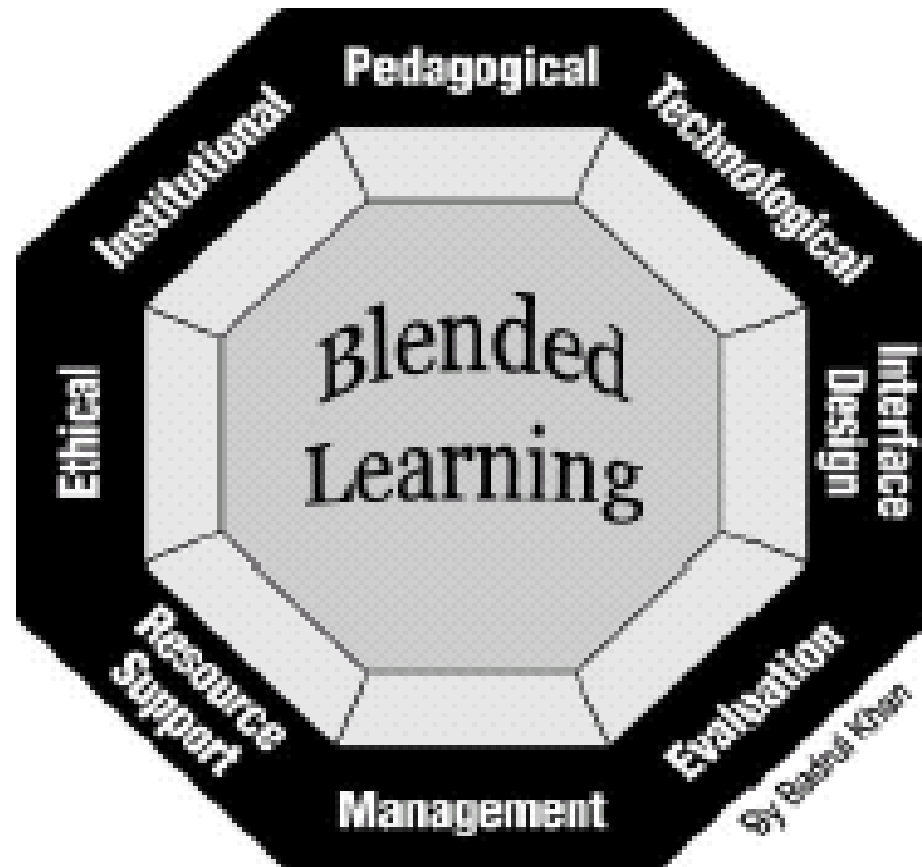*SFC Spaces for learning, AMA Alexi Marmot Associates, (2006);*
SMG Impact of future changes on higher education, Institute of Education (2006);

JISC – reports on the design and management of teaching and learning spaces

Emerging trends			
	1. Personalisation and inclusivity – audio visual navigational cues; external access to personal learning environment on institutional networks; access from mobile computers; student-led blended learning activities **2. Consolidation** of teaching spaces in disciplinary clusters **3. Hybridisation of spaces** – wireless-enabled social and general purpose spaces gaining additional roles as learning spaces **4. Fewer, more high-quality teaching spaces** – including small high-tech spaces for staff development **5. Increased focus on audio visual technologies** – distributed learning for large-group teaching; capture of learning objects for iterative learning; video links to real-world practice	**1. Pedagogical change** – increase in student-centred, constructivist approaches **2. Demographic diversity** of student intake **3. Access to ubiquitous computing** on and off campus – increase in use in both formal and informal settings; increasing availability of e-learning, m-learning and sophisticated audio-visual tools **4. Decline in lecture-style teaching methods in HE** and increased technology-enhanced peer to peer and social learning spaces; innovative designs to support multitasking in teaching spaces **5. Active learning** through simulated environments **6. Consolidation** of teaching spaces in disciplinary clusters – multiple learning modes used simultaneously in adjacent spaces; flexible designs supporting repurposing of spaces	**1. Continuing importance of the physical campus** **2. Growing efficiency** in space utilisation in HE **3. Growth in centralised timetables** and room-booking systems **4. Changes to the teaching day/year** **5. Decline in** *teaching* spaces and increased allocation for *learning* spaces e.g. enhanced amenity spaces **6. Permissive customer-focused** approach in library/learning centres **7. Increased flexibility in teaching space design** – allowing different sized groups to work in different ways **More small-medium-sized seminar rooms** – reduction in academic office space

Blended Learning octagonal framework
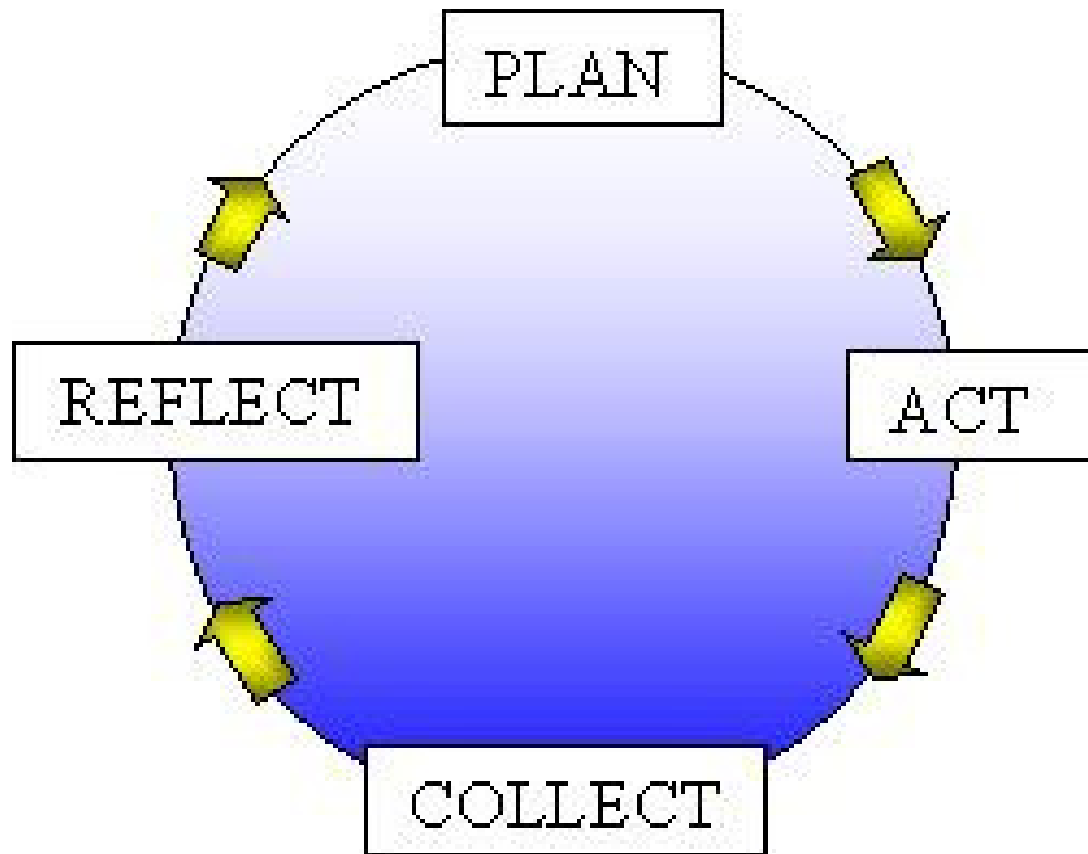

Singh, H. (2003) Building Effective Blended Learning Programs,
Educational Technology, 43:6, pp. 52
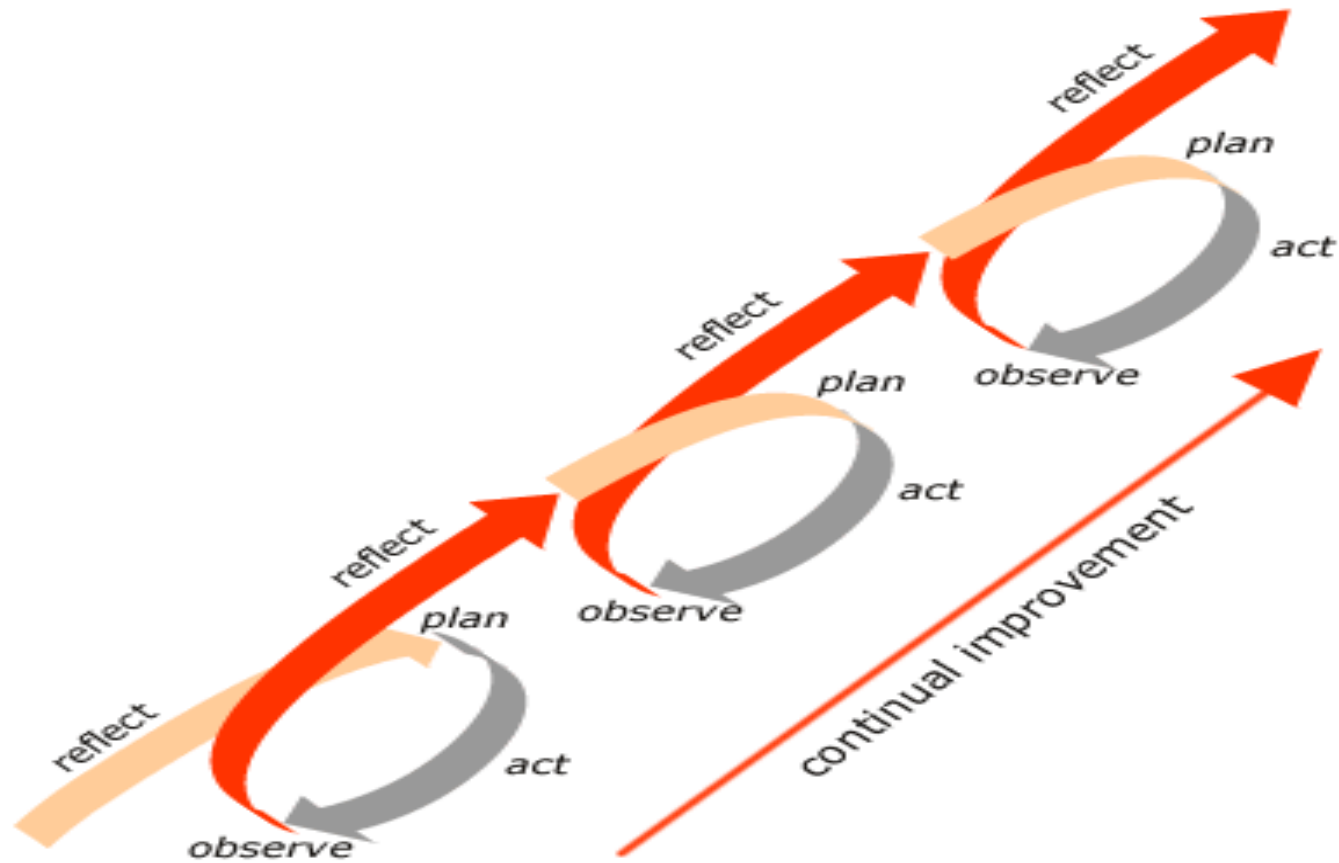
Learning approaches and choices

synchronous physical formats	instructor-led lectures hands-on labs and workshops field trips
synchronous on-line formats (live e-learning)	on-line meetings virtual classrooms web seminars and broadcasts coaching instant messaging
self-paced, asynchronous formats	documents and web pages web/computer based training modules assessments/tests and surveys simulations recorded live events on-line learning communities discussion forums distributed and mobile learning

Singh, H. (2003) Building Effective Blended Learning Programs, Educational Technology, 43:6, pp. 51-54

Action research cycle

Improving teaching practice

Higher Education Academy (2008) *Action Research Cycle*. [online] Available:
www.heacademy.ac.uk/assets/hlst/documents/heinfe_exchange/act_res_cycle.doc
[Accessed 1 Mar 2010].

User profile

targeted audience - age-range

background

interests

initial media skills

special needs

resource - learning context

distribution medium

role to the learning experience

Task and user analysis

The need for the task analysis should be obvious: if you build an otherwise great system that doesn't do what's needed, it will probably be a failure. But beyond simply "doing what's needed," a successful system has to merge smoothly into the user's existing world and work. It should request information in the order that the user is likely to receive it; it should make it easy to correct data that's often entered incorrectly; its hardware should fit in the space that users have available and look like it belongs there. These and a multitude of other interface considerations are often lost in traditional requirements analysis, but they can be uncovered when the designer takes time to look into the details of tasks that users actually perform.

Lewis, C., Rieman, G. (1994) Task-Centered User Interface Design - A Practical Introduction. [online] Available at: http://www.hcibib.org/tcuid/chap-1.html [Accessed]12 April 2010.

Learner-centred media

Media environments do not cause learning,

cognitive processing by the learner causes learning.

Mayer, R. E. (2003) *The Promise of Multimedia Learning: Using the Same Instructional Design Methods Across Different Media.* Learning and Instruction, 13:2, p. 125 - 139.

Development of lifelong learning skills

The practitioners should be able to:

- Consider how best to use Technology-Enhanced Learning in their practice.

- Be able to successfully integrate the user analysis and knowledge/information analysis outcomes into the design of a multimedia artefact.

- Use assessment to discover the strengths and weaknesses of students and provide appropriate support to improve student performance.

- Give effective and efficient feedback to students and encourage them to reflect upon their own learning because awareness and motivation are essential to learners' professional and personal development during active learning process.

- Enable students to develop wider perspectives and respond positively to challenges.

SCE Pedagogical Research group

Established on April 2009

Leader – Dr Crinela Pislaru

25 members of the academic staff from Engineering & Technology department and Informatics department

8 PhD students

ACHIEVEMENTS - 8 funded T &L projects with the total value of 40 K

PUBLICATIONS - 6 journal papers and 25 conference papers on pedagogical topics.

Aim of SCE Pedagogical Research group

to combine the research on pedagogical issues with members' world-leading expertise on the cutting edge specialised scientific domains recognised by the RAE 2008 (**4 * rating - world-leading in terms of originality, significance and rigour**)

Esteem factors

NATIONAL TEACHING FELLOWSHIP 2008 - Dr John Fieldhouse

- Present a workshop at the University T&L Conference 2010 - "Addressing the issues of increasing cultural diversity within an educational institution".
- Submitted a project bid (~£170,000) with Glen Hardaker to HEA entitled - "Develop a national cultural awareness that addresses the problems experienced by overseas students embarking on UK higher education".
- He is a member of FISITA Educational Committee, which addresses international education in automotive engineering.

HIGHER EDUCATION FELLOWSHIP 2005 - Dr Crinela Pislaru

- Invited speaker to HUDCETT Conference 2010 - "Development of Lifelong Learning Skills by Embedding E-learning into the Curriculum"
- Contribution to 4 teaching & Learning projects at School and University level (~ £ 36,000)
- Invited IET speaker, Feb 2010 – "Improving Work Based Learning With E-Learning Systems".

Integrate Teaching & Learning with research & enterprise

Group members are seeking the best ways to integrate the results of their own research in specialised aspects of engineering and computing into their teaching of undergraduate and postgraduate students.

The group members aim to explain in the course of an hour of lecture the results of several years of research. They would be able to achieve that due to their scientific research expertise in their specialist subject and their focus on actively integrating emerging technologies and professional best practice into teaching and learning experiences.

For further information contact

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