



**Visual Learning Lab CETL
University of Nottingham**

**Final Report to Higher Education
Funding Council for England**

March 2010



The University of
Nottingham

www.visuallearninglab.ac.uk

CETL FINAL SELF EVALUATION GUIDANCE	
Part 1 Evaluative Reflection	Detail
<p>Question 1 Please reflect on how effective your CETL has been in contributing to the objectives set out for the CETL initiative when it started. Be concise and do not exceed 1,000 words for the whole of the question.</p> <p>i. To reward practice that demonstrates excellent learning outcomes for students.</p> <p>ii. To enable practitioners to lead and embed change by implementing approaches that address the diversity of learners’ needs, the requirements of different learning contexts, the possibilities for innovation and the expectations of employers and others concerned with the quality of student learning.</p> <p>iii. To enable institutions to support and develop practice that encourages deeper understanding across the sector of ways of addressing students’ learning effectively.</p> <p>iv. To recognize and give greater prominence to clusters of excellence that are capable of influencing practice and raising the profile of teaching excellence within and beyond their institutions.</p> <p>v. To demonstrate collaboration and sharing of good practice and so enhance the standard of teaching and effective learning throughout the sector.</p> <p>vi. To raise student awareness of</p>	<p>Question 1:</p> <p>From the start, the VLL established a strong presence at the University of Nottingham through a range of mechanisms and processes:</p> <ul style="list-style-type: none"> • The VLL established a main physical base on the University’s state of the art Jubilee Campus. The VLL Lab has become a learning space for piloting and developing a wide range of visual learning technologies. • In addition, the VLL has developed a strong presence through the installation of the latest visual learning technologies in the highly innovative and successful Student Learning Hub in the Hallward University Library on University Park. The VLL facilities in this Hub are available to both staff and students for use, and whilst initially implemented and developed by the VLL are now fully supported by Information Services in order to ensure sustainability of VLL innovations. The Student Learning Hub development was a very strong collaborative venture with the Centre for Integrative Learning, which was the other CETL based at the University of Nottingham, and has become something of a showcase for the work of our two main CETLs. • The VLL also developed a strong presence in all University Faculties and campuses, through funding a wide range of visual learning projects in two phases. These projects have been highly successful. In some cases, initial VLL funding has led to substantial additional funding for the further development of Visual Learning practices and related facilities. <p>Student benefits have been maximised through the following mechanisms:</p> <ul style="list-style-type: none"> • All VLL projects were aimed at making a strong contribution to student learning. Evaluation findings confirm that all projects had benefits for student learning (see <i>A Showcase of Visual Learning Innovation on the Visual Learning Lab</i>)

effectiveness in teaching and learning in order to inform student choice and maximize student performance.

www.visuallearninglab.ac.uk)

- Since summer 2008, the VLL has also specifically aimed to involve University of Nottingham undergraduate and postgraduate students more directly in its activities. For this purpose, the VLL created a VLL internship scheme, which has now run for two years. This allowed registered University of Nottingham students to be employed for part-time VLL work alongside their academic courses. In 2008-2009 and 2009-2010, the VLL interns developed a series of activities that were aimed at engaging the student community more directly in visual learning and raising awareness of visual learning within the student community. As well as this the VLL interns have been used as researchers, and have been collecting evaluation data on the students' overall visual learning experience at the University of Nottingham. These student-led research activities have led to the production of a VLL interns' video on perceptions of visual learning at the University of Nottingham which has been further used in a series of internal and external workshops and is freely available from the University of Nottingham's YouTube channel for use by University academics and researchers (<http://www.youtube.com/watch?v=KThyfeV01X4>).

The VLL started off by rewarding key members of the VLL Advisory Board for their contributions to visual learning by providing key supporters with equipment and hardware as needed. During the existence of the VLL, in non-financial terms, the VLL has collaborated closely with a range of academics involved in VLL projects as part of evaluation and research studies. This has led to joint research projects and related publications.

VLL Core Team Publications

Wiesemes, R., Coyle, D., Bligh, B. & Carter L. (2007) Developing borderless learning spaces: interactive Teaching and Learning Observatories. ALT-C: Beyond Control, Nottingham, UK, 4-6 September. Accessed at http://www.alt.ac.uk/altc2007/timetable/abstract.php?abstract_id=1190 on 24 March 2010.

Bligh, B. (2009) Drawing strands together: cross-disciplinary dialogue around computer-based assessment, in: M. Karanika-Murray & **R. Wiesemes** (eds), Exploring Avenues to

Interdisciplinary Research, Nottingham: Nottingham University Press, 57-71.

Bligh, B., & Li, S. (2009) On the use of a multiple display, in-room collaboration system to promote free response formative discussion between learners and tutors in small group seminars, International Technology, Education and Development Conference (INTED2009), Valencia, Spain.

Bligh, B. (2009) On Multi-Display Classroom Systems: the affordances and constraints of simultaneous display and non-linear presentation for students and tutors. EduLearn09: International Conference on Education and New Learning Technologies, Barcelona (Spain), 6th-8th July, 2009, Conference Proceedings [CD] (pp.283-292). Valencia: IATED.

Bligh, B., Pearshouse, I. & Lewthwaite, S. (2009) On the evaluation of learning within technology-supported physical learning spaces. EduLearn09: International Conference on Education and New Learning Technologies, Barcelona (Spain), 6th-8th July, 2009, Conference Proceedings [CD] (pp.298-307). Valencia: IATED.

Murphy, R. & Bligh, B. (2009) Evaluating Visual Learning Spaces. SRHE Conference 2009, Newport, Wales, 8-10 December 2009.

Lorenz, K. & **Bligh B.** (2009) From comparative viewing to non-linear learning with pictures: using multi-display environments in higher education. SRHE Conference 2009, Newport, Wales, 8-10 December 2009.

Higgins, C.A., **Bligh, B.,** Symeonidis, P., & Tsintsifas, A. (2009) Authoring diagram-based CBA with CourseMarker, Computers and Education 52(4), 749-761.

Pearshouse, I., **Bligh, B.,** Brown, E., Lewthwaite, S., Graber, R., & Hartnell-Young, E. (2009) A Study of Effective Evaluation Models and Practices for Technology Supported Physical Learning Spaces (JELS): Final Report. Bristol: JISC.

Bligh, B. & Lorenz, K. (2010) The Rhetoric of Multi-Display Learning Spaces: exploratory experiences in visual art disciplines. Seminar.net: International Journal of Media, Technology

and Lifelong Learning, 6(1), 7-27.

Bligh, B., Wiesemes, R., & Murphy, R. (2010) Introduction to the Special Issue on Visual Learning in Higher Education. *Seminar.net: International Journal of Media, Technology and Lifelong Learning*, 6(1), 1-6.

Bligh, B. (2010) Learning from Multiple Perspectives in Multi-Display Learning Spaces. INTED 2010: International Technology, Education and Development Conference, Valencia (Spain), 8th-10th March, 2010. Valencia: IATED.

Higgins, C.A., **Bligh, B.**, Symeonidis, P., & Tsintsifas, A. (submitted) The Design and Implementation of CourseMarker's Generic Marking System. Submitted to: *Software: Practice and Experiences*.

Bligh, B & Sharples, M. (submitted) The affordances of presentations in Multi-Display Learning Spaces for supporting small group discussion. Submitted to EC-TEL2010, proceedings of which are published in *Lecture Notes in Computer Science*.

Murphy, R. and Sharma, N. (2010) What don't we know about interactive lecturing? *Seminar.Net:International Journal of Media, Technology & Lifelong Learning*, 2010, 6(1), 1-10.

Signorini,P., **Wiesemes, R.** and **Murphy, R.** (2009) Developing alternative frameworks for exploring intercultural learning: a critique of Hofstede's cultural differences model. *Teaching in Higher Education*, 2009, 14(3), 253-264

Lewis, P. and **Murphy, R.** (2008) New directions in school leadership, *School Leadership and Management*, 2008, 28 (2), 127-146, ISSN 1363-2434

Wang, R., Mattick, K. & Dunne, E. (2010). Medical students' perceptions of video-linked lectures and video streaming. *ALT-J Research in Learning Technology*, 18(1): 19-27

Wiesemes, R. & Wang, R. (2010). Video conferencing for opening classroom doors in initial teacher education: socio-cultural processes of mimicking and improvisation. *Seminar.net* –

	<p>International Journal of Media, Technology and Lifelong Learning (available at http://seminar.net)</p> <p>Wang, R., Wiesemes, R. & Gibbons, C. (2010). Developing digital fluency through ubiquitous mobile devices: findings from a small-scale study. <i>Computers and Education</i> (submitted).</p> <p>Wang, R., Wiesemes, R. & Gibbons, C. (2009). Mobile learning for whom? Exploring doctoral students' uses and perceptions of PDA phones: developing digital fluency. In <i>Proceedings of the International conference of Mobile Life</i>. Barcelona, Spain: 2-4 September 2009.</p> <p>Coyle, D.; Wiesemes, R. (2007): 'Developing Borderless Learning Spaces: Interactive Teaching and Learning Observatories' (conference paper). Presented at the Association for Learning Technology Conference Beyond Control, 4 September 2007, East Midlands Conference Centre Nottingham.</p> <p>The VLL has also developed a range of close contacts with national and international partners. These contacts include suppliers and developers of visual learning technologies, contacts with other academics in specific fields of visual learning nationally and internationally.</p>
--	--

Part 1 Evaluative Reflection	Detail
<p>Question 2 Please set out the aims and objectives specific to your CETL at the start; and for each one reflect how well these have been achieved. Be concise and do not exceed 1,000 words for the whole of the question.</p>	<p>The aims and objectives of the Visual Learning Lab CETL were at the start described as follows:</p> <ul style="list-style-type: none"> • Establish a strong visual learning and visual learning lab presence, facilities, networks and operating procedures within the University of Nottingham, • Maximise student benefit from Visual Learning within high quality undergraduate and postgraduate courses, • Recognise and reward excellent practices and practitioners, • Effective extension of visual learning developments and their proven potential within the University of Nottingham, nationally and internationally so as to significantly increase the understanding and use of visual learning in a wide variety of settings.

We review each of these aims in the following paragraphs:

Review of Aim 1: Establish a strong visual learning and visual learning lab presence, facilities, networks and operating procedures within the University of Nottingham

The VLL CETL has managed to achieve this aim through a variety of processes. First, it provided funding to a wide ranging series of projects which aimed at developing visual learning through technologies in all University of Nottingham faculties. For a detailed VLL projects overview please consult the VLL projects report *A Showcase of Innovations in Visual Learning*.

Facilities were provided and developed in a wide range of Schools, largely through project funding which was often matched by other resources from within Schools, Departments and Faculties. In addition the VLL CETL developed some key central facilities, which were available for general use by students and staff, by:

- Supporting the development of access for disabled and in particular visually impaired students in the main library.
- Contributing to the refurbishment of the Hallward University Library Student Learning Hub through a multiple display system (Thunder™) which has been made available to all those using the Hub facilities. Also, after a pilot phase where the Thunder™ Wall was run, managed and maintained by the VLL CETL, responsibility for Thunder™ maintenance, servicing and bookings has been handed over to appropriate staff in the Student Learning Hub.
- The VLL has also contributed to a wide range of capacity building projects across the University of Nottingham by providing, for example, increased facilities for video editing in the existing video unit, in Geography, in Film & TV studies and in Education. This has led to the development of a range of highly innovative assessment practices in these University Schools and beyond.
- The VLL has set up and developed a visual learning technologies innovation lab in the School of Education where the VLL CETL was based. From an initial set-up with one interactive whiteboard with integrated video conferencing facilities the in-room technology has gradually developed to a set-up that includes: High Definition video conferencing, Skype facilities, 2 independently running multiple display systems, which can also be used in an integrated manner using a range of combined and flexible display technologies.

As part of fulfilling Aim 1 the VLL CETL has developed a strong and positive working relationship with the University of Nottingham's Information Services.

Review of Aim 2: Maximise student benefit from Visual Learning within high quality undergraduate and postgraduate courses

The VLL has chosen not to develop its own courses, but to develop a model that aims at ensuring sustainability and further development of VLL teaching and learning legacies in the future. For this reason, the VLL has worked from the start on a model which allowed the VLL to respond to staff and students' needs by providing targeted project funding as needed and argued for by staff and students. In addition to targeting students through VLL-supported School and discipline specific projects, specifically in relation to maximising student benefit the VLL CETL chose to employ from 2007 onwards 'student interns'. These were undergraduate and postgraduate students whose function was twofold. First, the student interns were made available as a resource to members of staff who needed support in developing VLL-related activities, e.g. in the field of video editing. Second, the student interns acted as ambassadors for the VLL CETL to the student community at the University of Nottingham, and also provided a critical authentic student voice to the VLL Core Team. This led for example to the student interns conducting focus group based research into students' perceptions of visual learning across the University of Nottingham which resulted in an interns' produced film. This short film has been made available on the University of Nottingham's YouTube channel and has recently been shortlisted for a student film award (British Universities Film and Video Council Learning on Screen Awards). In addition, the VLL also ran a highly successful student video competition in 2009/10, targeting the University of Nottingham's student body and allowing all students on all University of Nottingham campuses to reflect in creative ways on their learning experiences at the University of Nottingham. One competition entry has had seen major exposure on You Tube with approximately 20,000 hits between December 2009 and March 2010.

Review of Aim 3: Recognise and reward excellent practices and practitioners

In its early stages, the VLL rewarded key staff who were involved in the VLL CETL bid development process through providing the finances for new visual learning lab hard- and software. Throughout its existence, the VLL – in particular through its projects-based approach – has managed to recognise and reward excellent practices and practitioners. For a full overview of VLL funded projects please consult the VLL projects report. As importantly, initial projects funding from the VLL CETL have led in numerous cases to other additional (and

	<p>in some cases substantial) funding from other internal or external sources. In this sense, the VLL CETL facilitated pilot projects, which allowed project partners to apply for further funding through the evidence of success facilitated via initial VLL funding.</p> <p><i>Review of Aim 4: Effective extension of visual learning developments and their proven potential within the University of Nottingham, nationally and internationally so as to significantly increase the understanding and use of visual learning in a wide variety of settings.</i></p> <p>As already indicated in the review of Aim 3, the VLL CETL has made – through providing pilot funding to new visual learning projects – a major contribution to piloting visual technologies that were future- and user-proofed through initial small scale VLL-funded projects. Many of these projects were able to attract additional funding by being able to demonstrate how much they contributed to enhancing student learning in specific discipline areas in HE. Nationally and internationally, the VLL has contributed to raising the profile of visual learning through a series of dissemination mechanisms:</p> <ul style="list-style-type: none"> • Presentations at a range of national and international conferences (SRHE Conference, Newport, Wales, December 2009; INTED, Valencia 2009 & 2010; EduLearn, Barcelona 2009; mSociety Conference 2009, Barcelona, 2009; ALT-C, Nottingham 2007; ALPs Conference, Leeds, March 2010). • Organisation of a Visual Learning CETLs Event (3 July 2008 – the first to be held for visual CETLs and attended by visual CETLs from across the country). • Local dissemination through organisation of a VLL CETL Projects Day at the University of Nottingham followed by a series of VLL projects seminars which were later run as part of the University of Nottingham Information Services Learning team seminars. • Publication and promotion of Visual Learning Lab developments through a range of publications such as the University of Nottingham’s <i>The Hub</i> learning and teaching magazine, articles in academic journals and production of a special issue of the e-journal Seminar.net – International Journal of Media, Technology and Lifelong Learning (http://seminar.net) on visual learning. • Contributing through the production of strategy papers to the School of Education’s and the University of Nottingham’s development of research and teaching and learning policies and priorities.
Part 1 Evaluative Reflection	Detail

Question 3

Please add any objectives that emerged as the CETL developed, and reflect on these as for question 2 (500 words maximum).

Whilst no specific major additional objectives have emerged as the CETL developed we would like to comment briefly on two areas that have become increasingly important in the VLL CETL's development: the role of technologies for the development of visual learning and development of student voice.

The role of technologies for the development of visual learning

As is generally acknowledged in a wide field of academic and non-academic literature the impact of technologies on learning and teaching in HE is dramatic. Some authors would go as far as arguing for the need for radical changes in learning and teaching approaches because of the Net Generation's continuous exposure to and interaction with technologies at all times. While we would not wish to adopt such an extreme position and would suggest that this needs a more refined discussion, we do accept that technologies and in particular current and emerging new visual technologies have a major impact on how students will learn and interact in learning environments in the future. In this sense, the VLL has been at the forefront of technology testing and development, which has led in some cases to successful partnerships with commercial partners. Multi-layered visual learning environments are a real possibility now. The VLL CETL has been able to make a major contribution in developing these further, in particular in the area of learning spaces in general, the use and development of multiple display systems for learning and teaching, the use of video conferencing and video editing and the further and more refined development of interactive whiteboard uses in a variety of HE settings.

Development of student voice

Employing student interns was a big experiment for us, as it was not clear from the start how students would be able to make their most meaningful contributions to the VLL CETL activities. This investment in student interns has in the event proved to be highly effective in terms of being able to support VLL CETL projects and related projects and – more importantly – has provided the VLL CETL with unique insights into student's perceptions into learning and teaching in HE. As well as all that this initiative has provided a talented group of undergraduate and postgraduate students with an exceptional learning and personal development opportunity. We have excellent data from student intern exit interviews to substantiate this finding.

Quote from LiShan Shan (VLL Postgraduate Student Intern 2008-2009)

"The most important thing is to express my sincere thanks to the VLL. Without the valuable working experience in the VLL, I would not have had the chance to get the job as Lecturer in

	<p><i>Multimedia Education in ShenZhen Open University (China). I will be responsible for multimedia teaching (including video production and distance learning research)."</i></p> <p>Quote from Odessa Dariel (VLL Postgraduate Student Intern 2009-2010)</p> <p><i>"The VLL provided me with opportunities to develop myself in ways I couldn't have done as an individual PhD researcher. The team-effort of working collaboratively towards something we all believed in was incredibly rewarding."</i></p>
<p>Part 1 Evaluative Reflection</p>	<p>Detail</p>
<p>Question 4 Irrespective of your answers to questions 2 and 3 above, please reflect on, and draw out the achievements and benefits of the CETL (1000 words maximum) (Think about different audiences, types of output, impact internal and externally, on professional / staff development, on student learning, work over an extended period, use of money for facilities development etc.)</p>	<p>The VLL CETL has had a variety of achievements, benefits and effects.</p> <p><i>Internal and external impact:</i> The VLL CETL's main achievement has been the successful implementation of a wide range of VLL projects and initiatives. These projects will have a long lasting effect due to the infrastructure and learning environments created that it can support. This has not only been due to the thoughtful implementation of technologies, but was also supported through a commitment by VLL staff to develop strong and on-going relationships with all project holders and to develop and maintain related project interactions. In this sense, the reduced HEFCE funding might have been beneficial as it forced the VLL CETL to focus its resources in targeted and economic ways with maximum benefit. The VLL has been of particular benefit for staff development.</p> <p>Specifically in relation to staff development, the VLL has been able to work with subject specialists across the University of Nottingham on the on-going development of a wide range of visual learning resources (For a full range of examples please consult <i>A Showcase of Innovations in Visual Learning</i> at www.visuallearninglab.ac.uk).</p> <p>The VLL has been able to create what we would describe as a 'ripple' effect, where through collaboration with academics via VLL projects and students via the VLL interns initiative novel ideas, innovative teaching and learning approaches and use of new technologies have been developed in a continuous and cross-disciplinary manner. Examples of this 'ripple effect' are the transfer of video conferencing technology uses and related pedagogical models from the interactive Teaching and Learning Observatory in the School of Education to a variety of video conferencing uses in the School of Modern Languages and the School of Nursing.</p>

The VLL CETL has been able to develop strong professional partnerships with technology suppliers external to the University of Nottingham and internal partners across Schools and Faculties and University support services such as Information Services.

The VLL has also worked with key units and networks across the University of Nottingham to promote visual learning:

- e-learning community: the VLL has regularly presented seminars on Visual Learning developments to a wide audience including China and Malaysia campuses.
- Promoting Enhanced Student Learning (PESL): the VLL has helped to embed good visual learning practice for all academic staff across the University of Nottingham.
- Professional Development work: the VLL has been supporting academic staff to use new visual learning technologies through a large number of showcase and training events held throughout the project.
- Director of Teaching and Learning: joint developments with the e-learning community and video competition.

These have all helped to integrate visual learning technologies and practices across the University of Nottingham more extensively.

The VLL has contributed to the University of Nottingham's Learning and Teaching Strategy and has submitted a paper to the School of Education's Research Strategy Group re: the future potential of educational research into visual learning.

The VLL CETL has been able to provide a test-bed for taking forward new ideas, developing them through a range of pilot projects, and then acting as a lever for procuring further internal or external funding for developing facilities further.

Student Learning

The VLL CETL has reached a wide range of students from all Faculties through project-related activities (see *A Showcase of Innovations in Visual Learning* at www.visuallearninglab.ac.uk).

The complete extent of this is hard to track in great detail, but we are aware of a large number of Schools, which have enhanced their mainstream courses in partnership with the VLL, and this is now impacting at least 10,000 students per year.

Through the VLL interns' initiative, the VLL CETL has been able to interact with students directly and to build 'student voice' into VLL core activities. The success of this initiative is also illustrated through a VLL student produced video which has been submitted for a student film competition (British Film and Video Council Learning on Screen Awards 2010).

The VLL CETL has also sponsored two sets of students on the MA in Educational Research Methods at the University of Nottingham's School of Education in 2007-2008 (3 students) and 2008-2009 (2 students). Of these students, 2 (from 2007-2008) and 1 (from 2008-2009) have been able to continue to PhD studies through ESRC funding or internal university funding. Additionally, the VLL has recruited, together with the prestigious Learning Sciences Research Institute (<http://www.lsri.nottingham.ac.uk/>), a jointly funded PhD student. All of these students are pursuing research in the field of visual learning.

Facilities development

On a project basis, the impact of the VLL CETL has been felt across the whole of the University of Nottingham. (For more detailed information on the VLL projects and their successes please see VLL Projects report *A Showcase of Innovations in Visual Learning* at www.visuallearninglab.ac.uk). Facilities have been developed via projects on a relatively small scale, but with high impact.

More generally, the VLL CETL has also been able to contribute to facilities development as follows:

- Interactive multiple display systems in the Hallward Library Student Learning Hub accessible to all students and staff and maintained and managed by Information Services
- Provision of increased facilities for visually impaired students in the Hallward Library Student Learning Hub
- Provision and development of video editing facilities on three campuses in partnership with the School of Geography, Film and TV Studies and Information Services
- Development of the VLL innovation laboratory in the School of Education as a test-bed for emerging learning technologies. This is used by a wide variety of users internal to the University and external, and usage of this room is continuing to expand.

Audiences reached:

	<p>The VLL CETL has reached a wide range of audiences both internal and external to the University of Nottingham, ranging internally from academics via students to information services, and externally including strong collaborations with technology systems suppliers.</p> <p><i>Types of output</i></p> <p>The VLL has produced a wide variety of outputs both in print and visual media:</p> <ul style="list-style-type: none"> • Articles in the internal University of Nottingham teaching and learning magazine <i>The Hub</i> • Articles in the internal University of Nottingham magazine for staff <i>Exchange</i> • Special issue of Seminar.net – International Journal of Media, Technology and Lifelong Learning (available at seminar.net) • Conference presentations (see Question 2) and publications (see Question 1) • Video productions (see www.visuallearning.lab.ac.uk)
--	--

Part 1 Evaluative Reflection	Detail
<p>Question 5 Have there been any disappointments in how the CETL has developed/what it has achieved. What are they, why did they happen? (600 words maximum)</p>	<p>The main disappointment is at the time of writing that the VLL CETL will not be able to continue in its current form.</p> <p>During its lifetime, there have been some barriers – most of which were overcome:</p> <ul style="list-style-type: none"> • Initial relations with Information Services were less good. These difficulties were overcome by developing a professional working relationship acknowledging each others’ strengths and limitations. • The location of the VLL CETL in the School of Education on Jubilee Campus – whilst appropriate for the VLL Core Team – was not ideal, as most VLL project related activities were located on University Park. This did not help with building up easy and informal communication channels, but was also not a major barrier to the VLL CETL’s success. • In its 3rd year of existence, one of the VLL co-directors left the University of Nottingham. This led in a transition period to increased pressure on the remaining VLL CETL Director and the Core Team. • Although the original VLL CETL bid was for the maximum funding available (over £5m), the award made was for only £1.8m. This has had a serious impact on our ability to implement the original plans. We were never given a satisfactory explanation why our

	<p>original bid was not funded, nor were we ever asked to revise our original plans in the light of our reduced funding. This has of course had major implications for all aspects of our work. This was particularly noticeable in not being able to pay for project staff time, which was not ideal. Additionally, this also led to a small Core Team which was forced to adopt an approach focused solely on supporting VLL projects in order to ensure successful implementation of projects. This led to a lack of research time for Core Team staff. This is highly problematic, as VLL research staff will be judged for their academic output, which – whilst existing – is limited. This also highlights the overall tension between developing teaching and learning and the need for research in a heavily research-led institution such as the University of Nottingham.</p> <ul style="list-style-type: none"> • Some members of the Core Team are at the end of the VLL CETL under threat of redundancy.
<p>Part 1 Evaluative Reflection</p>	<p>Detail</p>
<p>Question 6 Please reflect on the difficult and easier aspects of getting the CETL going and of getting your messages across. For example: Has action/change followed; where and why did you meet success or resistance. What worked, how did you discover this, how do you know it worked? (1000 words maximum)</p>	<p>Getting the VLL CETL going was overall an exciting and rewarding process. The process was successful overall which we believe is due to the following key factors:</p> <ul style="list-style-type: none"> • Adopting a mixed approach by developing both overarching activities (such as support for visually impaired students across the whole University of Nottingham) and project specific activities (such as the ones described in some detail in <i>A Showcase of Innovations in Visual Learning</i> at www.visuallearninglab.ac.uk). Providing a generic framework for developing visual learning via VLL projects initiated and led by visual learning enthusiasts and early adopters. We believe this user-led and VLL CETL-supported process was crucial for the relatively quick take-off of the VLL CETL. • Developing strong professional relationships with all staff involved and aiming to maintain these relationships throughout the project duration in spite of initial difficulties and misunderstandings. <p>Initially, the development of the VLL CETL’s website was somewhat problematic. However, this was addressed quickly and efficiently. The VLL website has become a good tool for communicating VLL CETL successes and has been updated on a regular basis.</p> <p>Key successes of the VLL CETL can be summarised as follows:</p> <ul style="list-style-type: none"> • Having a wide range of successful projects • Implementing and piloting new learning technologies • Dissemination activities such as the VLL CETL’s Visual Learning Day and the VLL CETL’s

	<p>Project Day which both were well attended and brought together staff from a wide range of departments and backgrounds with a shared interest in visual learning.</p> <ul style="list-style-type: none"> • Producing a variety of outputs • Setting up the student interns initiative successfully • Very productive relationships built with business partners, who are developing and selling cutting edge visual learning technologies <p>Key points of resistance remain though. These are:</p> <ul style="list-style-type: none"> • The difficulty of moving pedagogical practices forward within a large HEI, which places such a strong emphasis on research • Fragmented structures for supporting educational development within parts of the University • Busy colleagues who have little time to spend on teaching innovations
--	---

Part 1 Evaluative Reflection	Detail
<p>Question 7 Has your CETL adopted/used/been based around any specific theories, e.g. of change, or of student learning? If so, what, how have these underpinned your work, have they been useful? (1000 words maximum)</p>	<p>The VLL CETL has not used from the start any specific theories of change or student learning. This is due to the highly complex nature of what is understood by visual learning when looked at from a range of subject specific and scholarly perspectives. Initial attempts to develop a wide ranging literature review of visual learning revealed that this would need to cover very diverse fields and would need to include a wide range of perspectives.</p> <p>The VLL CETL adopted a pragmatic approach in theorising our work by always taking into account the subject-specific teaching and learning cultures that the VLL CETL projects were being implemented into. Whilst not addressed from the start, the VLL CETL has increasingly come to understand visual learning as visual learning through a wide range of technologies. This emerging vision of the VLL CETL is reflected in the two overarching theoretical frameworks that are being developed by the VLL Core Team:</p> <ul style="list-style-type: none"> • A socio-cultural perspective of teaching and learning processes including models of improvisation • A framework for describing, examining and analysing technology-enhanced learning spaces

The VLL CETL's socio-cultural perspective for conceptualising video conferencing uses for teaching and learning in HE

Findings emerging from our current work in the field of video conferencing suggest that whilst current conceptualisations of video conferencing uses remain valid, they need to be expanded further. Our analysis suggests that one way to expand these conceptualisations is to consider video conferencing as a tool that enables development of improvisation techniques and performances. We locate video conferencing as a tool in socio-cultural theory and argue that SCT provides a framework that allows the exploration of both scaffolded and dialogic interactions between teacher trainees and tutors that are supported in turn through 'safe' audiovisual access to observed classrooms. Conceptualised as an IZD the use of video conferencing for teacher training and development creates a learning space where video conferencing becomes a tool that facilitates processes of understanding through supported dialogic practices. In this sense, while we accept Marsh et al's (2008) arguments about video conferencing contextualising theory and de-contextualising practice, we suggest that video conferencing for teacher education and related uses in HE allows mimicking and promotes improvisatory practices. This means that video conferencing supports practices that are personalised by students based on the repertoire of practices that video conferencing makes available and the related dialogic interactions as a group in video conferencing practice. This also implies that instead of solely copying one practice, students have the opportunity to explore jointly a range of possible and appropriate practices and to make these parts of their emerging improvisatory repertoire as suggested strongly by Humphreys and Hyland (2002). Conceptualised in this manner, this points at the potential of much wider and more systematic uses of video conferencing for teacher training and other professional practices where access to practice sites is vital in initial training (e.g. in Healthcare Education). Locating video conferencing uses for training in an SCT framework in particular opens up further avenues for developing international practices that could facilitate a range of intercultural (learning) dialogues and have a real impact on a wide range of teaching and learning settings.

The VLL CETL's framework for describing technology-enhanced learning spaces

Recent years have seen an increased focus upon the concept of Learning Spaces, where the built environmental configurations of educational institutions are seen as enablers of the pedagogy which occurs within them. Seen through this lens, however, small group learning

	<p>spaces often more accurately reflect the pedagogies of 19th century <i>disciplinary education</i> than contemporary models of learning as a social activity. Our current work has focussed upon ethnographically inspired, interactional analyses of our Multi-Display Learning Spaces, addressing questions such as: What kind of Learning Space might be created by multiple wall information surfaces? Or, more specifically, what opportunities for learning are offered by larger and more complex display ecologies?</p> <p>Based upon this, we have proposed a framework for the evaluation of Learning Spaces which proceeds from an understanding of Why we are evaluating, undertakes to categorise in consistent language What we are evaluating and then considers a range of methods regarding How to evaluate. Our intention is to better understand the physical situatedness of learning through conducting consistent evaluations which can be systematised as research. We use concepts such as Gaver's affordances (based upon much earlier work by Gibson), to link the possibilities for action with the built environment, and we advocate the twinning of quantitative data gathering with ethnographic studies, using structured co-located observations or the gathering of video data. A core aim of this work is to produce recommendations for the design improvements of learning spaces themselves, thus seeking to re-imagine future HE learning through a focus on building and campus infrastructure.</p>
<p>Part 1 Evaluative Reflection</p>	<p>Detail</p>
<p>Question 8 Reflecting on the last five years what other important messages are there that you want to convey about your CETL - its successes, difficulties, impact etc. (1000 words maximum)</p>	<p>We believe that there are a wide range of key messages with different target groups that come out of the VLL CETL's activities. We have divided these up according to different key audiences ranging from the University of Nottingham's School of Education, the University of Nottingham in general and HEFCE. Each of these will be presented separately for its key messages.</p> <p><i>The VLL CETL and the School of Education</i> We suggest that the key message to take forward for the School of Education is to recognise the strength of the contribution that the VLL CETL can make to the School's new research and teaching agendas. This is exemplified by our answers to Question 7, which indicate the emergence of strong and empirically founded theoretical contributions to educational sciences. The VLL CETL also provides a model of how teaching, learning and research can be combined and developed jointly. This could help to further strengthen the link between research and teaching and learning activities in the School of Education.</p> <p>The VLL CETL has built a strong brand legacy with staff across all Faculties of the University of</p>

Nottingham. This is a strong base for further developing avenues for research into Higher Education. Generally, the VLL Core Team leaves behind a legacy of risk-taking by piloting new technologies and related uses, but also by implementing somewhat left-field initiatives such as employing the VLL student interns with huge success. This provides the School of Education with a test-bed for highly innovative and novel pedagogical approaches in HE, which could make a major contribution to the School of Education's research and teaching activities.

The VLL CETL also has developed strong relationships, with internal and external partners, which the School of Education can build upon.

The VLL CETL and the University of Nottingham

The VLL CETL has built upon existing excellence within the University of Nottingham. The existing VLL activities base provides a strong foundation for developing an auxiliary research strand across many disciplines which could make a major contribution to the University of Nottingham's reputation as a leading centre for innovation and research. The VLL CETL has also produced a group of champions and innovators in Technology Enhanced Learning through its Core Team, but also more widely through the big number of projects staff involved in VLL CETL activities since 2005. Because of its wide ranging nature, the VLL CETL has also allowed members of staff from different discipline areas to collaborate and to inspire each other through a range of projects. These interdisciplinary links in the domain of teaching and learning need continued support, as they make a major contribution to strengthening the University of Nottingham's reputation as a higher education institution that wishes to provide its students with the best educational experience possible.

The VLL CETL and HEFCE

Whilst there was some initial HEFCE support, this seems to have decreased throughout the existence of the CETLs. We believe that HEFCE could have done more to foster stronger relationships of all CETLs with the HEA, individual subject centres and RCUK. In our view the whole CETL initiative would have been more effective and productive if HEFCE had been able to provide more support for development work, CETL networking and joint evaluations at an earlier date.

HEFCE events seemed to rely very much on the willingness of CETLs to interact and develop activities on an *ad hoc* basis. If 5% of the CETL budget had been used for central support costs, then a strong team of CETL advisory and support staff could have been put in place, to run staff development workshops for CETL staff and ensure much greater levels of productivity and educational change as a result of the biggest teaching and learning initiative

	in UK Higher Education in the last 100 years.
Part 1 Evaluative Reflection	Detail
<p>Question 9 Reflecting on the last five years what important messages are there that you want to convey about the experience of being part of a wider 'movement'/experience of other CETLs. (600 words maximum)</p>	<p>As part of its activities the VLL CETL was part of a network of CETLs. These networks can be divided up as follows:</p> <ul style="list-style-type: none"> • Local (University of Nottingham) CETLs • East Midlands CETLs network • Visual CETLS network • National CETLs HEFCE-facilitated network <p>We will reflect briefly on each of these networks. The local CETLs network was generally useful, as it enabled the local CETLs at the University of Nottingham to compare experiences and address initial implementation problems that occurred in particular in the initial phases of the CETLs initiative. The regional East Midlands CETLs network proved to be extremely useful in the initial stages of the CETLs initiative, as it allowed to compare experiences both at institutional levels (i.e. the University of Nottingham, Nottingham Trent University, University of Leicester, Loughborough University) and at HEFCE level. This network also led to a joint launch event for all East Midlands CETLs on 1 June 2006 which allowed the VLL to present itself as part of the wider regional CETLs movement. Whilst initially important as a forum for project development, the EMCETLs network gradually became a less important tool as individual CETLs developed their own profiles and activities.</p> <p>The VLL CETL also hosted an event bringing together all CETLs which had a visual element in their practices. Whilst the event itself was highly successful it failed to lead to any further joint developments due to time and workload pressures. In this regard, it would have been useful if HEFCE and/or HEA had developed means to develop networks as part of the CETLs initiative which could also have contributed to ensuring post-CETL funding.</p> <p>The national CETLs network was initially useful and informative and provided some guidance on how the CETLs could develop. However, later events (especially after the mid-project report deadline) were somewhat disappointing. It seems that HEFCE was looking for CETLs to provide guidance on all aspects of the CETLs initiative which might have been appropriate to a certain extent, but was flawed in the sense that HEFCE did not seem to be willing or able to offer a vision for future developments or provide strong leadership for development of the</p>

	<p>CETLs initiative. This lack of leadership and lobbying on behalf of the CETLs is also a contributory factor to the VLL CETL not being considered to be vital to be continued in some form at the University of Nottingham. Whilst project gains and benefits will remain, the wider local VLL infrastructure will not be in existence anymore.</p> <p>Key messages for HEFCE would be from our perspective:</p> <ul style="list-style-type: none"> • Provide guidance and support, as appropriate and necessary, throughout the CETL lifespan, not just at the beginning of the CETLs initiative • Develop stronger lobbying mechanisms which could have prevented the CETL being a one-off initiative, especially in income and research focused universities • Develop in partnership with CETLs a stronger vision for post-CETL developments which would have allowed sustainability of projects and initiatives
<p>Part 1 Evaluative Reflection</p>	<p>Detail</p>
<p>Question 10 Please reflect on work emerging from your CETL that has been 'transferable', i.e. useable beyond the home audience for which it was originally developed. (You may wish to comment in terms of materials produced, a community created, understandings that CETL work has illuminated and which are useful to others, etc) (1000 words maximum) It would be useful to hear 'messages' and lessons learnt that you would like to continue to be disseminated.</p>	<p>Whilst the focus of the VLL CETL has been on developing visual learning with technologies across the University of Nottingham the VLL CETL has been able to act as facilitator for increased communication between a range of faculties, Schools and individuals that would not necessarily communicate with each other, to exchange project information and to recognise commonalities in developing visual approaches to teaching and learning. In particular, the VLL CETLs Projects Day, organised in June 2008 was a highly successful event which made a major contribution to the development of stronger internal communication mechanisms which have allowed cross-project dialogue and fertilisation.</p> <p><i>Transferable VLL CETL activities have been taking place in a variety of areas.</i></p> <p>The VLL CETL has provided assistance to Schools across the University of Nottingham with tangible projects and related projects outcomes. This assistance has focused in particular in the areas of learning and teaching and the development of pedagogies. The following example illustrates how varied transfer and adaptation of visual learning across schools and faculties has been.</p> <p>The School of Education conceptualisation of video conferencing uses for teacher training as exemplified in the so-called 'interactive Teaching and Learning Observatory' (Coyle, D., 2004) have been transferred into 3 different settings. First, the i-TLO concept has been developed in</p>

the School of Nursing as a means to link a range of geographically separate teaching and learning sites and as a means to provide nursing students with access to clinical settings prior to clinical practice. Second, the i-TLO concept has been adapted in the School of Modern Languages and Cultures by turning it into the *Cultural Exchange* where group video conferencing and one to one Skype links are used for allowing foreign language students from the University of Nottingham to exchange experiences of University life and cultural differences with peers at German and French partner universities. Third, the School of Veterinary Medicine and Science adapted the i-TLO concept, so that students could be linked into 'live' operating theatres at specialist partner clinics.

Similar patterns of transfer, adoption and adaptation have taken place in other areas such as the use of video production. Originally set up by Professor Michèle Clarke in the School of Geography as a means to provide students with the opportunity to produce a lab report in video format, this concept has been transferred into the School of Nursing. For further information about transferability of project mechanisms, pedagogies and practices see also the VLL Report *A Showcase of Innovation in Visual Learning* at www.visuallearning.ac.uk

It is important to note that transfer always includes transfer of pedagogies – and not merely transfer of technologies.

More widely, the VLL CETL has contributed to transfer of practices in the sense of supporting and developing champions for Technology Enhanced Learning, which subsequently impact more widely and more generally than the VLL CETL with its time limited remit. The VLL has also contributed to transfer of practices by facilitating formal and informal interdisciplinary networking, which has contributed to cross-pollination of ideas and renewed interest in developing pedagogies in HE. The VLL CETL also has developed more widely an interest in educational research in non-School of Education settings. Developing these joint interests is currently contributing to the joint development of research proposals for conducting further research into visual learning and teaching in HE as exemplified by the following research projects:

- European Lifelong Learning Programme 2010 in partnership with the University of Eastern Finland: ***Opening up learning through improvisation and use of ICT***
- Planned ESRC Proposal: **Developing a Conceptual Framework for Video Conferencing Uses for Learning and Teaching in Higher Education based on a**

socio-cultural improvisation model

- Planned ESRC Proposal: **The asynchronicity and permanence of lectures: how new technologies such as lecture capture affect identity and performativity within lecture theatres**
- Planned ESRC Bid: **The Emerging Pedagogies of Interactive Lecturing in HE**

One final transferable finding emerging from the VLL CETL activities since 2005 has been that it has led to stronger and better links with Information Services. Initial relations between the VLL CETL and IS were somewhat problematic, as it was not entirely clear what role the VLL CETL had in particular in relation to the activities in the learning team in IS. Through ongoing collaborative work, the VLL CETL and IS have developed a stronger relationship which could be regarded possibly as exemplary across the University of Nottingham. The VLL CETL has been able to support a range of IS activities such as developing support for disabled students, developing multiple display systems in University library areas and has contributed regularly to IS learning team seminars by presenting and critically reflecting on a wide range of VLL CETL activities.

In our view, key lessons or principles that have emerged out of 5 years of VLL CETL activities in relation to transferability are:

- Establishing good working relationships through open communication between all project partners
- Exchanging information regularly in formal and informal fora
- Inviting 'critical friends' for providing feedback on ongoing activities and ideas for further development

These principles are process-oriented. They are also not new, but constitute key factors of successful project management.

In relation to project outcomes, key lessons are almost impossible to distil at this point, as many projects are still developing. However, we would suggest that key to project success was the willingness of all project participants to 'think outside the box' and for the VLL Core Team and VLL CETL Advisory Group to take some risky decisions in terms of funding untested and underdeveloped uses of technologies for visual learning. The projects and activities

	described in the VLL CETL Report <i>A Showcase of Innovations in Visual Learning</i> at www.visuallearning.ac.uk are testament to these key principles.
Part 1 Evaluative Reflection	Detail
<p>Question 11 How will the work and achievements of your CETL continue after HEFCE funding ends (1000 words maximum)? Please reflect on how far you think CETL work has become embedded in your institution or discipline and indicate if any structures have been put in place to ensure its legacy is not lost (1000 words maximum)</p>	<p>Work and achievements of the VLL CETL will continue in a variety of ways. These can be divided up as follows:</p> <ol style="list-style-type: none"> 1) VLL CETL continuation through project website 2) VLL CETL continuation through project work and its extensions 3) VLL CETL continuation through equipment legacy <p>Each of these aspects is reviewed briefly individually:</p> <p><i>VLL CETL continuation through project website</i> The VLL CETL website (http://www.visuallearninglab.ac.uk) has recently been updated and upgraded as a means to provide up to date (and historical) information about the VLL CETL activities since 2005. It is hoped that the continued existence of a VLL CETL website will ensure that potential project partners will be able to contact key VLL members and develop collaborations as appropriate and possible.</p> <p><i>VLL CETL continuation through VLL projects</i> Since 2005 the VLL CETL has funded ten Round 1 Projects (funding both purchase of capital equipment and staff research time) and fourteen Round 2 Projects (funding purchase of equipment). Most of these have been highly successful and a substantial number of these projects have been able to attract additional project funding either through further internal school or university funding or through external funding. For example the School of Classics has received funding from the University of Nottingham, Capital Investment Fund, 12/2008-2010 (£190K) and the EPSRC project <i>Towards Pervasive Media</i> (University of Nottingham), Troubadour Grant, 6/2010-8/2010 (£2.3K). In this sense, initial VLL CETL funding has often provided pilot funding for hitherto untested visual technology applications. It is hoped that these projects will develop the VLL CETL legacy further.</p> <p><i>VLL CETL continuation through VLL equipment legacy</i> The VLL also leaves behind a limited amount of equipment, e.g. a well equipped professional standard video editing suite in the School of Education, a technology room in the School of</p>

	<p>Education featuring the latest video conferencing and multiple display technologies. Current discussions indicate strongly that the School of Education and other interested Schools will be keen to continue using these facilities and are keen to contribute to mainstreaming VLL CETL technology uses for visual learning and teaching.</p> <p>Other legacies include a highly successful student interns' initiative which is currently being redeveloped by VLL CETL interns in order to become a university wide student initiative. Finally, it is hoped that the VLL CETL also leaves behind a less tangible legacy in the sense that pockets of risk taking remain in the University of Nottingham, which allow academics to explore future uses of technologies for supporting visual learning.</p>
<p>Part 1 Evaluative Reflection</p>	<p>Detail</p>
<p>Question 12 Do you think there are any emerging aspects of your CETL activity that will have greater importance in the future? (600 words maximum)</p>	<p>The following <i>key educational content aspects</i> are emerging out of the VLL CETL activities:</p> <ul style="list-style-type: none"> • Learning spaces design and research will become increasingly important. The VLL CETL is at the forefront of developing methodological and analytical frameworks for further research and development activities in this area. As part of our CETL work we have been involved in conducting ethnographically inspired studies of our Multi-Display Learning Spaces. We will extend this work further, for example in our study of the ways in which mass lectures are affected by the introduction of new technologies such as Lecture Capture systems which is currently at the pilot stage. Through this work, we will offer a better understanding of the physical situatedness of learning. • Ubiquitous (mobile) technologies will be increasingly important for learning and teaching activities in a wide range of contexts and format. The VLL CETL is at the forefront of developing further activities in this area. For example, the VLL CETL is currently part of a pilot study that aims to examine how mobile phones can be used in rural and urban settings in Rwanda as a means to develop learning about the Rwandan genocide with a range of target populations. • Emerging out of ongoing research into Interactive Whiteboard uses which have been widely researched in schools, but less so in Higher Education, the VLL CETL is at the forefront of developing its activities in the field of multiple display systems used for teaching and learning in HE. Using the concept of display ecologies within Multi-Display Learning Spaces, we are investigating tutors use of spatial scaffolding in directing

students' attention across shared displays, as well as the enabling juxtapositions which allow students to gain better insight into complex materials through contextualisation, complementarity and the argumentational weighing of competing evidence.

- Technological progress in the use of digital visuals, in particular the use of film and video, is ongoing and increasingly easy for non-specialist users. As highlighted in previous sections, the VLL CETL is, particularly through its activities in the fields of video editing/production and video conferencing, promoting pioneering uses and innovative research and development in these fields. The VLL CETL is also starting to contribute new theoretical insights in these fields, especially in relation to the development of improvisation as a theoretical and applied concept that is crucial for learning.

Further activities in these areas are reflected in the development of research and development projects in these areas with partner institutions locally, in the UK and Europe. We envisage that all of these emerging aspects of VLL CETL work will become increasingly important in the future due to on-going technological advancements.

Focusing on VLL CETL *processes* two key issues are emerging that will have greater importance in the future:

- The VLL CETL has been able to provide the framework and facilities to develop pilot projects that have been a test-bed for the use of new (and somewhat untested) technologies in a range of disciplines and faculties across the University of Nottingham. Because of the VLL CETL, a range of highly innovative projects have been developed at the University of Nottingham, as reported in the VLL projects report (www.visuallearninglab.ac.uk). With visual technologies developing constantly, we suggest that it might be vital for universities to consider how supported risk-taking with the use of visual technologies can be supported more long term. This process finding highlights in our view the need for creating a framework that allows ongoing innovation in teaching and learning in all disciplines across the university sector.
- The VLL CETL has been highly successful in developing student voice as part of the student interns' activities. (For more information on these activities see Question 3 and Question 4 and the VLL website www.visuallearninglab.ac.uk). We believe that systematic development of student voice will become increasingly important for HE as the student body continues to become more diversified through students from non-traditional backgrounds accessing HE and a further increase of international students attending British universities. The VLL CETL interns are currently starting to develop a project that would allow them to continue its activities with a general focus on

	engaging students in reflecting on their formal and informal learning experiences in HE.
Part 1 Evaluative Reflection	Detail
Question 13 Any other comments (600 words maximum)	<p>Overall, we suggest that the VLL CETL has been highly successful with a limited budget and small team. While having different strengths and work foci (ranging from administrative via project management to research), the VLL CETL Core Team members have ensured implementation and development of CETL activities, therefore we provide quotes from members of the Core Team to conclude this Final Report:</p> <p>Roger Murphy: "The CETL initiative has been one of the most exciting developments in UK higher education in the last 30 years. It has been a privilege to be part of the dynamic VLL team and we are all very proud of what we have achieved. Visualisation is so important in learning about complicated things and we have seen so much evidence of the way in which good visual learning can greatly improve the quality of the student learning experience in HE. We have worked through some inspirational partnerships and the fruits of our labours will influence generations of future learners. Visual technologies have developed out of all recognition in the last five years and will probably continue to do so for many years to come. Universities need to build on this and not be seen to be running after the train after it has left the station!"</p> <p>Rolf Wiesemes: "I worked as Senior Research Fellow and projects coordinator for the VLL CETL from the start. This role has been very diverse and has enabled me to develop a wide range of generic project management skills, to develop another research specialism and to interact with a wide range of new colleagues in schools and faculties at the University of Nottingham and beyond. I am particularly pleased with the development of the VLL interns' initiative which has been in my view an immense and somewhat unexpected success. Taking into account the variety of research and teaching developments that the VLL CETL has been able to contribute it is in my view highly regrettable that the VLL CETL will cease to exist, but I do hope that its various legacies will continue to exist at the University of Nottingham. The VLL CETL could not have been as successful had it not been for its highly dedicated core team, which was key for developing the wide range of projects and links implemented since 2005."</p> <p>RuoLan Wang: "I joined the VLL team in 2009 as Research Fellow working mainly on the research dimension</p>

of the VLL agenda. The VLL offers a professional, dynamic and friendly working environment for all participants. Innovative ideas have always been encouraged and supported by the VLL director and the team members. I have benefited immensely from my involvement in various VLL activities and this positive experience contributes significantly to my ongoing personal professional development.”

Brett Bligh

“At the VLL’s outset I was a Computer Scientist with an interest in learning technologies; at its conclusion I am an interdisciplinarian with a focus on learning. In that sense, my involvement with the VLL has seen a re-shaping of my academic identity. This is at least partly as a result of being a member of projects creating innovative learning across a variety of disciplines, and partly as a result of how the VLL has managed to create networks of inspiring practitioners. Yet the core of my interest in technology as a mechanism for changing learning has broadened and been reinvigorated rather than diminished. Problems of scale have brought home to me the necessity of formalising the speedy transfer of successful innovations to central groups such as Information Services, since at times the VLL felt like a tiny and rather overstretched service unit, but in a sense this was also a demonstration of the popularity of our central ideas. Inevitably, with the CETL funding coming to an end, my own focus will drift back towards research. It is to be hoped that HEFCE will see fit to support further teaching and learning innovation programmes in the future, ideally of a more permanent nature”.

Marian Anderton:

“I joined the VLL as a PA to the former Co-director Do Coyle in 2005 and in 2008 became the VLL Centre Manager. I have greatly enjoyed my time in the VLL, working as part of a creative and innovative Core Team, as well as with students and staff across the University of Nottingham and with external VLL partners. I feel that I have gained a great deal both personally and professionally during my time with the VLL”.

CELT FINAL SELF EVALUATION GUIDANCE																													
PART 2 – STATISTICAL INFORMATION	Detail																												
a. Name of CETL	Visual Learning Lab CETL																												
b. Name of Institution	University of Nottingham																												
c. Contact Name (in post until July 2010)	Marian Anderton, Visual Learning Lab Centre Manager																												
d. Name of person/s submitting self-evaluation	Professor Roger Murphy, VLL Director Dr Rolf Wiesemes, Senior Research Fellow and VLL Co-ordinator																												
e. Start date of CETL	May 2005																												
f. Anticipated end date of CETL (Will it end with the money, when, will it continue in some recognisable form?)	The Visual Learning Lab CETL will end on 31 July 2010.																												
g. Lead Director(s) and dates associated with CETL	Professor Roger Murphy (May 2005-2010) Professor Do Coyle (May 2005-September 2008)																												
h. Total amount of Award: capital and running	Capital £800,000 + £140,000 Recurrent £1,000,000 Total = £1,940,000																												
i. Briefly describe what the capital was used for.	<table border="1"> <tr> <td>Visual Learning Lab set up with new visual learning technologies to enhance student learning on high level university courses.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1. Thunder systems x 2 in Base Room (VLL) and Hallward Library, UoN</td> <td>£86,635</td> <td></td> <td></td> </tr> <tr> <td>2. TLO system and Video Editing suites x 2</td> <td>£155,161</td> <td></td> <td></td> </tr> <tr> <td>4. Multi-Slides and Smart Meeting Pro</td> <td>£50,039</td> <td></td> <td></td> </tr> <tr> <td>5. Funding for 24 Projects across the University of Nottingham to support innovations in visual learning developments.</td> <td>£32,600</td> <td></td> <td></td> </tr> <tr> <td>For a full list of projects see http://www.visuallearninglab.ac.uk/awards</td> <td>£691,106</td> <td></td> <td></td> </tr> <tr> <td>Staff salaries</td> <td></td> <td></td> <td></td> </tr> </table>	Visual Learning Lab set up with new visual learning technologies to enhance student learning on high level university courses.				1. Thunder systems x 2 in Base Room (VLL) and Hallward Library, UoN	£86,635			2. TLO system and Video Editing suites x 2	£155,161			4. Multi-Slides and Smart Meeting Pro	£50,039			5. Funding for 24 Projects across the University of Nottingham to support innovations in visual learning developments.	£32,600			For a full list of projects see http://www.visuallearninglab.ac.uk/awards	£691,106			Staff salaries			
Visual Learning Lab set up with new visual learning technologies to enhance student learning on high level university courses.																													
1. Thunder systems x 2 in Base Room (VLL) and Hallward Library, UoN	£86,635																												
2. TLO system and Video Editing suites x 2	£155,161																												
4. Multi-Slides and Smart Meeting Pro	£50,039																												
5. Funding for 24 Projects across the University of Nottingham to support innovations in visual learning developments.	£32,600																												
For a full list of projects see http://www.visuallearninglab.ac.uk/awards	£691,106																												
Staff salaries																													

<p>j. What will these facilities be used for in academic year 2010-11? (indicative/anticipated)</p>	<p>Video conferencing and teaching. Open access use by students in School of Education, Jubilee and University Park campus Avid editing suites – School of Education and Kings Meadow campus. The VLL Projects will continue independently in Schools across the University of Nottingham</p>			
<p>k. Average number over lifetime of the CETL of persons employed at any one time, in FTEs and by type: academic, admin, other (please indicate type of job)</p>	<p>Research Staff</p> <ul style="list-style-type: none"> • Academic Directors x 2 • Research Staff x 2 • Senior Research Fellow • Research Fellow • Learning Technologist x 1 (0.5) <p>Administrative Staff</p> <ul style="list-style-type: none"> • Centre Manager x 1 (0.6) • Support staff x 1 (0.5) 			
<p>l. What are staff employed by the CETL towards the end of its HEFCE funded life going to do when this funding ends? Summarise, do not name staff, e.g. 2 part time academic staff return full time to university role; centre administrator has job in private sector lined up; research officer has an academic appointment for 2010-11 in another university; learning technologist will remain employed by host faculty to continue with similar work; not yet clear for 1 staff member)</p>	<p>Director:</p> <ul style="list-style-type: none"> • Continue at same University <p>Administrative Staff x 2 part-time</p> <p>Admin assistant</p> <ul style="list-style-type: none"> • Moved to permanent part-time post in same University <p>Centre Manager</p> <ul style="list-style-type: none"> • On Redeployment/redundancy register of University <p>Research Staff</p> <p>Senior Research Fellow</p> <ul style="list-style-type: none"> • On Redeployment/redundancy register of University <p>Research Fellow</p> <ul style="list-style-type: none"> • Continuing work as additional 			

	<p>project funding secured.</p> <p>Learning Technologist</p> <ul style="list-style-type: none"> 0.5 contract taken over by Learning Sciences Research Institute until July 2011. 			
<p>m. Number of 'spin out' projects funded: List projects by title and amount awarded, and name institution if other than host.</p>	<p>Round 1 Awards September 2005: funding capital equipment and staff research time</p> <p>School of Nursing Using Teaching and learning observatories in nursing education</p> <p>School of chemical, Environmental and Mining Engineering Developing problem-solving through visual learning in simulated, virtual and mixed reality environments</p> <p>School of Molecular Medical Sciences Enhancing learning in pathology through the use of visuals</p> <p>School of Psychology Understanding visual learning by using visual records</p> <p>School of Computer Sciences and Information Technology Visual learning aids in computer graphics</p> <p>School of Chemical, Environmental and Mining Engineering Visual Widgets</p> <p>School of Geography Assessment in Geography via video production</p> <p>School of Education Engaging staff in professional development through VL</p>	<p>£409,159</p> <p>£33,250</p> <p>£47,000</p> <p>£7,000</p> <p>£16,500</p> <p>£40,500</p> <p>£1,000</p> <p>£127,409</p> <p>£73,000</p>		

	School of Geography Learning Landscapes	£49,000		
	School of Education The use of video data to support learning and teaching	£11,500		
	School of Humanities Virtual Votive Offering Site	£3,000		
	TOTAL Round 1			
	Round 2 Awards: January 2007 funding purchase of equipment	£409,159		
	School of Veterinary Medicine and Science (3 Awards) Examining Clinical Cases through Digital Photographs	£5,120		
	Linking Teaching and Practice Sites through Video conferencing	£49,056		
	Enhancing Teaching of Veterinary Clinical Skills through the use of Visualisers	£22,281		
	School of Pharmacy Enhancing Lab Teaching through Visualisation Technologies	£25,000		
	Biomedical Sciences Producing 'Virtual Specimens' for visualising complex models	£32,952		
	Modern Languages and Cultures The Cultural Exchange as a Virtual Means of Intercultural Learning	£32,249		
	School of Chemical, Mining and Environmental Engineering (ScHEME) 2 awards IWB and problem-based learning: technology-enhanced visual learning for teaching difficult concepts in laboratory	£8,645		

	<p>sessions</p> <p>Submersive Visual Technology – ‘learning in extremis’</p> <p>School of Biosciences</p> <p>Visualising Real-Time Plant Cell Structures</p> <p>School of Humanities</p> <p>Showing Seeing Centre and Visual Analysis Lab</p> <p>The Graduate School</p> <p>Exploring the effects of portable learning technology on the experience of learning</p> <p>Institute of Film and Television Studies</p> <p>Virtual Film Making Lab</p> <p>Learning Sciences Research Institute</p> <p>Using Video-Conferencing for Remote Co-Supervisions and Lectures</p> <p>School of Computer Sciences</p> <p>Visual Examples of Algorithms for JAVA programming</p> <p style="text-align: right;">TOTAL Round 2:</p>	<p>£5,000</p> <p>£20,844</p> <p>£40,400</p> <p>£5,000</p> <p>£10,000</p> <p>£20,000</p> <p>£5,400</p> <p>£281,947</p>		
n. If you wish, list up to 5 other outputs that have not been peer reviewed.	<p>1. A Showcase of Innovations in Visual Learning (VLL projects report)</p> <p>2. Lord Dearing Video</p> <p>3. Articles submitted to University of Nottingham publications (17)</p>			
o. Number of events held to develop or disseminate work beyond the CETL in the last three years internally; externally. Please also draw attention by means of a short paragraph each to 3-5 events that	<p>1. VLL Showcase Report Launch Event (Internal)</p> <p>Date: 13 October 2009</p> <p>Size: 30+</p> <p>Attendees: SofE Staff/ High Profile</p>			

<p>have been especially important or noteworthy, e.g. title, date, size, type of attendees, purpose, why it was important.</p>	<p>University Staff/Beneficiaries of project funding</p> <p>Purpose: To launch the VLL Showcase Report</p> <p>Importance: The opportunity to promote the high level work of the Projects which have been funded by the VLL across the University of Nottingham.</p> <p>2. VLL Visual CETLs event (External)</p> <p>Date: 3 July 2008</p> <p>Size: 40+</p> <p>Attendees: Visual CETLs across the UK</p> <p>Purpose: To enable Visual CETLs to showcase their work and develop links.</p> <p>Importance: Opportunity to see the work of other visual CETLs and see the wide variety of work which was being undertaken in different areas of visual learning.</p> <p>3. e-learning Seminar series (Internal)</p> <p>Date: January 2009-February 2010</p> <p>Size: 20+</p> <p>Attendees: University Staff and video links with Malaysia and China campuses</p> <p>Purpose: To showcase the work of individual projects funded by the VLL</p> <p>Importance: Dissemination of new technologies and systems to a wider audience for possible adoption across the University of Nottingham including the Student Voice video produced by VLL student interns.</p> <p>4. University of Nottingham Video Competition</p>			
---	---	--	--	--

	<p>Dates: September 2009 – March 2010 Size: All undergraduates and postgraduates on all campuses including China and Malaysia Purpose: To reflect The Student Learning Experience at the University of Nottingham Importance: Videos used to promote the University of Nottingham in a variety of formats including YouTube. 5. SRHE Symposium, Newport, South Wales Date: 8-10 December 2009 Size: 360 Attendees: HE researchers from the UK and abroad. Purpose: To allow researchers to present papers on their research areas to a wide audience. Importance: Dissemination of work of the Visual Learning Lab in an HE setting.</p>			
<p>p. If any appropriately experienced member of your CETL team wishes to participate in a peer review scheme of CETL self-evaluations, please provide their names and contact details, especially email. (Participation in the scheme means that you are putting your own self-evaluation up for peer review and indicating willingness to act as a peer reviewer for up to 2 other self-evaluations. These will need to be completed within a reasonable timescale, to be determined once we see how many people wish to be involved.)</p>	<p>Professor Roger Murphy Roger.Murphy@nottingham.ac.uk 0115-8467201</p>			

APPENDIX 1

Supporting statement by Professor Gill Nicholls, External Evaluator for the Visual Learning Lab CETL

The Visual Learning Lab CETL has had a significant impact on teaching and learning and the student experience through a wide range of projects and initiatives funded since 2005. The work done by the VLL has been excellent. The VLL has promoted and developed a comprehensive range of visual learning practices and developments that have far reaching implications across the University of Nottingham and beyond.

In particular, the VLL has had a strong impact in the following areas of teaching and learning in HE: Videoconferencing, Podcasting, Vodcasting and Mobile Technologies, Visual Display Systems, Modelling and Simulation, Video making and School wide visual learning initiatives, all of which represent a great diversity in the areas of technology employed. The VLL has worked extensively across a wide range of Faculties and been involved with a diverse range of internal and external partners using different technologies. The VLL team has collaborated with and supported colleagues across a very wide range of key areas of HE teaching and learning. As a result the impact of VLL activities has been felt across the University of Nottingham campuses, including those in Malaysia and China. In many cases VLL funding has led to academic partners securing additional funding in order to continue the development of these exciting projects and increase the sustainability of visual learning initiatives.

The VLL has worked as an ambassador for visual learning across the higher education sector. Supported by a strong team of Student Interns, funded MA and PhD students the work of the VLL has been widely disseminated targeting academics and students. It has encouraged staff to break new ground and support them in their 'risk taking' in trying out and implementing new technologies and innovative ways of delivering their work to students. This has been formally acknowledged through academic partners being awarded the highly regarded University of Nottingham Lord Dearing Award for excellence in their teaching and learning activities. The VLL has also broken new ground by employing student interns to support staff and students in novel and exciting ways. One recent powerful example of the work of these VLL student interns can be seen on <http://www.youtube.com/watch?v=KThyfeV01X4>.

In this increasingly technological age it is important that universities remain at the forefront of technological innovation and development in all that they do. The work done by the VLL illustrates the commitment to this field by the University of Nottingham in several ways. The on-going research and development work of the VLL has for example been a key driver in educational development at the University of Nottingham since 2005. The VLL initiatives confirm the VLL as a key player in the field of technology enhanced visual learning in Higher Education.