

Centre for Excellence in Enquiry-Based Learning

# Interim Evaluation Report for HEFCE 2005 – 2007



# Centre for Excellence in Enquiry-Based Learning (CEEBL)

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Executive Summary .....	1
I. Summary of key CEEBL activities .....	3
II. Background to CEEBL.....	4
III. Introduction to CEEBL .....	4
IV. Rationale for major activities .....	6
V. Evaluation Purposes, Frameworks and Processes .....	6
VI. Reflections on the Experience of the Evaluation Process .....	7
VII. Summary of Key Findings from Local Evaluation .....	9
Introduction .....	9
CEEBL's Activities .....	10
i. Internal (Institutional).....	10
1. Establishing the Centre and Raising Awareness.....	10
2. Installing Suitable Facilities in Centre and Faculties.....	11
3. Major Projects and Small Projects .....	11
4. Extending and Enhancing EBL to Teaching across the University .....	12
5. Expand Capacity of Staff to Develop and Deliver EBL .....	13
6. Staff Development Seminars, Workshops and Masterclasses .....	14
7. Annual Symposia .....	14
8. Work with Students.....	14
9. Continuation Strategy .....	15
ii. External (National and International).....	15
1. Develop Networks and Partnerships .....	15
2. Contribution to Pedagogic Research through Conference Papers, Case-Studies, Publications .....	15
3. National and International Profile.....	16
4. National and International Conferences.....	17
5. Consultancies and Targeted Workshops.....	17
6. Evaluated CEEBL's National and International Impact.....	17
Rationale for CEEBL actions.....	17
VIII. Findings and Observations on Core Questions .....	18
The Process of Change and Development .....	18
Internal (Institutional) .....	20
Capital Investment .....	20
Teaching and Learning Activities Beyond the Immediate Area of Excellence .....	22
Reward and Recognition.....	23
Engaging the Wider Academic Community .....	25

Strengthening Institutional Standing.....	25
Learning and Teaching Strategies.....	26
External (National and International) .....	27
National and International Impact .....	27
Developing Relationships within the National HE Community.....	27
Pedagogic Research .....	29
IX.    Action Plan .....	30
References.....	31
Website References.....	32
Appendices.....	33
Appendix I            Summary of Changes to CEEBL’s initial bid.....	34
Appendix II           Engagement with Faculties and Schools .....	35
Appendix III          Summary of Usage of Hub Space.....	39
Appendix IV           Summary of Small Projects 2005-06.....	40
Appendix V            Extending EBL to Teaching across the University.....	42
Appendix VI           Summary of Workshops .....	43
Appendix VII          Masterclass.....	46
Appendix VIII        Summary of Papers and Conference Presentations .....	47
Journal Papers .....	47
CEEBL Staff Presentations.....	48
Project Holder Presentations.....	53
Appendix IX           Summary of Travel and Dissemination Grants.....	56
Travel (Staff Development) .....	56
Dissemination .....	56
Appendix X           Description of the CEEBL website.....	57
CEEBL Student Blog .....	57
Appendix XI           Summary of Consultations.....	58
Internal Consultations .....	58
External Consultations .....	61
Appendix XII          Events Invited to Present .....	64
Appendix XIII        Letter from JISC project Leader .....	67



## ***Executive Summary***

CEEBL has made good progress towards its planned targets (section I). It is significantly ahead in terms of Small Projects and Staff Development Workshops, both central to CEEBL's strategy.

The University of Manchester had extensive experience in Enquiry-Based Learning (EBL), which formed its case for excellence in the CETL bid (section II).

CEEBL's mission is to expand and enhance the practice, understanding and profile of EBL, institutionally, nationally and internationally, with the result that everyone engaged in CEEBL and EBL will become capable, committed, curious, collaborative, scholarly and life-long learners through enquiry. It operates through the four Faculties by a 'hub and spoke' model, directing its activities towards improving the students' learning experience (section III). CEEBL's activities are aligned with its mission (section IV).

CEEBL has adopted an open, devolved and 'fractal-like' model of supported self-evaluation, focusing evaluation at the level of activity (section V). CEEBL's Evaluation Strategy has been developed through a thorough process informed by literature and consultations (section VI).

Strategic changes have been made to CEEBL's operation, to strengthen and accelerate progress towards its broad aims. These include: developing internal expertise; maximising the impact on student learning; increasing the role of small projects; creating a variety of web-resources; and planning for the sustainability of CEEBL (section VII).

Focusing on CEEBL's activities within the institution (section VII.i): a centre has been established and staff awareness of CEEBL and EBL has been raised through its launch, website, marketing and engaging with staff training events. Technology-rich, flexible learning spaces have been built both in the centre and in each of the Faculties. The use of these spaces for EBL teaching and learning has been increasing. CEEBL has supported 27 small projects and initiated four major Faculty projects. These projects are central to CEEBL's aims of extending the number of students experiencing EBL and developing the ability of staff to develop and deliver EBL. To support staff developing these skills 33 workshops have been provided. These are now open to other staff internal and external to the institution. Practice and findings from the small projects have been disseminated through our annual symposia and case-studies publications. CEEBL works in partnership with students through its student intern programme. Students assist in the development of materials and the evaluation of projects. A continuation strategy is being developed.

Focusing on CEEBL's external activities (section VII.ii): CEEBL has developed networks and partnerships among CETLs (Learning through Enquiry Alliance), EBL practitioners (North West EBL Network) and students involved in CETLs (Student Network). CEEBL has contributed to pedagogic research through conference papers, case-studies and publications, authored by CEEBL staff and project holders. These activities have also developed CEEBL's national and international profile, which has been further developed through our website, hosting a national conference and supporting the sector by providing consultancies and targeted workshops for 20 institutions. An international adviser and external evaluator have been consulted on how to achieve and evaluate our national and internal impact.

In our reflection on CEEBL's activities we have addressed HEFCE's core questions (section VIII). We have begun to address the key questions: what is Enquiry-Based Learning and how can the principles of EBL be put into effect? CEEBL's role is one of *facilitation* in the **process of change**, whilst recognising that we are in an environment of change through the merger of two Universities, the re-structuring of pay and grading, and the Research Assessment Exercise. CEEBL has been instrumental in supporting teaching and learning innovations against this background.

Focusing on CEEBL's internal activities:

The **capital investment** has been used to build technology-rich, flexible learning spaces in the centre and the Faculties. Devolving the support and maintenance for the technological aspects of the learning spaces has proved to be a challenge. The monitoring and evaluation of the usage of these spaces are concerns for the future.

A major aim of CEEBL is to **extend the practice** of EBL. The generic nature of EBL also allows extension to **wider teaching and learning activities**, such as Personal and Academic Development Plans (PADP) and widening participation.

**Reward and recognition** for engagement with EBL can be seen through: staff involved in preparation of the bid are now integral to CEEBL; staff engaged in project work have been appointed to roles within CEEBL; staff managing Faculty projects have received increments; two Faculty Coordinators have been promoted; two project holders have received University teaching awards; students' careers have been assisted by working for CEEBL.

The generic nature of CEEBL has allowed it to support a variety of projects from across the disciplines, engaging with staff from a range of backgrounds. Opening our workshops, masterclasses and symposia to participants outside the projects and institution has further **widened our engagement with the academic community**.

CEEBL's engagement with initiatives, such as contributions to development and research proposals, contributes to **strengthening institutional standing**.

CEEBL aligns itself with the new University's mission statement (Manchester 2015). The influence of CEEBL's activities, through facilitating an increase in the quantity and quality of EBL practised in the institution, on the emerging **learning and teaching strategies** is a long-term aim, which can only be assessed at a later date.

Focusing on CEEBL's external activities:

CEEBL has engaged with the **national and international** communities through conferences, consultancies and collaborations. The **impact** of these will be monitored.

Through the networks and partnerships described above, CEEBL has **developed relations** with the wider community. Already strong relationships, through central and project staff, with the Higher Education Academy and its Subject Centres have been developed. This is evidenced partly by the increased number of Subject Centre workshops hosted by CEEBL.

CEEBL contributes to **pedagogic research** through the dissemination of EBL case-studies and the developing research of the Research Associate and project holders.

As a result of the foregoing activities and reflections, CEEBL's action plan for the period 2007-10 will focus on (section IX): reviewing the Key Performance Indicators; evaluating CEEBL's activities for the summative evaluation report; targeting under-represented Schools; and developing a research and publication strategy.

## I. Summary of key CEEBL activities

Table 1 summarises CEEBL's key activities for the period April 2005 to July 2007, set against the 2007 interim and 2010 summative targets.

<b>Internal</b>			
	<b>Current Status</b>	<b>2007 target</b>	<b>2010 target</b>
1. Hub Space	Completed	Completed	
2. Faculty Spaces	Completed	Completed	
3. Website	Established	Established	
4. EBL Resource and Research Bank	Developing		Developed
5. Small Projects (1 year, <£3,000)	14 Completed 13 Started	3 Completed	13 Completed
6. Staff Development Workshops	33	10	25
7. Dissemination Grants	5	4	10
8. Travel Grants	2	4	10
9. Faculty Projects (3 years, £60,000)	4 Begun	3 Begun	4 Completed
10. Sabbatical Officers	2	2	5
11. Student Interns	6 (2 continued)	8	20
12. Student EBL Guides	1 (Mary W) 2 in writing		
13. Extended EBL to Students	1,615		5,000
14. Provide Internal Consultancies	32		
15. Annual Symposia	2		4
16. Staff Promotion			10
17. Continuation Strategy	Developing		Implemented

<b>External</b>			
	<b>Current Status</b>	<b>2007 target</b>	<b>2010 target</b>
1. EBL Network	Integrated	Integrate with National Network	Embedded and Developed
2. CETL Alliance	Formed	Formed	
3. Joint Research Projects		2 Agreed	8 Complete
4. HEA Subject Centre Workshop	1	1	7
5. Research and Evaluation into EBL Formats		Established	Complete
6. National Conference	1		1
7. Research Papers	4		10
8. Conference Papers	23		20
9. Case Studies	13		20
10. Consultancies	20 Institutions <sup>1</sup>		21 Institutions
11. Evaluated with external evaluator and international consultant	Begun		Completed

**Table 1: Summary of key CEEBL activities: April 2005 - July 2007**

<sup>1</sup> HEA Subject Centres are counted as individual institutions

## **II. Background to CEEBL**

The University of Manchester had extensive experience in Enquiry-Based Learning (EBL), particularly in the form of Problem-Based Learning (PBL) in its Medical and Nursing programmes, the “Manchester Method” of live project case studies in the Manchester Business School MBAs, and different forms of field work in Geography. In addition to this there have been a number of innovative development projects. Four National Teaching Fellows were involved in writing the CEEBL bid. One National Teaching Fellow had been central to the embedding of EBL within Medicine and another central to the development of EBL in English Literature. For more detail of the case for excellence see the original CETL Bid (University of Manchester 2005).

## **III. Introduction to CEEBL**

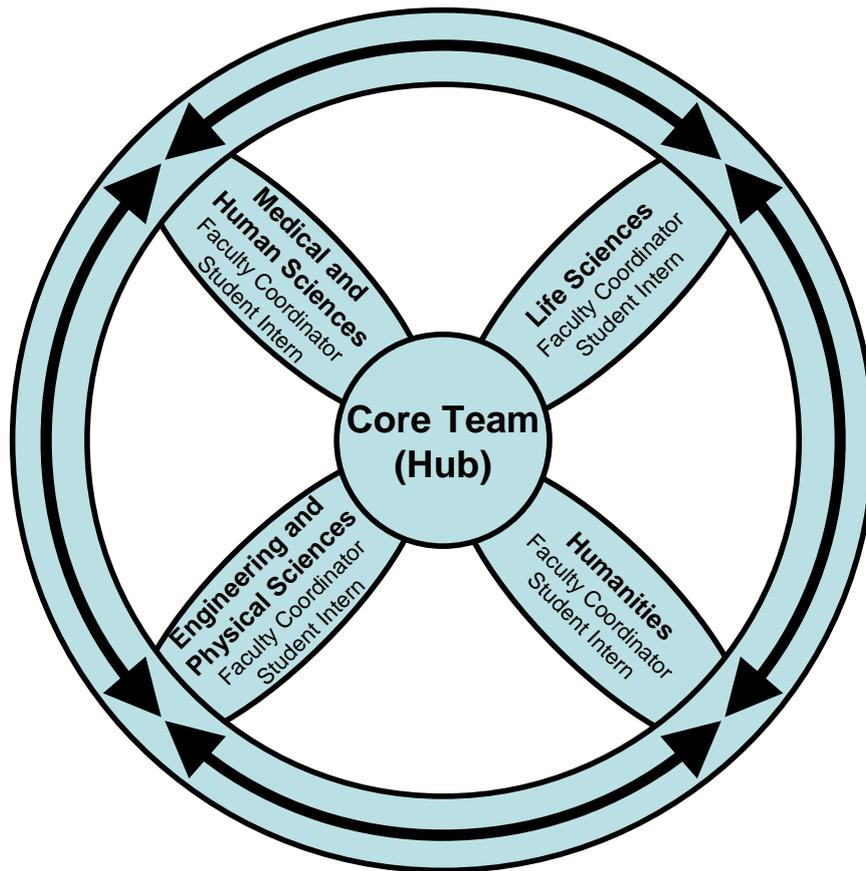
EBL is an open, flexible, social and supported form of learning that values, stimulates and nurtures people’s natural capacity for enquiry.

Our mission is to expand and enhance the practice, understanding and profile of EBL, institutionally, nationally and internationally, with the result that everyone engaged in CEEBL and EBL will become capable, committed, curious, collaborative, scholarly and life-long learners through enquiry.

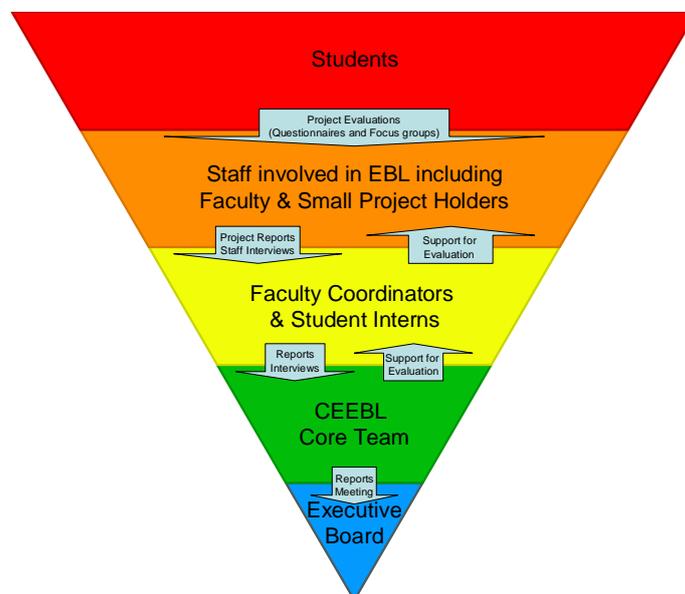
CEEBL is structured using a ‘hub and spoke’ model (Figure 1) – a central ‘hub’ of expertise supporting local developments which are devolved through the ‘spokes’, one within each of the four Faculties:

- The Faculty of Medicine and Human Sciences  
(5 Schools, 9,300 Students);
- The Faculty of Engineering and Physical Sciences  
(9 Schools, 8,200 Students);
- The Faculty of Life Sciences  
(Single School, 2,100 Students);
- The Faculty of Humanities  
(7 Schools, 15,700 Students).

The support that CEEBL provides can be modelled as an inverted pyramid (Figure 2), with the students at the top level. It is students’ experience and learning on which we ultimately intend to have the most positive impact. Supporting the students’ learning are members of staff developing the curriculum and facilitating their learning. Staff involved with EBL may be supported by CEEBL through formal means, such as the Faculty projects and small projects or through more informal contact, such as consultancies and workshops. Supporting these members of staff are the Student Interns and Faculty Coordinators, who are supported in turn by the core CEEBL team. Interactions between these levels are intended to be open, rich and flexible, responding to interests, practicalities and needs.



**Figure 1: Hub and Spoke Model of CEEBL**



**Figure 2: Inverted Pyramid Model of CEEBL Support**

#### **IV. Rationale for major activities**

The rationale behind how CEEBL's major activities will achieve its mission can be summarised:

- Projects: *expand* and *enhance* the *practice* and *understanding* of Enquiry-Based Learning *institutionally*;
- Internal seminars and workshops: *expand* and *enhance* the *understanding* of Enquiry-Based Learning *institutionally* and *nationally*;
- Internal symposia and conferences: *enhance* the *understanding* and *profile* of Enquiry-Based Learning *institutionally* and *nationally*;
- Secondment and internship: *expand* and *enhance* the *practice* and *understanding* of Enquiry-Based Learning *institutionally*;
- External activities (keynote lectures, presentations, conference papers, publications, case study publications, seminars and workshops): *enhance* the *practice*, *understanding* and *profile* of Enquiry-Based Learning *nationally* and *internationally*;
- Website: *expands* and *enhances* the *understanding* and *profile* of Enquiry-Based Learning *institutionally*, *nationally* and *internationally*.

#### **V. Evaluation Purposes, Frameworks and Processes**

Over the 2005-06 period CEEBL has been evolving its Evaluation Strategy (web ref. [Evaluation Strategy](#)). The Evaluation Strategy is now accessible to everyone associated with CEEBL, particularly project holders as a first line of support in their evaluation of their activities.

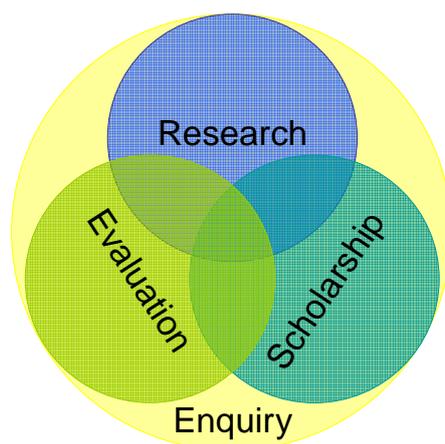
Chelimsky and Shadish (1997) identify three purposes for evaluation:

1. **Accountability**, monitoring whether the process achieves its intended outcomes;
2. **Development**, providing information to help improve the process;
3. **Knowledge**, to obtain a deeper understanding about the process and its participants.

To this a fourth purpose may be added (Baume 2006):

4. **Capacity building**, providing those engaged in the process of evaluation with the ability to evaluate, in order to support their own processes of enquiry and critical thinking.

Evaluation is closely aligned with research and scholarship, all three processes being driven by the process of enquiry (Figure 3). Enquiry encompasses all three of these activities. The materials generated for evaluation can be used for research. Both should be informed by and inform scholarship (Moore 2006, developed from Levy *et al.* 2006).



**Figure 3: Venn diagram linking Evaluation, Research and Scholarship to Enquiry**  
(after Levy *et al.* 2006)

We have adopted an open, devolved and ‘fractal-like’ model of supported self-evaluation (web ref. [Evaluation Strategy](#)). This focuses the responsibility of evaluation at the level of the activity. Following this model, the emphasis of the evaluation, with respect to CEEBL’s core aims, and the nature of the sources of data and evaluation tools used are devolved to the academic and professional judgement of the individuals implementing the activity. This process is supported by the CEEBL team.

## ***VI. Reflections on the Experience of the Evaluation Process***

The development of CEEBL’s Evaluation Strategy has been a thorough and consequently lengthy process. It has been informed by: the literature on evaluation and educational evaluation; the Evaluation Strategies of other cognate CETLs, namely CILASS, SCEPTRe and AURS; and consultations with independent evaluation and educational consultants. It also reflects the experience of the functioning of CEEBL over its first year of operations. An important component has been to ensure that the principles of EBL underpin CEEBL’s evolving Evaluation Strategy.

This process has taken the following steps:

- The rationale for the evaluation approach was described in the original bid (University of Manchester 2005). This indicates some of the critical indicators and outcomes and methods used.
- A strategic decision for CEEBL was to begin recruitment and developmental activities as soon as possible, the principal motivations being to begin to make an impact from day one and to establish a profile. Some monitoring and evaluation systems were already built into these early projects. These systems evolved and were refined with time. A disadvantage of this approach may be that not all projects might have full evaluation methods in place. However, the converse advantage is that these projects provide a wealth of operational experience which may contribute to wider strategy and guidance.
- Building on these components and the emerging Evaluation Strategies of other CETLs, our educational consultant was commissioned to develop some

frameworks for evaluation, documented in *Towards an Evaluation Strategy* (Moore 2006).

- An external evaluator was appointed to provide external and independent scrutiny of CEEBL's strategies, procedures and activities, informing the evaluation with an external perspective, cognisant of other CETLs and educational development initiatives. One of his roles was to provide specific advice on the evolving Evaluation Strategy. A model of the role of the external evaluator, appropriate to the context of higher education, is that of 'external examiner'.
- In addition to the external evaluator, an International Adviser provides an international perspective on CEEBL's evaluation process. One of her roles is to provide advice on how to maximise international impact; another is to provide comment on how CEEBL's activities are perceived from an international perspective.
- One of the evaluation activities initiated by the external evaluator has been an outcomes audit. This led CEEBL to focus on the 110 different statements of aims, objectives, outputs, deliverables and key performance indicators described in the initial bid and subsequent Strategic Plan. One of CEEBL's principal responses to this was to map out how these statements interlinked with each other and related back to CEEBL's core mission (Powell 2006a). A second strand to this process has been to clarify statements and identify changes made between the Bid and the Strategic Plan (Powell 2006b). This mapping and clarification are reflected in the structure of the following sections.
- In order to synthesise this wide range of contributions to the evaluation process, a revised CEEBL Evaluation Strategy (web ref. [Evaluation Strategy](#)) was developed by the Research Associate. Its aim is to provide all the constituencies of CEEBL with a clear and concise statement of the CEEBL evaluation strategy, followed by accessible but concise advice about the implementation of the evaluation strategy.
- In the light of changing advice from HEFCE concerning the size and structure of the Self-Evaluation report, the large quantity of rich, qualitative data, collected through interviews and narrative reports for Part B will now feed into CEEBL's internal review of operations and pedagogic research outputs.

One of the emerging lessons is the heterogeneous nature of CEEBL's activities and the projects that it supports, involving to a greater or lesser extent all four Faculties and including University divisions not immediately associated with teaching. Following the principles of EBL, CEEBL's role is to enable and empower the members of staff to develop and evaluate EBL in ways that are academically appropriate for their disciplines and contexts. This gives rise to the open Evaluation Strategy outlined.

Since the Evaluation Strategy in its current form is relatively recent, the evaluation of the strategy itself is a task for the future, as project holders and others gain experience of using it. This evaluation will be built into the general evaluation of CEEBL support for project holders.

## VII. Summary of Key Findings from Local Evaluation

### Introduction

The structure as modelled in Figure 2 reflects the priorities for CEEBL's operations and internal impact.

Our principle is that the *student experience* is the touchstone. Students' direct interface is with the *academic and support staff* on their programme who are fronting the projects and delivering the teaching and learning. On a practical level, the University of Manchester is a very large (3,000 academic staff and 35,000 students), diverse and research-intensive institution. Consequently, decisions about the nature and effective delivery of courses must ultimately reside with the academic staff, for both practical reasons and reasons of principle. CEEBL's function is to *facilitate* their EBL work by means of support, advice and encouragement. That support ranges from individual, practical and hands-on assistance (for example, with the application and use of Learning Technology for Enquiry-Based Learning) to provision of the broader, conceptual and academic support that may be given through reference to pedagogic research, presentations and seminars, and materials available on the CEEBL website. It is by these means that CEEBL aims to take responsibility for pedagogic leadership in a collaborative and enabling manner.

The model of CEEBL as *facilitator* is consistent with the procedures of Enquiry-Based Learning itself. In Enquiry-Based Learning, the role of tutor changes from that of conventional transmitter of knowledge to that of guide to students' engagement with their own learning and attainment of knowledge. The role of facilitator remains consistent with being recognized, and acting, as an expert in the field. We consider it essential for intellectual and pedagogic coherence that the CEEBL operational model should reflect the nature of Enquiry-Based Learning itself. The style of learning and the style of pedagogic support should be aligned.

It follows that, just as Enquiry-Based Learning renders students responsible for their own learning as a means of empowering them and releasing their creativity, for the same reasons the ownership of learning should be located at the highest possible level of Figure 2's inverted pyramid. Therefore, evaluation of student learning should be principally carried out at the level of the interface between academic staff and student learners. CEEBL's facilitation role lies in its provision of support and guidance for this process. Our account of the development of CEEBL's Evaluation Strategy (see sections V & VI, above) is designed to describe how CEEBL came to adopt a method which we hope is both robust and sensitive. The Evaluation Strategy aims to provide individual project holders and other academic and support staff with appropriate guidance towards their autonomous adoption and implementation of evaluation strategies that are fit for their purposes, within the context of their disciplines, courses and student population.

In order to strengthen and accelerate progress towards the achievement of the broad aims of CEEBL, a number of key decisions were taken during the first year of operation (2005-06). These adjust some of the initial aims as set out in the bid document. These changes are reflected in the CEEBL Strategic Plan, and are summarised in Appendix I. The principal aims of these changes are:

1. To put emphasis on the development of internal expertise, at the expense of some external consultation, in order to build capacity and to contribute to sustainability.
2. To place emphasis, wherever possible, on making the maximum impact on student learning. A substantial increase to the number of projects funded will be made, at the expense of external consultation and staff summer schools. However, a programme of masterclasses has been initiated instead to serve the needs of the wider community.
3. Increasing the role of small projects in the operation of the CEEBL. It was initially conceived that 13 would run over the lifetime of the CEEBL. In fact, 14 have been run in the first year and another 13 in the second year. Similar numbers are anticipated in subsequent years. These projects are instrumental in extending the provision of EBL, expanding the capacity of EBL developers and facilitators and building a community of EBL practice.
4. To create a wide variety of resources, principally available from our website, servicing a range of audiences, including students engaged with EBL and staff facilitating and developing EBL, both internal and external to the institution. This replaced our intention to create four e-books.
5. To plan for sustainability of CEEBL post 2010, through (1) and (2) above; development of marketing strategy; re-profiling of personnel to develop expertise and knowledge of core staff; and provide a financially more economical model for continuation.

## **CEEBL's Activities**

The following section describes CEEBL's activities in the 2005 to 2007 period. It is divided into (i) internal, institutional activities and (ii) external, national and international activities. The headings reflect the aims of CEEBL as outlined in the Strategic Plan. A summary of CEEBL's activities measured against the Key Performance Indicators (KPIs), as defined in the Strategic Plan, can be found in Table 1, Section I. The level of interaction of CEEBL within the Faculties and Schools is summarised in Appendix II.

### **i. Internal (Institutional)**

#### **1. Establishing the Centre and Raising Awareness**

The Director, core team (Associate Director, Research Associate, Learning Technologist, Administrator, and Administrative Assistant: web ref. [Centre Staff](#)) and Faculty Coordinators have been appointed. In addition, we have a team of five internal specialist consultants experienced in different aspects of EBL (areas of consultant expertise are: staff development; students as partners; business; assessment; and research and development). The Centre was launched by the President of the University of Manchester on 20<sup>th</sup> October 2005. The CEEBL website (web ref. [Home Page](#)) and marketing leaflets are principal methods of raising awareness internally and externally. CEEBL's current mailing list of 121 internal and 105 external people indicates the number of people with whom CEEBL is in regular contact. In addition, CEEBL has had a high presence at and made significant contribution to many internal events, such as courses for new lecturers and Faculty

teaching and learning programmes. Faculty Coordinators and Student Interns provide direct contact with Faculties and Schools.

## **2. Installing Suitable Facilities in Centre and Faculties**

The structure of CEEBL follows a hub and spoke model, consisting of a central hub and four spokes, one in each of the Faculties. The hub consists of: a flexible seminar space, which can be divided into up to three smaller rooms (web ref. [Facilities](#)); a social learning space; a resource area; and administrative offices. The Faculty facilities consist of flexible seminar rooms and resource areas. Exact forms and specifications of these facilities vary between Faculties, according to the availability of spaces and the disciplinary needs. Three of the four Faculty spokes have an access grid node, are wireless networked, are flexibly partitioned and have flexible seating.

The hub is used principally for formal and informal teaching and learning events for students. In addition it is used for internal and external staff development events. The usage of this space is gradually increasing, especially for internal teaching and learning sessions (Appendix III).

The University made a successful bid to HEFCE for additional capital funds (£350,000). This enabled CEEBL to expand and improve the planned spaces in the Faculties, which were completed over the 2006 summer vacation, and are now being used for teaching and learning. The usage of these spaces will be monitored in the following sessions.

## **3. Major Projects and Small Projects**

Major projects are synonymous with Faculty projects. Major has a common definition, that is, a project of around 3 years in duration and a funding commitment of approximately £20k per year. Other dimensions of a 'major' project are that they apply across a whole programme and are at least a module in size. Another important criterion for the major projects is that they have potential for expansion within the programmes and for transferability to other programmes within the Faculty and beyond. Other dimensions of 'major' are determined locally and approved centrally on the merits of each project. These dimensions may include the number of students involved, the proportion of the programme involved, the size and complexity of the activity, the extensibility and transferability of the activity, and the degree of innovation.

The Faculty projects consist of:

- The Faculty of Medical and Human Sciences: the School of Dentistry is converting its 5-year programme to a completely EBL format, beginning with years 1 and 4 in the first year of the project.
- The Faculty of Engineering and Physical Sciences: the School of Mechanical, Aerospace, and Civil Engineering is developing a series of 15 integrated short EBL workshops for undergraduate and industry professional development, designed to address the shortfalls in design education within the built environment. This project is also supported by the Construction Industry Training Board (CITB) and will feed into their programmes for Continued Professional Development.

- The Faculty of Life Sciences: a number of final year project students are developing online enquiry-driven resources, using an EBL-approach to resource, design and develop them. These resources will support two second-year laboratory units and will incorporate data analysis exercises.
- The Faculty of Humanities: Religions and Theology in the School of Arts, Histories and Cultures is developing an innovative Professional Doctorate in Practical Theology through action research, reflection and EBL.

Three of the major Faculty projects were planned to start in 2006-07. In the event, all four began in this period, and will be completed in 2009.

Small projects are projects of 1-year duration and a funding commitment of up to £3k. They are usually at the scale of a single module/unit.

It was initially envisaged that we would run at least 13 small projects during the life of the CEEBL. In fact 27 will have been completed in the first 2 years (Appendix IV, web ref. [Small Projects](#)). This was in response to great deal of demand and interest in running small projects (27 bids in 2005-06, 40 bids in 2006-07 and 25 bids in 2007-08). We intend to maintain, as far as possible, this level of small project activity throughout the project. The 2005-06 small projects have produced case studies, published in a bound volume with an ISBN, and are also available on the CEEBL website (web ref. [Case Studies](#), including a video case study of one of the projects). They have also produced conference papers and journal articles; see CEEBL's external activities, section 2, below.

#### **4. Extending and Enhancing EBL to Teaching across the University**

The baseline is approximately 5,000 students experiencing various levels of EBL in their programmes (principally Medicine, MBA Business School and Nursing students).

The Faculty projects, which began in 2006-07, will have a major impact on extending EBL practice:

- The Faculty of Medical and Human Sciences: the School of Dentistry project will by its completion extend EBL to all 450 of its students. In the first year of its activity it will extend EBL teaching to its years 1 and 4 programmes, affecting a total of approximately 180 students.
- The Faculty of Engineering and Physical Sciences: the School of Mechanical, Aerospace and Civil Engineering project. At this stage the workshops are being developed; the first one having recently being piloted. In future they will be rolled out across the School and related Schools in the Faculty, by incorporating the majority of them into the undergraduate design programme and making the workshops available on WebCT for Faculty use.
- The Faculty of Life Sciences: its project will impact on years 2 and 3, about 900 students in total. It is currently engaging 6 year-3 students to develop materials to be piloted on 60 year-2 students. In addition 36 year-3 students are piloting some tutorials that use video clips as stimuli for EBL.
- The Faculty of Humanities: the School of Religions and Theology's Professional Doctorate in Theology has recruited 7 students in the 2006-07

period. They anticipate building up recruitment to this programme to 10, 11 and 12 students in subsequent years. The attraction of this project is its innovation and potential for transferability, not student numbers.

As a result of the 2005-06 small project activity alone, approximately a further 500 students across all four Faculties have had EBL piloted in their programmes. The majority of the modules/units taken by these students have become embedded. In 2006-07, a similar number of students are in the process of having EBL courses piloted through the small projects (see Appendix V for a summary of student numbers).

Non-funded EBL initiatives that have been supported by CEEBL expertise have extended EBL to a further 345 students from two of the reported activities.

In addition to extending EBL, the 2005-06 small projects have enhanced the EBL experience of approximately 150 students; a similar number is expected for the 2006-07 small projects.

## **5. Expand Capacity of Staff to Develop and Deliver EBL**

The major projects, as well as being managed by teams of key members of staff within the Faculties, will affect significant numbers of staff as they influence whole years and programmes.

- The Faculty of Medical and Human Sciences: the School of Dentistry project is being led by a team of 12 staff including the Faculty Coordinator. Planning preparation and delivery of this course will affect all members of teaching staff in the School (40 academic staff), and also practising dentists who are used for teaching.
- The Faculty of Engineering and Physical Sciences: the School of Mechanical, Aerospace, and Civil Engineering project is led by 3 members of staff and will draw in additional members of staff as the focus of the workshops changes.
- The Faculty of Life Sciences: the School of Life Sciences project is led by a team of 14 staff, who are directly involved in the modules/units involved and two team leaders.
- The Faculty of Humanities: the School of Religions and Theology project involves 2 staff in the development and implementation of the Professional Doctorate and a further 4 in its delivery as co-supervisors, all drawn from the University's collaborative partners in validation.

As a result of the 2005-06 small projects, 26 members of staff were engaged in developing, implementing and evaluating EBL projects as well as attending supporting workshops. A further 61 members of staff were engaged in facilitation roles. We would anticipate similar numbers in 2006-07.

In addition, CEEBL offers funds to support staff attendance at external conferences and workshops. Of these 2 have been taken up over the period (Appendix IX).

As well as working with project holders, CEEBL supports and develops members of staff engaged in EBL activities in Schools that are not participating in funded projects. For example, CEEBL provides feedback on bids that it was not able to fund and offers support to EBL activities within the wider University.

An important strand of staff development is reaching new and established members of lecturing staff. For example, the new lecturers programme in Humanities involved 45 members of staff. Attendees from previous years have become small project holders.

The five Internal Consultants and four Faculty Coordinators are instrumental in supporting the development and activities of the project staff, and in the process their own roles are being developed.

The construction of the core team has involved a great deal of learning and development as the six members of staff have grown to fulfil their new roles.

## **6. Staff Development Seminars, Workshops and Masterclasses**

Over the years 2005-06 and 2006-07 CEEBL has run 33 workshops (including seminars and masterclasses), attended by an average of 23 members of staff. These workshops were led by a mixture of internal and external experts (Appendix VI).

From 2006-07, these workshops have also been made open to other staff within the University and to colleagues from outside the University, in order to extend and maximise impact.

A developing strand of activities is the masterclasses, again for internal and external colleagues, which are aimed at more experienced EBL practitioners to explore more deeply issues around EBL. The first in this series was “Reflection: A critical and transferable thinking skill” (Appendix VII, web ref. [masterclasses](#)).

Each January, CEEBL hosts a seminar for the project holders to share their interim findings with each other and supportive colleagues.

## **7. Annual Symposia**

The first CEEBL annual symposium took place in June 2006. The annual symposia provide a forum for the project holders to describe their projects and present their outcomes to a large audience (in 2006, 81 people), principally internal (60) but with a significant number of external visitors (21), some international (2 out of the 21). The second CEEBL symposium took place in June 2007. This attracted 50 attendees, 6 of whom were external visitors. There were however a number of cancellations (6) due to the inclement weather and a clash with a Higher Education Academy event. The higher numbers in 2006 reflect the additional draw of the conference that CEEBL had hosted the day before (see section 4, external activities).

## **8. Work with Students**

‘Students as Partners’ is a principal part of the University’s philosophy, which CEEBL has positively embraced. This means working with students in a spirit of collaborative enquiry and learning.

The mechanism used to achieve this is through employment of a full-time Student Sabbatical Officer, appointed annually, and 4 student interns per year, one based in each of the Faculties. The ‘spirit of enquiry’ is evident in the degree of autonomy that the students have in defining their own roles and pursuing the aims of CEEBL. This is particularly evident in their personal and collaborative writing projects, developing student resources with an authentic student voice. The first major outcome of these writing projects is the *EBL Guide for Students* authored by Mary Whowell, last year’s Humanities Student Intern (web ref. [EBL Guide for Students](#)).

The Student Interns fulfil a number of crucial roles in CEEBL. Working with the Faculty Coordinators, they are CEEBL's ambassadors in the Faculties, making links with staff and students and assisting in CEEBL's activities, such as the Faculty projects and small projects. The Medical and Human Sciences Student Intern was integral to one of the 2005-06 small projects and consequently co-authored the resulting published Case Study. The Student Interns also ensure that the student voice is heard both in design of EBL activities, by providing a student perspective, and in evaluation of EBL activities, by facilitating focus groups. In addition, Student Interns have facilitated workshops of staff and students, introducing them to EBL. A notable example of this was the *Dragons' Den* workshop which was very well received at a national conference for the Centre for Recording Achievement. As well as being advocates of CEEBL in the Faculties they have been ambassadors for CEEBL, presenting their activities at external workshops and conferences. Currently, the student interns are developing a guide for facilitators, '*Facilitating EBL: A Student's Perspective*' and the Humanities interns are developing '*A Postgraduate Facilitator's Guide to EBL*'.

## **9. Continuation Strategy**

The building-up of internal capacity, within the core team and within the academic community broadly, is a key element of the continuation strategy. Other elements are the development of the marketing strategy, re-profiling of the personnel and the development of a financially more economical model for continuation. This is a strategic priority for the 2007 to 2010 period. Please see the Strategic Plan (web ref. [Strategic Plan](#)).

### **ii. External (National and International)**

#### **1. Develop Networks and Partnerships**

CEEBL is principally involved in three national networks:

- a. LTEA (Learning Through Enquiry Alliance): a network of 6 CETLs working in cognate areas. The Alliance presents an annual conference, rotating between CETLs. CEEBL hosted the 2006 LTEA Conference and will contribute significantly to future conferences.
- b. A practitioner network consisting of project holders and enthusiastic staff at various levels of engagement with EBL, which was developed from the North West EBL Network. These have been integrated into National EBL and PBL networks and CEEBL's mailing list.
- c. CEEBL's Student Sabbatical Officer was instrumental in the development of the Higher Education Academy National Student Network, linking students involved in the various CETLs. This was launched on 12<sup>th</sup> February 2007.

#### **2. Contribution to Pedagogic Research through Conference Papers, Case-Studies, Publications**

This is a major priority for the period 2007 to 2010. This process has begun with the recruitment of the Research Associate and focuses on applied research following evaluation research and action research models. CEEBL has presented 16 conference papers (9 national, 7 international). In addition, project holders have presented 7

papers (5 national, 2 international) and published 4 journal papers (Appendix VIII). A number of project holders' dissemination activities (5) have been supported by CEEBL (Appendix IX).

As part of the Research Associate's activities, he leads CEEBL's contribution to other University projects. An example of this is the development of a literature review for a National Teaching Fellowship Project: "Peer Review of Problem-Based Learning", which got through to the second stage of its funding application, but unfortunately was not ultimately successful.

### **3. National and International Profile**

The CEEBL website provides an immediately accessible resource for the national and international educational community.

The website includes (Appendix X, web ref. [Home Page](#)):

- a. A concise introduction to CEEBL – our aims, objectives and structure, including the core team, Faculty Coordinators and Student Interns.
- b. Key documents, such as the Strategic Plan and the Evaluation Strategy.
- c. A summary of the current Small Projects and the Case Studies from previous years' projects. The invitation for bids for small projects is also available.
- d. An introduction to EBL, supplemented by a growing 'Resources' section, combining CEEBL-produced resources, 'Essays and Studies in EBL' and links to external resources.
- e. An 'Events' page detailing up-coming CEEBL events, a list of external events with RSS feeds. An archive of past key CEEBL events, containing presentations and other supplementary materials.
- f. A Student Blog to enable our Student Interns to keep each other and everyone else up-to-date with their activities.

CEEBL's national activities have included: hosting the LTEA 2006 Conference; providing external consultancies and targeted workshops (Appendix XI), presenting conference papers (Appendix VIII). CEEBL Staff have been invited to present at number of events (29, see Appendix XII).

CEEBL's international activities have included organising and running:

- An international and interdisciplinary PBL session, over two days, involving students from the US (Samford) and UK (Manchester), held in London.
- TSEE (Teaching Science and Engineering in English) Workshops, describing EBL to visiting Chinese academics.
- A PBL workshop for Oxford Brookes, OCSLD (Oxford Centre for Staff and Learning Development) for visiting Latvian Lecturers.
- EBL workshops at University College, Cork, Ireland.
- EBL workshops and formal presentations about the implementation of EBL in Humanities and Life Sciences, at the Teaching and Learning Conference, University of Teramo (Dall'insegnamento All'apprendimento: esperienze a confronto) in Italy.

- A consultancy in EBL for Dublin City University.

CEEBL staff have also presented conference papers in the following locations: Lima, Peru; Malmo and Stockholm, Sweden; Maynooth, Ireland; Tampere, Finland and Teramo, Italy.

CEEBL's anticipated international activities include delivering a keynote at the International PBL Conference in Mexico, 2008.

#### **4. National and International Conferences**

One national conference was anticipated during the period 2005-10. This was run in conjunction with the LTEA in order to maximise impact. Consequently, there will be annual LTEA conferences, with CEEBL making a significant contribution to each.

CEEBL hosted the 2006 LTEA conference, which consisted of 4 workshops and 11 paper presentations run in parallel sessions, attended by 91 delegates, 32 internal, 56 national and 3 international.

It is anticipated that the LTEA conferences will become increasingly international with respect to attendance and contribution. Thus the 2007 LTEA conference had an international Keynote speaker. We see this development as incorporating CEEBL's anticipated international conference and as embedding a stronger collegiate and collaborative approach.

#### **5. Consultancies and Targeted Workshops**

CEEBL has to date been involved in 32 internal and 27 external consultancies to 20 institutions, 5 of which were international (Appendix XI). Some of these have been in the form of traditional consultancies, that is, a meeting or a series of meetings with a handful of key members of staff (24 internal and 17 external consultancies). Others have been in the form of targeted workshops that are designed to facilitate a larger number staff to think through issues associated with their particular institution or discipline (5 internal and 10 external). A further form of consultancy has been facilitating sessions such as focus groups (3 internal).

#### **6. Evaluated CEEBL's National and International Impact**

We have consulted an educational consultant, a national evaluator and an international adviser on how CEEBL's impact can be achieved and evaluated. The national evaluator and international adviser will also provide independent statements on the agenda, operations and impact of CEEBL from national and international perspectives. From these discussions presentations at international conferences and publications in significant peer-review publications have been designated as vital ingredients to national and international impact.

#### **Rationale for CEEBL actions**

The activities described above reflect CEEBL's methodology for the implementation of its broad aims. The rationale for this methodology may be summarized as meeting the following needs. [Square brackets provide cross-reference to the account of CEEBL activities.]

- To have the ‘hub’ and its core staff up and running as early as possible in order to have maximum impact during the first and second years of CEEBL’s existence (2005-7) [Internal, 1, 2, 3, 4]
- To establish a significant presence, in terms of both learning spaces and staff (Faculty Co-ordinators, Student Interns), on the ground at Faculty level. This is crucial in an institution as large as the University of Manchester, and is consistent with the principle of devolution to Faculties adopted by the administration of the University. [Internal, 2, 3, 4]
- To ensure a diversity of projects across all Faculties (and other appropriate agencies, such as Widening Participation) of the University of Manchester [Internal, 1, 2, 3, 4]
- To introduce the practice of Enquiry-Based Learning to a wide range of the academic and support staff of the University of Manchester, and to enhance the experience of Enquiry-Based Learning for existing practitioners among the academic and support staff of the University of Manchester. [Internal, 5, 6]
- To demonstrate to as wide a section of the University of Manchester as possible the value, relevance and efficacy of Enquiry-Based Learning as a teaching and learning method and philosophy. [Internal, 1, 6, 7]
- To establish CEEBL as a nationally and internationally recognized Centre and resource for demonstrating the value, relevance and efficacy of Enquiry-Based Learning as a teaching and learning method and philosophy to as wide an external audience as possible. [Internal, 6, 7; External, 1, 2, 3, 4, 5, 6]
- To embed and embody the key principle that the aim of teaching is student learning, and to do so in a way that is modelled on Enquiry-Based Learning processes. [Internal, 8; External, 1]
- To maximize the effectiveness of the movement for Enquiry-Based Learning nationally and to operate in a collaborative manner consistent with Enquiry-Based Learning principles. [External, 1, 4]
- To enhance the *understanding* of Enquiry-Based Learning by actively contributing to research and dissemination (through the development of the CEEBL website as a major resource; conference papers; seminars and workshops; case-studies and other publications), and by facilitating the expertise of a wide range of University of Manchester academic and support staff in order for them to engage in similar research and dissemination activities. [Internal, 4, 5, 6; External, 2, 3, 4]

### ***VIII. Findings and Observations on Core Questions***

This section aims to draw out a number of central issues from the **Summary of Key Findings from Local Evaluation** (see page 9, above). It will therefore refer back to some of the points made and evidence cited in that section. It will broadly follow the structure of the **CEEBL’s Activities** sub-section (see page 10, above), that is to consider first internal (institutional) matters, then external (national/international) matters. In addition, we wish to bring out the *student experience* as a continuing strand, consistent with CEEBL’s commitment to having ‘Students as Partners’ as an integral element of its philosophy and structure and to the CEEBL structural model (see Figure 2, page 5, above).

### **The Process of Change and Development**

CEEBL is committed to the proposition that EBL is the most natural, creative and enduring method of learning. All our activities are ultimately motivated by, and at the

service of, this essential principle. A key question for CEEBL's own enquiry is: "What exactly *is* Enquiry-Based Learning?"

CEEBL was set up on the basis of: (i) the substantial and successful implementation of Problem-Based Learning at the University of Manchester; and (ii) the conceptual extension of Problem-based Learning to the broader and more flexible idea of Enquiry-Based Learning.

The definition of Enquiry-Based Learning that CEEBL has inherited is that it is an umbrella term, beneath which shelter not only Problem-Based Learning, but other varieties of active learning, such as field-work, case-studies and project-work. These may be validly regarded as enquiry-based because students engage in a process of discovery driven by their own decisions and research. CEEBL's aim of seeking to ensure that the majority of University of Manchester students encounter some form of Enquiry-Based Learning in the course of their programme was formulated on this basis.

However, CEEBL's own process of discovery may lead to a more distinct and distinctive definition of true Enquiry-Based Learning. Legitimate forms of enquiry may be carried out within given intellectual parameters that, to a greater or lesser extent, set the limits of students' enquiry. But the truest and most radical forms of Enquiry-Based Learning are those which endow students with the challenge, freedom and responsibility of determining all – or at least as much as possible – of their learning within the chosen field. Such Enquiry-Based Learning comes closest to replicating genuine research. The ultimate goals of CEEBL are to:

- discover how such powerful learning may be engendered, and to
- enable academic teachers to implement appropriate forms of such learning within their disciplines.

As we have said in the Introduction to **Summary of Key Findings from Local Evaluation** (above), we are also seeking to apply the principles of Enquiry-Based Learning to our own operations, including evaluation. This seems to us to be essential for intellectual and academic coherence. A key consequence of this approach is that CEEBL's role within the institution and the wider HE sector nationally and internationally is one of *facilitation* of learning and development. This proposition motivates CEEBL's influence on the **process of change** we hope to inspire, and also underpins our continuation strategy as we look ahead to 2010 and beyond.

In order to demonstrate a clear starting point for CETL activity, the University of Manchester bid to HEFCE highlighted (after audit) the existing levels of EBL activity and presented evidence of our track record in developing and enhancing EBL. The HEFCE award has allowed us to make significant progress in extending this provision in a move towards, and potentially beyond, the goals set out in the CEEBL Strategic Plan.

This high level of activity has required complex and sensitive management of change processes, not least because the CETL was itself being developed within an environment of extensive upheaval and change related to:

- The merger between The Victoria University of Manchester and the University of Manchester Institute of Science and Technology;
- The re-structuring of pay and grading;

- Preparation for the 2008 Research Assessment Exercise.

These challenges created opportunities as well as obstacles for CEEBL. We were able to provide a positive contribution to alleviate the inevitable pressures imposed by each of the above areas. Key CEEBL staff were already accustomed to working across both institutions and had credible profiles, enabling them to offer almost uninterrupted support to staff and students. As a newly-formed Centre we assimilated ourselves relatively easily into the new pay and grading structures. CEEBL's commitment to the principle that learning and teaching should be informed by scholarship (demonstrated by the appointment of our Research Associate) is in line with the University's research agenda.

The principal aim of CEEBL is to have lasting impact on the quality of student learning. As detailed above (**Summary of Key Findings from Local Evaluation**), this takes the form of a combination of enhancement of existing practice, extension of existing practice and development of new practice. The change that we are seeking is therefore evolutionary. Local achievements and success stories are the drivers of extension. We are pleased with the number of local developments we have been able to encourage, support and develop, and, as we stated earlier (**Summary of Key Findings from Local Evaluation, Introduction**) changes to CEEBL strategy have been aimed at increasing these numbers.

Two key issues follow. How far are these developments embedded? How can we evaluate the quality of the learning experiences? To a significant extent, these are matters for local evaluation, which CEEBL Evaluation Strategy is seeking to inform and support. There is, however, a further strand to our strategy. We have emphasised the extent to which CEEBL has had at its core from the outset the principle of '*Students as Partners*'. Our aims have been twofold: to ensure that CEEBL's work aligns itself with other student-centred developments (e.g. in Personal Academic Development Planning: see **Work with Students**, above), and to enable EBL projects to have direct and integrated student input. The operation of the student internships has been, and will be, crucial to the latter aim; and we are pleased that student interns have also had direct engagement with other aspects of student-centred work. The experience of student interns in managing integration with projects has been varied. Some positives have emerged (see **Reward and Recognition**, below), while other interns have found that project holders were unable to find a role for them in their established projects. Consequently, project holders are now made aware of the availability of student interns from the very beginning, as part of the bidding process, and the project holders are introduced to the interns at the very first project holders' workshop. In response to 2005-06 intern reports, we moved tactically in 2006-07 to have students present from day one: all our interns and the Student Sabbatical Officer took part in the initial project holders' meeting in September 2006. We need to monitor progress and respond accordingly.

## **Internal (Institutional)**

### **Capital Investment**

Impact upon student learning has been the principle underlying CEEBL's **Capital Investment**. The 'hub and spoke' model described above (**Introduction to CEEBL**) is consistent with the devolved nature of the University of Manchester's administrative model and is intended to be a mechanism to facilitate the support of

local developments and communities of practice. We thereby hope to have an active influence on EBL development across the institution while enabling individual Faculties to take responsibility for their own learning spaces.

The hub flexible learning space is designed to be EBL-friendly and serves to enhance the delivery of teaching and learning activities as well as staff development seminars, student induction and group-working activities and CEEBL project holder meetings. The central facility is increasingly booked for small conference use by external agencies such as subject centres (e.g. Engineering Subject Centre, History Classics and Archaeology Subject Centre, Business Management and Finance Subject Centre) and educational development associations (e.g. SEDA). We welcome the use of the Centre for informal meetings and study groups and are seeing an increase in the numbers of staff and students who 'drop in' to meet and talk. Such diverse usage achieves a CEEBL objective to be seen as approachable, useful and communicative to a wide range of people at different levels of EBL engagement. The process is towards establishing CEEBL as a physical and symbolic centre within the local and national teaching and learning community. This aim is a long-term one, and we shall be monitoring usage closely during 2007-10 in order to track progress.

The spaces are experiencing encouragingly high occupancy for a range of EBL-related activity at Faculty and School level. Increasing numbers of staff and students are brought into contact with EBL processes and methodologies through usage of the spaces and this is a major factor in facilitating the development of more creative, student-centred approaches to learning and teaching at subject level. The main challenge for us is to develop ways of evaluating the *quality* of the learning experiences. The CEEBL model (cf. Figure 2) locates principal responsibility for this at the local level, with the CEEBL Evaluation Strategy as our active facilitation of the process. Monitoring the effectiveness of this operation will be a priority for 2007-10.

All CEEBL learning spaces are technology-rich and equipped to high specifications. Installation of technology increases the availability of multimedia learning resources and enables cross-campus, national and international video conferencing (through the Access Grid nodes), increasing opportunities for collaborative projects, discussion and co-operative working at the widest level.

The hub learning space is generally regarded as a high quality space by its users. It functions particularly well for staff development events. The space facilitates a variety of uses, including staff and student workshops, and includes technology to enable the recording of events and meetings. It also facilitates the remote observation of groups, that is viewing a group at work in one area of the centre on the plasma screen located in the social learning space area. This last facility is used frequently in staff development, allowing staff to observe a student EBL session in action.

There are, however, a number of concerns about the design and operation of the hub learning space and the development of the associated Faculty spaces.

Unforeseen consequences of decisions made at the *design* stage of the space and its technology include: the use of directional microphones whose connections are made through sockets embedded in the floor, more suited to a fixed format room, and not linking the presentation computers to the Ethernet. The latter has had the knock-on effect that the interactive Starboard data tablets have not been successfully installed in the space.

The presence of Access Grid Nodes in both the hub and each of the Faculty spaces represents a large proportion of the capital spend, and has impacted on the way that the spaces that were developed. Their use requires geographically separate groups, working together, all with access to the Access Grid Nodes. At the moment, the majority of EBL activity in our institution occurs with groups within the same location. Groups that are more dispersed often prefer to interact through other more familiar communication technologies. However, attempts are beginning to promote the use of these facilities in an EBL context.

There are a number of issues that affect the day-to-day *operation* of the hub space:

- The space is very high maintenance, requiring significant staff time to set up and support both the physical space and the technology within. There is reluctance, even from regular users, to take ownership of the physical and technical aspects. The general layout of the space reinforces the perception that it is a maintained conference facility as opposed to an open teaching and learning space.
- The presence of technical equipment requires that access is by means of a security swipe card. This reinforces the separateness of the centre and militates against more casual usage, which we would like to encourage.
- The space is a flexible space with removable partitions and furniture. Both are however, substantial in quality, but also in time to set up. This has an impact on turn around time between sessions that use different layouts. This is problematic if the space is to be absorbed into central timetable, or to be used heavily.

Lessons that could have been learnt from the operation of the hub might have been taken account of in the development of the *Faculty spaces*. However, partly owing to the time-limit imposed on the capital spend and partly owing to the location of the decision-making, it is felt some of these problems have been replicated in the Faculty spaces.

A subsequent problem encountered has been developing a workable model for support and maintenance of the Faculty learning spaces. This has to be developed at local level, for consistency with CEEBL principles as well as for practical reasons within a very large campus. But support and maintenance, particularly of the Access Grid nodes, bring additional burdens for Faculty IT staff. In addition, CEEBL's need to monitor usage in order to evaluate impact produces problems for local timetabling and reporting procedures between Faculties and CEEBL hub. Operational arrangements are still in process of negotiation.

In June 2006 two members of the CEEBL team presented a paper at the AISHE Conference (Maynooth, Ireland) outlining our commitment to evaluation of the learning spaces and the methods by which we would evaluate according to different perspectives. This initiates a potential strand of research, one that intersects with a growing national discussion about effective learning spaces.

## **Teaching and Learning Activities Beyond the Immediate Area of Excellence**

A major aim of CEEBL is to extend the practice of EBL **beyond the immediate areas of its practice**, as described in **Section 4** of **CEEBL's internal activities**, page

12. That extension is implicit in the hub and spoke model and the generic nature of CEEBL.

The flexible nature of EBL, and the non subject-specific role of CEEBL, enable us to have impact on **wider teaching and learning activities** that are central to the institutional and national context. Examples of this are our support of the institutional PADP (Personal and Academic Development Plans) initiative and our relationship with the Centre for Recording Achievement, and the linkages between EBL skills development and the Record of Professional Development compulsory for Pharmacy students. CEEBL has made many contributions to the ongoing development of generic skills for student group-work activities.

CEEBL has developed and gathered resources to support EBL development and these are held in the Centre as well as on the CEEBL website. The resources are designed to be adaptable to a range of subjects and contexts and include materials authored *by* staff and students *for* staff and students. We are collecting and creating material on aspects of EBL such as facilitation skills, groupwork, report writing, making presentations etc. In this way CEEBL hopes to benefit student learning by providing useful and practical resources outside of project funding and consultancies.

CEEBL has supported a range of innovative EBL projects related to Widening Participation and has welcomed groups of high school pupils into the Centre to work on EBL activities designed specifically for their educational level and offering them an insight into the learning, teaching and research activities that might await them should they opt to come to the University of Manchester. A 2006-07 project involves CEEBL supporting the Manchester Museum to deliver EBL activities to a group of 30 pupils from four local high schools.

## **Reward and Recognition**

An aim and aspiration of CEEBL is to enhance the **reward and recognition** for both its student participants and its core, affiliated and project staff. In many cases, the effect of involvement in CEEBL activities on career development will be a long-term issue. Those academic staff who lead or take part in EBL projects often do so in addition to their continuing commitment to academic research and other aspects of academic and administrative work. It is important that CEEBL is perceived as making an active contribution to the status of teaching and learning as part of career progression, working in alignment with institutional promotion and reward procedures. At this stage, the extent of impact through enhanced CVs and Performance and Development Reviews is difficult to assess as these processes take time. But, as we now proceed to show, the matrix of a successful narrative pattern can be shown within the inception and initial years of CEEBL.

The bid to HEFCE set out the proposed structure of the CETL team of core staff and referred to the preparatory recruitment work carried out prior to submission of the document. Recruitment of experienced personnel from within the institution who had demonstrated expertise in specific areas of EBL serves to motivate and inspire individuals and teams to work with CEEBL with some degree of confidence. The CETL bid writing team included members with experience in pedagogic research, project management, publication, research, student support and curriculum development.

Present observable products of reward and recognition are of six types:

- (i) Experienced personnel involved in the preparation of the CETL bid now integral to CEEBL. These are the Director (a National Teaching Fellow), appointed as an academic with national recognition in teaching and learning and Enquiry-Based Learning; and the Associate Director, seconded from Curriculum Development as an experienced and nationally recognised educational developer.
- (ii) Academic and research staff who engaged in CEEBL project work in 2005-06, and were subsequently appointed to roles within CEEBL. These are the CEEBL Research Associate (formerly Project Officer in Electrical and Electronic Engineering); the CEEBL Co-ordinator for the Faculty of Engineering and Physical Sciences (formerly project holder); and the CEEBL Co-ordinator for the Faculty of Humanities (formerly project holder).
- (iii) The two members of academic staff managing the Life Sciences Faculty project have received incremental salary enhancements in recognition of their additional responsibilities.
- (iv) The Medical and Human Sciences Faculty Co-ordinator has recently been promoted to Senior Clinical Teaching Fellow. Her work with CEEBL formed part of her application. She will now also take over leading the implementation of the Faculty project. The CEEBL Co-ordinator for the Faculty of Life Sciences has recently been promoted to Senior Teaching Fellow and received a University teaching excellence award. He has also been dominated by the University of Manchester as a National Teaching Fellow.
- (v) A 2005-06 small project holder has received one of a University distinguished achievement award, Teachers of the Year (Stopes Medal). A member of CEEBL's wider community, who received support and advice from CEEBL and is about to become a project holder, has received a University teaching excellence award.
- (vi) Students whose careers have been significantly assisted by work for CEEBL. These are the Student Sabbatical Officer (2005-06), who has progressed to a post of *Communications and High Tech AI Analyst*; the Medical and Human Sciences Student Intern (2005-06; re-appointed 2006-07), an undergraduate in Pharmacy whose participation in a CEEBL project 2005-06 led to her co-authoring the published Case-Study with the academic project holder, and who has been nominated by CEEBL for and has been awarded the prestigious institutional Distinguished Student Award for student of the year 2007. In 2006-07, CEEBL appointed two Humanities Student Interns, both of whom have successfully chosen to pursue staff and curriculum development based positions in CETLs with an EBL focus. One will become CEEBL's Student Sabbatical Officer (2007-08) and the other has taken up the position of Learning Development and Research Associate at one of our LTEA CETLs, CILASS at Sheffield University.

All of our project holders are required to demonstrate a scholarly approach to planning, management and implementation of their projects, and we encourage and support staff to undertake pedagogic research across all stages of their project. Project

holders have opportunities to enhance their profile through specific recognisable pedagogic research outcomes (see **Pedagogic Research**, below).

Benefits to staff and students working in and alongside CEEBL include development of professional skills and competencies to enhance career progression and/or guide career choice including opportunities for internal and external consultancy activities, funding to attend conferences and external events, networking and publishing.

## **Engaging the Wider Academic Community**

As CEEBL activity is not focused in specific discipline areas, we are not restricted as to the subjects or levels of teaching. Also, Enquiry-Based Learning is by definition a philosophy that underpins many modes of teaching and learning that have been conventionally branded under other descriptions (Kahn & O'Rourke 2004). Hence an important by-product and initially an **unintended outcome** is the involvement of **other internal (and external) staff** in CEEBL activities, such as attending workshops.

CEEBL's development activities correlate strongly to the EBL model. As we have emphasised, our overall approach is *facilitation*, that is enabling others to develop their own intellectual, professional and pedagogic competencies and skills. By making our range of activities and support mechanisms flexible and responsive we aim to provide development opportunities that are meaningful to individuals, their disciplines, their students and their institution. This is consistent with the model described in the introduction to **Summary of Key Findings from Local Evaluation**.

A decision to make seminars, workshops and symposia an integral part of CEEBL activity has enabled us to influence and support individuals across a wide range of disciplines and in institutions in the UK and internationally. These activities are reviewed and evaluated and we endeavour to be responsive to participant needs. Seminars are designed to support a wide range of people at different stages of EBL understanding and range from introductions to theories and methods of EBL through to masterclasses for more experienced staff wanting to engage at a deeper level. Following the 2005-06 series of seminars that was principally aimed at CEEBL project-holders, the decision was taken to open up future seminars to *all* University of Manchester staff, and to staff from other institutions (see **National and International Impact** below and Appendix VI). The aim is to extend the reach of CEEBL by engaging a wider cohort of academics and support staff and by this means to raise the profile of CEEBL and of EBL with a view to engaging more staff in appropriate teaching and learning development. An initial test of the effectiveness of this policy is the number and range of bids we have received for funding for projects in 2007-08 (25 bids from 12 Schools across all 4 Faculties, including 23 members of staff who have not previously been engaged in CEEBL projects). However, there is also the potential for 'slow-burn' take-up of CEEBL support for initiatives (whether or not through funding), given that planning for course development can be a lengthy process for academics, in terms of both preparing themselves conceptually and pedagogically and presenting to, and negotiating with, School and Faculty Teaching and Learning committees. We shall need to monitor this over an extended period.

## **Strengthening Institutional Standing**

CEEBL also aims to make an impact institutionally through its engagement with appropriate initiatives outside the specific remit of CEEBL. These initiatives serve the

dual purpose of integrating CEEBL within the wider University and contributing significantly to **strengthening institutional standing**. Key examples to date are:

- (i) Contribution of CEEBL to a proposal to JISC Capital Programme by the University of Manchester School of Medicine (Lead Partner), together with the University of Manchester Distributed Learning Group; Lancashire Teaching Hospitals NHS Foundation Trust; Salford Royal Hospitals NHS Trust; South Manchester University Hospitals NHS Trust. Proposed project: Development of e-Portfolio services to support lifelong workplace learning. This bid was successful, see Appendix XIII for letter from the project leader.
- (ii) Contribution of CEEBL to the University of Manchester's proposal to the project strand of the National Teaching Fellowship Scheme. Proposed project: Enhancing the Quality of Tutoring in Problem Based Learning. The CEEBL Director and Research Associate were two of the main contributors to this bid, which reached the second stage of its funding application, but unfortunately was not ultimately successful.

## **Learning and Teaching Strategies**

The institutional merger referred to above necessitated revision of programme specifications, regulations, policies and systems in direct alignment with the new University's mission statement (Manchester 2015).

This led to a re-definition of **learning and teaching strategies** for the new University. CEEBL aligns itself with the aims of the University of Manchester, in particular that it should make a major contribution to the intended development of a "scholarly community....committed to open, disciplined, rational inquiry and to international excellence in higher learning, research and professional education". CEEBL's advocacy of the values of Manchester 2015 is set out in the Strategic Plan.

There is evidence that EBL can and does enhance synergies between research, teaching and learning and so it is appropriate to expect that EBL methodologies would work harmoniously within a research-intensive institution that has a high reputation for teaching quality and student experience (Jenkins *et al.* 2003).

The re-structuring of the new University into four Faculties meant that existing EBL activity was in some cases fragmented and dispersed more widely, and in other cases consolidated so that disparate activity became a more visible, recognisable entity. CEEBL has capitalised on both these effects to expand the community of EBL practice and develop a critical, influential mass of advocates for EBL across the institution. On the other hand, not all of the consequences of re-structuring have always worked in favour of supporting EBL practice. There have unfortunately been examples of promising and established EBL practice being lost in this process. CEEBL will, of course, try to support, sustain and encourage EBL practice and practitioners in these areas.

We have described in the business plan section of the final-stage CETL bid document the ways in which the CEEBL will by 2010 have progressed from working in harmony with institutional strategy to informing strategy and eventually forming the core of the strategy by 2015. The fact that the timeline presented in the CETL bid document (University of Manchester 2005) extends beyond the scope of HEFCE

funding, i.e. to 2015, demonstrates confidence in building capacity for continuation and a commitment to locating EBL as a central element of the University strategy.

The effectiveness of this long term aim can be assessed only at a later date.

## **External (National and International)**

### **National and International Impact**

We stated above (see **Engaging the Wider Academic Community**) that, following the 2005-06 series of seminars that was principally aimed at CEEBL project-holders, the decision was taken to open up future seminars to staff from other institutions. This decision forms part of CEEBL's aims to make significant impact on the **HE sector nationally and internationally**. The development of the CEEBL web-site to include materials from these seminars is a significant aid to this process.

CEEBL has influenced many colleagues to engage in EBL development through consultancies (Appendix XI) and staff development activities institutionally, regionally, nationally and internationally. Members of the CEEBL team have given keynote presentations at teaching and learning conferences, have contributed to conferences and symposia, and have led workshops at conferences.

Additional ways in which external impact has been made are:

- (i) Involvement in international activities. The CEEBL web-site contains a case-study of a joint project with the University of Samford (USA), which is also an example of the international facet of CEEBL's *Students as Partners* commitment (web ref. [Samford](#)).
- (ii) Involvement with external teaching and learning projects. CEEBL contributed to a bid to ESRC by University of Salford. Proposed project: Technology Enhanced Learning Linked with Interdisciplinary Problem Based Learning. This has been initially unsuccessful and a resubmission is planned.
- (iii) CEEBL is supporting an Australian colleague (Sally Sandover) in her application for a prestigious Carrick Fellowship. Should the bid be successful, Sally will work for a period in CEEBL, actively supporting and informing her research programme.

Tracking the effectiveness of this range of activities is a challenge. Feedback we have received from institutions where presentations have been made has been positive. The extent to which these interventions lead to EBL development within the institutions is subject to many factors outside our control. This will also be a long-term process. At present what we can do is to monitor, maintain and develop our engagement with the HE sector, with the aim of having maximum influence on educational strategies.

### **Developing Relationships within the National HE Community**

CEEBL has set up a formal working relationship with five cognate CETLs (the Learning Through Enquiry Alliance) at the Universities of Sheffield, Surrey, Reading, Gloucestershire and Warwick. This is a specific instance of how **working with the national HE community** seeks to maximise impact on educational developments and hence make a major contribution to change. The LTEA Agreement to Collaborate defines as its shared values:

- Working together in a cooperative rather than competitive way to advance knowledge and understanding of the field of learning through enquiry with the collective aim of influencing higher education teachers in the UK and beyond.
- Making a positive difference to the lives of students, teachers and others who support students' learning.
- Helping students and higher education professionals develop as competent, critical and creative enquirers.
- A research informed approach to advancing knowledge and practice of EBL.
- Openness and responsiveness to other CETLs and organisations who might wish to work with us.

In 2006 The University of Manchester hosted the first in an annual series of LTEA Conferences (Section 4, **CEEBL's external activities**) attended by participants representing the four original LTEA institutions as well as delegates external to the Alliance. In 2007 the conference was held at Surrey and again represented a collegiate approach to development and delivery of the conference themes.

The above model of effective networking has encouraged the CEEBL student interns to take a lead role in the development of a national CETL Student Network, designed to create a forum for students involved closely with CETLs to share dialogue, ideas and activities. After consultation with students in other CETLs, the CEEBL interns set up a meeting with Professor Brenda Smith (Associate Director, HEA) and Bob Hunter (Project Officer, CETLs, HEA) to ascertain what, if any, value the **Higher Education Academy** (HEA) might place on such a network. The meeting was successful in securing HEA support and a formal National Student Network launch took place on 12<sup>th</sup> February 2007. Further to this, the National Student Network will be facilitating workshops at the CETL networking event in Warwick and the HEA conference in Harrogate. This represents a significant increase in the effectiveness and impact of CEEBL's commitment to *Students as Partners*. It also represents a significant **unexpected outcome**.

Strong relationships already existed between the University and the **HE Academy** and its Subject Centres before the CETL award was given. The CETL bid document refers to a successful LTSN Generic Centre project led by the Victoria University of Manchester and including five regional partners. This project culminated in the hosting at Manchester of an international EBL conference at which a HEA Senior Adviser gave the keynote presentation. The two project leaders were subsequently commissioned by the HEA to author a Guide to Enquiry-Based Learning (Kahn & O'Rourke 2004).

We have continued to develop links with the HEA through team attendance at the CETL development days organised to support the bidding process and through contributions and lead roles in subsequent HEA events. A direct link with the HE Academy is provided by Nick Hammond (Senior Adviser, Research and Evaluation, HEA), who is a member of CEEBL's Executive Board. Examples of engagement with HE Academy activities include funding colleagues to attend the annual HEA Conference and the invitation to the CEEBL Director and Associate Director to give a keynote presentation at the HE Academy's 'First Year Experience' conference in Aston, Birmingham 2006.

Many of our CEEBL project holders are recipients of HEA Subject Centre small project funding (e.g. CSAP) and have made active contributions to the work of their related Subject Centre (e.g. Engineering). The CEEBL Director and Associate Director are past English Subject Centre project holders. CEEBL has been a successful venue for events led by Subject Centres (BMAF, MEDEV, HSP, HCA, Engineering) and the feedback from participants has been extremely positive. Recent discussion with representatives from other Subject Centres (such as English) indicates that CEEBL will play host to more Subject Centre events in the future.

All these activities demonstrate CEEBL's aim to liaise productively and actively with the HE Academy in order to reach a wide section of the HE community. This engagement will continue. We have specifically requested that our national and international external evaluators assess our progress in this area of broad impact. We will particularly welcome their assistance with evaluating the outcomes and quality of these activities. Having initiated an active programme of engagement, a priority for 2007-10 will be to assess its impact and develop a strategic plan accordingly.

## **Pedagogic Research**

CEEBL's aim of making an impact on the widest possible scholarly community underpins its **engagement with and development of pedagogic research**. This is aligned with our commitment to scholarship informing all teaching and learning activity, the need for research to establish the validity of EBL principles (see materials on web-site), and the high research status of the University of Manchester.

Members of the CEEBL team have had a long-standing, active engagement with the national and international SoTL (Scholarship of Teaching and Learning) community and this has enhanced our approach to developing the practice of pedagogic research. The priority for the CEEBL Research Associate in the 2007-10 period is to conduct his own research and make direct contributions to the field of educational scholarship. He will also support others in carrying out research in connection with their CEEBL-funded teaching and learning projects. A key area of CEEBL activity is to encourage and support the publication of project outcomes and associated research. In 2006 CEEBL published a volume of 13 case studies reflecting the achievements of our first tranche of funded projects. CEEBL aims to produce a volume of case-studies every year to 2010, i.e. five volumes containing over 50 examples of EBL in a range of subjects and levels. Dr Peter Kahn, one of CEEBL's internal consultants, is supporting some of our project holders to develop their case-study material into papers to be submitted for review and publication in appropriate subject-specific and pedagogic journals. Two members of the CEEBL team are on the editorial panel of the International Journal of Problem-Based Learning (IJPBL, [docs.lib.purdue.edu/ijpbl/](http://docs.lib.purdue.edu/ijpbl/)) and are actively involved in reviewing articles submitted for publication.

The relationship between research and teaching is currently the subject of a major debate within the HE community (Jenkins *et al.* 2003). CEEBL sees itself as taking part in this debate, as exemplified by the Director's presentation at the HE Academy *Bringing Research and Teaching Together* conference (London, November 2006). A final note to sound is that the particular emphasis of CEEBL within this large-scale debate may be summed up in one sentence. Enquiry-Based Learning should be at the heart of teaching and learning because it is research-like teaching, and so is aligned with the very nature of a university.

## **IX. Action Plan**

As a result of the foregoing activities and reflections, CEEBL's action plan for the period 2007-10 is defining the following as key foci:

- Reviewing the Key Performance Indicators to reflect both the initial and emergent strategic decisions.
- Evaluating and monitoring CEEBL's activities, towards the summative 2010 evaluation report, in order to investigate the effectiveness of CEEBL's various internal and external activities. Key activities for investigation include:
  - The frequency and quality of use of the Learning Spaces and associated Learning Technologies;
  - The degree to which innovations and projects are embedded, extended and transferred to other teaching practice;
  - The impact of external activities, such as consultancies and workshops;
  - The reward and recognition of staff engaged in CEEBL and EBL practice.
- Targeting Schools with which CEEBL currently has not established a strong dialogue.
- Developing a research and publication strategy that will culminate in peer-reviewed research articles.

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- University of Manchester (2005) *Bid for Centre for Excellence in Teaching and Learning (CETL)*, University of Manchester, UK.

## **Website References**

Home Page

[www.manchester.ac.uk/ceeb1](http://www.manchester.ac.uk/ceeb1)

Strategic Plan

[www.campus.manchester.ac.uk/ceeb1/about/strategic\\_plan\\_v1.4.pdf](http://www.campus.manchester.ac.uk/ceeb1/about/strategic_plan_v1.4.pdf)

Evaluation Strategy

[www.campus.manchester.ac.uk/ceeb1/about/evaluation\\_strategy\\_0107.pdf](http://www.campus.manchester.ac.uk/ceeb1/about/evaluation_strategy_0107.pdf)

Facilities

<http://www.campus.manchester.ac.uk/ceeb1/facilities/>

Small Projects

[www.campus.manchester.ac.uk/ceeb1/projects/](http://www.campus.manchester.ac.uk/ceeb1/projects/)

Case Studies

[www.campus.manchester.ac.uk/ceeb1/projects/2005/](http://www.campus.manchester.ac.uk/ceeb1/projects/2005/)

EBL Guide for Students

[www.campus.manchester.ac.uk/ceeb1/resources/general/studentguide\\_july06.pdf](http://www.campus.manchester.ac.uk/ceeb1/resources/general/studentguide_july06.pdf)

Centre Staff

[www.campus.manchester.ac.uk/ceeb1/staff/](http://www.campus.manchester.ac.uk/ceeb1/staff/)

Samford

[www.campus.manchester.ac.uk/ceeb1/resources/essays/ceeblessay003.pdf](http://www.campus.manchester.ac.uk/ceeb1/resources/essays/ceeblessay003.pdf)

Masterclass

<http://www.campus.manchester.ac.uk/ceeb1/events/archive/>

## ***Appendices***

Appendix I:	Summary of Changes to CEEBL's initial bid	34
Appendix II:	Engagement with Faculties and Schools	35
Appendix III:	Summary of Usage of Hub Space	39
Appendix IV:	Summary of Small Projects	40
Appendix V:	Extending EBL to Teaching across the University	42
Appendix VI:	Summary of Workshops	43
Appendix VII:	Masterclass	46
Appendix VIII	Summary of Papers and Conference Presentations	47
Appendix IX:	Summary of Travel and Dissemination Grants	56
Appendix X:	Description of the CEEBL website	57
Appendix XI:	Summary of Consultations	58
Appendix XII:	Events Invited to Present	64
Appendix XIII:	Letter from JISC project Leader	67

## **Appendix I                      Summary of Changes to CEEBL's initial bid**

Emergent strategy and experience have led us to adjust the Deliverables and Outcomes as stated in the bid document. These adjustments have been incorporated into the Strategic Plan, which therefore represents the up-to-date version of CEEBL aims. In particular, the following decisions have been taken:

1. To put emphasis on the development of internal expertise, at the expense of some external consultation, in order to build capacity and to contribute to sustainability. Action: reduction of original role of external consultant to: 50% appointment for April 2005 – March 2006; specific external consultancy tasks totalling 74 days for April 2006 – March 2007; appointment to cease at 31<sup>st</sup> March 2007.
2. To place emphasis, wherever possible, on making the maximum impact on student learning. Actions: using financial savings from reduction of external consultant role and any other savings for project funding; strategic shift from staff summer school to student projects hence substantial increase in number of projects funded. However, a programme of masterclasses has been initiated, instead of the summer schools, to serve the needs of the wider community.
3. The small projects have taken an increased role in the operation of the CEEBL. Initially conceiving there being 13 over the lifetime of the CEEBL, 14 have been run in the first year and another 13 in the second year. Part of the budget re-profiling has been to ensure that this level of activity can be sustained throughout the lifetime of the project. The decision to fund more than a handful of projects was a deliberate attempt to generate a community of practice. A few project holders would not have the critical mass to form such a community. However, 13 projects, some with multiple project staff would provide a significant number. The level of funding has been relatively small, a maximum of £3k per project. It was strategically set at this level to tap into the interest of people who were already engaged or prepared to engage in EBL development of their courses, but to be of no interest to people for whom the money would be the principal motivation. A secondary consideration was to ensure that it was a sustainable activity for CEEBL.
4. It was decided not to create e-books. Instead a wider variety of resources is being produced, principally available from our website, servicing a range of audiences, including students engaged with EBL and staff facilitating and developing EBL, both internal and external to the institution.
5. To plan for sustainability of CEEBL post 2010. Actions: development of internal expertise, as in (i) above; increase in number of project holders with experience of implementing EBL, as in (ii) above; development of marketing strategy, through provision of information, dissemination, liaison (internal and external); re-profiling of personnel to develop expertise and knowledge of core staff and provide a financially more economical model for continuation.

## Appendix II Engagement with Faculties and Schools

Notes:

- Small Project Bid indicates an unsuccessful bid.
- Some Projects are shared across several Schools.

Faculties & Schools	Engagement
<b>Medical and Human Sciences</b>	<b>Faculty Coordinator</b> <b>Faculty Project</b> <b>Faculty Spaces</b> <b>Student Intern 2005-07</b> <b>NTFS Project Grant Bid</b> <b>Small Projects</b>
Dentistry	Faculty Coordinator Faculty Project Faculty Spaces: Cluster Room Seminar Rooms Interactive Whiteboards NTFS Project Grant Bid Small Project Bid 2006-07
Medicine	Internal Consultants: Research and Development Assessment NTFS Project Grant Bid 3 Small Projects 2005-06 3 Small Projects 2006-07 3 Small Project Bid 2006-07 Small Project 2007-08 Small Project Bid 2007-08
Nursing, Midwifery and Social Work	NTFS Project Grant Bid
Pharmacy and Pharmaceutical Sciences	Student Intern 2005-07 Small Project 2005-06
Psychological Sciences	2 Small Project Bids 2005-06 Recent contact through marketing

<b>Engineering and Physical Sciences</b>	<b>Faculty Coordinator</b> <b>Faculty Project</b> <b>Student Intern 2005-06</b> <b>Faculty Space</b> <b>Small Projects</b>
Chemical Engineering and Analytical Science	Small Projects 2005-06 2 Small Projects 2006-07 Small Project Bid 2006-07 Small Project 2007-08
Chemistry	Small Project Bid 2005-06
Computer Science	Supported Activity 2006-07 Small Project 2007-08 Small Project Bid 2007-08
Earth, Atmospheric and Environmental Sciences	Supported Activity 2005-06 Small Project 2007-08
Electrical & Electronic Engineering	Faculty Coordinator 2006-07 Small Project 2005-06 Supported Activities 2005-07 Small Project 2007-08
Materials	Small Project 2005-06
Mathematics	
Mechanical, Aerospace and Civil Engineering	Faculty Coordinator 2005-06 Student Intern 2005-06 Faculty Project Faculty Space (Location): Flexible Space Access Grid Node Maths Resource Room 2 Small Project Bids 2005-06 2 Small Project Bids 2006-07 Small Project Bid 2007-08
Physics and Astrophysics	
Manchester Science and Enterprise Centre	Small Project 2005-06 2 Small Projects 2006-07 Small Project Bid 2006-07
Teaching Support Unit	2 Small Project Bids 2006-07

<b>Life Sciences</b>	<b>Faculty Coordinator 2005-07</b> <b>Student Intern 2005-07</b> <b>Faculty Project</b> <b>Faculty Space:</b> Flexible Space Access Grid Node <b>3 Small Projects 2005-06</b> <b>Small Project Bid 2005-06</b> <b>2 Small Projects 2006-07</b> <b>8 Small Project Bids 2006-07</b> <b>4 Small Project 2007-08</b> <b>Small Project Bid 2007-08</b>
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<b>Humanities</b>	<b>Faculty Coordinator 2006-07</b> <b>Student Intern 2005-06</b> <b>2 Student Interns 2006-07</b> <b>Faculty Project</b> <b>Faculty Spaces</b> <b>Small Projects</b>
Arts, Histories and Cultures	Faculty Project 2 Student Interns 2006-07 Small Project Bid 2006-7 Small Project 2007-08
Education	Faculty Space 3 Small Projects 2005-06 Small Project Bid 2005-6 2 Small Project Bids 2006-07 3 Small Project Bids 2007-08
Environment and Development	Faculty Coordinator 2006-07 Student Intern 2005-06 Faculty Space Small Project 2005-06 Small Project 2006-07 Small Project Bid 2006-07 Small Project 2007-08
Languages, Linguistics and Cultures	Small Project 2005-06 2 Small Projects 2006-07 Small Project Bid 2006-07 2 Small Project 2007-08
Law	Small Project Bid 2005-06
Manchester Business School	Internal Consultant: Business 2 Small Projects 2006-07 3 Small Projects 2007-08 2 Small Project Bid 2007-08
Social Sciences	Small Project 2005-06

<b>Other</b>	
Widening Participation	Small Project 2005-06 Small Project 2006-07 Small Project Bid 2006-07 Small Project 2007-08 Continued Support
Manchester Museums	2 Small Projects 2006-07 Small Project Bid 2006-07
Whitworth Art Gallery	2 Small Project Bids 2006-07
Curriculum Development and Innovation	Internal Consultants: Staff Development Student as Partners Small Project 2005-06
NHS	Small Project Bid 2005-06

## Appendix III Summary of Usage of Hub Space

### Non-CEEBL (venue-only) sessions in hub space

	Yr1 Sem1	Yr1 Sem2	Yr1 Sum	Yr2 Sem1	Yr2 Sem2	Yr2 Sum	Total
<b>EBL Teaching</b>	0	12	5	24	42	0	83
<b>EBL Training</b>	0	9	8	13	20	0	50
<b>Non-teaching</b>	7	20	4	22	17	1	71
<b>Self-directed study groups</b>	9	14	0	8	17	0	48
<b>Total</b>	16	55	17	67	96	1	<b>252</b>

### CEEBL Sessions in hub space

	Yr1 Sem1	Yr1 Sem2	Yr1 Sum	Yr2 Sem1	Yr2 Sem2	Yr2 Sum	Total
<b>Promotional</b>	2	3	0	0	0	0	5
<b>Workshops/sessions for staff</b>	4	4	0	5	10	0	23
<b>Workshops/sessions for students</b>	4	1	0	2	1	0	8
<b>Sessions with CEEBL's affiliated networks</b>	2	2	2	1	1	0	8
<b>Showcasing electronic learning resources</b>	0	2	4	1	0	0	7
<b>Total</b>	12	12	6	9	12	0	<b>55</b>

## Appendix IV Summary of Small Projects 2005-06

<b>Project Title</b>				
<b>Number of Students</b>	<b>New Students</b>	<b>Level of Students</b>	<b>Size of EBL Activity</b>	<b>Nature of EBL Activity</b>
<b>Added Value</b>		<b>Repeated, Embedded or Expanded</b>	<b>Staff Developed</b>	<b>Dissemination</b>

### The Faculty of Medical and Human Sciences

<i>Application of Chemical Knowledge to the Clinical Understanding of Medicines</i>				
185	185	UG, Year 1	2 Credits (will be 10 Credits)	Team Research for Poster
		Extended to be a 10 Credit Module	4 staff, 30 facilitators, 1 student intern	Anticipated
<i>An Integrated Model of EBL in Practice</i>				
12 to 15	15	PG	2 Modules & Principal for whole MSc	Action Research, Presenting a Research Paper
Whole Programme, Fundamental Shift		Developing throughout the MSc	3	
<i>Medical Assessment for Enquiry-Based Learning</i>				
15	0 Already PBL	UG, Year 1 & 2	Series of Workshops	MCQ writing
Linking Assessment and PBL		Extended to full year	0 already aware of PBL	Anticipate Conference and Journal Papers

### The Faculty of Engineering and Physical Sciences

<i>Preparation for Group Project Work - A Structured Approach</i>				
135	135	UG, Year 2	20 hours (to be 1 Credit)	5 Problems as mini team project
		Add Credit & Teamwork Workshop	2 staff, 24 facilitators	Conference Paper
<i>Assessment and Enterprise through Enquiry-Based Learning</i>				
117	117	UG, Year 3	1 Module, 10 Credits	Individual Assignment
		Embedded	2	
<i>Pedagogic Development - Enquiry-Based Learning for Constructed Textiles</i>				
20	20	UG, Year 2	1 Problem Pilot for 3 Problem module	Team Design and Weave
		Full Weaving Module & Changed Year 1 Weaving Module	3 (minor/moderate & major)	Anticipate Journal & Conference
<i>Innovative Student Assessment in Engineering Mathematics</i>				
13	0 EBL module anyway	UG, Year 4	1 Module	Team Design of Teaching and Assessment
		Embedded	3 PG Facilitators	

<b>Project Title</b>				
<b>Number of Students</b>	<b>New Students</b>	<b>Level of Students</b>	<b>Size of EBL Activity</b>	<b>Nature of EBL Activity</b>
<b>Added Value</b>		<b>Repeated, Embedded or Expanded</b>	<b>Staff Developed</b>	<b>Dissemination</b>

#### **The Faculty of Life Sciences**

<i>Improving the EBL Experience for First Year Nurses</i>				
112	0 Already PBL	UG, Year 1	1 Module, 20 Credits	PBL made more directive EBL
Transferable to other modules		Embedded	2 design/7 facilitation	Anticipated
<i>3D: An Enquiry-Based Approach to Drug Development and Development</i>				
40	40	UG, Year 2	5 weeks, 9 stages - 2 Credit	Team Analysis of Data
		Embedded	1	

#### **The Faculty of Humanities**

<i>Teaching Ethnography Ethnographically</i>				
41	41 (0 not embedded)	UG, Year 2	1 Module	Individual Ethnographic Journal
Practicing Research		No, too time intensive for lecturer (rethinking)	1 moderately	
<i>Embedding Interdisciplinary: the Evolution of an Undergraduate EBL Module</i>				
21	14	UG, Year 2 & 3	1 Module, 10 Credits	Team Research for Poster
Interdisciplinary, WebCT		No, difficulty negotiating across faculties, will work on this	2 became much more engaged	
<i>Using Participatory Image-Based Research to Inform Teaching and Learning about Inclusion in Education</i>				
9	9	PG PhD, Med	1 taster session, 2 day workshop	Team Image Research
Novel Research Method		Embedded and distributed into a lot of programmes	3 staff major/1 minor	
<i>Partnerships in Pedagogy</i>				
3 (?)	0 no report	PGCE students	3 EBL activities	Observation of Teaching
		No, Mentors did not have language of pedagogy	3 teachers?	

#### **Widening Participation**

<i>The EBL Master Class Series: Exploring Issues around Climate Change through a Process of Enquiry</i>				
30 (5)	5 UG facilitators	Pupils, Lower 6th (UG Year 2)	2x3 hour workshops	Team Research
Widening Participation		Embedded, rolled out as residential weekend, looking for	2 staff + 5 student facilitators	

## Appendix V Extending EBL to Teaching across the University

Project	Current 2007	Projected for 2010	Target
MHS Faculty Project	(Y1 and Y4 @ 90 per year) 180	(5 Years of Programme) 450	
EPS Faculty Project	(Pilot Workshop) 6	300	
FLS Faculty Project	(CW 6 Y3 designing for 60 Y2) (RP 36 Y3 Tutorials) 102	(all Y2 labs and Y3 tutorials) 900	
Humanities Project	(recruited this year) 7	(10, 11 & 12 recruits in future years) 40	
Small Projects 2005-06	540	540	
Small Projects 2006-07	(4 of the 14 projects reported) 434	500	
Small Projects 2007-08		500	
Small Projects 2008-09		500	
Small Projects 2009-10		500	
Non-funded Support	(SEAS – 133, CS – 140, EEE -72) 345	770	
Total	1,614	5,000	5,000

Number of Students to whom EBL is *Extended*

## Appendix VI      Summary of Workshops

Date	Title	Facilitator	Total Number of Attendees	Institutional	National	International
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### Workshops for the 2005-06 Small Project Holders

28/9/2005	Project Holders Introductory Meeting 2005-06	Ivan Moore Karen O'Rourke	19*	19*		
01/11/2005	Scholarly Approach to Development Projects in EBL: Project Holders Workshop 1	Ivan Moore Karen O'Rourke	16	16		
12/12/2005	Assessing in EBL: Project Holders Workshop 2	Ivan Moore Karen O'Rourke	19	19		
18/01/2006	Interim Findings: Project Holders Seminar	Karen O'Rourke	51	50	1	
15/03/2006	Disseminate Your Findings: Project Holders Workshop 3	Ivan Moore Karen O'Rourke	11	11		
26/04/2006	Quality in Academic Publishing: Project Holders Workshop 4	Peter Kahn	14	14		

### Student Workshops [Not Staff Development] (Partial List Only)

(Other Introductory Workshops are run for other programmes, EEE is just one example)

4/10/2005	EEE – VLSI Year 3 Students Introduction to PBL	Karen O'Rourke Peter Hicks Norman Powell	30*	30*		
01/11/2005	Engineering Refresher Session	Karen O'Rourke	25*	25*		
30/01/2006	Engineering Refresher Session	Karen O'Rourke	40*	40*		
16/11/2005	Focus Group Training Session	Karen O'Rourke	6	6		
8/12/2005	EEE – ESP Year 2 Students Introduction to Team-Projects	Karen O'Rourke Norman Powell	15*	15*		
13/12/2005	EEE – ESP Year 2 Students Introduction to Team-Projects	Karen O'Rourke Norman Powell	10*	10*		
15/12/2005	EEE – ESP Year 2 Students Introduction to Team Projects	Norman Powell	5*	5*		
30/01/2006	EEE – Robotics, Opto-electronics Year 3 Students: Introduction to PBL	Karen O'Rourke Alasdair Renfrew Norman Powell	45*	45*		
03/10/2006	Focus Group Training for Student Reps.	Karen O'Rourke	6	6		
21/09/2006	EBL Introduction: Computer Sciences	Karen O'Rourke	40	40		
22/09/2006	EBL Introduction: Computer Sciences	Karen O'Rourke	40	40		
09/05/2007	EBL Taster Session: Psychological Sciences	Karen O'Rourke Jamie Wood Louise Goldring	15	15		

\*Estimate

**CEEBL Workshop Programme (Project Holders and Wider EBL Community) 2006-07**

Date	Title	Facilitator	Total Number of Attendees	Institutional	National	International
27/09/2006	Project Holders Introductory Meeting	Bill Hutchings	30	30	Closed	
04/10/2006	CEEBL Workshops: Can you Assess Enquiry-Based	Val Wass (UoM) Pat McArdle (Boston US)	35	34	1	
25/10/2006	CEEBL Workshops: Developing Graduate Skills through PBL	Jenny Blumhof (Hertfordshire)	16	12	4	
08/11/2006	CEEBL Workshops: Engaging our Students through Enquiry-Based Learning, Learning Journals and Reflective Thinking	George Allan (Portsmouth)	35	26	9	
13/12/2006	CEEBL Workshops: Making Evaluation Work, Planning a useful approach	Murray Saunders (Lancaster)	21	19	2	
17/01/2007	Project Holders Seminar, 2007	CEEBL Team	41	41		
7/02/2007	CEEBL Workshops: Publishing about a Development in your own Teaching	Peter Kahn (UoM)	16	9	7	
21/02/2007	CEEBL Workshops: Linking discipline-based research and teaching to benefit student learning	Mick Healey (Gloucester)	14	11	3	
27/03/2007	CEEBL Masterclass: Reflection: a critical and transferable thinking skill	Chris Bundy and Lis Cordingley (UoM)	10	10		
28/03/2007	CEEBL Workshops: Critical Thinking: Defining the Concept, Promoting the Practice	Susan Jamieson (Glasgow)	17	10	7	
18/04/2007	CEEBL Workshops: Basic Facilitation Skills	Marcia Ody (UoM)	22	13	9	
25/04/2007	CEEBL Workshops: Enhancing Projects and Dissertations: Lessons from Enquiry-Based Learning	Pater Kahn (UoM)	19	10	9	

\*Estimate

## Other Staff Workshops run by/in connection with CEEBL

Date	Title	Facilitator	Total Number of Attendees	Institutional	National	International
03/11/2005	Access Grid Launch and Workshop	Sally Anderson	35	35		
13/12/2005	EPS Innovation Forum	Karen O'Rourke Sally Anderson	27	27		
06/02/2006	Access Grid Training: Project Holders	Sally Anderson	4	4		
21/04/2006	Computer Science Facilitators' Workshop	Bill Hutchings Karen O'Rourke	24	24		
21/04/2006	Interactive PBL software demonstration	Sally Anderson	6	6		
08/05/2006	Virtual Manchester Demonstration: Japan Centre	Jonathan Bunt Karen O'Rourke	24	24		
10/05/2006	Seminar for New Academics	Bill Hutchings and Karen O'Rourke	20	20		
17/05/2006	Using Primary Sources: Use of Primary Sources in EBL	Bill Hutchings	10	10		
31/05/2006	Pedagogic Research Workshop	Liz Theaker	30	30		
05/09/2006	Computer Science: Facilitation Workshops	Karen O'Rourke Graham Gough	35	35		
07/09/2006	Computer Science: Facilitation Workshops	Karen O'Rourke Graham Gough	35	35		
17/05/2007	ELLI Workshop	Karen O'Rourke	10	5	5	
18/05/2007	ELLI Workshop	Karen O'Rourke	6	3	3	
22/05/2007	EBL for New Academics: Faculty of Humanities	Julia McMorro Louise Goldring Jamie Wood Bill Hutchings	45	45		
25/05/2007	HE Academy Subject Centre for History, Classics and Archaeology: Inspiring Learning	Julia McMorro Louise Goldring Jamie Wood Bill Hutchings	35	10*	25*	

\*Estimate

## **CEEBL Masterclass - Reflection: a critical and transferable thinking skill**

**Tuesday 27 March 2007, 15.00 - 17.30**

***Presented by Christine Bundy and Lis Cordingley,  
School of Medicine***

This small, interdisciplinary discussion group will be a chance for those with more experience of critical thinking to examine the topic in depth and in the context of Enquiry-Based Learning.

Critical thinking and the ability to use reflection effectively are core academic skills and valued transferable skills. Few academics are given explicit instruction on how to develop these cognitive skills as part of professional development and it appears that few teach students how to develop them. This special interest group workshop is an opportunity to consider how best to embed reflective practice in our selves and our students.

The format of the meeting will be a brief presentation on some related core cognitive and behavioural skills including:

- The role of meta-cognition in information processing
- What is emotional intelligence and is it related to reflection?
- Core self and others management skills
- How to motivate students to be mindful

Lis and Christine will then facilitate a discussion on how to recognize reflection and how to embed it in teaching & learning in our discipline areas.

The outcome of the workshop will include:

- increased understanding of a theoretical framework in which to understand reflection
- identify some difficulties of embedding reflection
- share good practice on how to embed reflection in teaching & learning

## Appendix VIII Summary of Papers and Conference Presentations

### Journal Papers

Name	Publication Date	Published in
Graham, E. 'The Professional Doctorate in Practical Theology: An idea whose time has come?'	01/12/2006	International Journal of Practical Theology in Higher Education
Woods, C 'Towards a Generic Model for Interdisciplinary Learning: A Case Study in Course Design'	01/01/2006	Active Learning in Higher Education Journal (Online)
Woods, C. 'Researching and developing interdisciplinary teaching: Towards a conceptual framework for classroom communication'	10/07/2006	Higher Education (Online)
Prince, R.J and Hollingsworth, M. 'Teaching Drug Development through Enquiry-Based Learning: A case study in course design'	01/02/2007	British Journal of Pharmacology

## CEEBL Staff Presentations

### Presentations/Discussions/Workshops

Event Name	Location	Date	Description	Presenter
National University of Ireland Galway and Maynooth: 'PBL Symposium'	National University of Ireland Maynooth	04/11/2005	Presented on the CEEBL as part of book launch	O'Rourke
Coventry University: 'Innovations in PBL'	Coventry University	10/11/2005	Presentation about the CEEBL and led a discussion about the shift from PBL to EBL	O'Rourke
MHS Teaching and Learning Day	University of Manchester	06/03/2006	EBL workshop	Theaker
EBL and PBL presentation at Scientific Literacy CETL, Liverpool Hope	Liverpool Hope University	08/03/2006	Presentation about CEEBL	Hutchings O'Rourke
Staffordshire University: PBL Forum	Staffordshire University	22/03/2006	Plenary presentation and chaired feedback group	O'Rourke
University of Coventry: PBL Day	Coventry University	24/04/2006	Presentation about CEEBL and led a discussion.	O'Rourke
Meeting of CETL staff, EngCETL	Loughborough University	15/05/2006	Short presentation about CEEBL.	Powell
CRA Conference	n/a	21/11/2006	'Dragon's Den' – PDP workshop.	Wood Sattenstall Tinker Maull Goldring
SEDA: Mapping Educational Development: locations, boundaries and bridges	n/a	21/11/2006	Plenary discussion group	O'Rourke

Event Name	Location	Date	Description	Presenter
1st Annual CETLs Conference 2007	University of Warwick	19/03/2007	Greg and Mary invited to take part in a discussion on evaluation.	Tinker Sattenstall
Faculty of Medical and Human Sciences Away Day	University of Manchester	05/04/2007		Theaker O'Rourke
LDHEN (Learning Development in Higher Education) Symposium	Bournemouth University	12/04/2007	Delivered a presentation and workshop on the Student Intern Programme. Fewer numbers than anticipated – session was cut short to compensate and we allocated more time at the end to general discussion.	Wood Sattenstall Maull Goldring Tinker
Faculty of Engineering and Physical Sciences staff development	University of Manchester	24/04/2007		O'Rourke
University of Exeter Teaching and Learning Conference: Active Learning through Enquiry	University of Exeter	17/05/2007	Presentation 'Enquiry-based Learning in English'	Hutchings
Open University: CETL collaborations with an interest in science	Open University - Milton Keynes	08/06/2007	Short talk about CEEBL's science and engineering project.	Powell
Annual Teaching and Learning Staff Conference: What's Hot in Teaching and Support?	University of Bolton	14/06/2007	Led a workshop on 'Developing the Developer'.	Tinker O'Rourke Goldring
HE Academy Symposium: 'Teaching Informed and Enriched by Research'	University of York	28/06/2007	Took part in expert panel, as representative of CETLs and the LTEA.	Hutchings

Papers – National

Event Name	Location	Date	Description	Presenter
HEA English Subject Centre: 'Teaching Scottish and Irish Literature'	University of Manchester	21/10/2005	'Teaching Swift Through EBL'	Hutchings
SEDA Conference	unknown	29/11/2005	'So what about the Professional Standards of Educational Developers?'	O'Rourke Moore
Centre for Learning Developments Colloquium 'Challenging Orthodoxies: Alternative Approaches to Educational Research'	unknown	08/12/2005	Presented a paper on behalf of CEEBL. Name unknown	Moore
HE Academy: CETL Conference	n/a	08/02/2006	'Students as Partners in the CETL Initiative'	Maul Patel Law Sattenstall O'Rourke Whowell
6th Annual SOTL Conference, 2006	n/a	18/05/2006	'Learning Theory and Learning Practice: an example of Enquiry-Based Learning in Literary Studies'.	Hutchings
HEA English Subject Centre 'The Pedagogy of the Text: A Symposium'	n/a	26/05/2006	'Enquiry-Based Learning and Literary Studies'.	Hutchings
HE Academy Conference: Research and Teaching Together	'Bringing unknown	24/11/2006	'Bringing Research and Teaching Together'	Hutchings
LTEA 2nd Annual Conference: Learning for a Complex World	University of Surrey	25/06/2007	'The CEEBL Student Intern Programme'	Goldring Tinker O'Rourke
LTEA 2nd Annual Conference: Learning for a Complex World	University of Surrey	25/06/2007	'Examining the Underlying Principles of Enquiry-Based Learning: Two Instances of where Learning Sessions Start'	Powell Allan

Papers - International

Event Name	Location	Date	Description	Presenter
International Problem-Based Learning Conference	University of Tampere, FIN	09/06/2005	'Student Responses to Problem-Based Learning'.	O'Rourke Hutchings
4 <sup>th</sup> International Conference on Supplemental Instruction	Malmo University, SWE	24/05/2006	'Recognizing and Rewarding Excellent PASS Leaders'	Whowell Lewis Ody O'Rourke Maull Patel Law
PBL International Conference	Pontificia Universidad Catolica del Peru, PERU	09/07/2006	'Research: Evaluating changes in teaching and learning: how staff and students adapt to Problem-Based Learning'.	O'Rourke
AISHE (All Ireland Society for Higher Education) Conference 2006: 'Creating and Sustaining an Effective Learning Environment'	National University of Ireland Maynooth	31/08/2006	'Effective Environments for Enquiry-Based Learning'	O'Rourke Powell
Dall'insegnamento All'apprendimento: esperienze a confronto	University of Teramo, ITA	02/02/2007	'L'applicazione del Problem-Based Learning in Medicina. L'esperienza di Manchester' (Application of PBL in Medicine: Manchester method).	Elliott
Dall'insegnamento All'apprendimento: esperienze a confronto	University of Teramo, ITA	02/02/2007	'Data-Driven Enquiry-Based Learning Nella Biologia' (EBL in biology).	Prince
Dall'insegnamento All'apprendimento: esperienze a confronto	University of Teramo, ITA	02/02/2007	'Enquiry-Based Learning Nelle Materie Umanistiche' (enquiry-based learning for humanities).	O'Rourke

## Keynote Addresses

Event Name	Location	Date	Description	Presenter
Second Southern Universities EBL Network: 'Developing your Facilitation Needs'	University of Surrey	11/01/2006	'Some Digressions on Facilitation'	Hutchings
HEA Health Sciences and Practice Subject Centre Special Interest Group: Is PBL Problematic?	University of Manchester	16/03/2006	'Is EBL Problematic?'	Hutchings
University of Gloucester Teaching and Learning Symposium: 'Inquire Within: Putting research into taught courses'	University of Gloucester	05/06/2006	'Enquiry-Based Learning'.	O'Rourke Hutchings
Higher Education Academy Conference: 'Innovations in Supporting the First Year Student Experience'	University of Aston	20/09/2006	'Enquiry-Based Learning and the First Year Student Experience'	O'Rourke Hutchings
Newman College of Higher Education Learning and Teaching Conference	Newman College of Higher Education	20/03/2007	'Enquiry-Based Learning: Principles and Practice'	Hutchings
Advocating IBL: CILASS	University of Sheffield	23/05/2007	Keynote lecture at CILASS as part of University of Sheffield's Sharing Good Practice Week	Hutchings
Centre for Teaching and Learning Inaugural Colloquium	University College Dublin	12/06/2007	Keynote lecture about CEEBL	O'Rourke

## Project Holder Presentations

### Presentations/Discussions/Workshops

Event Name	Location	Date	Description	Presenter
HEA Health Sciences and Practice Subject Centre Special Interest Group: Is PBL Problematic?	University of Manchester	16/03/2006	"Problems in Electronics: PBL in The School of Electrical and Electronic Engineering".	Powell Truscott Hicks Green Renfrew Peaker
PBL Partners Rotating Meeting	University of Bristol	20/04/2006	"Problems in Electronics: PBL in The School of Electrical and Electronic Engineering"	Powell Green Hicks Peaker Truscott Renfrew
HE Academy Annual Conference	University of Nottingham	03/07/2006	'Interdisciplinary Learning in the UK HE Sector: Challenges and Possibilities'	McMorrow Woods Braidman
Engineering and Physical Sciences, Teaching Support and Development Meeting, EPS Innovation Forum	University of Manchester	13/12/2006	'Preparation for Group Project Work – A Structured Approach'.	Hicks Green Van Silfhout Powell
HEA Subject Centre for History, Classics and Archaeology: Supporting Teaching & Learning in Archaeology & Classics: Graduate Teaching Assistants, Part-time Teachers & New Lecturers	University of Manchester	19/02/2007	'Enquiry-based Learning: A mechanism for gallery evaluation'.	Sutherland

Papers - National

Event Name	Location	Date	Description	Presenter
HEA Subject Centre for Languages, Linguistics and Area Studies: 'Disciplines in Dialogue II: Interdisciplinary Teaching and Learning'	University of Birmingham	13/07/2006	'Cross-faculty interdisciplinary work, or how to work with 'others'.	Lorenzo-Zamorano
International Conference on Innovation: Good Practice and Research in Engineering Education	University of Liverpool	24/07/2006	'Preparation for Group Project Work - A Structured Approach'.	Powell Green Truscott Hicks
School of Materials Textile Futures Conference	University of Manchester	21/08/2006	'Blended Learning Approach to Constructed Textile Design'.	Sayer
British Pharmacological Society Meeting	University of Oxford	18/12/2006	'Teaching drug design and development via EBL: a student perspective'.	Prince Hollingsworth
Higher Education Academy and LTSN Philosophy/Religion section: 'Teaching Practical Theology in Higher Education'	Oxford Brookes University	01/03/2007	'Launching the Professional Doctorate'	Graham Bennett

Papers - International

Event Name	Location	Date	Description	Presenter
6th European Workshop on Microelectronics	(Sweden)	08/06/2006	'Problems in the Semi-Conductor Industry: Teaching design and of VLSI systems using PBL'.	Powell Hicks Truscott Canavan
10th Annual Asia-Pacific Programme of Educational Innovation for Development (APEID) International Conference.	(Bangkok)	06/12/2006	'Using Participatory Image-Based Research to inform Teaching and Learning about Inclusion in Education'.	Miles Kaplan

Poster

Event Name	Location	Date	Description	Presenter
4th Annual Conference on Teaching and Learning: 'The Challenge of Diversity: Teaching Support and Student Learning'	National University of Ireland Galway	08/06/2006	'EBL Master Classes for Targeted Outreach'	Clift Lee

## Appendix IX Summary of Travel and Dissemination Grants

### Travel (Staff Development)

Name	Event	Date	Grant
Dr Tony Matthews, School of Medicine, UoM	PBL Summer school 2006, University of Leicester	July 2006	£75
Marcia Ody, Students as Partners, UoM	LTEA 2 <sup>nd</sup> Annual Conference: Learning for a Complex World	June 2007	£200

### Dissemination

Name	Event	Date	Grant	Details
Susie Miles and Ian Kaplan, School of Education (UoM)	10 <sup>th</sup> Annual Asia-Pacific Programme of Educational Innovation for Development (APEID) International Conference – Bangkok.	6 <sup>th</sup> – 8 <sup>th</sup> Dec 2006	£750	Presenting a paper on their CEEBL funded project
Susan Moger, Manchester Business School (UoM)	BMAF Conference: Managing Diversity in Learning and Teaching - Oxford	6 <sup>th</sup> - 7 <sup>th</sup> April 2006	£89.10	Poster display on behalf of CEEBL
Julia McMorrow, School of Environment and Development (UoM)	HE Academy Conference	3 -5 <sup>th</sup> July 2006	£410	Presented Discussion Paper based on CEEBL Small Project: Inter-disciplinary learning in the UK higher education sector
Norman Powell Formerly: School of Electrical and Electronic Engineering	6 <sup>th</sup> European Workshop on Microelectronics Education, Stockholm, Sweden	8 <sup>th</sup> – 9 <sup>th</sup> June 2006	£390	Presented paper on non-funded project: 'Problems in the Semiconductor Industry: Teaching Design and Implementation of VLSI Systems using Problem-Based Learning'
Norman Powell Formerly: School of Electrical and Electronic Engineering	International Conference on Innovation, Good Practice and Research in Engineering Education, Liverpool	24 <sup>th</sup> -26 <sup>th</sup> July 2006	£210	Presented paper on CEEBL project: 'Preparation for Group Project Work – A Structured Approach'

## **Appendix X            Description of the CEEBL website**

<http://www.manchester.ac.uk/ceeb/>

The CEEBL website offers a concise introduction to CEEBL - our aims and objectives and how we are structured. We also include information about the core team and introduce our staff in the Faculties – the academic co-ordinators and student interns. The website is also used to share key documents, such as our Strategic Plan and Evaluation Strategy.

The website also provides summary information about the small projects we fund each year, along with the subsequent published case studies at the end of the cycle. Information about these is contained in a database so that website users can retrieve information about CEEBL projects in a number of different ways, using their own search criteria. This becomes more useful as the number of funded projects grows year on year. The website is also used to provide application information for small project funding each year, making the whole process from application to case study transparent.

The website contains a brief and simplified introduction to Enquiry-Based Learning. This is supplemented by a growing 'Resources' section, which provides a combination of CEEBL-produced resources and links to external resources supporting practical and theoretical aspects of EBL. A section of growing importance is 'Essays and Studies in EBL', which provides an outlet for more philosophical and research orientated works on EBL.

The website also gives comprehensive information about the Centre itself and the physical and technical facilities we offer. This includes two interactive 360° panoramic views from within the Centre to give people a feel for the place. We also have a 'Find us' page with directions and maps.

Our 'Events' section lists key events scheduled at the Centre and an archive makes available presentations and other past event materials where appropriate. We have also added an external events page so that we can list events elsewhere that may be of interest to our constituents. Both the CEEBL events and external events listings have an RSS feed.

The CEEBL events section is also data-driven with a simple content management system to enable administrative staff at the Centre to make updates easily without any specialist skills. The same events information is then fed to our plasma displays within and outside the Centre.

### **CEEBL Student Blog**

<http://www.manchester.ac.uk/ceeb/studentblog/>

In October 2006 we launched a Blog for our Student Interns to enable them to keep each other and everyone else up-to-date with their activities in an informal, more sociable way than the formal reporting mechanisms.

The Blog allows each of the Student Interns to make and categorize posts. The blog is open for all to read and submit comments on the posts.

## Appendix XI Summary of Consultations

### Internal Consultations

Status	Category	Start Date	Details	Consultant
Internal	Academic Consultancy	26/10/2005	Meeting with Don Bradley, Medicine. Advised on how to progress with PBL Tutoring courses	Hutchings O'Rourke
Internal	Academic Consultancy	10/11/2005	Meeting with Jim Petch, Distributed Learning. To advise on EBL aspects of a new project in mobile technologies	Hutchings
Internal	Academic Consultancy	10/11/2005	Meeting with Stella Halkyard, John Rylands University Library. Advised on the use of library archives in terms of EBL	Hutchings
Internal	Academic Consultancy	16/11/2005	Meeting with Michelle Doherty, Continuing Education. Advised on potential for links between the two areas.	O'Rourke
Internal	Academic Consultancy	22/03/2006	Meeting with Mary Griffiths and David Morris, Whitworth Art Gallery. Advised on how collections can be used in developing EBL in Art History and other related subjects	Hutchings
Internal	Academic Consultancy	22/03/2006	Meeting of Special Collections Librarians at John Rylands Library. Advised on how collections might be used to support EBL in the Humanities and the possibility of an EBL/Special Collections Showcase	Hutchings
Internal	Academic Consultancy	31/03/2006	Meeting with Emma Lowe, SAGE (Faculty of Humanities). Advised on a current PBL session for MA students that had had some negative feedback - how to make it more relevant, fully enquiry-based and specific to students' needs	Hutchings
Internal	Academic Consultancy	10/05/2006	Meeting with Lee Webster, Manchester Science Enterprise Centre. Advised on developing some EBL activities online using WebCT for Foundation students. He indicated that he would be getting back to her when he has worked out further specifics	Anderson
Internal	Academic Consultancy	22/05/2006	Meeting with Linda Macaulay, School of Informatics. Advised on the development of a new degree programme which will deliver teaching through EBL and the possibility of CEEBL contributing was agreed.	Hutchings
Internal	Academic Consultancy	07/07/2006	Initial meeting with Graham Gough, Computer Science. Although project bid was unsuccessful CEEBL are to support through evaluation of new EBL module in School.	O'Rourke

Status	Category	Start Date	Details	Consultant
Internal	Academic Consultancy	06/02/2007	Dr Gribben, School of Arts, Histories and Cultures (English) teaches two level three courses. These received positive student responses when he first ran them, but last year they did not go so well. He is looking at developing an enquiry-based method as a way to improve delivery and reception of the courses. He has no experience and little knowledge of EBL so this was very much an early stage discussion of possible pathways. He will consider a range of possibilities discussed with Bill and get back in contact, and possibly an application for project funding.	Hutchings
Internal	Academic Consultancy	12/03/2007	Janet Pennington, School of Psychological Sciences, wishes to introduce EBL into a traditionally-taught degree course. Her problems include: size of student group; widespread staff resistance to innovation; only a small group of dedicated Teaching Fellows; research orientation of section; financial cut-backs.	Hutchings
Internal	Academic Consultancy	25/04/2007	Katja Steurzenhofecker, Dept. Religions and Theology, works on a level 2 course into which they have introduced an EBL element in the form of an individual task. They would like to develop this into a group exercise and further refine it. Katja asked for help with a bid for TQEF funding through Faculty, as well as advice about timing the project, implementation and EBL processes - particularly facilitation.	Hutchings O'Rourke
Internal	Research/Eval Consultancy	01/06/2006	Brought into the Memetics project to produce an example piece of work showing how Memetics could be used to analyze an EBL/PBL session recorded at an access grid node.	Powell
Internal	Research/Eval Consultancy	07/11/2006	Met with Computer Science Teaching Fellows to discuss how to go forward with the evaluation aspect of their roles. Also advised on a small project bid they are putting together. Followed up with notes, comments and suggesting for publishing outlets, as well some evaluation tools to follow once compiled.	Powell
Internal	Research/Eval Consultancy	02/02/2007	Met to advise Chris Chadwick from Centre for Educational Leadership on possible avenues for evaluation of on-line communities.	Powell
Internal	Learning Consultancy	Tech 10/11/2005	Meeting with School of Education to discuss slow moving Distributed Learning through EBL project.	Hutchings Anderson O'Rourke
Internal	Learning Consultancy	Tech 26/01/2006	Meeting with Manchester Leadership Programme. Advising on how staff from MLP can take their module forward with EBL, particularly with learning technologies. CEEBL Learning Technologist recommended possible use of mobile technologies.	Anderson Niblett
Internal	Learning Consultancy	Tech 08/02/2006	Meeting with MIMAS. Discussing potential link-up of resources	Anderson Hutchings O'Rourke

Status	Category	Start Date	Details	Consultant
Internal	Learning Consultancy	Tech 09/02/2007	Meeting with Margaret Smith, School of Education. Discussed all aspects of best format for PBL demonstration videos as well as discussion of content. Sessions to be filmed at CEEBL later this year	Anderson Niblett
Internal	Student Consultancy	14/11/2006	Meeting with PADP Director to discuss the redesigning of PADP within School of Pharmacy	Sattenstall
Internal	Student Consultancy	27/02/2007	Met with Janet Tatlock (Humanities Widening Participation) who is interested in using the Dragon's Den workshop designed by the interns and presented at recent CRA conference (article published in UniLife) for Business School Post16 Summer School.	Tinker Louise Jamie Kate
Internal	Student Consultancy	01/06/2007	Follow-up work with MBS Summer School for Dragon's Den session	Tinker
Internal	Student Consultancy	29/05/2007	Contacted by student rep from Institute for Development Policy and Management (School of Environment and Development) who was interested in getting a sense of EBL and whether it might be appropriate to bring to a meeting of student reps and departmental heads	Tinker Louise Jamie
Internal	Training/Teaching	01/02/2006	Enquiry-Based Learning Language Workshop - invited by UoM Language Department. Spoke on the theory and practice of EBL and led a discussion on its applicability to languages	Hutchings
Internal	Training/Teaching	20/04/2006	Session for JRUL. Led introductory session for special collections librarians on EBL implications for library use. Led to a joint seminar for wider catchment of library staff.	Hutchings
Internal	Training/Teaching	02/10/2006	Ambassador training session for Widening Participation in Modern Languages	Goldring Mauil Tinker
Internal	Training/Teaching	02/10/2006	Introductory EBL workshops for TSEE programme – visiting Chinese lecturers. Run by Pedagogic Development.	O'Rourke
Internal	Training/Teaching	24/04/2007	Motivating Students to Work in Teams'. Two hour workshop for EPS staff. CEEBL was approached to contribute to the ongoing staff development programme in Faculty	Goldring Sattenstall Tinker O'Rourke
Internal	Facilitation	05/10/2006	Focus group with Geography first years to evaluate experience so far	Wood Goldring
Internal	Facilitation	20/11/2006	Focus group with first year Dentistry students	Sattenstall
Internal	Facilitation	25/04/2007	Two focus groups, one for Yr4 and one for Yr1, to identify the groups views on EBL programmes within Dentistry	Sattenstall

## External Consultations

Status	Category	Start Date	Details	Consultant
External	Academic Consultancy	21/11/2005	CILASS Advisory Group Meeting. Karen had been asked to act as external consultant to board	O'Rourke
External	Academic Consultancy	20/02/2006	Meeting with Professor Paul Matteoli, University of Teramo, Italy. To discuss development of PBL Biotechnology programme, leading to potential for CEEBL to take a more formal consultative role to this Italian institution	O'Rourke
External	Academic Consultancy	20/03/2006	Meeting with Joyce Willock, Centre for Health Psychology, University of Edinburgh. Advised on introducing EBL into undergraduate, MSc and taught doctoral programmes.	O'Rourke Hutchings
External	Academic Consultancy	28/04/2006	Meeting with Patrick Dainley, University of Greenwich	Hutchings O'Rourke
External	Academic Consultancy	01/10/2006	Initial discussion with George Allan, University of Portsmouth, in an advisory role regarding project - 'Integrated Case Study across First Year Computer Science Units'. Possibility this will become a collaboration	Powell
External	Academic Consultancy	20/11/2006	Meeting to discuss intro of PBL to first year chemistry at Birmingham University with Dr Nicola Rowley. Her Research Associate is planning a future visit so CEEBL may continue as consultants on this.	O'Rourke
External	Academic Consultancy	20/11/2006	Penny Burden, from University of Surrey, visited to have a look around CEEBL and speak to Bill/Karen regarding the setting up a successful learning space. She is developing a student space in the library at Surrey and was interested in our space, its usage and any particular issues we have encountered.	Hutchings Niblett
External	Academic Consultancy	29/01/2007	Formally requested to join consultative team for Prof. Sally Sandover's (University Western Australia) bid for Carrick Fellowship Project 2007, which will focus on PBL. Will contribute towards high profile publication and research outcomes.	O'Rourke
External	Academic Consultancy	01/02/2007	Following an initial meeting in Manchester, CEEBL staff visited Teramo to continue discussions about developing EBL at University of Teramo and more widely.	Prince O'Rourke Elliott
External	Academic Consultancy	02/02/2007	Robert Poole, St Martins, is planning a second level 30 credit course on 'Britain in the Long Eighteenth Century'. His key problem is how to combine an EBL approach with ensuring the students have a sound survey grounding.	Hutchings

Status	Category	Start Date	Details	Consultant
External	Academic Consultancy	15/02/2007	Initial meeting with Geraldine Main to open up discussion about University College Dublin's recently funded large-scale project to implement EBL in at least ten modules across the institution, and negotiate CEEBL's ongoing consultative role.	O'Rourke
External	Academic Consultancy	19/02/2007	Consultancy with Nick Hamilton, University of Abertay Dundee, who is on a one-year Leadership Foundation Fellowship in innovation in teaching and learning in University sector. He was particularly interested in the distinction of EBL from PBL and the structure of CEEBL activities	Hutchings
External	Academic Consultancy	27/04/2007	Full day visit from Tim Lucas, Research Assistant (to Natalie Rowley) at University of Birmingham.	O'Rourke
External	Academic Consultancy	13/06/2007	Part of a fact-finding trip to the UK. Mark Hunwicks, (TASEFA, AUS) met with the CEEBL team for a full-day consultancy. His specific area is work-based learning so had already visited SCEPTRE.	Hutchings O'Rourke Anderson Tinker
External	Academic Consultancy	19/06/2007	Paul Ramsden, Head of the Higher Education Academy, visiting senior teaching and learning staff, including Alan Gilbert, before coming to CEEBL to meet with Bill and Karen and view facilities.	O'Rourke Hutchings
External	Learning Tech Consultancy	23/02/2006	Meeting with Maggi-Savin Baden, Coventry University. Requesting CEEBL assistance with the production of a PBL DVD as part of an ongoing project	O'Rourke Anderson Hutchings
External	Student Consultancy	22/06/2007	Full day consultancy/visit for student group and academic from Glasgow University. Finding out about EBL and our student intern programme, took part in an EBL activity as well as talks from Louise and Greg	Goldring Tinker
External	Training/Teaching	26/01/2006	Invited to Queens University Belfast to lead seminar for Nursing Postgraduates. Presented Bill's EBL model as derived from his national teaching fellowship project	O'Rourke
External	Training/Teaching	03/04/2006	Invited to University College Cork to present to staff over two days. Led a teaching forum to teaching staff new to EBL.	Hutchings O'Rourke
External	Training/Teaching	04/04/2006	Invited to University College Cork to present to staff over two days. On this second day led a teaching forum for staff more experienced in EBL	Hutchings O'Rourke
External	Training/Teaching	04/12/2006	Full day EBL workshop for (Latvian) staff at Oxford Brookes University	O'Rourke

Status	Category	Start Date	Details	Consultant
External	Training/Teaching	06/12/2006	Workshop on EBL in Humanities for staff at Glasgow University	Wood Goldring Hutchings O'Rourke
External	Training/Teaching	05/01/2007	Delivered workshop on 'Teaching the Holocaust through EBL'. 12 attendees, all from Humanities subjects, University of Surrey	O'Rourke Hutchings
External	Training/Teaching	01/02/2007	Led EBL workshop for academic staff at Teramo University, ITA, with focus on Humanities. Linked to ongoing, larger consultancy with Mauro Mattioli.	O'Rourke
External	Training/Teaching	01/02/2007	Led EBL workshop for academic staff at Teramo University, ITA, with focus on Biosciences. Linked to ongoing, larger consultancy with Mauro Mattioli.	Prince
External	Training/Teaching	19/02/2007	Co-led (with Ella Sutherland, project holder) EBL session as part of the HEA Subject Centre for History, Classics and Archaeology workshop for new lecturers	O'Rourke
External	Training/Teaching	05/06/2007	Part of the University of Hull's (Centre for Development) Certificate in Higher Education programme, but open to all staff. Delivered a lecture and workshop on EBL	Hutchings

## Appendix XII Events Invited to Present

Event	Host/Location	Category	Date
HEA English Subject Centre: 'Teaching Scottish and Irish Literature'	University of Manchester	Paper - national	21/10/2005
National University of Ireland Galway and Maynooth: 'PBL Symposium'	National University of Ireland Maynooth	Presentation/Discussion/Workshop	04/11/2005
Coventry University Teaching and Learning Conference: 'Innovations in PBL'	Coventry University	Presentation/Discussion/Workshop	10/11/2005
Second Southern Universities EBL Network: 'Developing your Facilitation Needs'	University of Surrey	Keynote	11/01/2006
HE Academy: CETL Conference 2006		Paper - national	08/02/2006
EBL and PBL presentation at Scientific Literacy CETL, Liverpool Hope University	Liverpool Hope University	Presentation/Discussion/Workshop	08/03/2006
HEA Health Sciences and Practice Subject Centre Special Interest Group: 'Is PBL Problematic?'	University of Manchester	Presentation/Discussion/Workshop	16/03/2006
HEA Health Sciences and Practice Subject Centre Special Interest Group: 'Is PBL Problematic?'	University of Manchester	Keynote	16/03/2006
Staffordshire University: PBL Forum	Staffordshire University	Presentation/Discussion/Workshop	22/03/2006
HEA English Subject Centre 'The Pedagogy of the Text: A Symposium'		Paper - national	26/05/2006

Event	Host/Location	Category	Date
University of Gloucester Teaching and Learning Symposium: 'Inquire Within: Putting research into taught courses'	University of Gloucester	Keynote	05/06/2006
Higher Education Academy Conference: 'Innovations in Supporting the First Year Student Experience'	University of Aston	Keynote	20/09/2006
CRA Conference 2007 (Manchester)		Presentation/Discussion/Workshop	21/11/2006
SEDA Conference: 'Mapping Educational Development: locations, boundaries and bridges'		Presentation/Discussion/Workshop	21/11/2006
HE Academy Conference: 'Bringing Research and Teaching Together'		Paper - national	24/11/2006
Engineering and Physical Sciences, Teaching Support and Development Meeting, EPS Innovation Forum.	University of Manchester	Presentation/Discussion/Workshop	13/12/2006
Dall'insegnamento All'apprendimento: esperienze a confronto	University of Teramo, ITA	Paper - international	02/02/2007
Dall'insegnamento All'apprendimento: esperienze a confronto	University of Teramo, ITA	Paper - international	02/02/2007
Dall'insegnamento All'apprendimento: esperienze a confronto	University of Teramo, ITA	Paper - international	02/02/2007
HEA Subject Centre for History, Classics and Archaeology: 'Supporting Teaching & Learning in Archaeology & Classics: Graduate Teaching Assistants, Part-time Teachers & New Lecturers'	University of Manchester	Presentation/Discussion/Workshop	19/02/2007
1st Annual CETLs Conference 2007	University of Warwick	Presentation/Discussion/Workshop	19/03/2007
Newman College of Higher Education Learning and Teaching Conference	Leicester University	Keynote	22/03/2007

<b>Event</b>	<b>Host/Location</b>	<b>Category</b>	<b>Date</b>
Faculty of Medical and Human Sciences Away Day	University of Manchester	Presentation/Discussion/Workshop	05/04/2007
Faculty of Engineering and Physical Sciences Staff Development Day	University of Manchester	Presentation/Discussion/Workshop	24/04/2007
University of Exeter Teaching and Learning Conference: 'Active Learning through Enquiry'	University of Exeter	Presentation/Discussion/Workshop	17/05/2007
CILASS: Advocating IBL	University of Sheffield	Keynote	23/05/2007
Centre for Teaching and Learning Inaugural Colloquium	University College Dublin	Keynote	12/06/2007
Annual Teaching and Learning Staff Conference: 'What's Hot in Teaching and Support?'	University of Bolton	Presentation/Discussion/Workshop	14/06/2007
HE Academy Symposium: 'Teaching Informed and Enriched by Research'	University of York	Presentation/Discussion/Workshop	28/06/2007
<b>Tot: 29</b>			

**Appendix XIII Letter from JISC project Leader**

**Statement regarding CEEBL involvement in JISC capital projects bid, June 2006.**

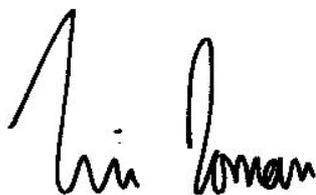
A group representing three of Manchester Medical School's four teaching hospital trusts, the Medical School itself, the University Distributed Learning Group, and a national consortium working on assessment of medical competence bid in June 2006 for approximately £200K to the Joint Information Systems Committee to conduct research and development work on education technology. The project was to build on an existing technology (Horus), with these specific aims:

Extend the JISC-funded HORUS learning management services to a wider range of applications, institutions, and stages in the lifelong learning continuum and link them to the JISC-funded UK Collaboration for a Digital Repository (UKCDR) and MANSLE projects.

The existence and activities of the CEEBL were cited in the bid as an important feature of the research environment in these words:

“The project is also supported by the University of Manchester Centre for Excellence in Enquiry-based Learning, with whose goals the project is closely aligned.”

A letter of support from Dr Hutchings accompanied the bid, which was successful. I regard the CEEBL as having made a material contribution towards this research and development initiative, which will help enhance excellence in enquiry based learning in the higher and further education sector.



Professor Tim Dornan

20/2/07

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