

Cover Sheet for Proposals	JISC Capital Programme
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Name of Capital Programme: e-Learning		
Name of Lead Institution: Learning Technology Research Institute (LTRI), London Metropolitan University		
Name of Proposed Project: <i>Cross-institutional implementation and evaluation of digital dialogue games for inclusive and personalised learning</i>		
Name of Project Partners: Open University University of Teesside University of Exeter Queen Mary, University of London		
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Length of Project: 28 months		
Project Start and End Dates: September 2007 – January 2009		
Total Funding Requested from JISC: £199,737		
Funding Broken Down over Project Years: £40,818 year 1; £84,121 year 2; £74,798 year 3.		
Total Institutional Contributions: £38,377		
Outline Project Description This technology-focussed collaboration project for the e-learning strand of the JISC Capital Programme will take a 'state-of-the-art' collaboration and social-software tool (InterLoc) and its related learning activities (digital dialogue games) from the current pilot phase of development to integrated exemplary implementations and embedding in five HE institutions - that have a particular focus on widening participation, flexible delivery and lifelong learning. The project will run for twenty eight months from September 2006 to January 2009 and will lead to more widespread dissemination of the approach within the UK HE community by the end of the project. The InterLoc tool and digital dialogue game approach is particularly suited to addressing problems of widening participation and providing engaging learning experiences throughout the lifelong learning cycle in formal, semi-formal and informal settings. Although the nature of the dialogue games already supports personalised learning, the current InterLoc tool will be adapted to produce an advanced version that is more personalised and integrated, leading to a more pervasive gaming approach. So this project will: adapt the current Open Source InterLoc tool (version 1.0E), built according to JISC's ELF, to achieve greater personalisation and integration (e.g. through facilitating mobile interaction and integration with other e-learning environments and tools); trial and refine the advanced InterLoc tool; Implement the advanced tool in five HE contexts; and, embed and disseminate the approach. By the end of the project we will deliver a fully evaluated approach to supporting highly engaging dialogical learning that is inclusive and personalised, and embedded within five HE Institutions. This approach will be supported and made available to the wider HE community for further adoption via the project web-site (www.interloc.org) that will maintain and extend the dialogue game user-community. The LTRI, who have a long-term commitment to this line of work, will sustain the InterLoc tool, web-site and user-community after the end of the project.		
I have read the Circular and associated Terms and Conditions of Grant	YES √	NO

Cross-institutional implementation and evaluation of digital dialogue games for inclusive and personalised learning

Bid for e-learning strand of JISC Capital Programme

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D. Andrew (Centre for Academic and Professional Development, London Metropolitan University)
Prof. R. Wegerif & Dr. M de Laat (Dept. of Education and Lifelong Learning, University of Exeter)
Prof. E Scanlon & Dr. Canan T Blake (Institute of Educational Technology, UK Open University)
Dr. E Pearson (Accessibility Research Centre, University of Teesside)
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1. Introduction

This technology-focussed collaboration project for the e-learning strand of the JISC Capital Programme will take a 'state-of-the-art' collaboration and social-software tool (InterLoc) and its related learning activities (digital dialogue games) from the current pilot phase of development to integrated exemplary implementations and embedding in five HE institutions - that have a particular focus on widening participation, flexible delivery and lifelong learning. The project will run for twenty eight months from September 2006 to January 2009 and will lead to more widespread dissemination of the approach within the UK HE community by the end of the project.

The InterLoc tool and digital dialogue game approach, developed according to JISC's ELF, is particularly suited to addressing problems of widening participation and providing engaging learning experiences throughout the lifelong learning cycle in formal, semi-formal and informal settings. The very nature of the dialogue games makes them highly personalised, as students can choose who they collaborate with, and in what ways (i.e. which type and level of dialogue game) and about what content or topic (which can be interpreted broadly and involve any relevant multimedia material). Previous pilot studies have shown that the dialogue games operate optimally when these exercises are prompted, or sanctioned, by the tutor but left under student initiative and control (Ravenscroft, McAlister & Baur, 2006).

The specific aims of this project are:

1. To adapt the InterLoc dialogue game tool (www.interloc.org) in ways that make it a more personalised, flexible (e.g. ubiquitous) and integrated learning experience;
2. To build on previously successful pilot implementations through performing larger scale exemplary implementations in five HE Institutions;
3. Evaluate the implementations;
4. Embed the tool and approach through linking with the Central Services of the participating Institutions;
5. Disseminate the tool and approach to the practitioner and researchers e-learning communities in the UK.

Why use Dialogue Games and InterLoc instead of standard CMC applications?

The multimedia game design combines a specially designed interface to afford, support and scaffold synchronous reasoned dialogue and debate (see Figure 1) with an environment for setting up and managing suitable sequences of game activities. These features give this approach considerable advantages over the use of 'standard' dialogue approaches such as asynchronous discussion boards or synchronous chat. Synchronous chat typically supports fairly superficial exchanges of opinion of little educational value (Bonk et al., 1998). In contrast, McAlister, Ravenscroft & Scanlon (2004) have shown that the InterLoc approach, *when compared with Chat, supports dialogue that has greatly improved educational value, which is characterised by improved motivation, more focussed and coherent discussion, the wider exploration of positions and ideas, better use of evidence (both requesting and referring to evidence) and more qualifications and justifications for positions and ideas.*

The need for additional personalisation and integration

Although the digital dialogue games have been successful in tutor-organised exercises in previous projects (Ravenscroft, McAlister & Baur, 2006), we aim to significantly broaden the reach of the approach and degree of personalisation by increasing the level of integration with student's mobile devices and providing additional options for interface modality (e.g. text and speech input via mobile phones and PDAs). In addition, we will integrate the InterLoc tool with the current e-learning environments offered to students (e.g. Moodle and Web-CT) and link learners collaborative dialogical behaviour with their individual writing through the use of InterLoc's dialogue editing and export facilities. In brief, we will make technical adaptations of the current tool to more tightly couple learners everyday digital behaviours (e.g. using mobile phones and VLEs, gaming, instant and SMS messaging etc.) with academic discourse and reasoned dialogue, to make being intellectual inclusive, fun and mediated by contemporary communication devices. The aim is to make the current InterLoc technology more ambient and yet more integrated (at technological and pedagogical levels).

Rationale in the context of widening participation and inclusion

Promoting productive and valuable educational dialogue and critical discussion that fosters and supports engaging and deep learning is a key challenge in the context of the widening participation agenda pursued in UK Universities (e.g. see Ravenscroft, 2004). The challenge of providing an engaging 'space of debate' that promotes students confidence in their ability to express themselves in collaborative situations and supports their development of generic dialogical and reasoning skills is particularly acute within new Universities. For example, although 157 languages are spoken at LondonMet, teaching and learning is by necessity conducted in English, with students who are typical of the widening participation agenda having an urgent need to acquire the confidence and academic skills that are developed through critical discussion and 'academic' argument and debate, which will enable them to perform effectively in the Higher Education process and beyond. Additionally these sort of students need to be provided with relevant, engaging and social activities that foster their motivation and belief in the learning process they are engaged in and the content that is part of their curriculum to prevent them from dropping out of, or simply losing interest in, their University learning. The InterLoc approach directly addresses these problems and the need for greater inclusion (Ravenscroft, 2006). It is particularly suited to improving the confidence and academic and thinking skills of those students who are usually disadvantaged, through being non-native speakers of English, having untypical educational backgrounds or having the burden of financially supporting themselves and therefore being absent from the campus. In brief, the dialogue game approach raises the level of confidence and intellectual performance of those less privileged HE students, and assist in helping to 'level the playing field' in the context of widening participation.

Specifically the dialogue game approach:

1. Fosters inclusion through overcoming emotional barriers and 'fear' that students have related to participating in collaborative and critical dialogues;
2. Improves students' confidence in participating in collaborative fora for critical discussion and debate;
3. Provides students with an engaging 'space of debate', where they can express and develop their ideas and critically discuss issues within a 'safe' environment;
4. Develop collaborative and individual skills of 'academic' discussion and critical thinking;
5. Engages students with the content of their courses through 'learning dialogues' about it;
6. Generally empower students to more fully participate in critical decision making processes relevant to their studies and their lives.

Rationale in the context of lifelong learning

The InterLoc tool and digital dialogue game approach provide engaging learning experiences throughout the lifelong learning cycle in formal, semi-formal and informal settings. The tool is highly flexible and can be used by younger HE students who are new to academic practice or older students either returning to academic study or performing informal learning activities.

Rationale in the context of flexible delivery and adaptability

The proposed project will considerably extend the flexibility and adaptability of an approach that is already high on this dimension. The current JAVA/Jabber application that has been built according JISC's ELF for Open Standards and interoperability, will be made interoperable with mobile and wireless devices. This will be in addition to testing the 'reality' of interoperability with other software tools and applications built according to the same Open Standards or otherwise (e.g. Moodle or Web-CT). In brief, this project will make the dialogue games an 'anytime and anywhere' technology that seamlessly link, as far as possible, with other user-driven and organisation-driven technologies.

2. Project description

Building on previous e-tools projects through larger scale implementations and extending the reach and appeal of the tool

The InterLoc dialogue game tool is an Open Source application that has been developed through two rounds of JISC e-tools funding and already been successfully pilot tested at four HE Institutions (with a total of 96 users). These projects have been unusually successful, producing a robust e-learning tool that has been pilot-tested, pedagogically evaluated and disseminated through numerous papers and invited talks (see Ravenscroft, McAlister & Baur, 2006 for a full list). Indeed, the last year resulted in 4 invited journal articles/book chapters and 8 invited talks - which constitute 12 of the 16 official outputs recently produced in response to the e-learning community's interest, with HE Institutions outside the consortium using InterLoc immediately after its release into SourceForge. Additionally, International interest is also growing, e.g. the LTRI are currently in dialogue with David Williamson Shaffer of Jim Gee's gaming group at Wisconsin about collaborating in the area of 'epistemic games'. Taking this work to 'the next level' through making technical adaptations that make it a more personalised and integrated experience and more widely implementing and evaluating the approach is a particularly timely. This is a logical next step towards making InterLoc a truly pervasive learning technology that can empower students, and especially disadvantaged ones, to more fully participate in academic practices that are the cornerstone of Higher Education and intellectual development more generally.

This project will extend the number of implementation sites from the previous InterLoc project, adding the Accessibility Research Centre at Teesside and the Language and Learning Unit at Queen Mary (University of London) to the existing sites of LondonMet, Exeter, OU and Oxford¹, bringing in additional sites with expertise in accessibility and “Thinking Writing” through collaborative academic partnerships respectively. The project will follow four Work-packages, these are:

WP1: Adaptation for greater personalisation and integration;

WP2: Trialling and refining at LondonMet and through the CETL in Reusable Learning Objects (RLOs);

WP3: Cross-institutional implementation and evaluation;

WP4: Embedding and dissemination.

These are described in more detail in the next section following a description of the current InterLoc tool.

The current InterLoc Dialogue Game tool (version 1.0E)

The InterLoc tool (see Figure 1 below) supports synchronous dialogue games that foster reasoned discussion and debate that leads to the development of higher-order conceptual skills (Ravenscroft & McAlister, 2006a). The tool also provides an activity setup component which links the dialogue game activity with sequences of related learning activities (Ravenscroft & McAlister, 2006b). A screenshot and description of how the InterLoc tool operates are given below, the software is available from Sourceforge (Open Source repository) and the project web-site (www.interloc.org) contains comprehensive information about the tool. The approach has been presented and evaluated in many academic and practitioner oriented articles and invited talks (e.g. see the web-site above for a full list). Pilot studies have shown that motivation and engagement are fostered through this game design – which maximises each player’s involvement and fosters ‘conceptual flow’ within the collaborative process, and especially through allowing the integration of multimedia materials particularly relevant to the players (e.g. video and sound based artefacts).

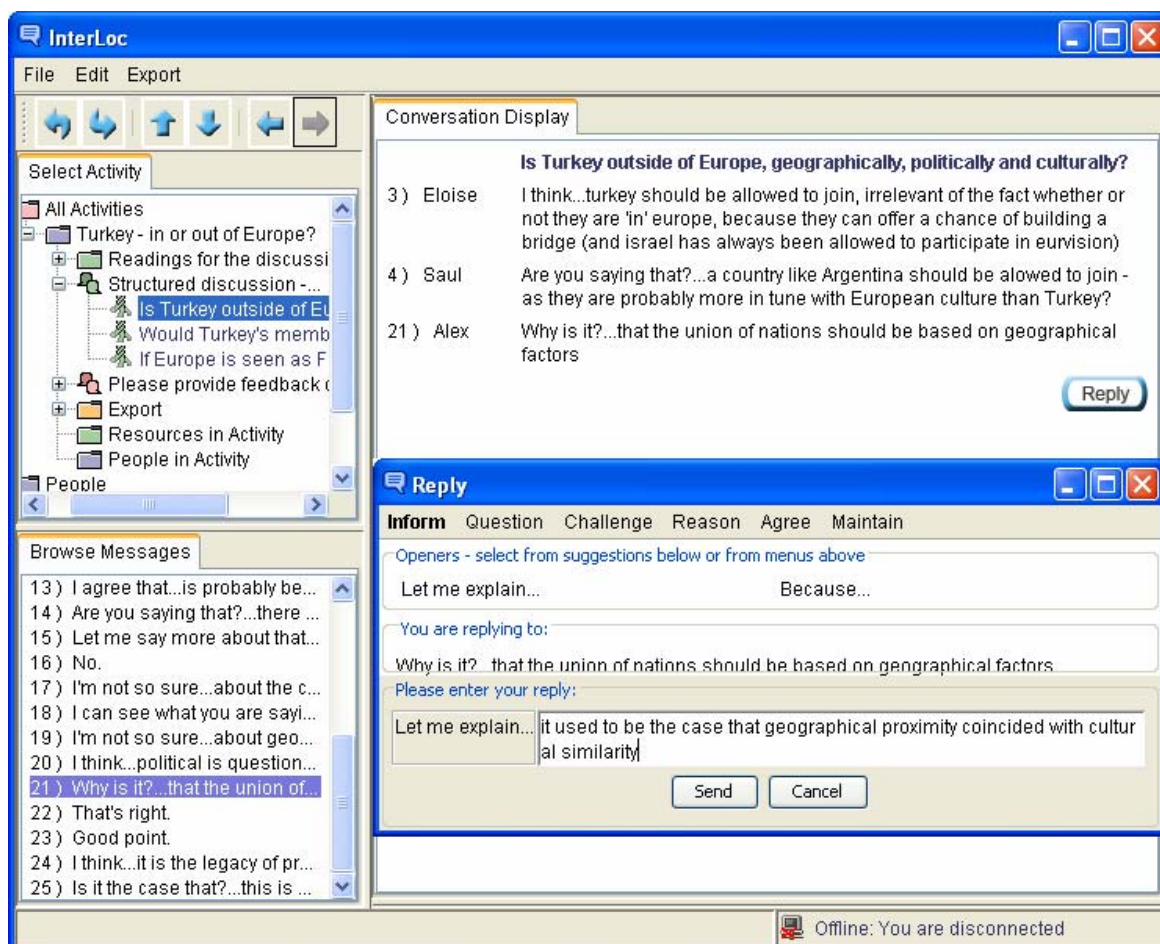


Figure 1 InterLoc Screenshot demonstrating the Critical Discussion and Reasoning (CDR) game

¹ Although Oxford are not partners in this specific project they remain members of the InterLoc consortium.

Essentially, the approach allows players to perform their critical thinking and reasoning skills in a structured and risk free environment, where the interactions are governed by shared rules and contributions are made through shared tactical options (see Figure 1) to promote high levels of social and cognitive engagement. Note that unlike many other gaming approaches that have focussed on school learning, *our games and tool have been developed specifically for the HE sector* and have been pilot-tested across four HEIs in the context of an e-tools round 2 project.

These multimedia dialogue games are specified in terms of the *goals* of the interaction (e.g. critical discussion and reasoning, exploratory dialogue, creative thinking), the *roles* of the participants (e.g. discussant, facilitator), the *Intentions/Moves* that may be performed (e.g. Inform, Question, Challenge), the *Locution Openers* that actually express the surface-level realisations of the Intentions (e.g. 'My evidence...', 'Is it the case that...', 'I disagree because...') and the *rules of interaction* (e.g. about turn-taking and the legitimate sequencing of moves). The dialogue game for critical discussion and reasoning has been evaluated extensively in previous research (e.g. McAlister, Ravenscroft & Scanlon, 2004). The InterLoc tool is described in detail in Ravenscroft & McAlister (2006a, 2006b, 2005). The game design, generally, supports risk-free engagement leading to a greater confidence in participating in the academic forum of critical debate. In brief, the dialogue game approach allows students to play with, practice and develop their academic, dialogical and cognitive skills in an engaging and motivating way.

Summary notes on excerpt: in Figure 1: how InterLoc promotes reasoned discussion and thinking together

This brief excerpt in the interface in Figure 1 illustrates how students are engaged in coherent critical discussion during the early stages of the InterLoc Critical Discussion and Reasoning (CDR) game. Eloise expresses her opinion about the topic (related to the debate about Turkey joining the EU) using the Opener *"I think..."*, to explain why she thinks Turkey should be allowed to join the EU, because it provides a (cultural) 'bridge'. This is responded to by Saul who uses *"Are you saying that?..."* to suggest an implication of Eloise's position, that perhaps other countries, such as Argentina, should also be considered as they are arguably more similar to European culture than Turkey. These contributions stimulate Alex to use *"Why is it?..."* to question a previously implicit assumption about membership to the EU, that it is based on geographical proximity (rather than cultural similarities). And this question stimulates further elaboration using and **Informing** move (bolded in the Reply Window) that is *"Let me explain..."* (that is actually being constructed in the Reply Window).

Research has shown that the way that these players collaboratively and coherently express, elaborate, question and challenge the ideas in play is virtually impossible to achieve online without using this gaming approach (Ravenscroft & McAlister, 2006a).

Linking pedagogical, collaborative and personalised activities

Through using the activity setup mode of the InterLoc tool, the dialogue games are coordinated within a *broader activity model of sequenced exercises* (e.g. preparation, interaction and summary stages). So the interaction is 'tuned' by the students or tutors to the context in which it is performed. Additional features of InterLoc allow the production of a personalised and editable textual summary of the performed dialogues that is used as a resource for other personalised learning activities (e.g. as an essay outline or personal notes). *This is particularly powerful as it provides 'substance' to the dialogue activity and links the collaborative dialogues to related personalised writing activities.*

Work packages

The Project will be conducted according to the following work packages.

WP1: Adaptation for greater personalisation and integration

The current InterLoc tool will be adapted to make it a more personalised and integrated experience for students, which will involve work at a number of complementary levels:

1. Implementing modifications that allow the dialogue game exercises to operate in a more pervasive way, through facilitating participation and interaction via students mobile devices;
2. Implementing design and interaction metaphors from existing mobile and pervasive gaming approaches to make the experience more attractive, motivating and relevant to learners;
3. Evaluating and refining the interface and interactions to meet the access needs and preferences of disabled students (with support from the Accessibility Research Centre at Teesside);
4. Integrating with formal and informal digital behaviours of students, through making InterLoc available through VLEs (e.g. Moodle & Web-CT) or linked to other standard e-learning tools *and* making it available as an ambient technology available to any group of student who wish to integrate it within their personal learning environments;
5. Improving the dialogue editing and export facility so that students can easily link the collaborative dialogues with their individual writing.

WP2: Trialling and refining at LondonMet and through the CETL in RLOs

The modified, i.e. advanced, InterLoc tool will initially be tested and trialled at LondonMet so technical and pedagogical issues can be evaluated and addressed on-site prior to rolling out to the other sites. This approach has been very successful in previous projects and led to smooth migration of the InterLoc tool and dialogue game exercises.

The same user-testing and piloting methodology that was successful in previous projects will be used here. This involves:

1. Testing the tool with the InterLoc team and other members of the LTRI;
2. Testing the tool with games developers, HCI experts and students at LondonMet who are associated with the LTRI (e.g. those on secondment to Departments within the Shoreditch building of LondoMet University);
3. Trialling the tool through the CETL for Reusable Learning Objects (RLOs) under the direction of Prof. T. Boyle (Director of the CETL) and on specific courses within the Department of Computing, Communication Technology and Mathematics under the direction of the MSc Computing Course Director, Peter Oriogun (see also WP3, the tool will be tested in contexts that will become the fuller implementations in the second year).

A note on mobile integration

Note that the CETL for RLOs (see www.rlo-cetl.ac.uk) has already investigated and implemented blended m-learning approaches that integrate Learning Objects and SMS messaging using MediaBoard, so this is an ideal test-context for trialling the more personalised and integrated InterLoc approach with enhancements for mobile functionality

WP3: Cross-institutional implementation and evaluation

The implementation sites will perform exemplary implementations of the InterLoc tool and dialogue game approach and evaluate their experience. This will involve liaising with Computer and Student Services and Staff Development units as appropriate, to ensure that the dialogue game exercises are technically and pedagogically integrated with students curricula and related semi-formal or informal learning. Technical staff at the LTRI will be available as appropriate to support the migration of the new tool and approach during the early stages of the implementations, although previous work has shown that the tool is easily downloaded, setup and used without explicit support. The implementation sites and their proposed uses of InterLoc are described below.

London Metropolitan University, has students who are particularly representative of the widening participation agenda and the need for flexible delivery. The tool and approach will involve scaling-up from the previous successful pilot study implementations of the InterLoc tool within the Department of Computing, Communications Technology and Mathematics under the direction of the MSc Computing Course Director, Peter Oriogun (who is also responsible for the Software Engineering provision at both undergraduate and postgraduate level). So it will be implemented with groups of 4-6 students across a number of courses run by this Department: 2nd year undergraduate software engineering students (approx. 40) to facilitate the negotiation and reconciliation of their software requirements during a whole semester; MSc Software Project Management students (approx. 15); and, Final year undergraduate students on Interactive Systems Design (approx. 60).

The Open University has students who are particularly representative of the widening participation and lifelong learning agenda and the need for flexible delivery. The tool and approach will involve scaling-up from the previous successful pilot study implementations. The tool and approach will be implemented with students doing the MA in Open and Distance Learning and Science Studies strand of MSc in Science. In the Science Studies Strand the project members will work with tutors and students doing the course Communicating Science and Contemporary Issues in Science Learning. They will plan sessions with voluntary students on a topic related to course content. It is anticipated that repeated trials will be performed with about 30 students (in groups of 4 - 6). Note that in this context, where distance students are recruited voluntarily, it is anticipated that more effort is needed at the planning and recruitment stage (e.g. compared with campus-based courses).

University of Exeter, are experts in online dialogue and lifelong learning. The tool and approach will be implemented in three distinct HE contexts: A core undergraduate module in the Educational Studies degree programme entitled 'ICT and Education' run by Kate Watson, Rupert Wegerif and Richard Osbourne (approx. 100 students); A new Masters level module 'Moderating Online' currently being developed by Maarten de Laat and Rupert Wegerif to run from September 2007 which is aimed at a global online market (approx. 20 students); An online learning environment supporting Post-graduate research students in the field of ICT in Education (approx. 15 students). Work at this site will pay particular attention to comparing the critical discussion and creative thinking games.

University of Teesside, are experts in Inclusion and Accessibility, which has students who are particularly representative of the widening participation agenda and the need for flexible delivery. The tool and approach will be implemented as part of a module in Mobile Applications and Devices for first year undergraduates studying on the BA Mobile Entertainment, BSc Mobile and Pervasive Computing Degrees (approx. 40 students). In this module, mobile technologies are both studied and used as part of the learning process. Students focus on design issues including user considerations, usability, accessibility, adaptability; and issues of multimodal communication. The Interloc tool will be used to explore its integration with other mobile devices, evaluated by the students in terms of its accessibility and will

be used as part of the learning and teaching strategy to support the students' learning. So in this context, the emphasis will be on a 'deep' implementation and evaluation, with students using InterLoc repeatedly and in different ways.

Queen Mary (University of London), are experts in developing diverse uses of 'writing for learning', argument strategies, and setting up collaborative partnerships with academic teachers in the disciplines. The tool and approach will be implemented by identifying collaborating members of staff in approximately 4 discipline-based courses, at least one of which will have a large cohort of students (e.g. approx. 100). It will also be implemented in at least one academic study course, which may be at foundation level. The innovations will be part of Queen Mary's Thinking Writing initiative which has been successful in embedding pedagogical and curricular innovations in several disciplines and has an established profile in the university and beyond. The initiative disseminates its work through a website, newsletters and academic and professional networks.

WP4: Embedding and dissemination

Each Institution will migrate and 'handover' the InterLoc technology and related pedagogical practices to their central and local academic services, based on successful implementation experiences in the exemplar contexts. Note that this process will vary based on the nature of each institution and the form that this will take. LondonMet will involve David Andrew, their head of Centre for Academic Development during the trials in the first year, so that partners not only receive the completed tool and approach in the second year, but also receive tips, advice and practical models developed during the activities performed during the first year of the project. Also note that the broader and top-down method of implementation conducted at Queen Mary through the 'Thinking Writing' initiative is itself a form of institutional embedding.

In parallel with these internal institutional activities the project will perform more widespread dissemination to the practitioner and researcher communities through:

1. Developing community components of the InterLoc web-site;
2. Publishing conference and journal articles;
3. Co-operating with JISC and other organisations (e.g. ALT, HEA) at focussed e-learning workshops and symposia.

Management and administration

The project leader, Dr. Andrew Ravenscroft, will manage and oversee the day-to-day activities of the project and ensure appropriate collaboration and communication between the sites. The technical developments will be based at the LTRI, using an existing team that will be supervised by Dr. Ravenscroft, who will also lead the interaction design. A discussion list will be set up along with any provisions for sharing developments and progress to ensure collaborative working is properly realised. The necessity to work intensively and collaboratively in this project is aided by the fact that most project members have worked together successfully in the past on similar projects and have a strong track record of successful collaborative working in general. The team will have quarterly meetings throughout the project and also engage in additional smaller reactive meetings (e.g. between developers and pedagogy experts) as appropriate. The project leader has extensive experience of working in this type of cross-institutional collaborative project (i.e. he has successfully led four similarly complex projects and worked in the commercial sector) and he will ensure that the work is regularly monitored and managed in ways that realise the work-plan and deliverables.

Work plan and timetable of activities (including project milestones)

Total time: Sept 06 – Jan 09 (28 months)

Sept 06

Project start-up meeting and documentation completed. Outcomes: detailed project plan and individual work-plans for project members

Sept 06 – March 07 (6 months)

WP1: Adaptation of InterLoc for greater personalisation and integration. Outcomes: mobile integration completed, modified interface designs completed, emerging integration and interoperability issues solved, dialogue editing and export facility improved.

Jan 07 – Sept 07 (8 months)

WP2: Trialling and refining at LondonMet and through the CETL in RLOs. Outcomes: InterLoc tool and dialogue games successfully tested within LondonMet and through CETL in RLOs, refinements to tool implemented, procedures for adoption established and disseminated to partners.

Sept 07 – Sept 08 (12 months)

WP3: Cross-institutional implementation and evaluation. Outcomes: InterLoc tool and dialogue games implemented and evaluated on a large-scale, procedures for adoption by Universities Central Services established.

August 08 – Jan 09 (6 months)

WP4: Embedding and dissemination. Outcomes: InterLoc tool and dialogue game approach adopted by Universities Central Services, InterLoc web-site (www.interloc.org) supporting user-community, approach disseminated more widely through UK and abroad to practitioner and researcher communities through papers, practitioner focussed workshops and related networks (e.g. JISC, ALT, HEA etc.).

Deliverables

The key project deliverables will be:

1. An advanced version of the InterLoc tool supporting greater personalisation and integration (available through SourceForge);
2. A completed set of user- trials and implementation of the approach at LondonMet University;
3. A completed large scale cross-institutional implementation and evaluation at five HE Institutions;
4. Embedding of the approach within the participating Institutions;
5. An improved project web-site (www.interloc.org);
6. Publications and presentations: Papers, Final Report and evaluation reports.

Risk analysis

Below we list the possible risks along with how they would be remedied.

1. The advanced InterLoc tool is not available in time to perform the initial trialling and cross-institutional implementations. This risk is low as the team have successfully performed to very tight deadlines in the past. Also, current versions of the InterLoc tool are robust and sustainable and could be used to 'fill' any gaps caused by unanticipated problems related to prospective developments.
2. It is difficult to setup the proposed implementations for practical reasons. The risk of this is low because all those organising these are very familiar with the technical and practical issues that can make this difficult. And although these implementations take place during the second year of the project the sites will use the first year to plan ahead, organise and lead into the proposed implementations.

IPR & Sustainability

There are no significant IPR issues associated with the project. All JISC work will be released under LGPL 2.1 licence into SourceForge. Legacy source code in the project was originally released under Mozilla 1.0 licence which does not conflict with LGPL. The project also uses Jive Smack libraries for XMPP, which are also Open Source under Apache 2.0 licence, and SAX and DOM libraries are used under W3C licence. The source files are documented with the appropriate licence in each case, and the full licence documentation is bundled with the release. Issues related to use of empirical data will be discussed and covered in the consortium agreement.

Impact: benefit to JISC and the education community

This project will have a strong range of benefits for JISC and the education community. Firstly it will deliver a generic and pervasive e-learning tool and set of re-usable interaction scenarios that have been shown to support inclusive and effective educational argumentation and reasoned discussion. These will be adaptable to numerous educational problems and contexts, supporting a wide range of learners. Secondly, it will test and apply the JISC's technical frameworks specification, producing a transportable and re-usable Open Source tool that integrates with other suites of tools and mobile/wireless devices, realising an excellent blend of pedagogical innovation and technical exploitation. Thirdly, the tool itself will also provide an excellent 'work-bench' for e-learning researchers, that will be used to investigate the effectiveness of different forms of discussion-based educational dialogue and record the data in a readily usable form.

Qualitative and quantitative benefits

The project will further strengthen the reputation of all partners in terms of research and development in innovative e-learning and interaction design and the impact of this on contemporary teaching-learning practices. Every team member is already very active in this respect. The project will lead to a large number of conference and journal articles in the area (see www.interloc.org for previous outputs in this respect), a number of which will be based on the unique synergy of the experts involved in the project.

Sustainability

The LTRI and London Metropolitan University, who have a long-term commitment to this line of work, will sustain the InterLoc tool, web-site and user-community after the end of the project. This will be in addition to continuing to deposit the software into SourceForge. This work is a key strand of the Research Theme in "Learning interaction and dialogue design" that is led by Dr. Ravenscroft, and the University is committed, at a strategic level, to supporting and realising e-learning innovation (e.g. related projects like the CETL in RLOs). Similarly, this line of work is of significant strategic importance to all the partner institutions (see Letters of Support). However we anticipate significant interest and adoption of the advanced InterLoc tool through SourceForge following the end of the project, e.g. by those who are already, or will be, using the existing version of InterLoc (1.0E).

4. Key Personnel

Dr Andrew Ravenscroft who will lead this project, has been principal investigator or co-investigator on relevant projects that have attracted £720,000 in competitive funding and is Deputy Director of the Learning Technology Research Institute (LTRI), co-ordinating (along with the Institute Director, see below) the research activity of its 21 members. Previously Andrew was Director of the Dialogue and Design for New Media Research Group that he established at the UK Open University and he is also member of a number of national and international advisory groups in e-learning research and development (including the JISC e-Learning and Pedagogy Experts Group and the EPSRC/e-Science e-learning consultation group), international editorial boards (e.g. Journal of Computer Assisted Learning, Computers and Education) and conference committees (e.g. CAL Series). This provides Dr. Ravenscroft with the expertise that is necessary to ensure effective co-ordination and collaboration amongst the experts and developers working on this project. He has published over eighty refereed articles in this area and worked on many projects that have developed and delivered sustainable e-learning innovations. He has successfully led three other JISC projects, namely 'Case studies in innovative e-learning practice' and two e-tools (round 1 and 2) projects that developed and pilot-tested the InterLoc tool and approach.

Dr Simon McAlister, who will be the main developer on this project, successfully managed the technical aspects of the round 1 and 2 e-tools projects. He gained a Learning Technology PhD thesis in the Institute of Educational Technology at the UK Open University, that was supervised by two of the applicants (Dr Ravenscroft and Prof. Scanlon). This focussed on developing the AcademicTalk tool for synchronous discussion – a pre-cursor of InterLoc - that was fully implemented and evaluated with open and distance learners at the UKOU. He took a first degree in Economics and in 1998 took an MSc. in Intelligent Systems (with Distinction) from Brunel University. Until recently Simon tutored online courses in Computing and Technology for the Open University. Previously, he worked for 10 years on a commercial expert system and 10 years in economic forecasting, during which time he programmed and implemented several substantial commercial packages and user interfaces. McAlister's experience with creating applications and his teaching experience provides a unique and relevant blend of relevant knowledge and expertise for building e-learning tools.

Prof. Tom Boyle holds degrees from three British universities, with higher degrees in Psychology and Computing, and he has written a book and over 100 journal and conference papers on learning technology. He has a long history of developing, using and evaluating innovative multimedia learning technology. For the past three years he has been leading a major project on the development, use and evaluation of learning objects that has produced marked improvements in student performance. This work resulted in a European Academic Software Award (EASA) in 2004. He is Director of the HEFCE funded Centre for Excellence in Teaching and Learning (CETL) in Reusable Learning Objects (RLOs), based on a partnership of London Metropolitan, Cambridge and Nottingham Universities.

David Andrew is course leader for the MA Learning and Teaching in Higher Education, based in the Centre for Academic & Professional Development at London Metropolitan University. His background is Occupational Psychology and he continues to teach business psychology related subjects and business ethics. He is a member of the Critical Learning research group and has research interests in learning in HE, academic practice and organisational theory.

Peter Oriogun is a Senior Lecturer in Software Engineering at London Metropolitan University. His current research interests are in Semi-structured approaches to online learning, CMC transcript analysis, software life cycle models, problem-based learning in computing and cognitive presence in online learning. He is a chartered member of the British Computer Society. He has over 20 years teaching experience in software engineering, computing and online collaborative learning within FE and HE institutions in the UK, and has extensive publications in this area. He is part of an ongoing JISC Design for a Learning Programme Pedagogic Planer Project, where he is one of the lecturers planning and using course and session level innovations for the project. He has recently successfully defended his PhD by Prior Output in Software Engineering Education.

Rupert Wegerif is Professor of Education at the University of Exeter. He has researched and published widely in the field of learning with ICT. His book, 'Thinking and Learning with ICT: Raising achievement in Primary Classrooms' (Routledge, 2004; written with Lyn Dawes) was positively reviewed by academics and practitioners alike and he is now working on the theory of teaching and learning with ICT taking a global perspective in a book called Dialogic, Education and Technology due out in 2006 with Springer. He is currently Pedagogical Director of the EC Argonaut project investigating tools to support computer supported collaborative learning, lead editor of the International Journal of Teaching for Thinking and Creativity and a co-editor of the Elsevier book series 'Advances in Learning and Instruction'

Dr. Maarten de Laat is a researcher at the department of education at Exeter University. He conducts research on e-learning in both educational and organisational contexts. His work covers, networked learning, CSCL, ICT, communities of practice, social learning, work related learning, and knowledge management. Besides working for the University of Exeter, he also works for the Centre for ICT in Education at IVLOS, University of Utrecht, The Netherlands. He has published in internationally refereed journals on methodological and pedagogical issues in researching networked learning. He received a PhD on networked learning, in which he studied how participants of communities of practice learn and coach each other in a collaborative learning environment in both the workplace as well as in higher education. Having worked on many national and international research projects he is currently participating in the evaluation of the new educational system of the Dutch police academy, which was introduced in 2002, and he is involved in a three year European project called ARGUNAUT, which is aimed at developing awareness and feedback mechanisms for moderating e-discussion environments.

Prof. Eileen Scanlon is a Professor of educational technology at the Open University and Director of the Computers and Learning Research Group with a special interest in science education. She has been researching the use of information and communications technology with a wide range of learners from the early years of schooling to postgraduate and work based learning. She has been a

European Science Foundation Senior Scientist on the Programme on learning in humans and machines, a visiting scholar at UC, Berkeley, and a visiting Professorial Fellow at the Institute of Education, University of London. Her current research includes remote experiments for University science learners, researched as part of the European Community Framework V initiative in the PEARL project, and the Framework VI Kaleidoscope Network of Excellence researching the future of Digital technologies for e-Learning. She has published more than 50 journal articles and many other articles in her field. She has extensive experience of designing environments for learning through her work on course teams with the Open University.

Dr. Canan T Blake is Research Fellow in Institute of Educational Technology, The Open University and her interests include computer supported collaborative learning using synchronous groupware, asynchronous computer conferencing and evaluation of technology-mediated learning environments. In addition she is working on projects related to video-mediated communication and mobile learning in informal science settings.

Sally Mitchell is Coordinator of the Thinking Writing initiative at Queen Mary University of London. She works in partnership with academic departments and individual staff to develop courses and pedagogies that support students' learning *to* write and learning *through* writing, including writing in on-line environments. Partnerships have resulted in innovative curriculum models particularly in the first year where issues of identity, participation, retention and progression are most focussed. Sally Mitchell's research background is in the uses of argumentation, both written and spoken, in higher education settings; she is author of two substantial reports on this topic and co-editor of *Learning to Argue in Higher Education*, (with R. Andrews, 2000). A recent article in the field is 'Developing a toolkit for tackling academic discourse' (with Mike Riddle) in *Learning to Read Critically in Language and Literacy* (Goodwyn & Stables, eds, 2005). She is currently collaborating with the Universities of York and Illinois on an HE Academy funded pilot study of argument in the first year undergraduate curriculum.

Dr Elaine Pearson is a Principal Lecturer in the School of Computing, University of Teesside, UK, with responsibility for supporting the development of E-Learning, and is Director of the Accessibility Research Centre. Her research interests lie in all aspects of computing for people with disabilities, and learning and teaching online. She has published and presented extensively in journals and conferences in the UK, Europe, North America and Australia on the subject of accessibility and online learning, is a Program Co- Chair for EDMEDIA 2006, and is on the editorial board of a number of journals. Elaine is also a Visiting Fellow for the Educational Development and Technology Centre at the University of New South Wales, Sydney, Australia. She coordinates and contributes to a number of research projects funded by Leverhulme Trust, HEFCE, ESF, ERDF and HEIF. Her personal research interests focus on supporting academics in achieving inclusive practice and creating flexible and accessible learning activities to improve the educational experience for all students.

Key References and relevant publications (see also www.interloc.org for a full list)

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Lesley Hawkins,
Programme Manager, ELearning (Capital Programme),
Joint Information Systems Committee (JISC),
Strand Bridge House,
138-142 Strand,
London WC2R 1HH;

Dear Ms Hawkins,

University of Teesside support for JISC project:

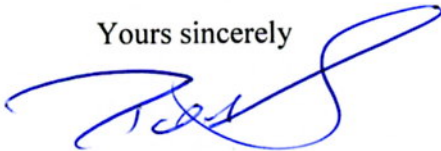
Cross-institutional implementation and evaluation of digital dialogue games for inclusive and personalised learning

Supporting this JISC project is consistent with The University of Teesside's real and ongoing commitment to social inclusion and widening access to higher education, together with the pursuance of excellence. We appreciate the need for pedagogical tools to enhance the learning experience and to support inclusive practices and this project will enable us to explore alternative approaches.

University of Teesside is happy to support London Metropolitan University and their partners in this bid, by providing the expertise and resources related to the implementation, evaluation and dissemination of the Interloc dialogue games system.

I confirm that the services offered can be delivered within the timescale and that the necessary staff resources will be supplied.

Yours sincerely



Dr Derek Simpson

Dean, School of Computing,



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DEAN: Dr DEREK SIMPSON

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21 June 2006

Lesley Hawkins
JISC Policy Officer
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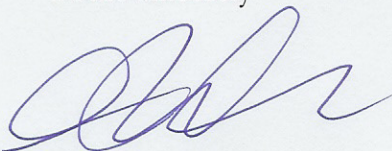
Dear Lesley Hawkins

Cross-institutional implementation and evaluation of digital dialogue games for inclusive and personalised learning - Bid for e-learning strand of JISC Capital Programme

I am pleased to write in support of the above bid in which Sally Mitchell of the Thinking Writing initiative in the Language and Learning Unit is named as a partner. Sally is well placed to implement and evaluate the Interloc tool and dialogue game approach at Queen Mary. She has an academic research background in argument and dialogue and a strong track record of working in partnership with academic staff to develop strategies that help induct students into high-level academic practices. Her network of contacts in the academic departments as well in the Language and Learning Unit (which works with native and non-native speaking students at Foundation level and beyond) will be invaluable in finding a range of contexts for implementation.

Sally Mitchell will be supported by Sam Brenton and colleagues in Queen Mary's Distance and E-learning Unit, as part of the institution's contribution to the project. The bid is wholly in line with Queen Mary's E-learning strategy which aims to promote widening participation, flexible learning and to equip students for lifelong learning and employment.

Yours sincerely



Nigel Relph
Director of Corporate Affairs



The Open University

The Open University
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Milton Keynes
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MK7 6AA

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Lesley Hawkins
JISC Policy Officer & Committee
Secretary for JLT
HEFCE Offices
Northavon House
Coldharbour Lane
Bristol
BS16 1QD

21 June 2006

Dear Ms Hawkins

**Re: JISC e-Learning Capital Programme bid:
“Cross-institutional implementation and evaluation of digital dialogue games for inclusive
and personalised learning”**

The Open University wishes to participate in the above bid for the e-Learning Capital Programme. The Request has the full support of the University.

The work proposed in this bid is an extension of work undertaken jointly by Dr Andrew Ravenscroft of London Metropolitan University and Dr Canan Blake and Professor Eileen Scanlon here at the Institute of Educational Technology (IET), The Open University. This work is of great relevance to the research and teaching agenda of the Centre for Study of Educational Technology and we would welcome the opportunity to continue in this important direction.

I offer my strong support for this bid.

Yours sincerely

Dr Paul Clark
Pro-Vice Chancellor (Learning and Teaching)



21 June 2006

Lesley Hawkins
JISC Policy Officer
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(Research and Development)
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Dear Lesley Hawkins

RE: Bid for e-learning strand of JISC Capital Programme

Cross-institutional implementation and evaluation of digital dialogue games for inclusive and personalised learning

I am very pleased to express my full support for the proposed project which is being led by Dr Andrew Ravenscroft, Deputy Director of the Learning Technology Research Institute (LTRI) at our University, with the Open University, University of Exeter, Queen Mary (University of London) and University of Teesside as partners.

The emphasis on using innovative e-learning approaches to address problems of widening participation through the flexible delivery of personalised learning experiences resonates strongly with our Universities key priorities and other strategic research, development and teaching initiatives, e.g. the CETL in Reusable Learning Objects (RLOs) also led by the LTRI. So we welcome the impact this project will have in our University and more widely in the HE community, and we are committed, through our Centre for Academic and Professional Development and the Department of Computing, Communications Technology and Mathematics, to ensuring that the necessary collaborations to realise this project are fully exploited.

Yours sincerely

Chris Topley
Deputy Vice-Chancellor
Research and Development

Ms Lesley Hawkins
JISC Policy Officer
HEFCE Offices
Northavan House
Coldharbour Lane
Bristol
BS16 1QD

21st June 2006

Dear Ms Hawkins

**Cross-institutional implementation and evaluation of digital dialogue
games for inclusive and personalised learning - Bid for e-learning strand of JISC Capital
Programme**

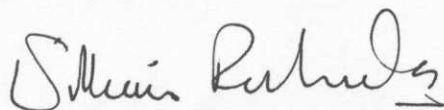
I am writing in support of the above project application of which the University of Exeter is a partner. The element to be delivered by Exeter will be led by Professor Rupert Wegerif, an expert in online dialogue and lifelong learning, and will build on his involvement in the previous successful *InterLoc* project.

The School of Education and Lifelong Learning has vast experience of managing and participating in large, multi-institutional projects – our academics, for example, currently lead on two major *Teaching and Learning Research Programme* (TLRP) projects.

The proposed project falls squarely within the objectives of the School's long term business planning for both research and teaching. I can confirm that the necessary technical support and infrastructure will be made available to ensure successful implementation of the project as set out in the proposal.

Should you need any further information or clarification regarding any aspect of Exeter's commitment to this project then please do not hesitate to contact my office.

Yours sincerely,



Professor William Richardson
Head of School of Education and Lifelong Learning