

Annex D – Proposal template (Submission date: Monday 12 January 2009)

Learning and Teaching Innovation Grants - Submission of Initial Proposal

Thank you for choosing to submit an initial proposal to the January deadline of the JISC Learning and Teaching Innovation Grant programme.

BEFORE YOU COMPLETE THIS TEMPLATE YOU SHOULD HAVE:

- read the circular guidance document available at http://www.jisc.ac.uk/fundingopportunities/funding_calls/2008/04/circular408.aspx ;
- attained the support of a senior member of institutional staff for your proposal, and been assured that yours is the only institutionally supported proposal;
- checked the length and completeness of your proposal;
- checked the eligibility of your proposal against the circular.

PLEASE DO NOT:

- submit overlong answers (note, you cannot “vire” words between answers) or an ineligible proposal;
- include supplementary material (annexes, staff CVs, letters of support);
- use images in an attempt to get around the word limit.

Bids that do not follow these simple instructions will not be assessed, and you will receive a notification of this rather than feedback.

Proposal Information

This is the basic information that we need to process your bid and correspond with you regarding the assessment process:

1. What is the name of your proposed project?
System for an Immersive and Mixed reality Language Learning Environment (SIMILLE)
2. What is the name of the institution leading this bid?
University of Essex (The International Academy)
3. Who is the contact person for this bid?
Dr Michael Gardner
4. What is the email address of the contact person?

mgardner@essex.ac.uk

5. What is the amount of funding sought from JISC for this proposal?

(Bidders can request between £20,000 and £75,000, smaller projects are welcome.)
£75,000

Similarities to previous JISC bids

Though we will check this internally, projects should to indicate where they are submitting a heavily revised bid to a previous call for proposals. Note that direct resubmissions of unchanged bids are not eligible.

6. Has a version of this proposal been submitted to any previous JISC programmes?

No

6a. If yes, please explain briefly. (200 words)

(you should mention the programme the bid was made to, the feedback offered and steps that have been taken to address this)
N/A

Freedom of Information

Please see <http://www.ico.gov.uk> for further information on the Freedom of Information Act and the exemptions to disclosure it contains.
This FOI Withheld Information question is of indicative value only and JISC may nevertheless be obliged to disclose this information in accordance with the requirements of the Act. In answering this question you acknowledge that the final decision on disclosure rests with JISC. We also reserve the right to post details of this submission online, in order to support future rounds of this call.

7. We would like JISC to consider withholding the following sections or paragraphs of this proposal from disclosure, should the contents of this proposal be requested under the Freedom of Information Act, or if we are successful in our bid for funding and our project proposal is made available on the JISC website.

Not applicable

Project Description

8. Describe your proposed project in 3 sentences. (80 words)

The proposed project will investigate using virtual world technologies to create meaningful contexts for learning a foreign language. It addresses the problem for distance learning students unable to experience the cultural and social immersion when learning a language, and to enrich and control the cultural content for students already located in the host environment. A virtual world will be built using Sun's Darkstar Platform and Project Wonderland tools. It will be evaluated for both its technological and pedagogical utility.

Material for Assessment

These sections will comprise the part of the proposal that is assessed at stage one of the process (pre-interview). You **must** adhere the word limits indicated for each question.

9. What is the issue, problem or user need that your proposed project is addressing? (500 words)

The general problem being addressed is how to enrich foreign language learning experiences by providing realistic socio-cultural settings and content. It is recognised that optimum language learning occurs when the learner is immersed in the host culture. Many foreign students wishing to study in a UK HEI undertake pre-degree courses to help them meet the required proficiency level. At the University of Essex such courses are provided on campus by the International Academy. By studying in the UK the students have the advantage of being immersed in the culture but traditional classroom methods rarely take advantage of the cultural context to control the learning content (classroom learning by definition removes students from the 'real' world). Outside of the classroom, the students often cluster together forming linguistic or cultural ghettos. Further, traditional courses in the host country are an additional expense for the student, and there is an undoubted market for a cheaper, distance learning (DL) option. However most distance learning solutions are not only culturally but also socially impoverished (a particular problem in learning conversational English). The latter has been improved through the use of 'chat' rooms and social computing/software technologies, but these are often text based, asynchronous and context independent communications. These 'social' facilities are usually 'add-ons' and do not form part of the explicit curricula being taught making them both linguistically and intellectually impoverished.

Computer Assisted Language Learning (CALL) is complex, but essentially any effective enabling technology needs to meet the following requirements:

1. High Quality, synchronous, communication. Many virtual worlds (VW) are still dependent on text based communication, whereas high quality speech is essential for language learning (e.g. for learning pronunciation, conversational skills). The communication must also be closely synchronised with avatar behaviour (e.g. directional and gesture based) to support both verbal and non-verbal communications.
2. Realistic settings and behaviours which provide contextual cues and sign posts for meaningful discourse and interactions, and to support a 'sense of presence and self'. In many respects this means 'restraining' permissible actions (e.g. flying; avatar dress etc) within the virtual world, and building worlds around purposeful and realistic roles (e.g. a shopkeeper) and actions (e.g. shopping) , and not just place (e.g. the shopping mall).
3. Reflection, Imitation and Practice where the learner has an opportunity to reflect on what is learnt and to take remedial action through further imitation and practice. This requirement is particularly difficult to achieve for DL students, and areas in the VW where such activities can take place will be needed.
4. Personalised to support learners of different abilities, styles and learning pace. A selection of different learning scenarios with pre-built associated VWs are required to meet individual learners' needs.
5. Transparent teaching so learners become less distracted by the mechanics of the teaching and more focussed on the learning process and content.
6. Motivating through greater realism, autonomous interactions and compelling scenarios.

The challenge therefore is to provide rich contextual settings for effectively using and practising language in both traditional and distance learning formats.

10. How does the proposed project address the issue described above? (500 words)

The proposal intends to use Sun's open source Darkstar platform and Project Wonderland tools as the technology, combined with scenarios to support the learning, and Mayes' (1995) conceptual framework to inform the pedagogical design and evaluation of the learning system. The learners will be foreign students learning English, and trainee teachers of foreign languages. Sustainability is being assured by the use and adoption of the system by the University's International Academy with support from the Department of Language & Linguistics.

Sun's Project Darkstar is a computational infrastructure to support online gaming. Project Wonderland is an open-source project offering a client server architecture and set of technologies to support the development of virtual and mixed reality environments. The graphical content that creates the visible world as well as the screen buffers controlling the scene currently use Java3D. Additional objects/components to Wonderland (such as a camera device to record audio and video seen from a client), make use of other technologies such as the Java Media Framework¹. Graphical content can be added to a Wonderland world by creating objects using a graphics package such as Blender or Maya. Project Wonderland also supports shared software applications, such as word processors, web browsers and document presentation tools. A user is represented as an avatar (eventually it is intended that avatars would have an appearance similar to that of its user). A user can speak through their avatar to others in the world via the voice-bridge and a microphone and speaker, or use a dedicated chat window for text-based messages.

The University of Essex has already built MiRTLE (Mixed Reality Teaching & Learning) using Project Wonderland and this will form the bases for SIMILLE. MiRTLE provides a mixed reality environment for combining local and remote students in a traditional higher education setting. The environment augments existing teaching practice with the ability to foster a sense of community amongst both remote and local students. The mixed reality environment links the physical and virtual worlds and is ideal for supporting DL students.

Scenario-based learning is essential for defining the worlds and learning goals and activities required from the students. A scenario could be for example, a shopping task, where students are given a list of items to be bought in a virtual shopping mall. In doing so they will interact with other students (remote or at the host institution) undertaking the same task, and trainee teachers performing key roles in the scenario (shop keepers etc). The inclusion of students undertaking a teaching qualification provides those students with a realistic exposure to learners' needs.

Mayes' three stage conceptual framework (conceptualisation, construction and dialogue) will provide a pedagogical basis for design and evaluation of the system. Much of the previous work using the framework was based on the use of so-called Web 1.0 technologies, and mapping these to appropriate stages of the Mayes conceptual framework. We now need to consider how this can be extended for the new generation of Web 2.0 and particularly immersive virtual environments.

11. What makes the proposed project innovative? (500 words)

¹<http://java.sun.com/javase/technologies/desktop/media/jmf/index.jsp>

There is a long and distinguished history of research and development in CALL (see Graham Davies - <http://www.history-of-call.org/>). Equally there is a growing body of research in the general area of using Virtual World for learning (see <http://www.elearnmag.org/subpage.cfm?section=articles&article=44-1>). There is less published research but a great deal of interest in the application of VW to learning of Foreign languages. This research mainly focuses on the use of more traditional VLE rather than VWs (see HEA subject centre: Language Linguistic Area Study eg <http://www.llas.ac.uk/resources/gpg/61>). Where VWs have been used by HEIs for teaching courses, it has nearly always used the Second Life platform (see for example Harvard University, Edinburgh University, Oxford University). JISC too has funded work using the Second Life platform for a range of different courses (eg MOOSE for Archaeology and Computing; OpenHabitat for Philosophy and Art & Design; PREVIEW for Medicine). Moodle Microblogging and Microblogging (M3 – see <http://www.jisc.ac.uk/media/documents/programmes/usersandinnovation/m3projectplan.doc>) combines Moodle, Twitter and Second Life for teaching language learning communities (MA in English Language Teaching). The learners, however, are predominately English speakers training to be teachers of EFL rather than foreign students learning English as a second language.

There are issues about the use of Second Life (SL). SL is 'bandwidth hungry' and requires top of the range computers to be practical. It also demands from its users a not insignificant amount of preparation or training (learning to fly, clothing avatars etc). SL is owned by a commercial enterprise driven by its own set of imperatives, including not being open source. Alternatives to SL include the open source OpenSimulator (<http://opensimulator.org>) which is effectively a SL compatible server and has the advantage of allowing users to move easily between different worlds, but it is not platform-agnostic and relies on Mono and .Net software frameworks. In contrast, SIMILLE will be an extension of the existing MiRTLE system which uses Sun's Darkstar Platform using their Project Wonderland tool kit. The Wonderland platform has the following key strengths:

- Live application sharing
- Integration with business data
- Internal or external deployment
- Darkstar scalability
- Very large to very small
- Open and extensible
- 100% Java
- Open source, open art path
- Audio (spatial) as a core feature
- Extensive telephony integration

The team at the University of Essex have worked closely with Sun to use the Wonderland platform for learning (see Gardner, M, Scott J and Horan B (2008), Reflections on the use of Project Wonderland as a mixed-reality environment for teaching and learning ReLIVE08 conference, Researching Learning in Virtual Environments, Open University, UK). and are already working with the University's Department of Health & Human Sciences to exploit the platform for teaching and learning. The proposed project is not only original in its choice of platform and subject area but is made innovative by the fact that team is in place with existing skills and competencies to deliver a workable system within the required timeframe and cost.

12. How does the proposed project address the JISC eLearning vision, principles and objectives? (500 words)

(These are listed in the circular 04/08.)

The JISC e-learning programme has a vision of a world where learners and teachers benefit from the power of new technologies to enhance their educational experience. Initially many of the benefits resulted from technologies that tended to emulate existing practices. Innovation is required to 'rediscover' pedagogy and to apply the principles to generate new insights and practices. One challenge is to 'unshackle' the learners from the classroom by providing alternative environments where key pedagogical principles can still be applied and learners and teachers can be exposed to new and enriching experiences. Virtual worlds could be a particularly potent environment to support constructivist principles by gaining knowledge and understanding through exploration, reflections and practice. In this context VW solutions are particularly pertinent to work-based learning with its more applied and practical focus.

Not all situations or individuals will benefit from a VW solution and so we need a better understanding of when and how to apply virtual world technologies to teaching and learning. The creation of a 'Good Practice Guide' will go part way to informing both practitioners and their Senior Managers about the benefits and cost of deploying VW solutions in their own institutions. This understanding could also be used by the JISC to inform future funding decisions.

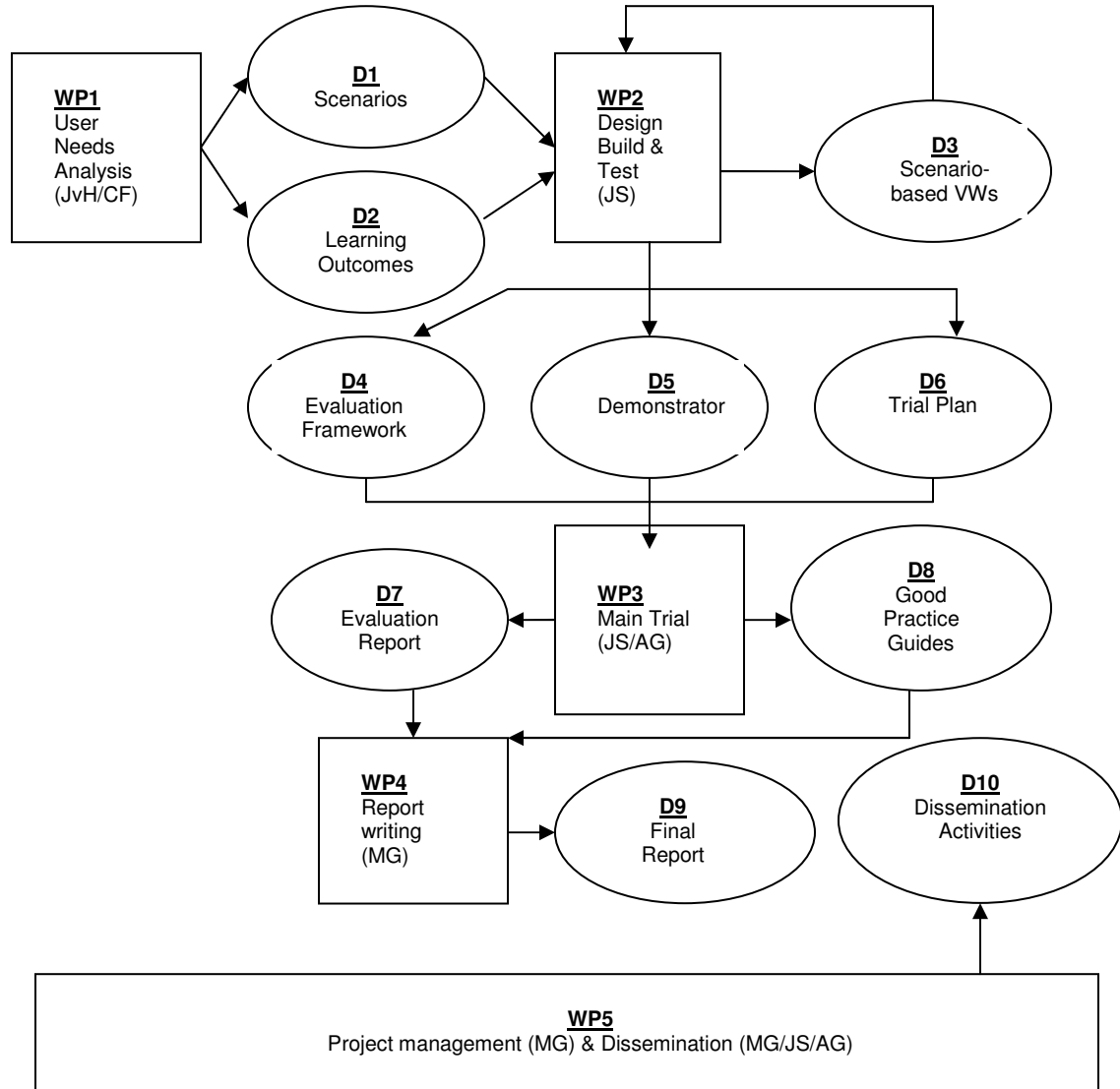
The adoption of an open source solution (Wonderland) also meets the e-learning programme needs to encourage a flexible architecture, and the re-use of scenario-based worlds and objects encourages efficient use of resources and could be a key building block for any future community of practice.

Finally, JISC is committed to working closely with the HEA Subject Centres. The subject centre for Language Linguistic and Area Studies (LLAS) is particularly relevant to this proposal. The LLAS community, as portrayed on their web site, is still mainly in the Web 1.0 world. This proposed project would aim to inject more innovation into the community through the provision of resources (e.g. Good Practice guides) and contributions and leadership in the LLAS forum.

13. Give brief details of the project timescale, project team, key work packages and outputs. (500 words)

Timescale:

May – July User Needs Analysis and Scenario building
 July – Nov Design and build
 Nov - Dec Early testing and formative evaluations (walkthroughs, pilots etc), remedial actions, main trial preparation
 Jan- Mar Main Trial and Evaluation
 Mar – Apr Evaluation Analysis, Report Writing, summative dissemination.

Main WPs**Project Outputs:**

1. Good Practice Guidance for Practitioners and Senior Managers (D8,D10)
2. Reusable Virtual Worlds and objects based on realistic scenarios (D1,D3)
3. Wonderland Demonstrator for Foreign Language Learning (D5)
4. Contribution to building HEA's LLAS forum & Community (D10)

Budget Information

14. Please enter amounts for the entire year your project will run. (for directly incurred staff, please include details of staff member, grade and FTE under other information.) Please see annex C of the circular document for an explanation of terms.

(Enter overall totals for each line of the budget where indicated. List staff members, FTEs or details of spending (etc) in the "other information" column. You will be given the opportunity to submit a full budget at the interview stage. Note that the purchase of hardware or software is not permitted with JISC LTIG funds.)

	Amount	Other information:
a. Directly Incurred Staff:	██████	Michael Gardner (SP53 0.18 FTE); John Scott (SP50 0.34 FTE); Joy van Helvert (SP49 .07 FTE) Chris Fowler (SP66 0.02 FTE)
b. Directly Incurred Travel and Expenses:	£1,000	For dissemination activities
c. Directly Incurred Dissemination:	██████	Michael Gardner (0.045 FTE); John Scott (0.02 FTE); Adela Ganem (SP40, 0.02 FTE)
d. Directly Incurred Evaluation:	██████	Adela Ganem (0.2 FTE)
e. Directly Incurred Other:		
f. Directly Allocated Staff:		
g. Directly Allocated Estates:	£6,378	
h. Directly Allocated Other:		
i. Indirect Costs:	£33,427	
j. Total Project Costs:	£104,005	
k. Amount Requested from JISC:	£75,000	
l. Institutional Contribution:	£29,005	To include 40% for JS's time and 80% of AG's time, servers, and any required software.