Transforming the learning and teaching experience through technology and pedagogic innovation

Technology Enhanced Learning Strategy 2013-17

University of Surrey

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0. Executive summary

This document sets out the strategy for developing Technology Enhanced Learning (TEL) across the University for the Period 2013-17, and falls within the University of Surrey Learning and Teaching Strategy 2010-17. The purpose of this strategy is to identify and articulate mechanisms for transforming the learning and teaching experience through technology and pedagogic innovation, working towards a vision whereby:

The University of Surrey will be recognised as an international leader in the provision of technology enhanced learning and inspire staff and students in the transformation and enhancement of learning and teaching across the disciplines.

Three strategic areas of activity are identified to achieve this:

(i) Virtual Learning Environment - governance, engagement and usage. This area of activity aims to consolidate and extend the use of the University's virtual learning environment as a space for innovating and transforming learning and teaching.

(ii) Pedagogic innovation. This area of activity aims to support the introduction of novel pedagogies and promote the sharing of good practice in the use of educational technologies for learning, teaching and assessment.

(iii) Development through research. This area of activity aims to create a virtuous circle between learning, teaching and research activity.

The Department of Technology Enhanced Learning will drive forward the implementation of the strategy by developing annual action plans during its lifecycle and through the support of identified key stakeholders, from senior management, staff, students and central service areas.

1. Introduction

This document sets out the strategy for developing Technology Enhanced Learning (TEL) across the University of Surrey for the Period 2013-17, and falls within the University’s Learning and Teaching
Strategy 2010-17. The purpose is to identify and articulate mechanisms for transforming the learning and teaching experience through technology and pedagogic innovation. It aims to build a shared vision for the institution that will inspire staff and students in the use of technologies for learning and teaching, help lower barriers to their use, and promote positive change via standards of excellence, innovation and creativity.

1.1 Background

The strategy has been developed in response to an identified need for coordinated strategic activity in TEL and to build on the substantial investment that has been made in learning technologies, in particular the University virtual learning platform, SurreyLearn. It has been informed by workshops and consultation sessions with student, academic and central service staff groups carried out in March and April 2013. Primary and secondary stakeholder groups are identified here as both the audience for this document and key to its successful implementation:

- **Primary**: students, academic staff, IT Services, Library and Learning Services, Senior Management Team, Associate Deans Learning and Teaching, Department of TEL;
- **Secondary**: Widening Participation and Outreach, research students, registry services, Department of Higher Education, central and local committee groups.

Work with the stakeholder groups has led to the development of a working vision statement for Technology Enhanced Learning whereby:

The University of Surrey will be recognised as an international leader in the provision of technology enhanced learning and inspire staff and students in the transformation and enhancement of learning and teaching across the disciplines.

This will be achieved by working to provide a seamless digital learning environment that bridges different learning contexts and geographies, is responsive to staff and student needs, supports a strong research-led teaching agenda and provides access to high quality digital learning opportunities.

1.2 Identifying strategic areas of activity

Three strategic areas of activity have been identified to drive forward the transformation of the learning and teaching experience across the institution. These have been developed in relation to

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SurreyLearn runs on the Desire2Learn platform
the broad theme of evolving the TEL landscape through technologies, learning, teaching and assessment, and research. They encompass the following:

(i) Virtual Learning Environment (VLE) - governance, engagement and usage;
(ii) Pedagogic innovation;
(iii) Development through research.

These strategic areas acknowledge the importance of building on existing strengths and developing staff and student partnerships to achieve the objectives laid out within this document. The strategy also recognises that successful TEL interventions are based on developing a culture that values: engagement with technology, openness to change, measured risk taking, and staff and student support.

1.3 Towards implementation

The Department of Technology Enhanced Learning (DTEL) will drive forward the implementation of the strategy. This will be done by developing annual action plans for the lifecycle of this strategy and by drawing on the support of identified stakeholders to remain informed by institutional and faculty learning and teaching priorities.

A role of the DTEL is to work across the stakeholder groups and its activities are built on the following set of values:

- Purposefulness - enhancing learning and teaching experiences in meaningful and active ways;
- Criticality - asking the right questions to fully understand the context, needs, problems and potential solutions in learning and teaching settings;
- Scholarship - using sound methodological and research-led approaches to respond to future challenges;
- Enhancement - embedding excellence, value and quality in all interventions;
- Communication of success - making outputs visible, accessible and reusable;
- Reflection – underpinning work with a strong evaluative element.

1.4 Regular review

Technology Enhanced Learning is a domain that experiences rapid change as new and disruptive technologies emerge. This document will be reviewed at regular 12 monthly intervals to respond to the pressures of accelerated change and to maintain its relevance and agility for future action planning.

1.5 Shared vision
A number of vignettes are being developed to describe future TEL experiences for staff and students and provide a space for consensus building that will help translate the strategy into a shared vision for TEL across the University (see Annex 1).
2 Context

2.1 The University of Surrey’s mission is: “to work in partnership with industry, commerce, the professions and with other institutions for the benefit of our world. We will achieve this by providing scholarship attuned to the particular needs of society, developing leading-edge research and creating a rich and varied learning environment.”

2.1 The University Learning and Teaching Strategy 2010-17 was developed within the context of the University’s Vision and Strategic framework 2010-17 and it provides a strategic mechanism for innovation, enhancement and monitoring of learning and teaching interventions.

2.2 The Technology Enhanced Learning strategy 2013-17 sits within the aims outlined in the University Learning and Teaching strategy and provides a framework for the purposeful implementation of TEL activity across the institution.

2.3 The TEL strategy aims to drive forward the innovative use of educational technology across the disciplines to enhance the student learning experience and support the realisation of aspirations of academic staff in their teaching activities.

2.4 The TEL strategy acknowledges the importance of drawing together related strategic activity outlined in Faculty Learning and Teaching strategies and Library and IT strategies that will provide support mechanisms, infrastructure and processes for the successful implementation of the TEL strategy.

3 Guiding principles drawn from the University Learning and Teaching strategy

3.1 Traditional learning and teaching methodologies will be facilitated and supported with new technologies where appropriate;

3.2 The use of virtual learning environments (VLEs) will be increased to enhance the student learning experience;

3.3 Staff will be facilitated in implementing new technologies through technical and pedagogical training and support;

3.4 Students will be provided with the opportunity to learn through the deployment of rich digital media and resources and receiving timely and actionable feedback on their progress and achievement.
4 Strategic areas of activity

4.1 Virtual Learning Environment - Governance, Engagement and Usage

4.1.1 Objectives
   a. To consolidate and extend the use of the University’s virtual learning environment.
   b. To facilitate staff in their use of virtual learning environment platforms for innovating and transforming the learning and teaching experience.
   c. To enhance the quality of the staff and student experience in using virtual learning environment platforms.

4.1.2 Activity
   This will be achieved by:

   a. Creating a strong governance model to maintain oversight on the relevance, quality, resilience and visibility of the VLE platform/s.
   b. Consolidating the dialogue between stakeholders in TEL across the University;
   c. Maximising the strategic impact of TEL by linking to related institutional strategies and their concomitant implementation plans for example, IT Services, Registry, Library and Faculty Learning and Teaching strategies.
   d. Creating a benchmark for the use of educational technology that helps to engage, extend and empower academic staff in their transition from novice to expert user.
   e. Developing quality indicators for TEL by consulting with user groups for feedback relating to student and staff satisfaction that include touch points in the MEQ, iGrad and NSS surveys.
   f. Building a communications strategy to keep staff, students and key stakeholders aware of changes and developments in TEL.
   g. Developing an analytics approach to inform decision making, based on usage, performance and benchmarking data. The application of analytics to educational data will provide actionable information to improve learning and teaching-related activities through identified patterns of behavior.
   h. Developing the architecture of the VLE platform to exploit opportunities in open and distance learning to increase the number of pathways for international graduate and postgraduate students to engage with the university.
   i. Enhancing staff digital skills and competences through centrally organised workshops, local bespoke training sessions and recognition of staff achievement in their use of educational technology.
   j. Deploying digital content and instructional design approaches that maximise the richness, reusability, and consistency of electronic materials and their delivery.
   k. Maintaining a robust support model to deal promptly and effectively with user support issues.
4.2 Pedagogic innovation

4.2.1 Objectives
a. To support the introduction of novel pedagogies and diversity in the mode of study.
c. To enhance the learning, teaching and assessment experience of students and staff.

4.2.2 Activity
This will be achieved by:

a. Promoting flexibility in the space and time of study by exploring lecture capture and flipped classroom models.
b. Increasing the opportunities for mobile learning.
c. Supporting the introduction of novel pedagogies that engage and motivate learners, for example, problem-based learning, pervasive learning activities and learning through games.
d. Developing open content and open practices to exploit the potential in new educational delivery mechanisms such as Massive Open Online Courses.
e. Increasing the impact of synchronous virtual learning and teaching by enhancing the telepresence of participants in online educational settings.
f. Extending the personalisation of the student learning experience.
g. Maximising the impact of assessment on learning by identifying tools and processes that support prompt, effective and actionable feedback, including:
   - the use of ePortfolios for capturing evidence of achievement and practice;
   - micro-certification;
   - mobile online and offline marking systems.
h. Supporting and developing interactive tools and services to promote active learning.
i. Exploring partnerships to deliver courses in conjunction with employers, schools, international organisations and other institutions.
4.3 Development through research

4.3.1 Objective

a. To create a virtuous circle between learning, teaching and research activity.
b. To provide academic leadership in technology enhanced learning.
c. To establish connections and communities to move forward research-led developments in TEL.

4.3.2 Activity

This will be achieved by:

a. Providing an environment for establishing connections between University of Surrey based research and learning and teaching practice through collaborative tools and technologies that support the sharing of practice;
b. Encouraging the development of communities of practice in themes related to technology enhanced learning to facilitate the translation of research into practice;
c. Creating an incubator space for innovations in educational technology and TEL oriented activities, such as a sand pit area for testing novel instructional design models, tools and services;
d. Promoting interdisciplinary and joint research activity by working with faculty staff and students on research degree programmes and projects;
e. Valorising the outputs from technology enhanced learning activity by disseminating achievements at local, regional, national, European and International levels via events, peer review publication, and open access journals;
f. Conducting horizon-scanning activity to identify and track emerging technologies and assess their application and potential impact on learning and teaching;
g. Strengthening links with other departments, groups and organisations outside of the University to develop clusters of expertise in TEL;
h. Sourcing funding to carry out extended activity and scholarly work in the area.
Annex 1:

Example vignettes have been produced to bring the TEL strategy to life and illustrate visions of how we imagine students and staff will experience the learning and teaching environment in the future University of Surrey. These future scenarios will be developed in conjunction with stakeholder groups to generate a shared vision for transformed learning and teaching through educational technologies.

Both of the scenarios below are within reach, being based on technologies that are already, or will shortly be available to use.

**Example Vignette 1:**

**The student perspective: Experiencing a flipped classroom model.**

John walks into the lecture theatre and as he passes the doorway the Near Field Communication (NFC) tag interacts with his smart phone NFC reader and automatically registers his attendance. He takes a seat knowing that the NFC tag will have also instructed his mobile internet device to download the interactive lecture notes for this session. Pulling out his tablet he starts the mobile app for the module Critical Thinking 101. John has already watched the introductory lecture for this course on the VLE and is not surprised when the first section of lecture, following a brief introduction, is a group exercise in which the lecturer introduces a problem-based case study. Having already checked the underlying principles John finds the first short confidence based MCQ embedded in his lecture notes. As he completes each question his answers are transmitted to the polling software and appear on the interactive whiteboard where he can view his success against the activity of other students. During the five-minute break, the CSCW (Computer Supported Collaborative Work) software linked to the poll calculates the best discussion group for John to join, based on his performance. He is assigned to this peer working group where a set of questions, designed for his group, are generated for them to discuss and then answer collaboratively. As John leaves the study session his personalised revision notes are then downloaded onto his MID as he once again passes the NFC reader.

**Example Vignette 2:**

**The academic perspective: Exploiting learning analytics and augmented reality**

Susan discovers from the learning analytics report on the VLE that her neuroscience class is struggling with some basic concepts around neurotransmitter binding to receptors on muscle fibres. To help her class move forward Susan records a short 10 minute overview on her tablet device using a whiteboard capture system and uploads this to the VLE, ready to prep students before the next lecture session. When she arrives she knows the lecture capture has automatically started. She
proceeds with a problem based case study to walk the students through an authentic scenario. After a time she pauses to allow students to take a short MCQ on the VLE, based on her previous lecture recording. She then uses the Head Up Display (HUD) embedded in her glasses to provide an augmented reality overlay to watch the results live. The HUD overlays a digital image on each student so that she can privately see their names and exactly how each student is performing based against previously recorded test scores. She then shows the class on screen the test results and as a group they can see that over 50% of them have struggled with a particular question. Susan revisits this particular conceptual domain by providing a second clear example of applicability. She wraps up and leaves the theatre she knowing that the whole lecture will automatically be uploaded and delivered to her VLE course area for later viewing and reflection by the students. When she returns to his office she links in two academic references from her library supported social bookmarking repository to support the lecture and for further reading by the students.