



## Project Document Cover Sheet

Project Information			
<b>Project Acronym</b>	DUCKLING		
<b>Project Title</b>	Delivering University Curricula: Knowledge, Learning and INnovation Gains		
<b>Start Date</b>	1/11/2008	<b>End Date</b>	31/10/2010
<b>Lead Institution</b>	University of Leicester		
<b>Project Director</b>	Prof Gilly Salmon		
<b>Project Manager &amp; contact details</b>	Jaideep Mukherjee Beyond Distance Research Alliance 1813 Attenborough Tower, University of Leicester University Road, Leicester LE1 7RH E: <a href="mailto:jaideep.mukherjee@le.ac.uk">jaideep.mukherjee@le.ac.uk</a> T: +44 (0) 116 252 5713 F: +44 (0) 116 252 5725		
<b>Partner Institutions</b>	NA		
<b>Project Web URL</b>	<a href="http://www.le.ac.uk/duckling">http://www.le.ac.uk/duckling</a>		
<b>Programme Name (and number)</b>	Transforming curriculum delivery through technology		
<b>Programme Manager</b>	Lisa Gray		

Document Name			
<b>Document Title</b>	<i>DUCKLING Project Interim Report – 31 March 2010</i>		
<b>Reporting Period</b>	<i>September 2009 to March 2010</i>		
<b>Author(s) &amp; project role</b>	Prof Gilly Salmon (Project Director), Dr Alejandro Armellini (Project Adviser and CARPE DIEM leader); Dr Ming Nie (Research Associate), Gabi Witthaus (Teaching Fellow at Education) and Jaideep Mukherjee (Project Manager)		
<b>Date</b>	31 March 2010	<b>Filename</b>	DUCKLING Interim Report 31March2010.doc
<b>URL</b>	NA		
<b>Access</b>	<input type="checkbox"/> Project and JISC internal		<input checked="" type="checkbox"/> General dissemination (with financial reporting redacted)

Document History		
Version	Date	Comments

## **DUCKLING Project Interim Report – 31 March 2010**

**Project Name:** *DUCKLING (Delivering University Curricula: Knowledge, Learning and INnovation Gains), University of Leicester*

**Report compiled by:** *Dr Ming Nie*

**With contributions from:** *Prof Gilly Salmon, Dr Alejandro Armellini, Gabi Witthaus and Jaideep Mukherjee*

**Reporting period:** *September 2009 – March 2010*

### **Section One: Summary**

The DUCKLING project is entering its final quarter. Project activity has progressed and exceeded the work plan. The three curricula involved (MSc in Occupational Psychology, MSC in the Psychology of Work and MA in Applied Linguistics & TESOL) have seen major innovative changes as a result of DUCKLING's interventions. The incorporation and research of the three technologies: podcasting, e-book readers and Second Life (SL) into curriculum delivery has been an invaluable awareness-raising exercise for the research team, the project partners, the students and stakeholders: University of Leicester's (UoL) senior management team, employers, and JISC community.

DUCKLING produced outcomes and lessons learned which the team are disseminating within the institution and externally. The creative use of podcasting has already generated lasting change that will be sustained for the foreseeable future in both disciplines. DUCKLING research has confirmed earlier findings that effective use of podcasting promotes tutor and learner engagement, personalisation and motivation, and results in enhanced learner experiences. The research into e-book readers identified that the device has increased the flexibility and mobility of student learning, helped students to save resources and costs on printing, enabled students to do more reading of course materials during the day, and conduct their studies more effectively. The research into Second Life (SL) shows that through structured activities in SL (SL-tivities), students can be helped to apply theories in practical situations. SL has also enabled deeper interaction and collaboration between tutors and peers. An approach to using SL was also successfully piloted that demonstrated that SL can be used in substantially more flexible ways than other synchronous platforms.

During the final 6 months of the project, DUCKLING will complete all planned work packages and exceed expectations by:

1. Capitalising on existing DUCKLING action research with both psychology and education partners to ensure embedding of innovations and sustainability beyond the end of the funding, through further curriculum design, delivery and enabling technology.
2. Implementing and investigating the potential impact of, a new podcasting-related technology, Wimba Voice Board, for further curriculum delivery enhancement for both partners.
3. Increasing the impact of the innovative interventions on the project partners' curriculum delivery practices, DUCKLING interventions have impacted on curriculum design as well as organisation of support functions for students (particularly e-moderation). These gains will be consolidated in the final phase of the project.
4. Continuing to research with from students and staff as to the effectiveness of the DUCKLING interventions
5. Increasing dissemination of outputs and lessons learned in curriculum design and delivery enhancement. DUCKLING will share lessons learnt with other programme teams in the university delivering distance and work-based learning programmes, as well as through further external events and publications.

### Section Two: Activities and Progress

This section covers activities and progress made in the period from September 2009 to February 2010. A detailed description of these activities in support of the key objectives of each work package is provided in **Appendix 1** of this report. In summary, key activities in support of project objectives are:

1. The incorporation of the three DUCKLING technologies (podcasting, SL and e-book readers) into curriculum delivery in both disciplines was supported by the following activities. A detailed description of these activities is provided in **Appendix 1** of this report.
  - a. Workshops provided for staff of both course teams, providing technical training in how to use Audacity to produce a podcast, how to use SL, and how to design pedagogical podcasts and SL-tivities for student learning in SL.
  - b. In-world training sessions provided for students of both disciplines, focusing on practising and enhancing students' basic technical skills in SL.
  - c. Discussion, development and production sessions with the Psychology course team, aiming at building artefacts and specification of the SL oil rig.
  - d. E-book reader production sessions for both disciplines, aiming at formatting and uploading course material and podcasts onto e-book readers.
  - e. Liaison and negotiation with the UoL's library and publishers regarding copyright and intellectual property rights of core textbooks used by both disciplines.
  - f. Discussions on the institutional Virtual Learning Environment (VLE), Blackboard, moderated by the Education Teaching Fellow, throughout the SL and e-book reader projects, aiming at guiding students through the projects, monitoring their progress, dealing with their questions and inquiries and generating discussion and reflection.
2. The impact of technology-enhanced curricula on student and staff experiences was studied through action research-based data collection, analysis and feedback processes. A summary of activities in support of research objectives is provided in **Appendix 1** of this report. A detailed description of research methodology is provided in Section Four of this report.
3. A transferable model for technology-enhanced curriculum delivery, exemplar curricula in the two disciplines, and repository of case studies and guidelines for work-based distance curriculum delivery in dual-mode universities are being developed based on DUCKLING action research. A detailed description of these deliverables is provided in **Appendix 2** of this report. These deliverables are being disseminated through the project website at <http://tinyurl.com/yf7z2bh>.
4. The DUCKLING findings and the transfer of DUCKLING outputs into other programmes, disciplines and contexts was supported by Carpe Diem workshops<sup>1</sup>, Media Zoo<sup>2</sup> days and conference and seminar presentations to departments and institutions internally and externally. Details of these activities are provided in **Appendix 1** of this report.

---

<sup>1</sup> Carpe Diem is the Beyond Distance Research Alliance's well-researched, well-rehearsed team-based model for promoting change in learner-centred e-learning design and assessment, institutional capacity building and innovation. (See <http://tinyurl.com/beyond-distance-carpe-diem>.)

<sup>2</sup> The Media Zoo ([www.le.ac.uk/mediazoo](http://www.le.ac.uk/mediazoo)), which exists in the physical, web and 3D worlds, serves both as a dissemination forum for the research of the Beyond Distance Research Alliance and as a 'safe' environment where university staff and associates can interact with and explore the 'technological wildlife' on display.

5. Further dissemination of DUCKLING processes and findings has taken place through the project website and blog, UoL's Media Zoo, events organised by JISC and the HE Academy, national and international conferences and publications. These dissemination activities and links are provided in **Appendix 1**, under **Workpackage10** of this report.
6. A Distance Learning Benchmarking exercise, supported by the DUCKLING project and the Re-Vica European project, and involving the UoL and six other dual-mode universities worldwide, is underway to benchmark the participating institutions' online distance learning activity. The benchmarking partner universities have in excess of 10,000 students with at least 1,000 studying at a distance. The first results are expected in May 2010. The participating institutions will better understand their own positions in, and approaches to, distance learning against benchmarks of comparator institutions across the international sector.
7. Project evaluation was supported by three visits by the external evaluator, Andrew Comrie, on 20 July 2009, 19 January 2010, and 16 March 2010. Evaluation reports based on the first and second visits are available on the DUCKLING website: <http://tinyurl.com/ykr9xwe>.

### Section Three: Outputs and Deliverables

DUCKLING has produced outputs and deliverables in six categories: reports, podcasts produced by two course teams, SL developments, E-book reader guides and instructions, research instruments and outputs, and dissemination activities. A detailed description of these outputs and deliverables is provided in **Appendix 2** of this report. In summary, key outputs and deliverables are:

#### 1. Completed reports

Two baseline reports on staff and student reported experiences and views on problems and challenges in curriculum delivery for both disciplines, two SL reports, two e-book reader reports for both disciplines, and a podcasting report for psychology, based on the impact of technologies on student and staff experience, two evaluation reports produced by the DUCKLING external evaluator, and two interim reports to JISC.

#### 2. Podcasts produced by both disciplines

- a. Podcasts produced by the Psychology team

So far, the Psychology team has produced 59 podcasts in five categories, (summarised in Table 1): (1) module overview (for two of the modules), (2) research methods, (3) assignment guidance and support, (4) dissertation guidance and support, and (5) formative feedback on draft dissertations.

Podcast categories	Module(s) the podcasts were relevant to	No. of podcasts	Purpose
Module overview	Personnel Selection and Assessment	2	To provide an overview of the modules
	Training and Development	1	

## Transforming Curriculum Delivery through Technology Programme

Podcast categories	Module(s) the podcasts were relevant to	No. of podcasts	Purpose
Research methods	Research Methods in OP	11	To explain key concepts and approaches associated with research design, data gathering and analysis in OP
Assignment	Personnel Selection and Assessment	4	To provide support and detailed guidance on module assignments, including: <ul style="list-style-type: none"> <li>▪ Clarification of assignment requirements</li> <li>▪ How to tackle assignments</li> <li>▪ What markers are looking for</li> </ul>
	Psychology of Organising	4	
	Training and Development	3	
	The Individual at Work	4	
	Research Methods in OP	1	
Dissertation	Dissertation	17	To guide students through the dissertation process (see Figure 1 for a small sample of these podcasts) To offer a scaffold and pointers to sources of help
Feedback	Dissertation	12	To provide individual feedback and comments on draft dissertation chapters

Table 1: Summary of the Psychology podcasts

b. Podcasts produced by the Education team

The Education team has produced 12 podcasts for the *Language, Discourse and Society* module, and four podcasts for the dissertation module to increase the interactivity of the material. These podcasts are summarised in Table 2 below:

Module the podcasts were relevant to	Topic of the podcast(s)	No. of podcasts
Language, Discourse and Society	Introduction	2
	Language change and variation	2
	Standard English	2
	World Englishes	3
	Bilingualism and language choice	1
	Talk analysis	2
Dissertation	Introduction and guidance	4

Table 2: Summary of the Education podcasts

A further series of podcasts is currently being produced for the *Phonology* module of the MA in Applied Linguistics and TESOL.

### 3. SL developments

- a. A SL-tivity designed by the Psychology team to enable students to participate in an evacuation exercise from a SL oil rig is provided in Table 3. The purpose of the SL-tivity

## Transforming Curriculum Delivery through Technology Programme

was to enable students to apply their learning about workplace training in a real-life scenario. The SL-tivity was designed using Salmon's (2002) 5-stage model and to support student studying the *Training and Development* module.

5-stage model	Weekly target	Key activities
<b>Stage 1: Access and Motivation</b>	<b>Week 1: Introduction</b>	<ul style="list-style-type: none"> <li>• Explain why we are using SL</li> <li>• Provide an overview of the SL-tivity</li> <li>• Provide students with links, resources, and training guide</li> </ul>
	<b>Week 2: Getting started</b>	Students using the training guide and resources to acquaint themselves with SL and learning how to: log in, choose an avatar name, create an avatar, teleport, move and communicate.
<b>Stages 1 and 2: Access and Motivation and Online Socialisation</b>	<b>Week 3: Acquiring competence, improving confidence and motivation</b>	<p>A group training session in SL for students and staff led by Beyond Distance Learning Technologists, aiming to assist in the acquisition of the following skills:</p> <ul style="list-style-type: none"> <li>• Specific movements and gestures</li> <li>• Navigation</li> <li>• Camera control</li> <li>• Different modes of communication</li> </ul>
<b>Stages 2 and 3: Online Socialisation and Information Exchange</b>	<b>Week 4-1: Explaining and discussing the task</b>	<p>An initial meeting will be held in SL to explain the task which will feature on a virtual Oil Rig. It will allow students:</p> <ul style="list-style-type: none"> <li>• Ask questions</li> <li>• Discuss their views</li> <li>• Discuss general concerns</li> <li>• Comment on the task</li> <li>• Talk about the process so far</li> </ul>
	<b>Week 4-2: Initial visit to the Oil Rig</b>	The tour will enable students to look around, inspect and familiarise themselves with the environment. At the end of the tour they will be asked their thoughts in relation to a brief which they will then present in a brief to the senior project team.
<b>Stage 4: Knowledge Construction</b>	<b>Week 5: Revisiting the Oil Rig</b>	Students will be free to visit Oil Rig as much as they wish whilst they are preparing their ideas. This may be done on their own or with other members of the project team.
	<b>Week 6: The live event</b>	The live fire will occur in which students will have to perform an evacuation.
	<b>Week 7: Presentation of results</b>	Students will be asked to present their findings in SL in a group.
<b>Stage 5: Development</b>	<b>Week 8-1: Feedback</b>	Each student will receive individual feedback on their presentation by email.

## Transforming Curriculum Delivery through Technology Programme

5-stage model	Weekly target	Key activities
	<b>Week 8-2: Evaluation</b>	Participants will be emailed and thanked for their participation, and invited to respond via email to give their thoughts about the project and reflect upon the task if they wish to.

Table 3: A SL-tivity designed by the Psychology team

- b. A SL-tivity was designed by the Education team to enable students to consider the applicability of SL to their own teaching situations, as a component of the Computer-Assisted Language Learning (CALL) module and successfully piloted. The SL-tivity, shown in Table 4 below, was also designed using Salmon's (2002) 5-stage model.

5-stage model	Weekly target	Key activities
<b>Stage 1 &amp; 2: Access and Motivation Online Socialisation</b>	<b>Week 1: Preparation</b>	<ul style="list-style-type: none"> <li>• Sharing useful information/resources/ links about Second Life through Blackboard discussion board</li> <li>• Sharing information on our experiences in SL and questions if students have no experience of SL</li> <li>• At the end of this stage students can decide whether they want to proceed or not.</li> </ul>
	<b>Week 2: Getting started</b>	Students using the training guide and resources to acquaint themselves with SL and learning how to: log in, choose an avatar name, create an avatar, teleport, move and communicate.
	<b>Week 3: Acquiring competence, improving confidence and motivation</b>	<p>A group training session in SL for students and staff led by DUCKLING learning technologists, aiming to assist in the acquisition of the following skills:</p> <ul style="list-style-type: none"> <li>• Specific movements and gestures</li> <li>• Navigation</li> <li>• Camera control</li> <li>• Different modes of communication</li> </ul>
<b>Stages 2, 3, 4 and 5: Online Socialisation Information Exchange Knowledge Construction Development</b>	<b>Week 4 &amp; 5: Visiting language classes</b>	Students visit languagelab.com and observe classes. They will need to take notes about what they observed and how they might use SL in their own teaching context, and share that with others through Blackboard discussion board.
<b>Stage 5: Development</b>	<b>Week 6: Evaluation</b>	Participants will be invited to respond via a survey and interview to give their thoughts about the project and reflect upon the task.

Table 4: A SL-tivity designed by the Education team

- c. The SL oil rig platform that was used in the Psychology pilot is available at the UoL's Media Zoo island, <http://tinyurl.com/yhwqaa7>.
- d. Documents and guides for SL development and training, available at <http://tinyurl.com/ygixfz2>.

### 4. E-book reader guides and instructions

These guides and instructions are available at <http://tinyurl.com/yaa5nd9>.

### 5. Research instruments and outputs

The research instruments used include surveys used for baselining, SL and e-book reader studies, as well as semi-structured interview schedules. Research outputs include causal maps developed from student and staff interviews based on their experience in SL and their use of e-book readers. A detailed description of these research instruments and outputs is provided in **Appendix 2** of this report.

### 6. Dissemination activities

DUCKLING dissemination activities through the DUCKLING website, blogs and YouTube: a description and links are provided in **Appendix 2** of this report.

The following outputs and deliverables are currently under development:

#### 1. DUCKLING deliverables

These include a transferable model for effective, scalable inclusive and sustainable work-based distance curriculum delivery within a dual-mode university (this model is almost complete, see <http://bit.ly/6QQxSi>), exemplar delivery curricula and an inventory of examples of technology-enhanced solutions to work-based curriculum delivery. A detailed description of each deliverable is provided in **Appendix 2** of this report.

#### 2. Reports under development

These include a podcasting report to the Education course team, a third DUCKLING evaluation report, a benchmarking report and the final report to JISC.

## Section Four: Evaluation

### 1. External evaluation

DUCKLING has followed a structured evaluation process led by an external evaluator, Andrew Comrie. The evaluator's second evaluation report, available at <http://tinyurl.com/ykr9xwe>, covers the reporting period from July 2009 to January 2010, and describes the evaluation methodology and activities. The following recommendations from the external evaluator are currently under consideration by members of the course teams in both disciplines:

- a. The DUCKLING researcher should complete data collection and analysis of student feedback on the use of podcasts, e-book readers and SL to determine whether the use of these technologies is impacting on areas where students and staff had identified a need for improvement in the baseline studies (Under way).
- b. The DUCKLING researcher should continue research to ensure that in-depth insights can be gained in support of justifying and sustaining changes to programme delivery models beyond the life of the project. The external evaluator has provided specific recommendations in this regard in the following areas:
  - Investigation into the effectiveness of podcasting for providing feedback to learners. (Under way in Psychology programmes)
  - Investigation into the extent to which e-book readers are encouraging learners to read more widely and the impact this is having on the quality of assignment work. (This question will be put to students in the next round of surveys.)
  - Further investigation into the use and value of e-book readers, podcasts and SL for distance learning students coupled with further investigation into cost savings in materials production and distribution as a result of the creation of online materials and podcasts that are accessible via download areas on the VLE. (This investigation is ongoing.)

## Transforming Curriculum Delivery through Technology Programme

- Further investigation into the synergies between distance learning and campus-based programme delivery models. (This investigation is ongoing within the Education course team: preliminary evidence appears to show that the DUCKLING interventions made in the online programme are having a positive impact on the campus-based programme).
- c. It is recommended that the project team produces a summary of skills and hardware/software needed by teaching staff as a project output to enable successful implementation of e-book readers, podcasts and SL to distance learning curriculum delivery models. (Development of this documentation is under way in relation to all three technologies. See <http://tinyurl.com/yaa5nd9>, <http://tinyurl.com/ygjxfz2> and <http://tinyurl.com/ycquwcw>).
- d. Teaching Fellows in association with course teams should consider producing briefing papers for other members of teaching staff illustrating the changes that have been made to programme delivery and evidencing the resulting benefits accrued for both staff and learners. (Presentations and related documentation for course teams are currently being developed by the two Teaching Fellows, in collaboration with involved members of the course teams.)
- e. The project team should build activities into DUCKLING's dissemination plans to share lessons learnt from the project with other programme teams in the university delivering distance learning programmes. (This recommendation is being taken up within the context of the ongoing Carpe Diem workshops and Media Zoo activities. See Section 2, point 4, of this report.)
- f. Evolving DUCKLING's alternative Curriculum Life Cycle model (<http://bit.ly/6QQxSi>) in consultation with JISC and the wider HE community. (Work is ongoing in this regard, with project team members regularly contributing to JISC discussions around the Curriculum Life Cycle, both online and in workshops/seminars.)

The evaluation process is ongoing. Andrew Comrie's third visit took place on 15-16 March. The report emerging from the evaluator's third visit will be available in mid-April.

## 2. Research methodology

DUCKLING research was conducted using action research methodology that involves an action-reflection cycle (McNiff & Whitehead, 2006 p.9). The action-reflection cycle started before the introduction of the three DUCKLING technologies into the programmes in Psychology and Education. Before introducing the DUCKLING technologies, two baselining studies were conducted with staff and students of both disciplines. They were consulted on the challenges faced in course delivery and possible ways in which the relevant technologies could be incorporated into the curriculum to address these challenges. Their views were analysed and results were fed back to the two course teams to enable them to make appropriate changes to the curriculum delivery. Once the three DUCKLING technologies had been incorporated into the curriculum delivery, feedback from students and staff of both disciplines was regularly gathered and analysed. Evidence was fed back to both course teams to enable them to make any further modifications to the curriculum delivery that were implied by the findings, on an ongoing basis.

### a. Data collection methods

#### 1) Data collection methods for the baselining studies in both disciplines

The baselining studies were conducted with staff and students of both disciplines at the beginning of DUCKLING to find out their views on the issues and challenges that were faced in curriculum delivery, and how these problems could be addressed through the incorporation of the three DUCKLING technologies.

Views from staff of both disciplines were collected through informal meetings and discussions. Semi-structured interviews were conducted with a self-selected sample of six Education and seven Psychology students. Two Blackboard-based student surveys were also administered: (a) a survey asking for students' general comments on specific modules, and (b) a survey

## Transforming Curriculum Delivery through Technology Programme

designed to capture learners' ideas on how technologies might enhance their learning (the 'technology survey'). Table 5 summarises these surveys.

Survey types	Purpose	Student sample
<b>Module survey</b>	To evaluate satisfaction with a specific module, covering: quality of material, content, reading list, assessment, support and feedback.	12 Education students 23 Psychology students
<b>Technology survey</b>	To find out the level of student access to technologies such as computers, the internet and personal mobile devices; To establish learners' previous experience with podcasting, SL and e-book reader; To gather learners' ideas on how podcasting, SL and e-book reader can be integrated to improve their learning experience.	14 Education students 34 Psychology students

Table 5: Blackboard student surveys used for baselining studies

### 2) Data collection methods for Psychology podcasting study

A podcasting study was conducted with Psychology staff and students. The impact of podcasting on the staff's experience was captured through informal but regular meetings with the Psychology team. Semi-structured interviews were conducted with seven Psychology students to gauge their overall experience of using the podcasts. Four of them were among the seven who had been interviewed for the baselining study. Data from interviews was supplemented by the comments and feedback contributed by students through two Blackboard-based surveys (summarised in Table 5) and via the Blackboard discussion board.

### 3) Data collection methods for SL studies in both disciplines

SL studies were conducted with staff and students of both disciplines. After the incorporation of SL into the learning programmes, a SL survey was first sent to students of both disciplines via email to collect their experience throughout the SL pilots. The survey was completed by four Education and four Psychology students. The questions included in the survey covered a number of areas that helped to get a comprehensive picture of student experience in SL:

- Student previous experience with SL and computer games
- In what aspects did students find the SL activities useful and relevant to their studies?
- Technical problems and difficulties experienced
- What did students think of the in-world training and training guide?
- Did students visit SL at their own time and what did they do in SL?

Interviews with staff and students of both disciplines regarding their experience in SL were conducted using the cognitive mapping (Bryson et al., 2004) method. Four Education and two Psychology students, a Psychology tutor and an Education tutor were involved in the interviews.

### 4) Data collection methods for e-book reader studies in both disciplines

SL studies were conducted with staff and students of both disciplines. After the incorporation of e-book readers, a Blackboard survey was made available to students of both disciplines. The survey was completed by eight Education and nine Psychology students. The questions included in the survey covered a number of areas that helped to get a comprehensive picture of how students used the e-book reader:

- How often did students use the e-book reader?

## Transforming Curriculum Delivery through Technology Programme

- How did students use the course material and podcasts on the e-book reader?
- What features do student like or dislike about the e-book reader?
- To what extent did students find the course material and podcasts on the e-book reader easy to use?
- How helpful did students find the e-book reader in their studies?
- Has the e-book reader changed the way that students study?
- What other things students did students use the e-book reader for?
- Technical problems and difficulties experienced

Interviews with staff and students of both disciplines regarding their use of e-book readers were conducted using the cognitive mapping (Bryson et al., 2004) method. Three Education and three Psychology students, a Psychology tutor and an Education tutor were involved in the interviews.

A summary of data collection methods is given in Table 6.

### b. Data analysis methods

#### 1) Descriptive statistics

Quantitative data collected from the surveys was transferred into Excel spreadsheets and descriptive statistics were applied to close questions.

#### 2) Thematic analysis

Qualitative data was gathered from the semi-structured interviews conducted for baselining studies, and qualitative data was gathered from the surveys and discussion boards used for podcasting, SL and e-book reader studies. This data was coded using data-driven (inductive) coding (Boyatzis, 1998) and analysed using thematic analysis (Boyatzis, 1998; Joffe and Yardley, 2004) to identify categories and combine categories into themes.

#### 3) Cognitive mapping

Interviews with staff and students of both disciplines regarding their experience in SL and use of e-book readers were conducted using the cognitive mapping method. This method was developed based on Kelly's (1955) theories of personal constructs. The rationale of this method is that people make sense of their lives and situations by constructing, elaborating, revisiting and re-revising a system of interconnected concepts (more formally called 'constructs') (Bryson et al., 2004). In the SL and e-book reader studies, this method was used to capture a causal map of a student or staff member and his or her views, perceptions and experiences regarding SL or e-book readers.

A causal map is a word-and-arrow diagram in which ideas and actions are causally linked with one another through the use of arrows. The arrows indicate how one idea or action leads to another. The causal maps were created using *Decision Explorer* software (<http://www.banxia.com/demain.html>).

Figure 1 below shows a small piece of causal map created from an interview with an Education student regarding his experience in SL, using *Decision Explorer*. The arrow from Concept 2 to Concept 5 is interpreted as, 'SL offers an opportunity to meet other people studying the same course', and, as a result of that, 'What I found fascinating about SL is that

people from all around the world can meet at a particular place and talk about course-related things’.



Figure 1: A small example of a causal map from an interview with an Education student regarding his views about SL

In the SL studies within both disciplines, student interviews focused on one question: ‘In which aspects did you find this SL activity useful and relevant to your study of this Masters programme?’ Six causal maps were generated based on student interviews, using the *Decision Explorer* software, each illustrating a unique ‘map’ of a student’s views, perceptions and experiences in SL. For illustration, a causal map based on an interview with a Psychology student regarding her experience in SL is given in **Appendix 3**.

For example, Figure 1 shows that this student respondent considered SL useful for her study in three ways: opportunities for distance learners to meet and discuss course related issues, the potential for collaborative group-based work, and a perceived beneficial impact on the module assignment.

Two maps were developed based on an interview with a Psychology tutor and an interview with an Education tutor using the same method. Their maps generated a number of issues surrounding the use of SL for two disciplines:

- The rationale for using SL
- The goal and objectives of this innovation for the particular Masters programmes in the study
- Design of the SL-tivity
- Technical problems and difficulties faced by learners and tutors, as well as training and support issues
- Management and organisation of the students and task

In the e-book reader studies in both disciplines, student interviews focused on one question: ‘How did you use the e-book reader?’ Six causal maps were generated based

## Transforming Curriculum Delivery through Technology Programme

on student interviews, using the *Decision Explorer* software, each illustrating a unique ‘map’ of the student’s experience with the e-book reader. For illustration, a causal map based on an interview with an Education student regarding her use of the e-book reader is given in **Appendix 4**.

This map shows that this student considered the e-book reader to be useful for her studies in two ways: for making use of her commuting time by reading course material from the e-book reader, and for studying more effectively by changing her way of note-taking.

Two maps were developed based on an interview with a Psychology tutor and an interview with an Education tutor using the same method. Tutors’ maps generated a number of issues surrounding the use of e-book reader for the two disciplines:

- The rationale for using e-book readers
- The goal and objectives of this innovation for the particular Masters programmes in the study
- Issues with the formatting of materials, technical support and copyright

A summary of data analysis methods, along with the data collection methods, is given in Table 6 below.

		Methods
<b>Data collection</b>	Baselining studies in both disciplines	<p>Staff views were collected through:</p> <ul style="list-style-type: none"> <li>• Information meetings and discussions</li> </ul> <p>Students’ views were collected through:</p> <ul style="list-style-type: none"> <li>• Two Blackboard surveys: a module survey completed by 12 Education and 23 Psychology students, and a technology survey completed by 14 Education and 34 Psychology students</li> <li>• Semi-structured interviews with six Education and seven Psychology students</li> </ul>
	Psychology Podcasting study	<p>Staff views were collected through:</p> <ul style="list-style-type: none"> <li>• Information meetings and discussions</li> </ul> <p>Students’ views were collected through:</p> <ul style="list-style-type: none"> <li>• Two Blackboard surveys: a module survey completed by 23 Psychology students and a technology survey completed by 34 Psychology students</li> <li>• Semi-structured interviews with seven Psychology students</li> <li>• Comments made on the Blackboard discussion forum</li> </ul>
	SL study in both disciplines	<p>Staff views were collected through:</p> <ul style="list-style-type: none"> <li>• Cognitive mapping interviews with an Education staff member and a Psychology staff member</li> </ul> <p>Students’ views were collected through:</p> <ul style="list-style-type: none"> <li>• A survey completed by four Education and four</li> </ul>

		Methods
		Psychology students <ul style="list-style-type: none"> <li>• Cognitive mapping interviews with four Education and two Psychology students</li> </ul>
	E-book reader study in both disciplines	Staff views were collected through: <ul style="list-style-type: none"> <li>• A cognitive mapping interview with an Education staff member and a Psychology staff member</li> </ul> Students' views were collected through: <ul style="list-style-type: none"> <li>• A Blackboard survey completed by eight Education and nine Psychology students</li> <li>• Cognitive mapping interviews with three Education and three Psychology students</li> </ul>
<b>Data analysis</b>		Descriptive statistics applied to closed questions from the surveys Thematic analysis applied to open-ended questions from the surveys, qualitative data from semi-structured interviews and Blackboard discussion forum Cognitive mapping analysis applied to cognitive maps

Table 6: A summary of research methods adopted for DUCKLING research

### 3. Findings

#### a. Key findings from the baselining studies in both disciplines

In summary, the baselining studies with staff, student and employers in both disciplines identified a number of challenges faced in curriculum delivery, most of which are common in distance learning:

- Improving *learner engagement* with materials by bringing the materials to life and offering a variety of teaching approaches
- Improving *teacher support* by offering enhanced guidance, support and feedback in a variety of media formats
- Enhancing *flexibility* and *mobility* in programmes aimed primarily at time-poor, work-based learners
- Reducing *learner isolation* through the provision of additional opportunities for student-student and student-tutor interactions
- Enabling skills development and *transferring theory into practice* for work-based learners

#### b. Key findings from the Psychology podcasting study

In summary, evidence from Psychology students and staff showed that podcasting is effective in improving learner engagement with materials, as well as enhancing teacher support, increasing interaction with tutors and increasing the flexibility and mobility of materials for student learning. A summary of the key findings from the Psychology podcasting study is given in Table 7.

Outcomes		Key points
The learner experience	The human touch	Personalisation, interaction, relationship-building Livening up the learning experience Reduction in the isolation associated with distance learning
	Guidance, support and feedback in different formats	Effective provision of feedback, guidance and support in different formats Additional opportunities for effective engagement
	Flexibility and mobility	Access to quality content through mobile devices
Innovation and sustainability	Design once, deliver often	Reusability of resources, minimum adaptation Low-cost, high-value innovation Reduced online traffic on non-academic matters Better and more cost-effective use of tutors' time Transferability of frameworks and lessons learned

Table 7: A summary of key findings from the Psychology podcasting study

c. Key findings from the SL studies in both disciplines

In summary, evidence from two small scale pilot studies within both disciplines showed that SL is effective in creating simulated environments that students would otherwise not experience. The environment enabled the students to apply theories in a practical setting in a safe, non-threatening way. The small group of students participating in the simulation pilots enjoyed learning in this way and felt that it enabled opportunities for distance learning students to interact with their tutors and peers.

An additional finding from the Education pilot was that SL could be used very flexibly when the course team partnered with an SL-based institution (Languagelab.com), which allowed students to benefit from the affordances of the virtual world without needing to meet synchronously as a cohort in SL. The pedagogical design for this pilot is being drawn up as an open educational resource and will be made available through the OTTER project ([www.le.ac.uk/otter](http://www.le.ac.uk/otter)) as a model that could be transferred to other institutions and other disciplines. However, technical barriers, demand for resources for support and training, discomfort with SL features and managing students in different time zones together (when required for the task, as in the Psychology pilot) are challenges for sustainable integration of SL into the two disciplines.

d. Key findings from the e-book reader studies with both disciplines

The e-book reader study is still ongoing and a complete report on the findings will be included in the final report. Initial findings show for many students their study habits have changed as a result of having an e-book reader. A summary of these changes is illustrated in Table 8.

In what aspects have students' study habits changed as a result of having an e-book reader?	Student quotes from the e-reader survey and interviews
---	--

In what aspects have students' study habits changed as a result of having an e-book reader?	Student quotes from the e-reader survey and interviews
<p><b>Increasing mobility and flexibility:</b> Students used the e-reader in different places: at home, in the office, in public places (e.g. in Cafés and parks), and on the move (e.g. on aeroplanes and trains).</p>	<p>I loved the <b>small size/weight</b> and thought it would be practical to <b>carry</b> when I'm <b>travelling</b> by plane, car, etc, allowing me to study without transporting a lot of heavy books. I'm a bike commuter as well, so it would also be <b>practical</b> for daily trips to work, the library - or the beach or park, where I like to do a lot of my reading.</p> <p>The e-reader has increased my ability to <b>study in more places</b> without needing to carry around a bulky folder. I think the e-reader is a very useful addition as a <b>study aid</b>. Although at first I felt I needed to have my materials printed out, after a while I got into using it and in fact found just using it to be very <b>convenient</b>. The e-reader means you don't have to <b>carry around bulky materials</b> and can be <b>taken out and put away with ease</b>.</p> <p>I commute to the school that I teach and it takes an hour and half one way, and to get to the school I need to take a bus, a train, then another bus. I've been using the e-reader for my <b>commute</b>. The "Continue reading" function is very useful. It helps me to continue from the last place that I left off. I can <b>start reading on a bus, turn it off</b> and when I <b>get on a train, begin again</b>. It's so much easier to take the e-reader rather than taking around a lot of papers and getting papers for each unit out of my bag.</p>
<p><b>Making better use of time:</b> It's easier to take the e-reader anywhere and read whenever students have a minute. It gives students more study time during the day.</p>	<p>I find that the reader has <b>become an integral part of my day</b> in particular situations. I have a load of eight hours a week of CALL (Computer-Assisted Language Learning) classes here, during which there is pretty much nothing (for me) to do. But since I've received the reader, after I open the lab I sit and start reading the material I've loaded and take notes on what interests me. The reader, then, has given me <b>more study time during the day</b>. It's nice to have the corpus of <b>material</b> I am working on <b>loaded onto a single device</b>. There's something nice about being able to look at all the documents I'm interested in, and get a kind of "big picture" from doing this. I've also gotten into the habit of <b>carrying</b> my reader <b>with me everywhere</b>, and if I'm in a situation <b>where I'm waiting for 20 minutes I will automatically open the reader. How I kill time has been transformed by this device</b>, as previously I would have just spent the 20 minutes playing games on my iPhone!</p> <p>The "Continue reading" and Bookmark functions are useful. So I <b>don't mind finishing the whole unit in one sitting</b>. I can read it, then put it away and then catch up where I left off. The e-reader takes a lot of the burden out of having to remember where I have left off. However, with the paper version before, I'd sit down for 4-5 hours and go through one unit at the time. I have to remember where I'd left off. It wasn't a consistent method of study with the paper version. [With the e-book reader] Now I can <b>study in the week</b>. Before I allocated the weekend to study.</p>
<p><b>Saving costs and resources, and being more organised:</b> Less dependent on printed material; saving costs and papers, and become more organised.</p>	<p>The e-book reader works for me. When I started the Options module, I asked Leicester staff to print the material out for me and send them to me as a folder. I paid £100 for them to print out. Now, I've used the e-reader for studying the course material and I <b>got over this need to have the material printed out</b>.</p> <p>I've done two modules now. I have to print out all the materials and readings when I was studying the last two modules. I probably used up lots of paper for the two modules I've already done. [With the e-reader] I</p>

In what aspects have students' study habits changed as a result of having an e-book reader?	Student quotes from the e-reader survey and interviews
	<p><b>haven't printed out any course materials so far.</b> I've only printed out the assignment briefs and one reading from Blackboard that was associated with the assignment. My print-out is going to be a lot less for this module. The e-book reader is good in terms of <b>saving resources, costing and environment.</b></p> <p>It keeps me <b>organised.</b> I don't have bits of paper everywhere which drives me up the wall. I will print out some of the readings and module notes, but not all of them, so this will <b>save on resources</b> too. It has made me more <b>organised.</b> My notes are always accessible. I don't have to search for things.</p>
<p><b>Enabling more effective study:</b> Changing strategies for keeping notes, reading and approaching assignments.</p>	<p>I think that the e-book reader <b>changed my way of keeping notes and makes my study more effective.</b> Before, I used my laptop to write a lot of notes because I felt that I would forget the whole thing if I didn't take them down. But taking notes is time-consuming and not that effective because I never really use the notes. With the e-book reader, it's not very inconvenient to go back to the material on the e-reader and I can remember where the material was and go back to the module on the e-reader and look through it. As a result of that, I didn't take a lot of notes and I don't think it (not taking notes) makes a difference to my study.</p> <p>Previously I started my assignments after I'd done all the readings from print. I tried to read everything before because there was pressure there for reading all the print-outs [If you print them out]. I worked a lot harder before but I didn't really get the grades. [With the e-reader] I now start from the assignment and then read the materials and I'm being more <b>selective</b> now in what I'm reading. It's <b>saving me time</b> in a way and this will <b>change my approach how I do assignments</b> to some extent.</p>

Table 8: The e-book reader has changed the way that students study

Initial findings also showed that students were not satisfied with lack of a note-taking function in the Sony PRS-505, and the flickering and delays in turning pages that come with the e-book reader<sup>3</sup>. These drawbacks limited student use of their e-book reader throughout their studies. Study habits or preferences and life style are other factors that might stop students from using the device on a regular basis. Table 9 summaries these points.

What hasn't changed?	Student quotes from the e-reader survey and interviews
<p><b>Lack of note-taking function:</b> Students use the e-book reader when they are on the move or for reading to get an overview of the module content. For intensive study, e.g. preparing for the assignments, many students went back to printed materials where they had underlined sections and made notes.</p>	<p>Good and useful. Again I use it only when I am <b>on the move.</b> Otherwise I prefer to use hard copies. The <b>lack of (facilities for) making notes</b> means I don't use it as much as I would. (However), I think for the readings which are sometimes 50 pages long, it makes sense to read on the e-reader.</p> <p>I use the e-book reader for reading the first part of modules at the beginning to get <b>an overview of the module.</b> I use the e-book reader 3-4 times a week at the beginning of a module. The e-book reader definitely changed my way of study at the</p>

<sup>3</sup> (The Sony PRS-505 was the only e-reader available in the UK at the time the project started. This model has now been superseded, and some later models offer more advanced functionality, such as touch-screens and annotation functions. However, it is by no means clear whether such functionality is essential for effective use of the e-readers. New evidence is emerging to show that many students are using their e-readers very successfully in conjunction with laptops, iPhones, pen and paper, and other devices. Findings from this very interesting aspect of the research will be available in the final report.

What hasn't changed?	Student quotes from the e-reader survey and interviews
	<p>beginning of the module. However, I haven't use the e-book reader all through the module, as I go back to printed materials <b>when I do the assignment</b>. It's a lot easier for me to go through the materials again and <b>highlight</b> and <b>write notes</b> of my own words <b>on printed materials</b>.</p> <p>I personally find a very good study strategy to <b>underline</b> stuff and I <b>drew diagrams</b> for me to remember stuff, so when I have an assignment, I found it easier to look at my own notes rather than going through the whole module. If I know I have to summarise and find the key points, those materials I was not reading from the e-book reader. [The e-reader is good] If there is an article I want to <b>read lightly</b>. I found the e-book reader good for <b>general reading</b>. But for the <b>actual study in person</b> I don't think the e-book reader is very useful.</p>
<p><b>Not comfortable with certain functionalities:</b> page-turning and flickering were found distracting by some students and prevented them from using the e-reader.</p>	<p>Well, now I'm not really using it [the e-reader] at all. I find that there is <b>too little information on a page</b> so that the <b>constant page changing</b> is distracting. I also don't like the way the <b>pages change</b> – a bit <b>slow</b>, with a <b>flicker</b>. At the moment the e-reader is not useful because I have full access to everything I want on my computer, which has a larger screen, and more flexibility in terms of note-taking. However, I think that the issue with <b>page changes</b> notwithstanding. It's an interesting gadget but I wouldn't bother to get one for myself. At least not the version we have. The idea is promising, but I haven't found it to be better than using Blackboard.</p>
<p><b>Study habit and life style:</b> Students who like to physically manipulate printed materials or do not travel or commute do not find the e-reader very useful for their circumstances.</p>	<p>The issue I have with it – and this could just be my generation – is that I've <b>grown up studying on paper</b>. I like to <b>physically manipulate the readings</b> with highlighters, pencilled-in notes, post-its, etc. I print off all the course materials and photocopy relevant sections in books. I would prefer a more sustainable method, so I am trying to train myself to work electronically.... I just haven't figured out a way to actively engage with the e-reader yet.</p> <p>I haven't actually used the e-reader for a while. I find that I do not in fact have many opportunities or much desire to do school work outside of the time I allot at home each day. The e-reader would be useful if I were travelling more. However, I do not commute on a train or bus and do not usually have to be away from home for more than a few days at a time. The e-reader may be an excellent tool for some students. <b>My circumstances</b> don't make it particularly worthwhile.</p>

Table 9: What hasn't changed?

## Section Five: Outcomes and Lessons Learned

### Outcomes achieved so far:

1. Modelling curriculum delivery enhancement

A transferable model for effective, scalable and sustainable work-based distance curriculum delivery within dual-mode universities is being developed in light of DUCKLING research. It supplements the curriculum lifecycle diagram (<http://bit.ly/6QQxSi>) proposed as part of JISC InfoNet's Design Studio. DUCKLING's model aims to capture enhanced curriculum design and

## Transforming Curriculum Delivery through Technology Programme

delivery processes to meet diverse and changing learner requirements. This model is available via JISC InfoNet's Design Studio <http://bit.ly/duKYS3>.

### 2. Research to practice

Through DUCKLING, we have improved understanding of research to practice in curriculum delivery and how technology can support and transform learning opportunities. We captured these processes with research evidence in three DUCKLING deliverables currently under development: a transferable model for effective, scalable and sustainable work-based distance curriculum delivery, two exemplar delivery curricula, and an inventory of examples of technology-enhanced solutions to work-based curriculum delivery.

### 3. Evidence from learners

Evidence from learners achieving their goals via flexible, well designed, learner and employer-informed delivery processes is being gathered and analysed. Evidence of learners using podcasting and SL was collected and analysed. The e-book reader research is ongoing. The evidence will be built into the DUCKLING deliverables.

In summary, evidence from learners showed that the challenges or problems faced in curriculum delivery in both disciplines were addressed or improved through the appropriate incorporation of three DUCKLING technologies. Table 10 summarised how DUCKLING technologies addressed these challenges that were identified by both disciplines at the beginning of DUCKLING.

Challenges	Podcasting	Second Life (SL)	E-book readers
<b>Lack of interaction and teacher support</b>	Increased and improved interactions and teacher support with tutors - Psychology	Enabling interactions with tutors and peers through collaborative tasks in SL - Psychology SL activity generated interactions with tutors and peers through Blackboard discussion board - Education	E-book readers generated interactions with tutors and peers through Blackboard discussion board - Education
<b>Dry material</b>	Bringing materials to life	Bringing materials to life	-
<b>Lack of variety in teaching approaches</b>	Enriching teaching approaches	Enriching teaching approaches	Enriching teaching approaches
<b>Need for mobility</b>	Enabling students to play podcasts from their mobile devices (i.e. iPod, iPhone, MP3 player) and use them on the move (i.e. on a bus or train) - Psychology	-	Enabling students to read course materials on the move (i.e. on a train or plane)
<b>Need for flexibility</b>	Enabling students to use podcasts at different locations: at home, office, public places (i.e. Café) and on the move - Psychology	SL can be used asynchronously; students can complete SL task at a time and place of their choice - Education	Enabling students to read course materials at different locations: at home, office, public places (i.e. Café) and on the move.
<b>Need for transferring theories into practice</b>	-	Enabling students to practise skills as occupational psychologists in a simulated, non-threatening working environment – Psychology Enabling students to apply pedagogical	-

## Transforming Curriculum Delivery through Technology Programme

Challenges	Podcasting	Second Life (SL)	E-book readers
		and language teaching theories in a virtual environment - Education	

Table 10: DUCKLING technologies addressed the challenges faced in curriculum delivery

#### 4. Sustainability and development

The DUCKLING approach to work-based distance curriculum delivery, especially the incorporation of podcasting, has proved to be relevant to other subject areas, institutions and stakeholders. The Education team is now adapting dissertation podcasts developed by the Psychology team to support their dissertation module. Practitioners from many departments of UoL, including Criminology, Engineering, Lifelong Learning, Management and Media and Communications are now either redesigning parts of their curricula by making use of podcasting or planning changes that will incorporate the findings of our research.

#### 5. Contributions to institutional policy

The DUCKLING research has informed the new Learning Innovation Strategy approved by the University Senate in 2009.

#### 6. Effective dissemination

Effective dissemination of findings and engagement with key stakeholder communities has been taking place from the beginning of the project via the project website, the Media Zoo, events organised by UoL, JISC and HEA, national and international conferences and publications. A summary of the key dissemination activities is provided in **Appendix 1** (see also <http://bit.ly/aEnhm4>).

#### 7. Evidence for the value of annual DL benchmarking exercises across comparable HEIs

A Distance Learning Benchmarking Club of seven universities across the world, all active in distance online learning in a dual-mode fashion, has been set up to benchmark their online distance learning activity. All the partner institutions are universities with at least 10,000 students whose Distance / Online learning offering has in excess of 1000 students and also has a wide range of programmes. The seven institutions participating in the exercise are the University of Leicester (UK - Lead), the University of Liverpool (UK), the University of Southern Queensland (Australia), Massey University (New Zealand), Thompson Rivers University (Canada), Lund University (Sweden) and KTH - Royal Institute of Technology (Sweden). The first results are expected in May 2010 by means of which the participating institutions will better understand their own positions in, and approaches to, Distance Learning against benchmarks of comparator institutions across the sector and internationally.

### Key lessons learned so far

#### 1. The teaching fellows approach

DUCKLING has funded a part-time (0.4 FTE) teaching fellow in each partner department to co-participation in innovation and involvement in lasting change. Both are subject experts and experienced users of technology in curriculum design and delivery. The teaching fellows bridge the gap between the research being carried out by the DUCKLING team at Beyond Distance and the delivery of the programmes by the project partners (Education and Psychology). The teaching fellows are change enablers: without their work, it would have been very hard or impossible to implement research and, where appropriate, embed the innovations in curriculum design and delivery associated with the three DUCKLING technologies. This approach has been highly successful and has benefited the partners, the researchers and the students.

#### 2. Podcasting

## Transforming Curriculum Delivery through Technology Programme

In line with earlier research into curriculum design and delivery, the low cost but high value of the human voice in digital, portable audio format has been confirmed in DUCKLING. Podcasting has made a substantial contribution to curriculum transformation. Evidence suggests that the students' learning experience improved as a result of four key benefits associated with the integration of podcasting in learning design: (1) personalisation, (2) an additional and different format for providing clear and engaging guidance, support and feedback, (3) increased flexibility and mobility within the curricula, and (4) 'design once, deliver many times' with minimum adaptation. The presentation of research evidence in a variety of usable formats has enabled others across the University to relate to exemplars and evidence, adapt and test the ideas in their own courses and promote pedagogical innovation.

### 3. SL

As a curriculum delivery innovation, SL has demanded additional effort and significant investment from academic staff and learning technologists, including building or importing the required SL artefacts and several training, orientation and trial sessions for students and staff. However, despite huge efforts to recruit them, SL activities have not attracted many students in either discipline. This is consistent with earlier SL projects. Staff have been unable to relate to existing evidence of SL benefit or generate that evidence themselves through research. They find SL work very hard to sustain as part of the curriculum over time. The cost-benefit relation for SL in curriculum delivery, therefore, has been far less favourable than with podcasting. However, learners who did take part in SL activities have found them extremely valuable and relevant to their contexts.

### 4. E-book readers

No firm conclusions can be drawn from the use of e-readers in curriculum delivery at the time of writing. Indicative evidence from Education and Psychology students points to a range of advantages, especially for those whose work patterns require them to 'fill' many short gaps, which can be achieved successfully and usefully by accessing course materials off line on e-readers. Portability, clarity, the absence of screen glare and long battery life are cited as benefits. The inability to highlight or annotate (on the Sony PRS-505 model used in this study) and slow, distracting, 'flickering' page turns are quoted as the main drawbacks. The audio capability of the e-readers has not been used by learners, although podcasts had been pre-loaded onto the devices. In terms of IPR and copyright, DUCKLING has encountered major difficulties. Despite extensive help and collaboration from the Library and contacts made at all levels, publishers give blanket refusals to pre-loading copyrighted materials onto the e-readers. The model proposed in DUCKLING is outside publishers' *modus operandi*. So far, the project has managed to pre-load a single Education e-book (Sociolinguistics). This constitutes a major concern going forward, with new devices such as the Apple iPad about to reach the UK market. Research into e-book readers in curriculum delivery is ongoing.

### 5. Disseminating our evidence base for innovation and embedding change

Academics relate to evidence-based change. The research evidence generated through DUCKLING has not only enabled sustainable change within the partner departments, but it has also encouraged other colleagues across disciplines to consider these innovations in their design and delivery practices. Small but successful innovations are infectious. To make it possible for others to capitalise on the benefits of DUCKLING, regular effective dissemination (internal and external) has been key. Synergies with other projects (e.g. OTTER, [www.le.ac.uk/otter](http://www.le.ac.uk/otter)) have multiplied the impact of our dissemination activities.

### 6. Synergies between curriculum design and delivery

Although DUCKLING is a curriculum delivery project, it has promoted deep changes to design. DUCKLING's curriculum lifecycle model (<http://bit.ly/6QQxSi>) expands on this. For a curriculum to be delivered effectively, taking full advantage of the affordances of learning technologies, very careful consideration must be given to design and re-design.

### 7. Shared challenges in curriculum design and delivery internationally

The successful set-up of the international benchmarking exercise, with support from the DUCKLING project, indicates shared concern among dual-mode institutions across the world about challenges faced in curriculum design and delivery as applicable to work-based and distance learning. The results of the benchmarking exercise will throw further light on their relative positions, as well as approaches to these challenges.

### 8. Sustainability beyond the end of the funding period

Low-cost, high-value interventions multiply impact and motivation of staff and students. Podcasting has been a very low-cost technology that made a dramatic difference in design and delivery. Ease of creation, coupled with reusability, ensure sustainability beyond the end of DUCKLING. Podcasting is now truly embedded in the practice of those involved in the project.

### Section Six: Communication and Dissemination Activities

Effective dissemination of findings took place from the beginning of the project via the project website, the University of Leicester's Media Zoo, events organised by UoL, JISC and HE Academy, national and international conferences and publications. A summary of the key dissemination activities is provided at <http://bit.ly/aEnhm4> and in **Appendix 1**, under **Workpackage 10** of this report.

### Section Seven: Issues, Challenges and Opportunities

A review of risk analysis is given in Table 11 below.

Original risk	Became a live issue?	Mitigation	Will impact on targets?
Staffing not in place at start of project	Yes – Education teaching fellow started later than planned	Key staff already in post Interim staff available	No
Absence, illness or loss of key staff	Yes – Psychology teaching fellow will resign on 31 May	Recruitment of replacement in process Team approach and collaborative practice	No
Scope over-ambitious	No		
Lack of buy-in or commitment by internal stakeholders	No		
Technology-related failures	No		
Low student recruitment	No		
Failure to enable wider adoption and scaling-up	No		
Lack of relevance of lessons learned to other departments	No		
<b>New risk</b>			
Copyright and IPR	Yes – publishers refused to pre-load materials from the reading lists onto the e-readers unless they were paid exceptionally high fees.	Following normal procedures, students can themselves transfer materials from the e-library to their e-readers for a limited amount of time.	No

Original risk	Became a live issue?	Mitigation	Will impact on targets?
On-campus access to Second Life	Yes – network limitations and security concerns have prevented the unblocking of SL across the campus to date though progress is being made, and no students or staff have been disadvantaged in this project.	SL has been enabled from certain access points, including the Staff and Graduate Students Media Zoos and within Beyond Distance.	No
E-readers are a rapidly-evolving technology	Yes – new e-reader models have become available since the start of the project (including the Sony Touch and the Apple iPad), making the Sony 505s out of date.	Research has focused on pedagogical models and learner benefit, regardless of the specific device in use.	No

Table 11: A review of risk analysis

As part of the creative use of digital audio and as an extension to podcasting, DUCKLING has identified the pilot of Wimba VoiceBoards as an opportunity for further curriculum delivery enhancement. At the time of writing, both course teams are planning ways in which they can integrate this tool for specific purposes. The Psychology team are planning the use of VoiceBoards (1) as part of the students' research discussions (i.e. to post and respond to open questions about dissertations) and (2) within the Personnel Selection and Assessment module, where the tool would enable an audio-based tutor support group. The Education team are considering the incorporation of VoiceBoards to support moderated voice discussions amongst learners focused on the e-tivities developed for the Sociolinguistics module. The e-tivities provide formative assessment opportunities.

There is extensive previous research into the moderation of asynchronous online groups of learners and the use of tasks and other artefacts (such as e-tivities) to enable focused and meaningful participation for effective learning. However, the combination of the two, i.e. the facilitated discussion and resolution of asynchronous tasks by learners using voice has been notably under-researched. VoiceBoards thus seem a natural progression from standard podcasting and appropriate to be researched as part of DUCKLING.

## Section Eight: Collaboration and Support

### Internal

DUCKLING's impact and contribution to change in curriculum design and delivery at the University of Leicester has been based on successful collaborations and partnerships between the research team at the Beyond Distance Research Alliance and the Schools of Education and Psychology. The teaching fellows (see Section 5) have made this collaboration possible. Support from IT Services and the University Library has made it possible for DUCKLING to meet its objectives. The Media Zoo has been the key disseminator of outputs and lessons learned, which has generated collaboration with other departments. A highly supportive Steering Group, chaired by Leicester's Pro-Vice Chancellor for Students, has provided invaluable direction, advice and support throughout.

### External

DUCKLING has had regular contact with and has benefited from support offered by Lisa Gray, its Programme Manager. Peter Chatterton, our critical friend, has visited us twice. We have also had contact with him at various meetings and events. We would like to emphasise the value of the CAMEL meetings involving our cluster and facilitated by Peter. They have provided an opportunity to discuss and address practical problems through the analysis of possible solutions generated through frank peer discussion. We feel the project has been well supported. The programme meeting (Manchester, Oct 2009) had useful parts but did not influence the progress of DUCKLING. We do not have any specific needs or requests for additional external support.

## Section Nine: Financial Statement

Financial statement is provided in **Appendix 5** of this report.

### Checklist:

## Transforming Curriculum Delivery through Technology Programme

Before you return this report:

- Ensure that your project webpage on the JISC site is up to date and contains the correct information. Attach details of any required amendments to this report. Project webpages can be found from: [www.jisc.ac.uk/curriculumdelivery](http://www.jisc.ac.uk/curriculumdelivery)
- If there have been any changes to the original project plan and/or work packages, ensure that amended copies of the relevant sections of your project plan are attached to this report.
- Identify and name any areas within this report that you'd like removed before the report is made public (\*see below)

**\*Please note** the interim reports will be made available on the JISC website and on the Circle site with the budgetary information removed. We recognise that projects may occasionally address very sensitive issues. We would like you to present as full a picture in this report as you can as the lessons you learn are valuable to us. We assure you that any issues you identify as confidential are removed before the report is made public. Where such issues do represent valuable lessons for the community we will involve you in further discussion as to how they could be passed on without identifying institutions or individuals.

## Transforming Curriculum Delivery through Technology Programme

### References:

Boyatzis, R. E. (1998) *Transforming qualitative information: thematic analysis and code development*. London: Sage.

Bryson, J.M., Ackermann, F., Eden, C. and Finn, C.B. (2004). *Visible Thinking: Unlocking causal mapping for practical business results*. John Wiley & Sons, Ltd.

Joffe, H. and Yardley, L. (2004) Content and thematic analysis, in Marks, D.F. and Yardley, L. (eds) *Research Methods for Clinical and health Psychology*, Chapter 4, pp 56-68. London: Sage.

McNiff, J. and Whitehead J. (2006). *All you need to know about Action Research*. SAGE Publications Ltd.

Salmon, G. 2002. *E-tivities: the key to active online learning*. London: Routledge Falmer.

**Appendix 1: Activities and progress**

Appendix 1 contains activities and progress made in the period September 2009 to February 2010. WORKPACKAGES 1-4 have been completed and reported on in the first interim report.

WORKPACKAGES	Objectives	Activities in support of project objectives	Progress
<p><b>WORKPACKAGE 5:</b> Appropriate curriculum delivery, Presentation 1 (both disciplines)</p>	<p>Incorporation of podcasting into curriculum delivery in both disciplines</p> <p>Collect and analyse student and tutor feedback</p>	<p><b>Workshops:</b> A series of mini-Carpe Diem workshops providing podcasting training, development and production to both course teams.</p>	<p>A number of workshops have been provided; more will be provided on demand</p>
		<p><b>Data collection:</b> Feedback from tutors of both disciplines was collected through informal meetings and discussions at a regular basis. Feedback from students of both disciplines was collected via semi-structured interviews, Blackboard-based surveys and Blackboard discussion forum.</p>	<p>Data collection from psychology has been completed.</p> <p>Data collection is ongoing with education as the team is planning to produce more podcasts from March 2010.</p>
		<p><b>Data analysis:</b> Feedback from students and tutors of both disciplines was analysed using descriptive statistics (applied to close-ended questions from surveys) and thematic analysis (applied to qualitative data from interviews, open-ended questions from surveys and comments from Blackboard discussion forum).</p>	<p>Data analysis from psychology has been completed.</p> <p>Data analysis is ongoing with education as the team is planning to produce more podcasts from March 2010.</p>
<p><b>WORKPACKAGE 6:</b> Optimising delivery: Appropriate curriculum delivery, Presentation 2 (both disciplines)</p>	<p>Incorporation of e-book readers and Second Life into curriculum delivery in both disciplines.</p> <p>Collect and analyse student and tutor feedback.</p>	<p><b>Workshops:</b> A series of mini Carpe Diem workshops providing SL training and development to both course teams.</p>	<p>Completed</p>
		<p><b>SL training to students:</b> A series of in-world training sessions were provided to students from both disciplines.</p>	<p>Completed</p>
		<p><b>Development of SL artefacts:</b> A series of discussion, development and productions sessions with psychology team to</p>	<p>Completed</p>

Transforming Curriculum Delivery through Technology Programme

WORKPACKAGES	Objectives	Activities in support of project objectives	Progress
		build artefacts and specifications of the SL oil rig.	
		<p><b>Oil rig sessions in SL:</b> A series of activities in SL were provided to psychology students, including a task briefing, a tour of the oil rig guided by a psychology tutor, a live evacuation, a group presentation by students, and discussion and reflection.</p>	Completed
		<p><b>E-moderating:</b> E-moderated discussion about SL through Blackboard discussion forum throughout the SL project period, guiding student through the SL-tivities, monitoring student progress, dealing with student questions, generating discussion and reflection.</p>	Completed
		<p><b>E-book reader production:</b> A series of production sessions aimed at formatting and uploading course materials and podcasts onto e-book readers.</p>	Completed
		<p><b>Copyright liaison:</b> Liaison and negotiation with the university's library and publishers regarding copyright and IPR of core textbooks used by both disciplines.</p>	Completed
		<p><b>Data collection:</b> Feedback from tutors of both disciplines was collected through informal meetings and discussions and cognitive mapping interviews. Feedback from students of both disciplines was collected via cognitive mapping interviews and Blackboard-based surveys.</p>	<p>Data collection from SL is completed.</p> <p>Data collection from e-book readers is ongoing. 8 additional e-book readers were given to education students in March 2010.</p>
		<p><b>Data analysis:</b> Feedback from students and tutors of both disciplines was analysed using descriptive statistics (applied to close-ended questions from surveys), thematic analysis (applied to open-ended questions from surveys), and cognitive mapping methods for interviews.</p>	<p>Data analysis from SL is completed.</p> <p>Data analysis from e-book readers is ongoing. 8 additional e-book readers were given to education students in March 2010.</p>
<b>WORKPACKAGE 7:</b>	Development of	A transferable model, exemplar curricula, inventory of case studies and guidelines for	In progress – see

## Transforming Curriculum Delivery through Technology Programme

WORKPACKAGES	Objectives	Activities in support of project objectives	Progress
Data analysis and modelling	appropriate models, exemplar curricula, inventories of examples and guidelines for practitioners based on analysed data	work-based distance curriculum delivery are being developed in light of DUCKLING research and supported by a variety of data collection and analysis activities conducted in WORKPACKAGE 5 and 6.	<a href="http://bit.ly/6QQxSi">http://bit.ly/6QQxSi</a>
<b>WORKPACKAGE 8:</b> Planning for embedding and sustainability	Embed results into each redesigned curriculum Plan the transfer of outputs to other programmes, disciplines and contexts	<b>Carpe Diems:</b> A series of Carpe Diem workshops and Zoo days provided to departments of Lifelong Learning, Criminology, Politics and IR, Law at UoL since August 2009 to disseminate, embed and sustain DUCKLING results as appropriate.  <b>Dissemination meetings:</b> Dissemination meetings have been held with the School of Management at UoL.	Completed; more will be provided on demand
<b>WORKPACKAGE 9:</b> Project Evaluation	Assess the project's outputs and deliverables against projections made in the bid for measures of success, as well as 'value for money'	Three external evaluation visits were conducted in July 2009, January 2010 and March 2010; one more is planned for July-August 2010.	In progress
		A Distance Learning Benchmarking Club of seven universities across the world, all active in distance online learning in a dual-mode fashion, has been set up to benchmark their online distance learning activity and work is in progress.	The first batch of results are expected in May 2010
<b>WORKPACKAGE 10:</b> Dissemination	Achieve far reaching dissemination via a blend of face-to-face events and online vehicles, the target groups for which include academics, practitioners, learning technologists, managers, administrators in HE and FE, and especially focus on HEIs offering or considering DL and/or work-based	<b>Project website, blog and wiki:</b> <ul style="list-style-type: none"> <li>• Project website: <a href="http://www.le.ac.uk/duckling">http://www.le.ac.uk/duckling</a>.</li> <li>• Project blog: <a href="http://tinyurl.com/d8pqqp">http://tinyurl.com/d8pqqp</a></li> <li>• BDRA blog: <a href="http://beyonddistance.wordpress.com">http://beyonddistance.wordpress.com</a></li> <li>• YouTube: <ul style="list-style-type: none"> <li>- DUCKLING video: <a href="http://tinyurl.com/yj8aceb">http://tinyurl.com/yj8aceb</a></li> <li>- Oil rig evaluation: <a href="http://tinyurl.com/ybhonz9">http://tinyurl.com/ybhonz9</a></li> <li>- DUCKLING at LFF' 10: <a href="http://tinyurl.com/ybs86op">http://tinyurl.com/ybs86op</a></li> </ul> </li> </ul>	Ongoing
		<b>Dissemination via University of Leicester's Media Zoo:</b> <ul style="list-style-type: none"> <li>• Carpe Diems workshops and Zoo days with colleagues from across the campus and external (Lifelong Learning, Criminology, Politics and IR, Law, Department of Work and Pensions) since August 2009</li> <li>• A visit from Routledge in October 2009</li> <li>• Dissemination meetings with School of Management</li> </ul>	

## Transforming Curriculum Delivery through Technology Programme

WORKPACKAGES	Objectives	Activities in support of project objectives	Progress
	learning as part of their offering.	<ul style="list-style-type: none"> <li>• A 4-day visit by 10 Finnish academics in November 2009</li> <li>• A visit from Central Agricultural Broadcasting and Television School of China about DUCKLING technologies for distance education in January 2010</li> <li>• A visit from Jadavpur University, India, in February 2010</li> </ul> <p><b>Events at BDRA and at other UoL departments:</b></p> <ul style="list-style-type: none"> <li>• DUCKLING events at LLF10, January 2010</li> <li>• E-assessment workshop in December 2009</li> </ul> <p><b>JISC and HE Academy programme of events:</b></p> <ul style="list-style-type: none"> <li>• HEA-UoL PANTHER seminar, 3 March 2010, see <a href="http://bit.ly/drFVTQ">http://bit.ly/drFVTQ</a></li> <li>• JISC annual conference in April 2010</li> <li>• JISC Curriculum Design and Delivery meetings in 2009-10</li> <li>• CAMEL meetings in 2009-10</li> </ul> <p><b>Contributions to discipline-specific conferences:</b></p> <ul style="list-style-type: none"> <li>• A presentation at psychology DOP conference in January 2010</li> <li>• A presentation given at LLAS (Language and Linguistics Area Studies) E-learning Symposium on in January 2010</li> <li>• A presentation to IATEFL conference in April 2010</li> </ul> <p><b>Contributions to e-learning conferences nationally and internationally:</b></p> <ul style="list-style-type: none"> <li>• Three short papers submitted to ALT-C 2010</li> <li>• Demonstrations at Online Educa Berlin 2009 and EDEN 2009</li> </ul> <p><b>DUCKLING employers and professional body fora &amp; events:</b></p> <ul style="list-style-type: none"> <li>• A presentation at psychology DOP conference in January 2010</li> <li>• A presentation to IATEFL conference in April 2010</li> </ul> <p><b>Publication in peer-reviewed e-learning journals and discipline-specific areas:</b></p> <ul style="list-style-type: none"> <li>• A paper submitted to ALT-J based on psychology podcasts</li> </ul> <p><b>Open-resource sharing via OTTER (<a href="http://www.le.ac.uk/otter">www.le.ac.uk/otter</a>):</b></p> <ul style="list-style-type: none"> <li>• The Second Life pilot for Education is being OTTERised</li> </ul>	

Transforming Curriculum Delivery through Technology Programme

<b>WORKPACKAGES</b>	<b>Objectives</b>	<b>Activities in support of project objectives</b>	<b>Progress</b>
		<b>Contributions to Leicester Research Archive (LRA) - <a href="https://lra.le.ac.uk">https://lra.le.ac.uk</a></b>	

**Appendix 2: Outputs and deliverables**

Outputs and deliverables		Description	Progress
A transferable model for effective, scalable inclusive and sustainable work-based distance curriculum delivery within a dual-mode university		The model was developed in light of DUCKLING research and the Curriculum Lifecycle diagram ( <a href="http://bit.ly/6QQxSi">http://bit.ly/6QQxSi</a> ) proposed as part of JISC InfoNet's Design Studio. The current version of the model is available at <a href="http://bit.ly/duKYS3">http://bit.ly/duKYS3</a> .	Ongoing
Two exemplar delivery curricula for both disciplines		These will take the form of two case studies (one for Psychology, one for Education) in which we will indicate the challenges raised by the course teams, a description of the before- and after-DUCKLING phases, the technology-supported changes made to design and delivery and a summary of the research findings on those changes. These case studies will be presented in usable formats so that the wider community can benefit from the actual changes we implemented, the chosen interventions, the ways in which we integrated technology and the processes that we followed.	In progress
An inventory of examples of technology-enhanced solutions to work-based curriculum delivery		The examples will be six case studies, each illustrating the integration of a particular DUCKLING technology to Psychology or Education.	In progress
Guidelines		Guidelines for HE practitioners and managers for developing flexible and learner centred work-based curriculum delivery in their contexts.	In progress
Reports	Two baselining reports to both course teams	Contain key findings regarding current practice gathered from three key stakeholders: staff, students and employers	Completed
	A podcasting report to Psychology team	Contains research methods and key findings regarding student and staff experience of using the podcasts produced by the Psychology team.	
	Two Second Life reports to both course teams	Contains research methods and key findings regarding student and staff experience of participating SL-tivities.	
	Two e-book reader interim reports to both course teams	Contains research methods and key findings regarding student and staff use of e-book readers.	
	Two evaluation reports produced by the external evaluator, Andrew	A summary of the progress so far and the issues encountered, articulation of what has been learned and recommendations. Two reports are available from DUCKLING	

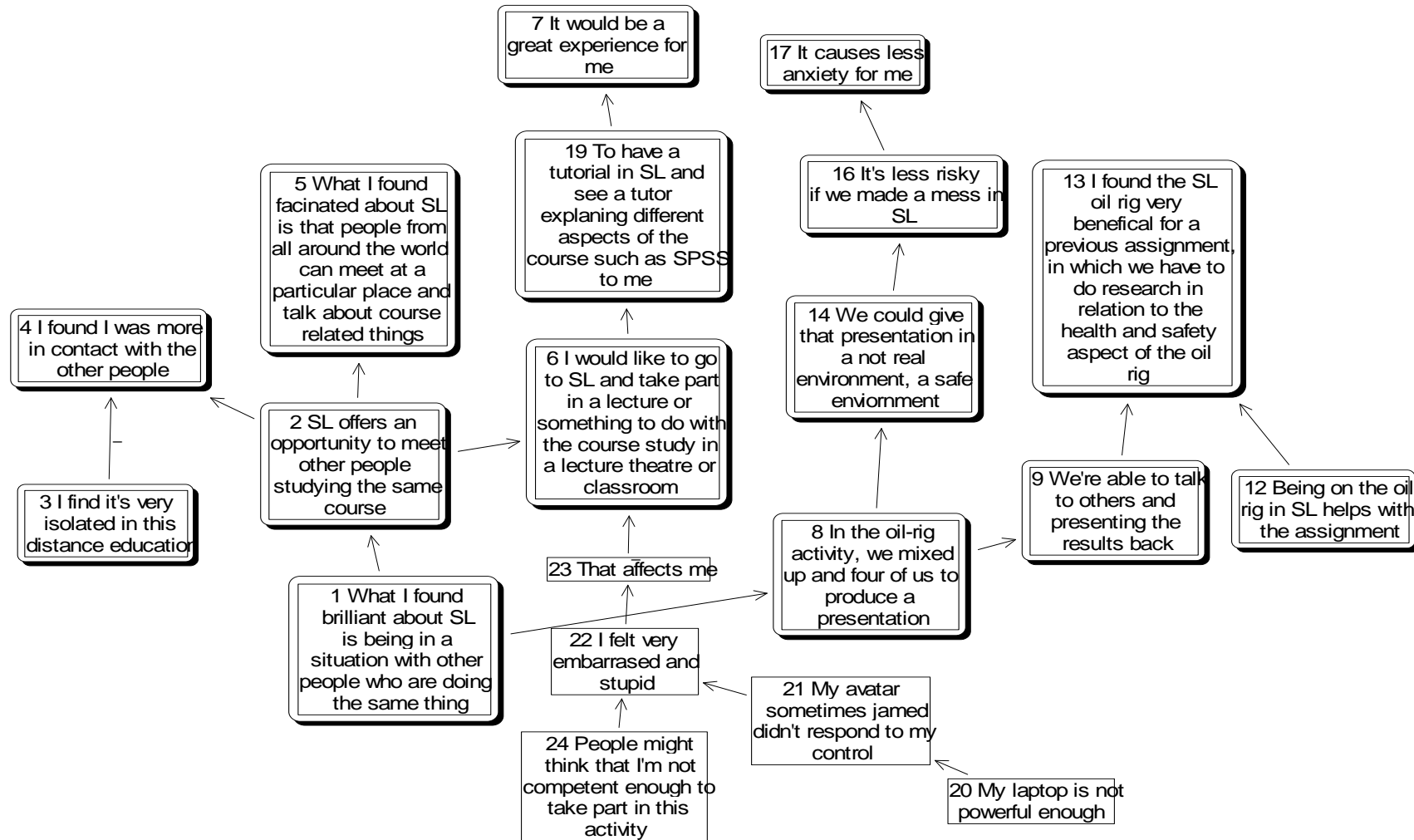
## Transforming Curriculum Delivery through Technology Programme

	Comrie in July 2009 and February 2010	website: <a href="http://tinyurl.com/ykr9xwe">http://tinyurl.com/ykr9xwe</a> .	
	Two interim reports to JISC in August 2009 and March 2010	A summary of key activities, progress, outputs, deliverables, outcomes, dissemination activities and lessons learned from the reporting period.	
	Final report	Reporting key activities, progress, outputs, deliverables, outcomes, dissemination activities and lessons learned from the project	To be completed at the end of project
	A benchmarking report		To be completed by December 2010.
Podcasting developments	Podcasts produced by Psychology	59 podcasts were developed in five categories, a summary of these podcasts was provided through DUCKING website: <a href="http://tinyurl.com/yb6a79r">http://tinyurl.com/yb6a79r</a> .	Completed
	Podcasts produced by Education	11 podcasts and audio clips were incorporated into the <i>Language, Discourse and Society</i> module to illustrate language change and variation and discourse analysis. A summary of these podcasts was provided through DUCKING website: <a href="http://tinyurl.com/yb6a79r">http://tinyurl.com/yb6a79r</a> .	
		More podcasts will become available for the Dissertation module from March 2010	In progress
	BB-based surveys	Two Blackboard-based surveys: module and technology surveys were used for collecting student feedback regarding their use of psychology podcasts.	Completed
Second Life developments	An exemplar of SL activity (SL-tivity) designed for Psychology students	The activity was designed to simulate an evacuation procedure and integrated into the <i>Training and Development</i> module. The design of this SL-tivity is available through DUCKLING website: <a href="http://tinyurl.com/ygjxfz2">http://tinyurl.com/ygjxfz2</a> .	Completed
	An exemplar of SL-tivity designed for Education students	This activity was designed for exploring language teaching opportunities offered by SL and can be beneficial to all students on this programme. This SL-tivity is available through the DUCKLING website: <a href="http://tinyurl.com/ygjxfz2">http://tinyurl.com/ygjxfz2</a> .	
	A SL oil rig for Psychology students	The oil rig is available for access at the University of Leicester's Media Zoo island ( <a href="http://slurl.com/secondlife/media%20zoo/168/149/17/">http://slurl.com/secondlife/media%20zoo/168/149/17/</a> )	
	An article documenting development	All available through DUCKLING website: <a href="http://tinyurl.com/ygjxfz2">http://tinyurl.com/ygjxfz2</a> .	

## Transforming Curriculum Delivery through Technology Programme

	of specifications of the SL oil rig	The two guides were also made available on Blackboard for students to download.	
	A SL training guide and a guide for setting up audio/video system in SL		
	A checklist for SL trainers	Available from DUCKLING blog: <a href="http://tinyurl.com/ycguwew">http://tinyurl.com/ycguwew</a> .	
	A SL survey	Designed to evaluate student experience in SL.	
	Cognitive maps	A number of cognitive maps developed from interviews with students and staff, capturing their use, experience and views about SL.	
E-book reader developments	E-book user guides and instructions on how to convert Word documents into e-book format	Available through DUCKLING website: <a href="http://tinyurl.com/yaa5nd9">http://tinyurl.com/yaa5nd9</a> . Also available on BB for students to download.	Completed
	A video podcast about e-book readers	Capturing a discussion session with postgraduates at Leicester via the Graduate School Media Zoo about e-books and e-readers, <a href="http://www.le.ac.uk/gsmz">http://www.le.ac.uk/gsmz</a>	
	A BB-based e-book reader survey	Designed to evaluation student use and experience with the e-book reader	
	Cognitive maps	A number of cognitive maps developed from interviews with students and staff, capturing their use, experience and views about the e-book reader.	
Web presence	DUCKLING website	<a href="http://www.le.ac.uk/duckling">http://www.le.ac.uk/duckling</a>	Ongoing
	DUCKLING blog	<a href="http://tinyurl.com/d8pqqp">http://tinyurl.com/d8pqqp</a>	
	BDRA blog	<a href="http://beyonddistance.wordpress.com">http://beyonddistance.wordpress.com</a>	
	YouTube videos	DUCKLING video: <a href="http://tinyurl.com/yj8aceb">http://tinyurl.com/yj8aceb</a> Oil rig evaluation video: <a href="http://tinyurl.com/ybhonz9">http://tinyurl.com/ybhonz9</a>	

Appendix 3: A causal map developed from an interview with a Psychology student about Second Life experience





**Appendix 5: Financial Statement**

<b>Total Grant</b>	<b>£200,000</b>	<b>Duration of project</b>	<b>1.11.2008 to 31.10.2010</b>
<b>Reporting Period</b>	<b>20.09.2009 to 24.3.2010</b>		

<b>Budget headings</b>	<b>Total budget allocated</b>	<b>Expenditure in earlier reporting period 1.11.2008 to 19.8.2009</b>	<b>Expenditure this reporting period 20.8.2009 to 24.3.2010</b>	<b>Total expenditure to date</b>	<b>Further information</b>
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<b>Travel &amp; Subsistence</b>					
Travel for Steering Group members	£1,200	£0	£177	£177	
Travel for project staff to programme level activity	£1,200	£99	£444	£543	
<b>Equipment</b>					
e-books for students on DL courses	£5,000	£736	£4,293	£5,029	
Second Life development costs	£4,000	£931	£250	£1,181	
<b>Dissemination activities</b>					
Online dissemination media set-up	£500	£0	£0	£0	
Conference dissemination	£2,400	£608	£2,847	£3,455	
<b>Evaluation activities</b>					
External Evaluator's fees	£2,000	£500	£0	£500	
Benchmarking Consultant's fees	£1,000	£0	£2,000	£2,000	
<b>Other (please specify)</b>					
Room & refreshments for Steering Group meetings	£1,200	£183	£475	£658	
CARPE DIEM training workshops for course teams	£1,500	£349	£212	£561	
<b>Contribution to estates and indirect costs</b>	<b>£10,982</b>	<b>£4,576</b>	<b>£3,198</b>	<b>£7,774</b>	
<b>Total</b>	<b>£200,000</b>	<b>£46,188</b>	<b>£63,318</b>	<b>£109,506</b>	See below (2)

## Transforming Curriculum Delivery through Technology Programme

### Notes:

- (1) The Learning Technologist post, which started in August 2009, is shared between two projects, and the portion of the salary from this project (DUCKLING) is committed for the period May – October 2010. This is the reason for the £0 expenditure against the allocated budget of £19,156.
- (2) In order to maximise the impact and deliverables of DUCKLING within the duration, scope and budget of the project, and in view of utilising the projected surplus – generated due to the delayed starts of the Education Teaching Fellow (Gabi Witthaus), the learning technologist (Emma Davies) and the researcher (Ming Nie) – the following proposals were made to the JISC Programme management and the Project's Steering group in March 2010, and approved:
  - a. Increasing the Education Teaching Fellow's time on DUCKLING from 40% FTE (2 days/week) to 80% FTE (4 days/week) from May to October 2010.
  - b. Allocating an extra full-time Learning Technologist from July to October 2010.
- (3) In consideration of the above – i.e. notes (1) and (2) – further costs amounting to £89,967 (which includes £83,796 in staff costs, £2,970 in non-staff costs and £3,201 as contribution to Estates and Indirect costs) remains committed from the project budget.
- (4) The DUCKLING project is expected to be completed on schedule and within budget.