CILASS (Centre for Inquiry-based Learning in the Arts and Social Sciences),
University of Sheffield

Inquiry-based Learning in the Arts

A meta-analytical study

Dr Jamie Wood
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Inquiry-based Learning in the Arts

Contents

1 Introduction

This report summarises learning about inquiry-based learning (IBL) in the arts and humanities disciplines at the University of Sheffield during the period in which the Centre for Inquiry-based Learning in the Arts and Social Sciences (CILASS) has been in operation. It draws upon impact evaluation data from curriculum development projects that have been funded by CILASS in departments in the Faculty of Arts and Humanities. CILASS employs an evaluation methodology that is based on a combination of Theory of Change (Connell & Kubisch, 1996) with Enabling, Process and Outcome (EPO) Performance Indicators (Helsby & Saunders, 1993). The evaluation methodology, which was developed in conjunction with the University's Learning and Teaching Services (LeTS), is intended to be a collaborative and participatory in nature (Hart, Diercks-O'Brien and Powell, 2009).

The Theory of Change (ToC) methodology is used at the level of the entire CILASS programme and helps to define the unit's performance indicators. The ToC methodology is also employed at project level and gives a framework for the evaluation process for all CILASS curriculum development projects. At project level the ToC document is used to allow key project stakeholders to generate evaluation questions for the project and design data collection methodologies and instruments. The ToC methodology therefore provides a standard framework for the evaluation of the full range of CILASS activities and thus for comparison and analysis across projects.

1.1 Aims

This report is intended to be used as a tool to inform educational practice in relation to the support and development of inquiry-based learning in the arts and humanities. Although the data relates specifically to the University of Sheffield, it is hoped that the report outcomes will be applicable in other HE institutions.

1.2 Methodology

A purposive sample of nine CILASS-funded projects from the Faculty of Arts and Humanities was selected from the total pool of 56 projects in the Faculty to provide the data set for the analysis. These projects were chosen to represent the variety of discipline areas within the Faculty, and were taken from both the departmental and IBL grant project funding streams. The projects included in the sample are summarised on the following table and are described in more detail in appendix A.

Department: project title	Funding stream	Level
Archaeology: Athens, empire and the Classical Greek world	Departmental	3
Biblical Studies: Field Archaeology online	Departmental	2/3
English: Roots-Route	Departmental	2
History: Paths from Antiquity to Modernity	Departmental	1
Music: Collaborative composing	Departmental	1
Philosophy: Discovering the background	Departmental	1
Hispanic Studies (School of Modern Languages): Torquemada en la Hoguera	IBL Grant	2
French (School of Modern Languages): History of the French language	Departmental	2
Student-led, extracurricular: Theatre Two Point Oh#	IBL Grant	All

The sample projects were selected in order to provide a broad overview of the different IBL approaches that have been adopted across disciplines and levels. The quality of the available evaluation data was also a determining factor in the selection criteria: it was judged that projects with a variety of evaluation sources would best facilitate the exploration of the research questions and triangulation of results. The data set for the analysis of the projects comprised a range of documentation which CILASS routinely requests and produces in conjunction with project leaders. Typically, this includes:

- project funding application forms;
- interim and final monitoring and evaluation reports;
- Theory of Change (ToC) documents for projects;
- evaluation data, including:
    - student focus groups and questionnaires;
    - staff reflective interviews and focus groups;
- learning design case studies which have been generated by CILASS (usually in conjunction with project leaders) from project evaluation data (see www.shef.ac.uk/ibl/resources/casestudies for a full list of cases).

A full list of the data which was included for each project can be found in appendix A. Each project is identified in the following report according to the name of the discipline.

2 Research questions

The research questions for the meta-analysis were drawn directly from the CILASS Theory of Change (ToC) document (see www.shef.ac.uk/content/1/c6/11/08/47/CILASS_ToC.pdf for the CILASS ToC), as follows:

2.1 'Teacher-focused' questions

1. Why do educators in the arts and humanities adopt IBL approaches, in terms of desired impact on the student learning experience?
2. How do educators in the arts and humanities conceptualise, design and facilitate IBL?
3. What 'models of IBL practice' have emerged from informal theories of change in the arts and humanities, and can disciplinary patterns and/or differences be discerned?
4. What have teachers learned about designing and facilitating IBL? What are the challenges of designing and facilitating IBL, in the arts and humanities?
5. What impact has doing the IBL project had on staff engagement with IBL, their valuing of it and their plans for further developing IBL practice?

2.2 'Student-focused' questions

6. What is the impact of IBL on students' learning experiences, understandings and attitudes (and its value)?
7. What is the impact of new learning spaces, networked learning strategies and information literacy development strategies in students' IBL experiences?
8. What have students learned about doing IBL?

3 Analysis

Atlas.ti software was used to facilitate the qualitative analysis of the data in response to the research questions. All available data was coded via a combination of pre-defined codes – based on the research questions – and codes which emerged from the data. Rather than addressing each of the questions in turn, the following report is divided into thematic sections in order to accommodate some of the overlap between questions.

Staff-focused

3.1 Rationale for adopting IBL

Project documentation articulated a wide range of different reasons for participating in IBL curriculum development projects. Most of the projects were directed at developing students' subject knowledge and disciplinary skills, for example in research. Inquiry-based learning was seen as one method through which this aim could be accomplished. Project leaders also envisaged inquiry-based learning as a method for developing a range of transferrable skills and outlooks among their students. Finally, inquiry-based learning was seen as a potential way of achieving certain strategic aims within the department, such as staff development.

3.1.1. The discipline

The modules within which IBL initiatives were implemented aimed, above all, at developing students' subject knowledge and skills. In some cases, the IBL activities were also directed at helping students in these areas understand the contours of the discipline [e.g. Philosophy, Archaeology and History]. IBL was seen as a way of developing students' understanding of disciplinary research and inquiry methodologies that were available in the discipline and encouraging students to work like researchers [English, Hispanic Studies]. Three projects saw the IBL activities as playing a role in broadening students' conception of the discipline: for Archaeology it was envisaged as helping students to contextualise their modular knowledge in terms of the broader discipline, while for Philosophy and French it aided them in conceptualising that it was possible for them to research and create knowledge (independently of tutors). The English project aimed to use IBL as a way of encouraging students to break through discipline boundaries and transfer their IBL knowledge and skills to other areas.

3.1.2 Skills

In addition to the development of disciplinary skills, projects aimed for students to develop a range of more generic skills. The most frequently-referred to skill was that of collaboration, which is mentioned as an important element of a majority of projects. Collaboration was articulated as students working together to negotiate their working process, structure tasks, manage their time, and carry out and present their collaborative research. At least one project also intended to encourage students to reflect explicitly upon group processes and dynamics as part of this effort to improve their group working skills [French]. For another project, collaboration was related to the broader aim of promoting cohesion within the student group [Philosophy].

The development of information literacy capabilities was seen as an important part of a number of projects [History, Hispanic Studies, Philosophy]. This was articulated as increasing students' awareness of the availability and functionality of electronic research resources, rather than as training them in higher order information literacy capabilities, such as the evaluation and synthesis of information.

A number of projects also aimed to encourage students to develop their skills in reflection [Hispanic Studies, Archaeology, French, English, Biblical Studies]. This was articulated as an ability to reflect upon the process of their learning and developing a critical awareness of that process:

> *This approach to learning and teaching was intended to prioritise process rather than product and, in particular, to heighten students' awareness of process*
>
> [English]

Other projects had the additional aim of encouraging students to value reflection as a process in its own terms:

> *Students understand the importance of gaining an explicit understanding of, and reflecting on, the learning experience.*
>
> [French]

Further skills that were mentioned included:

- technical and technology skills [Music, Philosophy, TTPO#]
- presentation skills [Philosophy]
- problem-solving skills [Music]
- time management skills [French]

3.1.3 Attitudes

In terms of attitudes, the primary common goal was to use IBL as a method for engaging and supporting students in independent and active learning [History, French and English]. For Philosophy this was intended to increase students' awareness that they could initiate their own inquiries independently of staff. The desired outcome of this was to increase engagement and motivation for learning. Again, one project aimed to make the value of self-directed learning explicit to students through a process of reflection [French].

3.1.4 Strategic aims

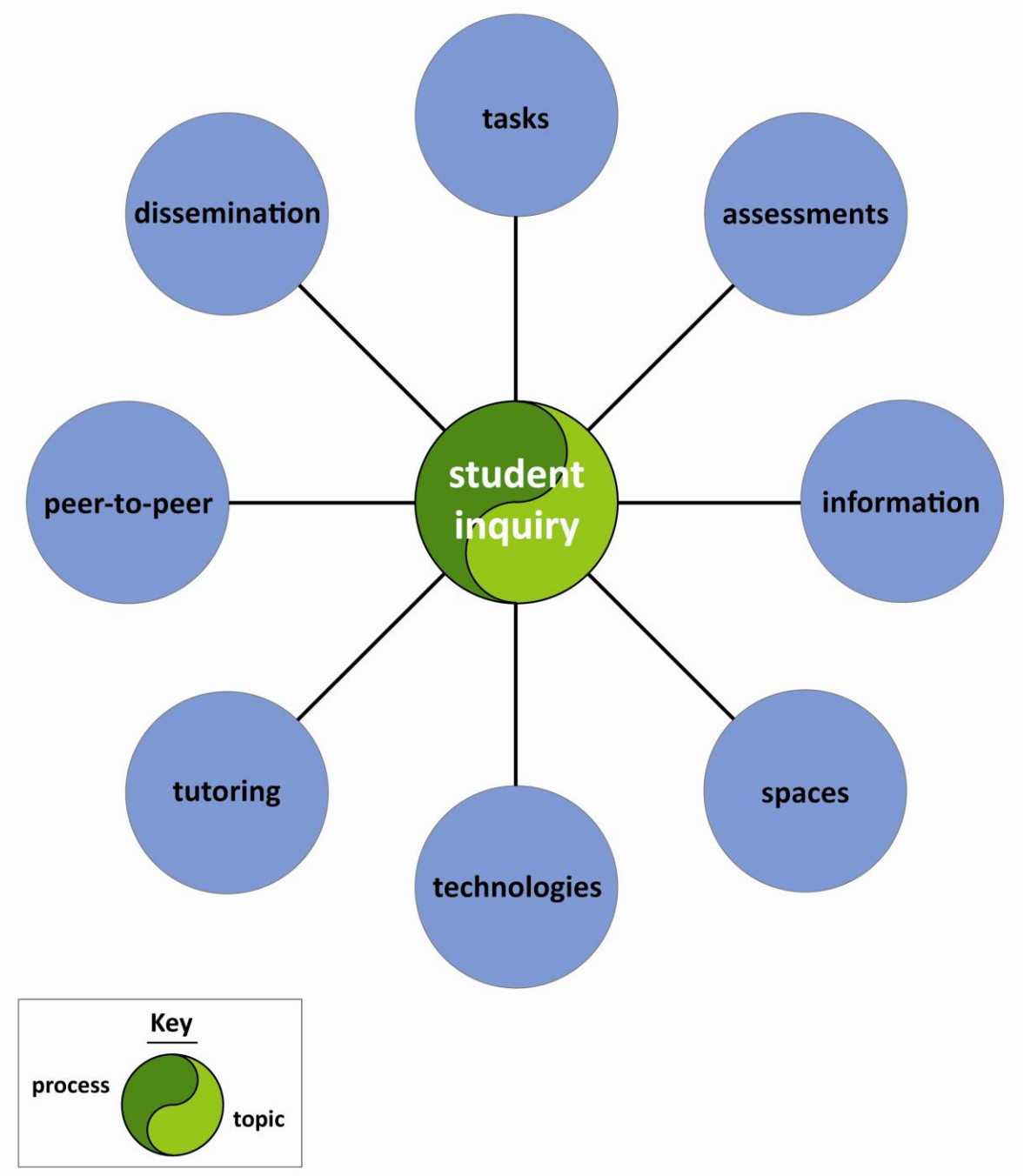
More strategic goals, in relation to the overall curriculum or the department, underpinned some projects. For example, the skills that students were developing as part of their IBL projects were envisaged as preparing students for more independent and intensive projects they were to undertake at higher levels [History and English].

Strategic aims of strengthening IBL provision within the department, of integrating teaching and learning to aid continuity and progression across levels, and of aiding staff development, underpinned some projects [History and Music]. Dissemination of staff and student work, within the University and externally, was an explicit aim of the two projects which were situated in performance disciplines [Music and TTPO#].

A number of projects talk about developing a more facilitative and less directive approach to teaching among staff [e.g. Hispanic Studies]. Some project leaders suggested that IBL offered them the opportunity to move away from more transmission-based modes of teaching, such as lectures, and towards more participative and active approaches [Archaeology].

3.2 Designing and facilitating IBL

The following diagram outlines eight factors (the 'spokes') which comprise the key features that underpin the typical IBL design (the 'hub'). The subsequent section analyses the sample projects against this framework. Similar categories have been used to organise the IBL design case studies that form the final output of each CILASS-funded project (see www.shef.ac.uk/ibl/resources/casestudies for full list of projects). The following section of the report represents a summary of what can be found in the case studies, fleshed out with other evaluation data where necessary.



3.2.1 Activities

Because IBL requires students to take on an active role in the learning process, it is usually important for tutors to build in some opportunities for students to engage in activities to forward and support their inquiries. These activities take one of two forms:

1. inquiry activities: activities that require or encourage students to carry out their own research and inquiries;

2. process-support activities: activities that may not necessarily involve students doing inquiries, but which support the students' engagement in the process of inquiry; for example in the development of the skills necessary to conduct independent research such as activities to develop students' information literacy skills.

3.2.1.1 Inquiry activities

Students were asked to engage in a wide range of inquiry activities during their IBL modules. These took various forms:

- Students as producers:
    - Students research and make videos focussing on the archaeological research process, including through interviewing members of the dig team at their field site [Biblical Studies].
    - Students from a range of disciplines and levels research, devise, rehearse and perform a play on a topic of contemporary relevance in an extra-curricular context [TTPO#].
    - Students create and act out a performance or write a piece of poetry based on the text they are investigating [English].
- Students as disciplinary researchers:
    - Students conduct multi-dimensional inquiries into an individual text [English].
    - Students collaborate to independently research a topic they have chosen within parameters defined by the tutor and give a group presentation [Archaeology, Philosophy].
    - Students collaborate on open-ended inquiry projects, the questions for which were set by staff. Students carry out initial data collection (into a corpus of a specified size), specify their own focus, identify avenues of research, conduct the research, and produce a report for assessment [French].
    - Students work on online problem-solving tasks into an electronic edition of a text. Tasks include analysis of particular characters, words, places or themes within the text using various features of the online edition. [Hispanic Studies].
    - Criticality and iteration of the inquiry process were encouraged by encouraging students to reflect critically on their initial interpretations and critically appraise the work of other groups [Hispanic Studies, Philosophy, English].
    - Students conducted independent research in preparation for small group teaching sessions and then discussed the work they had done in class. The virtual learning environment was used to establish these inquiries and/ or to provide access to sources of information [English, History].

3.2.1.2 Process support activities

Students received training to enable them to engage in their inquiries in a number of the projects. For example, training from Learning and Teaching Services was intended to provide students with necessary technical skills, such as using digital video cameras and editing videos [Biblical Studies]. In order to prepare for group-working and independent research students work together to investigate a topic of contemporary or personal significance (which may or may not be related to the discipline) in a mini-inquiry and then report back to the group [Archaeology]. Reflection on learning and process, especially that of group-working, is encouraged [Archaeology, Hispanic Studies, French, English]. In one project, students were directed by seminar tutors to conduct research into specific online databases or other electronic sources in order to develop their information literacy capabilities and to prepare for seminar work [History], while in another project their research into electronic resources fed into group research and the presentations that they were preparing [Philosophy].

3.2.1.3 Active learning

In addition to the major IBL tasks and process support activities, project leaders reported using a variety of active learning techniques in order to encourage smaller scale inquiries on a regular basis. These included:

- Source criticism;
- Whole group concept mapping;
- Comparing and contrasting arguments about the topic;
- Brainstorming modern comparisons and/or modern reflections of the topic and discussion of why and how these might be important.

3.2.2 Assessments

Due to the flexible and open-ended nature of IBL, appropriate assessment may come in many forms. Traditional methods of assessment, such as essays and examinations, often do not allow students to truly explore the processes around their inquiry, and offer only a snapshot-view of the inquiry journey they have undertaken. Students can sometimes struggle to make the link between the work they have done and the assessment used to grade this learning, especially in those cases where a module involves group work.

A variety of assessment regimes were adopted in the sample projects. Over half of the projects experimented with non-traditional forms of assessment, although elements such as essays and exams still formed part of the module marking scheme. The project leaders adopted multiple methods of assessment in order to reflect the varied activities and processes which students had been engaging in during their inquiries. The English and Archaeology projects allocated marks on the basis of student contributions to discussion boards in the virtual learning environment. Deliberate attempts were also made to distribute assessment throughout the semester, for example through mid-term assignments and the use of continual assessment. Even those projects which did make use of essays as a form of assessment sought to break with the standard format, for example by asking students to write two shorter assignments of 1,000 words rather than the traditional 2,000 word essay. In addition, certain projects [Biblical Studies, French, Philosophy] adopted an element of peer marking of both product (videos) and process (group-working). Students were given the opportunity to report non-contribution in some of the assessments that were related to group-work. At least two of the projects offered students (either individually or in groups) the opportunity to determine the form of assessment that they would undertake [Hispanic Studies, Philosophy].

For the History project the inquiry-based learning tasks were not assessed, though they were meant to feed into research for assessed work and this was made explicit to students in order to increase engagement. As it was an extra-curricular project, the activities for the TTPO# project were not assessed. It was envisaged, however, that the project would help students to make links between curricular and extra-curricular work and thus the project may have influenced assessed work that the students were undertaking.

3.2.3 Information

Because IBL involves students conducting research, awareness of the available information resources and the development of students' strategies for using them are vital parts of the support process for IBL and these have been important parts of a number of funded projects. The following section of the report is divided into two parts; one looks at the ways students were provided with 'process support' information (information to support students engaging in the process of their learning , the other with the methods for providing students with information relating to the disciplinary content of their inquiries.

3.2.3.1 Process support information

Projects leaders adopted a variety of approaches to providing students with access to process support information. These included:

- Face to face instruction and introduction to activities and information [Philosophy and French]; e.g. introduction to group-working session; advice on how to present results or common problems encountered by students doing IBL.
- Online comments, feedback and information [Philosophy, Archaeology, English]
- Handouts; e.g. details of the relevant websites and step-by-step guides to completing activities, sample mark sheets [History, French]; examples of earlier projects.

In general, however, project leaders adopted a mixed approach, utilizing both face to face and electronic approaches to provide process support information [Hispanic, Philosophy, English, French].

3.2.3.2 Subject information

In several projects, students worked independently on resources which staff had made them aware of through handouts or lectures [Archaeology, Philosophy, Hispanic Studies, History]. Most of these were electronic (online databases, editions of texts and other electronic resources). Lectures, coupled with independent learning, played a significant role in another group of projects [French, English, Biblical Studies]. As with the provision of process support information, a highly mixed approach was adopted in two projects [Biblical Studies, English], the elements of which included:

- direct participation;
- lectures;
- field visits;
- interviews with disciplinary experts;
- virtual learning environment (blogs, discussion boards);
- podcasts;
- resource packs;
- course texts;

- and reflection and reviewing of the learning process.

3.2.4 Spaces

Effective inquiry-based learning designs take careful account of the spaces in which the learning and teaching activities are to take place so that students are enabled to carry out their inquiries without hindrance. For example, if students are expected to collaborate, to utilise relevant technologies, and to conduct independent research, they should be in spaces that facilitate such activities.

Generally, learning spaces are not mentioned in the theory of change documents for the sample projects. One of the exceptions is English, which states that 'restrictions of space & access to technology affect the modes of teaching & prevent more interactive teaching approaches', with staff intending to make use of the CILASS learning spaces and technology 'to support open-ended & collaborative IBL'. Two other projects mentioned that they intended to make use of the collaboratories, stating that the space facilitates groupwork, enables the tutor to better support student inquiries, and allows the students to engage effectively with technology-based resources. The technology that is present in the rooms was suggested by one project ToC to enable the recording and creation of learning material by the students themselves, and the location of the project within the Information Commons gave access to a wide range of printed resources [TTPO#].

The sample projects fall into three different groups on the issue of learning space:

- Core first year modules, which, due to the large numbers of students involved, did not make use of innovative teaching and learning spaces. Instead, these projects used a combination of lecture theatres and small-group teaching rooms. Often the small-group teaching sessions were led by postgraduate tutors, or involved students working independently in groups [e.g. History and Philosophy].

- Projects which involved the setting up and/or use of collaborative and/or technology rich spaces [e.g. Music]. Technology and space was seen as potentially facilitating innovative teaching and learning activities, and enabling interaction between students with different specialisations [Music].

- Projects which made use of CILASS collaboratories [e.g. Archaeology, English, Hispanic Studies, TTPO#]. The flexible, moveable seating and desks were judged to facilitate collaborative inquiry and movement, particularly when contrasted with the fixed furniture common in most other teaching space in the University. Three of the project leaders compared the existing provision in the institutional negatively with the CILASS spaces. Tutors felt that there were probably more things they could have done and would do with the technology and the space in future. Indeed, some project leaders report having modified their approach on the second occasion that they used the spaces, with success. Student feedback on the spaces was highly positive ("CILASS room fantastic - technology here was really great made it far more interesting than other seminars"); disciplinary methodologies ("The new technology has opened my eyes to exciting new ways to examine literary texts"); and technological skills ("Excellent resources. My technology knowledge has grown widely").

  The flexibility of this space for group work and discussion, and especially the use of laptops and display screens, added considerably to the success of the IBL sessions. The informal nature of the space enabled discussion, and once I knew how things worked, the resources of the room facilitated the sharing/discussion portions of the sessions.

  [Archaeology]

We made extensive use of the huddle boards throughout the module, encouraging students to write on them in groups, present their findings, and then capture what they had written using the copy-cams. In the focus group, one of the students said that this process was useful because it allowed the group to interact while one person made notes for all of them. The fact that the laptops were connected to plasma screens was also mentioned as enabling collaboration: 'Because we could all see the same thing … if you found something, you could show the others'.

[English]

Such a wonderful space to be in […]. The moment that students walked into the room their eyes lit up.

[Hispanic Studies]

Space was so important to the project, the fact that we had a little home, a base- meant that people looked after and were familiar with the space and the technology. […] The important thing is that rehearsal space was on a par with size of actual space and one that enabled us to integrate technology (video etc.) early on. It was our home. The space and furniture was flexible which made it an ideal collaborative space for research, development and eventual rehearsal. Being technology rich meant that we were able to make full use of the hand-held cameras, the lectern and projector and these technologies were crucial during the research phase became integral to the actual end product performance.

[TTPO#]

At this point it is worth discussing the two projects during which students engaged in fieldwork away from the University. The journey that the TTPOH# group made to the V&A Museum was pivotal to the project, creating urgency, increasing engagement with the learning process and facilitating bonding among the group. All of this resulted in stronger working relationships for the remainder of the project. Most importantly, it acted as a creative stimulus and some of the significant elements of the performance were generated from ideas developed at the museum. Students on the Biblical Studies fieldtrip to Israel reported similar benefits. The active and collaborative learning in which the students engaged resulted in bonding between group members and the development of disciplinary skills and knowledge. In addition, the students benefitted from being in the seat of Biblical history, helping them to identify the political agendas behind many biblical commentaries and to judge evidence which they had collected for themselves.

3.2.5 Technologies

Different forms of technology are taking on an important role in IBL in two respects. Firstly, students are expected to conduct inquiries using online tools that facilitate independent and collaborative research. These might include the use of the institutional virtual learning environment (VLE) or Web2.0 technologies such as blogs, wikis or Googledocs. Secondly, the materials into which students are conducting their inquiries are now increasingly accessible via a range of electronic and online resources. Students must therefore be familiar with using online databases, for example.

The VLE was perhaps the most used technology with several of the tools within it being used, especially the discussion and bulletin boards. These tools were used to facilitate collaboration between students and tutors [Archaeology, English, Hispanic Studies, Philosophy]. In other courses, the VLE served as a platform for providing students with access to information about their subject, resources, or introductory details about the tasks that they were about to undertake [Archaeology, English, Hispanic Studies, Philosophy]. Still other projects pointed students directly to the online resources they were to use to conduct their inquiries, such as databases or other research tools [History, Philosophy].

The English project leaders used podcasts, accessed via the VLE, to provide students with access to subject information and an introduction to a particular week's research topic. For the Biblical Studies project students used video cameras to record footage and then edited it into a film using an editing package.

Web 2.0 technologies were used on two of the projects. The Music project utilised a wiki to create the 'collaboratory', while for TTPO# an entire suit to Web2.0 services were used to facilitate the collaborative process by which participants devised the theatre production (blogs, YouTube, Googledocs) and to record that process and the final performance for posterity.

3.2.6 Tutoring

As IBL usually involves students taking greater responsibility for their learning and directing the course of their inquiries, staff may have to consider taking on a different tutoring approach than they would adopt in more traditional and didactic forms of teaching and learning.

2.2.6.1 Mixed approach

Some projects adopted a varied approach to teaching the course, introducing IBL into a blend of lectures, seminars and tutorials in order to add variety and increase engagement with the topic. Similarly, a balance was struck, in some cases, between large and small IBL exercises, while online inquiry-based learning was added to the mix in others.

In several of the sample courses the IBL elements ran alongside a series of lectures which were intended to provide students with a survey of subject knowledge. This approach was particularly prevalent in first year courses [History, Philosophy, French]. In at least two of these courses, postgraduate tutors played significant roles in supporting students in seminars and independent learning. Some students appreciated the opportunity to engage in group work, noting that it was an opportunity they 'don't get with lectures', although some students felt that more lectures would have complemented their independent learning. As some of the projects aimed to encourage students to work independently and organize their own group working processes, they deliberately offered minimal levels of support. Although students appreciated the aim of this approach, they interpreted it as a failure to provide support rather than a deliberate strategy, especially in the case of first year projects, where students may have been expecting more scaffolding for their learning and were less attuned to the requirements of university-level study [French, Philosophy].

In at least two of the modules under consideration, staff input was limited to one or two lectures at the start of the inquiry. These lectures explained the task and the methods that students should use to tackle it, explaining the benefits of the approach that was being adopted, and outlining the resources available.

3.2.6.2 Open-ended facilitation

Students on the English module described their tutors as adopting an approach that encouraged students to explore questions, rather than providing answers for them.

> *It was very much a case of making you think, rather than spoon-feeding you*
>
> *They'd start you off with something, then you'd go off and do it*

As such, the tutors on this module acted as catalysts for students' learning, keeping the sessions open but guiding them in the correct general direction when necessary.

Nonetheless, students recognized that project leaders were not afraid to take the lead on occasions in order to keep the inquiry on track and stimulated:

> *Nice balance of being 'taught' along with supposedly teaching ourselves.*

I personally sometimes felt that by leaving us to research into each mode of inquiry was difficult as we were never actually taught much, but in the wide scale of things it allowed us to think for ourselves which was different and challenging.

3.2.6.3 Facilitation from afar

For those projects where students were expected to work independently of the tutor outside of class time, a number of approaches were adopted.

- Tutors making themselves available to students (or groups thereof) at certain intervals in the inquiry process (e.g. to allow students to run plans by them; to clarify specific details regarding the work; to provide opportunities for students to discuss problems).

Students describe feeling reassured that they could go to see the tutor if they needed to, but that they did not actually go on that many occasions. Some students thought that a mixture of informal and formal opportunities for interaction with the tutor would be better; for example, having a mixture of compulsory and optional meetings. This approach contrasts with that adopted in another project, where student complained about the lack of opportunities for contact with staff, interpreting this as a failure to support their inquiries.

Various strategies were adopted to give students support away from face-to-face meetings. In more 'hands-off' facilitation, students were given (and appreciated) explicit instructions (written or oral) about their inquiries in introductory sessions. On some occasions they were given access to examples of work by students from previous years. First year students on the French module reported feeling nervous at being presented with an open-ended task at the start of their inquiries, but feeling reassured that they knew they could go to the tutor if they needed to.

3.2.6.4 Online facilitation

It was necessary to facilitate the online discussions in the virtual learning environment in the Archaeology module. In the English module the tutors made entries in a reflective blog, looking back over the activities of the week. Students appreciated this kind of approach and the effort that tutors had put in:

It was useful to receive her comments on learning diary entries.

[Hispanic Studies]

However, in another module, students felt that although online comments from tutors were useful and helpful, the very fact that they were mainly contactable online made the tutors seem distant and unimportant.

3.2.6.5 External facilitation

Two of the projects reported making use of external experts to run workshops on specialist topics, with varied success. The externally run workshop that proved most effective was that which was focussed on the inquiry which the students were conducting at the time, while that which was less successful was more generic in nature (on group work and unrelated to the inquiry topic) and left the students feeling patronised.

3.2.7 Peer-to Peer (Collaboration)

Collaborative inquiry involves students working together to approach a task or question, generate discussion based on their experiences and reading, and negotiating through the creation of shared knowledge towards a joint approach or solution.

The majority of the projects in our sample incorporated some elements of collaborative student working. This is an explicit element of the ToC documents of nearly all of the projects under consideration and even those projects where it was not mentioned at the ToC stage included collaborative work in the actual module. This took a variety of different forms, including:

- Collaborative inquiry projects carried out independently by the student groups and leading to the production of a piece of work (e.g. research report, video) for assessment [Philosophy, French, Biblical Studies].
- Unassessed IBL through group-work carried out in seminars, or in preparation for seminars [English, History, Hispanic Studies].
- Discussion and debate in seminars (all modules), or online using the virtual learning environment [Philosophy, English, Hispanic Studies] or Web2.0 technologies [TTPO#: blogs, facebook, Googledocs].
- Creation of resources to record the collaborative inquiry process [Music; TTPO#].

Projects also encouraged collaboration across disciplines [Music, Archaeology] and year groups [TTPO#], while the Music project was designed to encourage collaborative working between staff as well as students.

A minority of projects were planned to take place in spaces that were specifically designed to support collaborative inquiry, due to their flexible and technology rich nature [TTPO#, English, Hispanic Studies]. Those projects which did make use of such spaces found them to be highly useful and well-adapted to supporting collaborative inquiry.

The independent and collaborative nature of the students' work meant that in a number of instances the students supported each other, especially when they were 'stuck'. In at least two instances, project leaders deliberately designed activities so that students could lead workshops or give presentations based on the research they had been doing [TTPO#, Philosophy].

3.2.8 Dissemination

The dissemination of student work should be considered as an integral part of the inquiry process, whether the work is assessed or not. Dissemination of project outputs could form an important motivation for the students, enable them to engage in authentic processes of knowledge creation and help students to see the relevance of their work to the 'real world'.

Several of the projects in the sample were directed explicitly at the dissemination and sharing of student work. For the Biblical Studies project, students created a video which recorded the archaeological dig process in Israel. This was at least partially intended to act as a resource for students in subsequent cohorts in case they were unable, due to the political situation, to attend the dig in Israel. The project leader argues that the video conveys

> *[…] most powerfully, in a way a written piece of work could not, is the authenticity of the students' research in Israel. The videos document the participation of undergraduates in genuine research, illustrating vividly their membership of a research community. The students are researching with, conversing with, and interviewing academics. The knowledge and experience they have acquired as*

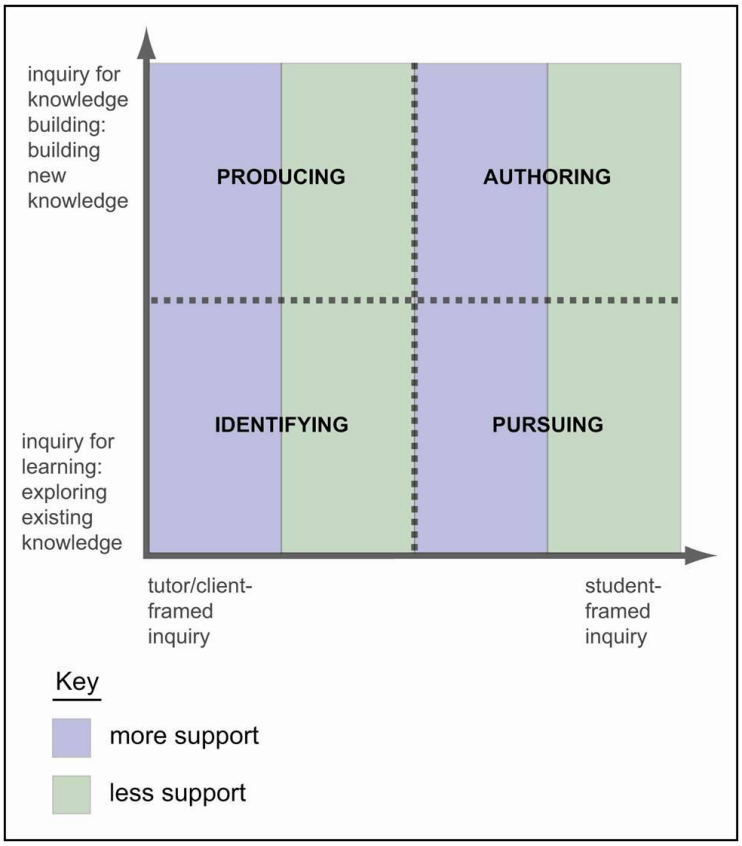
a result of actually 'doing' their subject is likely to be much more memorable than that they would acquire through reading about it. I was also struck, when watching the videos, by the students' creation of original knowledge; for instance, in one of the videos, two students discovered vessels of significant importance to the dig. The dig director is recorded on the video as calling this 'a once-in-a-lifetime find' and ordering for the dig to be re-directed to the site of the find. Again, such knowledge is likely to be more memorable and empowering for the students because it has originated with them.

The Music project was directed at creating student-generated resources which would be visible to the rest of the University and to the local community in Sheffield. The idea was to move from simply assessing this work to making it publicly available. Finally, one of the underlying purposes of the TTPO# project was to create and produce a play for performance at the University Drama Studio, to record the process by which that was achieved, and to disseminate both the performance and the production process. This dissemination was to occur at and around the actual performance itself (the performance, a question and answer session, a "making of" exhibition in the drama studio's foyer) and using a variety of publicly-accessible Web2.0 tools (blog, YouTube, Googledocs). The project was also disseminated by the students involved at a variety of events at the University of Sheffield and other HE institutions. As with the Biblical Studies project, one of the aims was to create a legacy resource which, in this case, could support future engagement in student theatre production by acting as a model and a record.

3.3 Models and conceptions of IBL

3.3.1 Models of IBL

The following diagram shows a framework for IBL that was developed as a result of research undertaken at CILASS into IBL pedagogies at the University of Sheffield and undergraduate student's experiences of inquiry and research (Levy and Petrulis, 2007; Levy and Petrulis, 2009; Wood and Levy, 2009). It can provide a useful model for conceptualising inquiry-based learning.



The diagram shows three main dimensions along which any inquiry-based learning pedagogy can be positioned. These dimensions are:

1. the **'information-discovery' dimension:** inquiry is either about acquiring existing disciplinary knowledge (= 'information') OR the creation of new knowledge (= 'discovery');
2. the '**process' dimension**: who (teacher or student) has responsibility for determining, controlling and supporting the process by which students engage in their inquiries;
3. the '**questioning' axis**: who (teacher/ client or student) is responsible for framing the inquiry questions which students work on during IBL.

These dimensions are not supposed to be seen as binary opposites, nor do we attach any greater value to one over the others; they are intended as heuristic devices to aid thinking about IBL. When mapped onto the diagram above they result in eight 'core modes' of inquiry-based learning. In the following section, each of the sample projects is mapped against these dimensions and positioned in a one or two of the core modes.

History (teacher sets questions, teacher determines process, aim is to explore existing disciplinary knowledge – Identifying): for this project staff lead the inquiry process (e.g. determining the resources into which students will research outside of class); staff set the questions for the homework and for the seminars; the overall aim is the acquisition of existing disciplinary knowledge by the first year students.

TTPO# (students set the questions, students lead process, aimed at creating new knowledge – Authoring): for this extra-curricular project students led the process from the very beginning, set the questions to be explored for themselves, and the overall aim was the generation of new knowledge through the creation of a performance from scratch.

Philosophy (teacher sets the questions, students determine process, unsupported, aim is to pursue existing disciplinary knowledge – Pursuing): students choose from a range of broad questions/ topics set by staff, students have a lot of independence in deciding on the process of their research, and they are very much pursuing existing disciplinary knowledge.

French (teacher sets questions, students determine process, supported, aim is to discover knowledge that is new to the students – Producing): staff set the questions from which students choose, students determine the process of their independent group-work, but with scaffolding from staff. The project is about learning about the open-endedness of research in the discipline (so, not necessarily about identifying existing knowledge).

Music (teacher and students set questions, students set process, unsupported, about creating new knowledge – Authoring and Producing): students use the collaboratory space to collaborate and create their own interactions and knowledge, although staff members sometimes determine the inquiry process and questions

English (teacher and students set questions, process set up by tutor, supported, about exploring existing knowledge but also students create new knowledge – Authoring and Pursuing): the different modes of inquiry are set up by the tutors, but the students have a great deal of freedom in deciding how to pursue these inquiries and the specific questions that they will address in class and for their assessments, students are sometimes discovering new knowledge (as tutors acknowledge) and on other occasions they are exploring existing knowledge.

Hispanic Studies (teacher sets questions, students determine process, supported, about exploring existing knowledge – Pursuing): questions are predefined by the tutor, although students are given freedom to determine how they will answer them. Students are largely exploring existing knowledge,

though independently and one of the purposes is to deepen their understanding of the discipline as a whole.

Archaeology (teacher sets questions, students and tutors determine process, supported, exploring existing knowledge and discovering about constructedness of knowledge in the discipline – Pursuing and Producing): students engage in activities which have been established by the member of staff to engage them with the knowledge base of the discipline, although one of the purposes of the activity is for the students to realise the constructedness of knowledge in their discipline.

Biblical Studies (teacher sets questions, students determine process, supported, exploring existing knowledge and creating new knowledge about an unfamiliar discipline – Pursuing and Producing): staff set the broad question but students determine its exact focus (which is where one of the groups went wrong), acquiring existing disciplinary knowledge (but it is new to the students and is about a discipline that they don't know much about, Archaeology). The dig process is determined by the staff, but the filming and editing process is set up by the students.

3.3.2 Conceptions of IBL

A number of project leaders describe IBL as directly aligned with the foundational principles of the pedagogy of their disciplines. In one instance, for example, it is described as 'providing the *foundational pedagogic principles* of the undergraduate degree' [Archaeology]. The Philosophy project report reiterates this point in more detail:

> *The modules that were developed address issues that are ideal material for inquiry-based learning. The issues were relatively clear; there is a wide range of suitable sources of information on which students might draw; questions of this sort will, at greater levels of detail, recur throughout the degree programme; and they are not issues that require, or even leave room for, substantial intellectual input from a staff member, leaving room for substantial independent work on the part of the students.*

IBL is seen as being ideally suited to the exploration of contested knowledge and evidence about topics with active current debate and no 'right' answers. The 'open-ended' nature of IBL is mentioned frequently and projects are explicitly aligned to achieve this aim, often in contradistinction to more didactic forms of teaching, although there is also a recognition that students need to be supported through this process.

Furthermore, there is a clear conception among project leaders that IBL is related to research-led or research-based teaching and hence involves students engaging in research activities. Two project leaders [Hispanic Studies, Archaeology] talk about moving away from more 'research-led' teaching, where students are told about the lecturer's research, to more research- or inquiry-based approaches, where they are offered more opportunities to conduct their own independent research, guided by the lecturer in a facilitative role. In IBL students are encouraged to reflect upon research methodologies and processes, and as part of this, staff sometimes judge that this is best achieved by making the learning process as explicit as possible to the students.

In a reflective interview, the Biblical Studies project leader emphasises the importance of engaging students in 'genuine research', because actually 'doing' their subject is likely to be much more memorable than reading about it. The Hispanic Studies project, as described in the project case study, aimed "to maximise the opportunities offered by research-led teaching by enabling the students to work like researchers." For the Philosophy project leader, in his reflective interview, the impact of these kinds of practices on the department was quite significant: "We have really taken to heart the idea of getting the students to do what we do."

Projects consistently emphasise that IBL should involve active, independent and self-directed work on the part of the students, with participative and collaborative modes receiving particular stress, while 'problem-based learning' and 'problem-solving' are used to describe the types of learning in which the students are engaging [Archaeology, Biblical Studies, Hispanic Studies, Music]. For these and other projects, students are described as being active, critical, analytical, evaluative, imaginative, and creative in their learning and these therefore seem to be considered as constituent parts of IBL.

There was also an emphasis upon the interdisciplinary and multi-modal nature of IBL. Several projects emphasise the interdisciplinary nature of the inquiries into which students are asked to research [Music, Biblical Studies], while others place more stress upon students learning about the numerous research approaches that exist in their 'home' disciplines [English, French, Hispanic Studies]. Yet other projects [TTPO#] sought to use IBL to broaden the conception of research and practice in the discipline(s) in which they were working.

3.4 Learning about IBL pedagogy

3.4.1 Facilitating

Tutors report taking on a much less dominant role in IBL classes. Indeed, one tutor was worried that the students were not receiving enough support, although she discovered that the students were taking the responsibility for supporting each other. As the teaching sessions were less structured, the tutor had to be more flexible than normal:

> *I was constantly kept on my toes and having to deal with the unexpected. It was very stressful, but also very rewarding because I felt that the students really engaged with the literature and the whole learning process.*
>
> [Hispanic Studies]

Tutors also discovered that the active engagement required by IBL meant that in-class activities took more time than would normally be expected. This meant that a flexible approach was again necessary to respond to this challenge.

One tutor suggested that IBL changes the 'shape' of learning: instead of giving a lecture to orient students to a topic and then sending them off to research an essay, they are engaged in an inquiry activity which then needs 'tidying up' and consolidating in some way [English]. A similar point was made by a student from a different module, who stated:

> *I think we should have maybe come back together at the end of the class, to go over the questions, because when we came to think of research questions, we just didn't have a clue what we were supposed to do [...] we eventually thought of something [...], but we could have done with having gone over the questions for that.*
>
> [French]

3.4.2 Challenges

3.4.2.1 Time/workload

Staff and students from a number of different modules felt that the IBL approach involved a significant amount of work. From the staff perspective, this included:

- Administration involved in running the module: time and effort to develop the module and the IBL tasks; time to organise, administer and mark (and keep track of marks) of the various components of modules. This gets more onerous if the numbers of students increase.

From the student perspective, there were also reports of increased workload compared to standard modules. In some instances, this was connected to the intensity of the tasks, with work being concentrated into a short period of time whilst in the field:

> *It was hard work, knackering. I didn't realise how much work was involved in Archaeology*
>
> [Biblical Studies]

In other cases, this was connected to the different layers of working that comprised the learning. This might include a mixture of lectures and other teaching sessions, or the variety of inquiry tasks that students had to complete. If the inquiry tasks were assessed then this increased the workload further and one of the module leaders noted that she altered the assessment in response to the amount of work that students were being expected to do. At least one tutor reported that it took the students longer to complete tasks when using electronic learning packages as opposed to the usual paper resources. These problems seem to have been exacerbated when modules required intense spells of fieldwork, during which students were solely working on one project. Students who took part in the TTPO# extracurricular project also noted that the amount of effort that they put into the project impacted negatively upon the time which they had available for their standard coursework. So, there seems to be some sort of link between the non-modular format and increased student workload (and perhaps their motivation and desire to work harder and longer).

3.4.2.2 Teaching in teams

Two of the projects, both of which involved first year core module modules [History and Philosophy], made extensive use of postgraduate tutors. This was challenging for staff on a number of levels. The need to involve up to 20 tutors in the planning and delivery of the module created logistical challenges. In addition, there was the need to induct the tutors into the IBL approach and, in some cases, to persuade them that it was a good idea to adopt IBL in the first place. The need to ensure 'buy-in' from the tutors and the potential risks if this was not achieved was that tutors might not link the independent IBL tasks that students were completing to the seminars in an effective way:

> *I found that the exercises were often un-discussed in seminars.*
>
> [Student feedback, History]

3.4.2.3 Level of tasks

Tutors reported that in some cases the level of the IBL tasks may have been pitched too low for some students. This seems to have been particularly problematic in larger first year modules, where the spread of abilities and experiences was greater.

> *I already knew how to use such resources and personally the tasks did not contribute much to my current practices.*
>
> [History]

> *The journal article search did not open new areas, having already heavily utilised it for essays.*
>
> [History]

3.4.2.4 Timing of tasks

Likewise, the timing of the tasks in terms of the module or the overall curriculum may not have been ideal in some cases:

> *The exercises would have been more useful if put into an intro period i.e. weeks 1-3 rather than spread out across the semester resulting in exercises focussing on skills you do/ should already know and have used for essays.*
>
> [History]

Another project leader reflected that students might need quite a long period of time to engage fully with an IBL approach and that this should be factored into planning. This was supported by the project leaders of the extracurricular project in our sample [TTPO#], who stated that they would have liked to have started their project much earlier in order to avoid rushing at the end and to increase engagement in the earlier stages.

3.4.2.5 Assessment

This has been one of the most significant challenges facing staff and students engaged in IBL projects. Continuous assessment was noted by a range of projects as increasing workload for students and the marking load for staff. Indeed, at least one project leader reported that she altered the marking scheme for her students after realising the amount of work that they were putting into their IBL tasks.

Peer assessment was felt to be problematic for students, many of whom report finding it difficult to maintain objectivity. Students stated that they had allocated marks based on effort rather than quality of work, although some felt that this was a fairer method of assessment because students or staff who had not experienced their module would not have a good idea of the amount of work that had gone into the assessments. Students on another module had similar feelings: they stated that they always gave passing marks to their peers and that their assessments of each other were based on attendance at meetings, not on quality of work. Friendship between students was judged to be an additional complicating factor impacting upon the validity of peer assessments.

Students on at least one module felt that they did not receive enough credit for the IBL tasks in which they were engaged, especially given the increased workload which they experienced (see above).

3.4.2.6 Technical challenges

Technical and technological issues affected some projects. This was obviously more of a problem for projects which had a greater reliance upon electronic resources. For example, 30% of students who responded to a survey on the Hispanic Studies module thought that using the technology in class was a slow process. The majority of students, however, felt that once they had mastered the technology, it was worth using.

> *At first the technology got in the way, but ultimately was very helpful in looking for and answering questions.*

The project leader noted that students did not make use of those electronic resources which had been provided (electronic diaries and discussion board), but which were non-compulsory, but that other resources were over-used (e.g. an online translation of a text which the students were studying).

Students on one project judged that it would have been very difficult for them to complete their video-editing project without access to their own computers. They also reported that they required more training in the use of the video editing software and that a lack of technical know-how was a potential barrier to engagement with the project and its successful completion.

3.4.2.7 Questioning and identifying problems for inquiry

Evaluative data from two projects (English and French) notes that students had particular difficulties in identifying appropriate problems or questions for investigation. One of the project leaders thought that the open-endedness of their assessment tasks made this fact particularly evident because students were not given a set question to answer, while the other project leaders suggested that improving the scaffolding and management of the process (e.g. through engaging the students in a 'dummy' project) could address this problem.

3.5 Engaging and further developing IBL

The extent to which project leaders disseminated their projects can act as something of a measure of their engagement with inquiry-based learning as it evidences a commitment to the spreading of IBL pedagogies to other practitioners.

Departmental teaching and learning committee meetings and specially-arranged 'showcase' events were used as venues for dissemination by a number of projects [History, Archaeology, Music]. At these events departmental staff shared their experiences and practices of IBL, CILASS staff made contributions, with academics from other departments also taking part sometimes.

Project leaders took part in a variety of CILASS events ('IBL cafes', Staff-Student Conferences) directed at sharing practice across projects [Archaeology, Hispanic Studies, English, TTPO#, French]. A smaller number of project leaders took part in dissemination activities away from the University, such as at Higher Education Academy Subject Centre events or conferences at other institutions [Hispanic Studies, TTPO#, French]. Online and multimedia fora were used for the storing and further sharing of this information with colleagues [Archaeology, English, TTPO#]. Documentation from three of the projects raises the possibility of dissemination of project findings via publication [French, Philosophy, Hispanic Studies] and in at least one of these cases this has already been taken through to completion.

Project leaders had numerous plans for further developing their IBL practice. None stated that they were planning to abandon the changes that they had made, although one project leader did state that 'interesting practical issues' could arise if she attempted to scale up her project. The majority of project leaders made reference to plans for developing the curriculum, including: further testing the limits of technology; taking learning outside of the classroom more; working with students on academic writing skills; introducing new classroom and presentation sessions; experimentation with group work elements. There were also plans to introduce new programmes to make use of the technology and spaces that CILASS had provided and to promote collaborative inquiry more effectively.

A number of projects talked about the need to provide greater process support to scaffold student inquiries in future iterations. This included the restructuring of modules, including a greater number of contact hours, altering the timing of modules, developing new ways of supporting groupwork and the process of engaging in IBL (for example, through modelling the process for students or providing more explicit guidance of what is expected when inquiries are first introduced to students).

> *The students were quite thoughtful about recommendations for change to the module. They felt the module was worthwhile, but these students said they needed more structure and scaffolding. First year undergraduates lack the experience to be able to discipline themselves, and have not yet developed the academic confidence or the social connections with each other to enforce group norms. Few felt comfortable, for example, confronting fellow students who failed to contribute or to turn up for group meetings. They wanted more assistance with process, including interim deadlines and consequences for those who didn't meet them.*
>
> [Philosophy]

Assessment was mentioned as a possible area for change by a number of projects. It was generally felt that assessments could be altered to reflect the learning process more closely. Peer assessment was felt to be potentially useful, but also problematic.

Several project leaders stated their desire to further monitor the impact of IBL and the changes which they had made to the module, for example by continuing to track the progress of students as they moved into higher levels and compare data over the years. The leaders of the French project make the following point:

> *[…] the project work has been designed to achieve some changes in student learning which are likely to be perceptible to those students only after some time has elapsed and they have had further opportunities to exercise inquiry or collaborative skills at a later point in their course.*

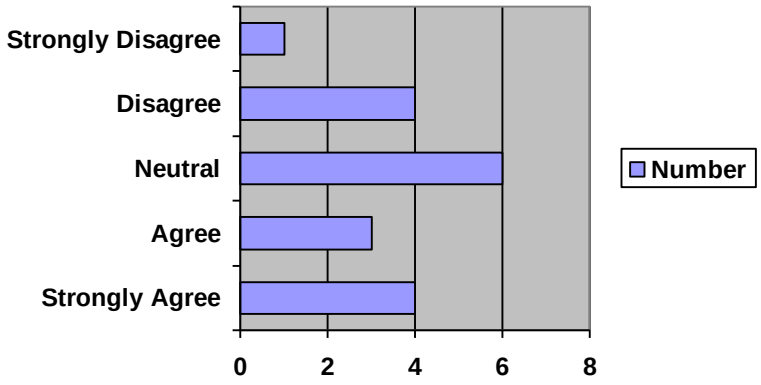
Student-focussed

Students experienced IBL in a number of different ways relating to knowledge, skills, attitudes and values. The following section outlines what the students and staff who taught them felt that they took away from their experiences of inquiry-based learning.

3.6 Outcomes

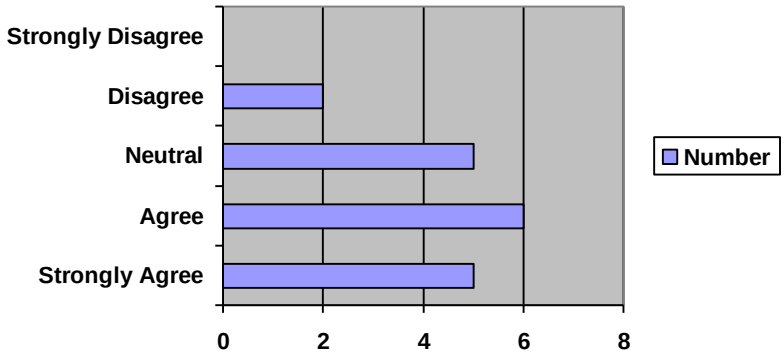
3.6.1 Skills and knowledge

- Project leaders on several modules felt that student results had improved on previous years, both in terms of the marks achieved and in the quality of the work produced and was more original [Philosophy, Archaeology, English]
    - **Archaeology**: 50% of the students received first class marks in 2006-7.
- Increased engagement and interest [Hispanic Studies, English, Archaeology]
    - **Hispanic Studies**: table: I found this inquiry-based learning activity enjoyable and motivating

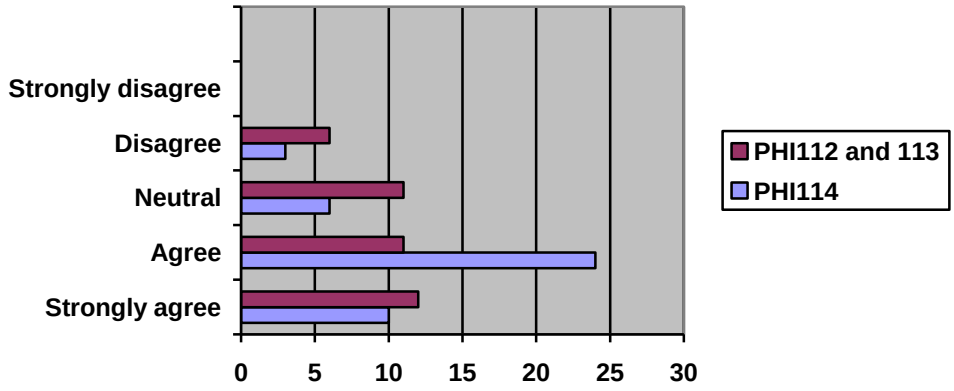


- Cohesion of the student group as a whole was enhanced [Philosophy]
- Students' technical, technology and design skills and awareness were improved [Philosophy, Hispanic Studies, Biblical Studies, TTPO#]
- Students are more open to independent and active modes of learning (e.g. in thinking up their own arguments) and have improved skills in those areas [Philosophy, Hispanic Studies, Archaeology, Biblical Studies, English, TTPO#]

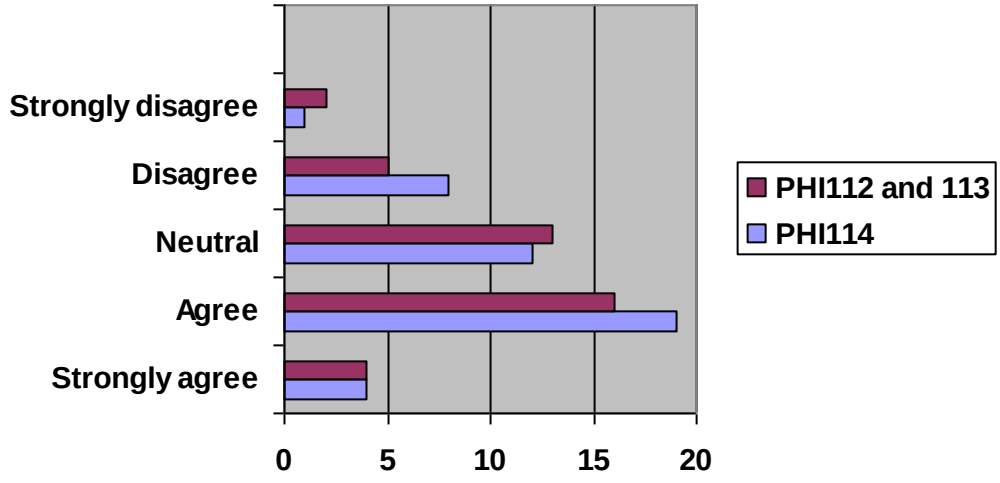
- **Hispanic Studies**: table: I feel that this inquiry-based learning activity encouraged me to take an active role in the class



- **Philosophy**: table: I feel that the module encouraged me to take responsibility for my own learning



- **Philosophy**: table: I feel that the module gave me the skills to explore philosophical questions for myself



- Students' information literacy skills (awareness of resources and their skills in using them) were developed [History]

- **History:** Of 33 students questioned in 2007, 76 % were positive that they had found new e-learning resources; 78 % were positive that they had found new library resources at Sheffield; 76 % were positive that they had improved their understanding of how to access appropriate e-resources; of the 25 students whose task had involved an e-resource, 72 % were positive that they now understood that Sheffield had a list of recommended appropriate websites;

- Developed students' research skills, awareness of different research approaches/ methods, increased awareness of the importance of questions and questioning, awareness of the open-endedness of research [History, English, Hispanic Studies, French, Biblical Studies, Archaeology, TTPO#]

- Improved students' collaborative working skills (e.g. discussion and debate, negotiation, sharing information and ideas, managing others, organisation, openness to the opinions of others) [History, Hispanic Studies, French, Archaeology, English, TTPO#]

- Transferring skills and knowledge to other units of study [Hispanic Studies, French, English, TTPO#]

- Developed writing and communication skills [French, Music]

- Developed presentation skills, including performance [Archaeology, Music, TTPO#]

- Improved creativity [Music, TTPO#]

- Fostered entrepreneurial skills [TTPO#]

- Developed time management skills [TTPO#]

- Developed skills in reflection [Biblical Studies, French]:

    - **Biblical Studies**:

      When you're filming it makes you think about the question 'What is Archaeology?' Makes you think about what you are doing and why. Personally, I thought it was a really good way of re-evaluating why you were out there and added a new element. It was a big help to my own general experience.

      Seeing everyone else's videos it highlights what we learnt and reiterates it – 'brought it all back'. In a way loads of your footage is mixed up and you have to unpick it and put it back together in right order.

3.6.2 Social and personal development

Students on at least one module [Biblical Studies] reported that the module had enhanced their personal and social, as well as their academic, development. Students ascribed this to being taken out of their 'comfort zones' and being given the opportunity to explore a new country, to learn from and about other cultures, to debate issues of contemporary significance, and to put their studies into context.

> *The cultural experience of life on the dig was much richer than I would have expected - I think it was good to spend time with everyone with the team and we learned from each other.*
>
> *I thought I was going there to do some work but I actually grew very much as a person from that experience. Next year, let them go and do what they want on the experience and they will gain more.*

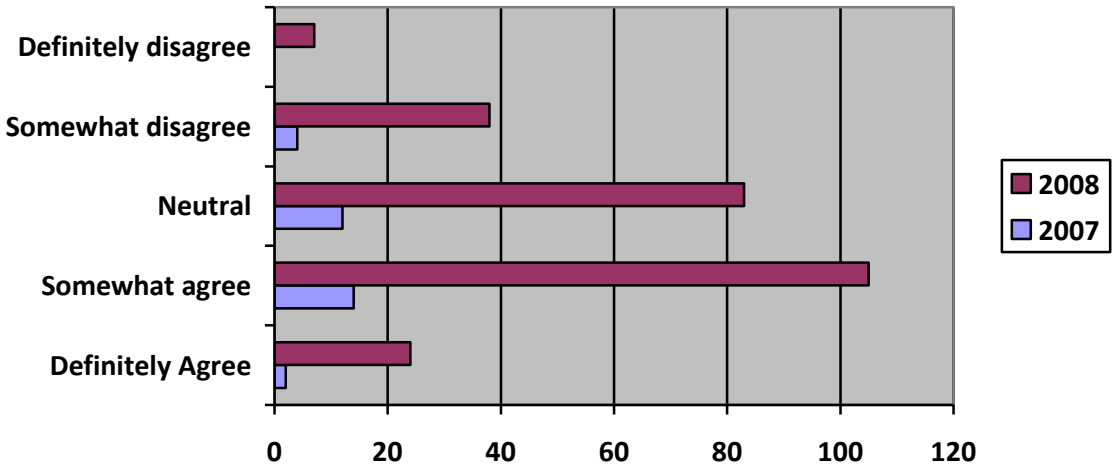
3.6.3 Engagement with the discipline

Overall I found this method of learning […] helped me further immerse myself in the subject

[History]

Students on a number of other projects also seem to have experienced IBL as a way of enhancing their disciplinary knowledge and skills and broadened their awareness of what their discipline *is* [TTPO#, Biblical Studies, English, French, Hispanic Studies].

- **History**: table: the exercise helped me to understand the topic of the seminar



Both the students and the project leader of the Biblical Studies project suggest that the production of a video about the archaeological research process on site in Israel was successful in encouraging the students to reflect upon the entire process *in context*, increasing the authenticity and relevance of the learning:

> *This way you have to learn – you have to develop the ability to analyse what is happening and what has been found. Seeing everyone else's videos highlights what we learnt and reiterates it, brought it all back. In a way loads of your footage is mixed up and you have to unpick it and put it back together in right order.*

There was a common belief that these skills and knowledge would be transferrable to other areas of their studies:

> *I think this text has stuck out because I've got a lot more involved with the text. Skills I have learnt from studying this text will help with other books*

[Hispanic Studies].

Multi modal inquiries, for example, broadened students' conceptions of what were valid and stimulating means of inquiry, which could be of use elsewhere in their studies:

> *It's such a different way of looking at a book…you'd never ever have imagined you could look at a book in that way*

> *It was good to do something new rather than just go over the same old methods*

> *It was nice to do something novel, something different to what we normally do*

Other students had their ideas about the discipline as a whole broadened:

In English it all feels really formal, like there's only one way to look at a book, to just read it and then do some background research…it just gets a bit stagnant. But doing it this way was really different.

Because the project involved direct engagement with academic research, through interviewing of archaeologists and taking part in the dig themselves, the Biblical Studies seems to have been particularly successful in engaging the students with their discipline:

Instead of feeling separated from academia, you are part of it.

This developed their understanding of the discipline and possible controversies within it:

You also see the dark side of archaeology. Showing how much your own interpretation and bias comes into it. Seeing first hand the political forces behind archaeology, especially in Israel, was interesting. You can see how it can be hard to move people away from their own positions.

Easier for me to see that and how archaeology can be forced into particular interpretations.

In my head there is a sort of backlash against the so many different interpretations.

A lot of the why of this is determined by preconceptions that people have in their heads.

However, not all students felt that IBL enhanced their engagement with their subject to any great degree. For one project, the students felt that the peer teaching that they received from fellow students did not give them enough information and was too low in quality to improve their knowledge of the discipline.

3.7 Student experiences of IBL

3.7.1 Responsibility for learning – active learning

The third year students on the Biblical Studies project were given genuine responsibility when participating in the archaeological dig in which they were engaged. This ensured that they worked hard and felt part of the dig team, taking a hands-on approach and getting to apply the skills and knowledge that they were being taught before going into the field. Other projects were described by students as involving a significant 'hands-on' component; students would conduct their own research instead of being 'spoon fed', and were encouraged to engage creatively with the tasks that they were set. All of this seems to have increased engagement with learning:

[...] a lot more people contributed to group discussions

It felt to me as if people had made an effort with this module.

However, students have not always been happy with the independence they have been given, sometimes complaining that courses lack structure. For example, students complain that they are sometimes left with too much responsibility for organising independent and collaborative working arrangements. Other students preferred being taught in a more didactic manner to more active forms of learning:

Didn't receive as much info as a normal lecture

Wanted to be lectured on book as with Tristana.

One project leader [French] suggested that students tended to engage with their IBL tasks as pieces of assessment rather than as a learning process:

> *[…] they focus quite strongly on 'what are we supposed to do?' (which they want staff to specify for them), rather than feeling able to step back and see the process itself as valid, and see that it is a process where learners can/must work out for themselves what it is best to do*

The same project leader summed up the dilemma facing anyone designing an IBL project neatly:

> *Students encountering the History of the Language project are thus confronted by a considerable challenge in terms of the type of exercise and the mode of working which it represents. There is thus a fine balancing act to be carried out in terms of providing adequate, appropriate and timely support, whilst also letting the students experience the challenge and have the opportunity to solve problems for themselves without the intervention of staff.*

3.7.2 Experiencing the Process of Learning

A number of projects were explicitly designed to engage students with the process of learning, to 'prioritise process rather than product'. The intention was to encourage students to focus on the whole learning process, enabling them to frame their knowledge within a wider picture. There was a general consensus among both staff and students that this had been achieved. One downside was that such a holistic approach to the learning experience inevitably took additional time and effort.

3.7.3 Facilitation and structure

For those projects where students commented about the teaching approaches that were adopted, there was a consensus that the staff took a less directive role than might normally be expected, although some direction was still necessary. In some cases, the students felt that they needed more contact time with staff and a greater degree of support. This seems to have been felt most keenly by first year students.

Tutors were seen more as 'catalysts' to student inquiries and did not direct the learning – they encouraged students to work independently and did not 'spoon-feed' them. Nonetheless, students on one module, at least, were clear that although the inquiries were very open, they still needed guidance from the project leaders to keep the inquiry on track and stimulated.

For one project [Philosophy], the first year students who were involved felt that they had been given too little structure and support for the level of work that was expected of them. There was a feeling that they needed more background knowledge in order to engage with the topic and to assess the quality of their work. This lent an arbitrary flavour to the marks they awarded to the work of their peers in assessments. Although students were told that there would be significant independent work on the module, they felt that more face to face meetings with tutors would have aided group organisation and motivated people to participate. The online support that was given by tutors sometimes felt 'distant and unimportant'. Indeed, the lack of input from tutors meant that some students did not feel confident about the material that they had learnt independently.

3.7.4 Collaborative working

In general, students seem to have found the processes of group working challenging. This seems to be especially true of first year students and featured highly in their experiences of projects. Students reported a general reluctance to engage in collaborative activities from the start of modules. They were reluctant to work with people that they did not know, and based some of their resistance on previous bad experiences of groupwork. Results of this included nervousness and worry.

Pre-group work worry was connected to the assessed nature of the coursework that the students were expected to engage in – because their work 'counted' students were understandably anxious that their group would function effectively. 'Effective functioning' was articulated as comprising everyone 'doing their bit' and that the people making sure that the group would gel:

> *[…] actually being able to work with those people, that were, like…actually work well with them or not*
>
> [French]

However, students were generally open to engaging in groupwork:

> *As long as everybody pulls their own weight, that's the only thing, but…my group definitely seems…there are a couple of hardworking people in there, hopefully it shouldn't be a problem.*

In the course of groupwork, students reported the following problems:

- placing too much emphasis on personal as opposed to collaborative research;
- failure to make collective decision or establish leadership for the group;
- people not pulling their weight;
- leaving work until the last minute;
- having to hand in unfinished projects (which was 'awful') as a result.

For the other projects in which students were concerned about groupwork, the issues seem to have been similar: students disliked the idea that their marks were dependent on others and that others might receive credit for work which they had done. Interestingly, students on this course felt that it was particularly problematic when the collaborative work was expected to be carried out independently of academic staff. Students did not like having the responsibility of ensuring that members of the group completed their tasks, feeling that this reduced the sanctions that were possible against non-contributors. They said that group products were really individuals' work strung together at the last minute, due in part to the way the group task was sequenced. When asked about the skills developed on the module, they said that they felt the standards for work had been quite low and that minimal effort brought passing marks. Because the group members all received the same mark for the project, the problem of free-riders was perceived to be acute. Indeed, the assessment of group work, both in terms of the process and the products of learning, figured highly in the sample projects. One project leader suggested that students may have a particularly negative reaction against groupwork when it is compulsory, especially when they may not have been anticipating collaboration as a significant element of the course at registration.

It was also noted that some form of oversight is preferable if groups are expected to work independently of the tutor. This helps to set standards and validates the independent learning that students are doing:

> *I have come to the conclusion that students are happier doing independent working if they think that you are somehow watching.*

However, students also reported that significant learning went on through this process. They learnt that it was 'very much teamwork, and you have to build up relationships with these people", to trust them, be tolerant, not worry too much if someone else is not doing the work. Students also felt that when the groupwork went well, it was a highly positive experience and they got to know each other. Students on another first year project also talked about the positive side of collaboration:

> *It gave us a basis of where to start the search and the group discussions meant we could pool what we found which meant we had more extensive resources than if we had been working alone.*

Discussing research skills was helpful in that it encouraged the sharing of ideas about ways in which others undertake research.

Created a wider range of discussion in seminars because different people had different sources. The journal article search did not open new areas, having already heavily utilised it for essays.

One project leader felt that 'group work also reduced some of the pressure on the students and helped them to think creatively'; this was backed up by student feedback. Another project leader thought that although collaboration posed significant challenges for staff and students it had the great benefit of bringing the students together to talk about their discipline.

One of the projects, due to its extracurricular nature, involved a high degree of interdisciplinary and cross-year group collaboration. Students reported benefitting greatly from the exchanges created by this form of collaboration. Their extra-curricular activities seem to have fed effectively into the modules they were taking at the time:

I was worried about one of the other students, but [the groupwork] actually helped him with group assessments - to bang together heads.

When I was 1st year I had hardly any contact with higher year students. Them being able to see the amount of work we were putting in for courses, but also to project, I think that made them realise what they could be doing in couple of years time

When you research something for your degree you go away and do it on your own and then write it in an essay, but going away and researching something for a group and getting the group to agree on it is something quite a different thing altogether. Negotiation and democracy - there were people who were more dominant, but everyone had to be on board with it and think that it was an idea that could go somewhere.

Another project, however, found it challenging to achieve collaboration across sub-disciplinary boundaries.

Students on two projects [French and Philosophy] reacted very negatively to presentations on teamwork which they received. Both staff and students felt that these generic and abstract sessions should be replaced by more practical and relevant activities that focus on the process of group working and relate it to the actual inquiries that the students are likely to be carrying out.

3.7.5 Fun

The ToCs from two projects emphasise how their project leaders were aiming to foster a more enjoyable or pleasurable learning experience for students, while one of those ToCs also mentioned that staff would experience greater enjoyment from the work their students were producing. Another project leader stated in a reflective interview that she had aimed to make learning more 'fun' for her students.

Student feedback on three projects explicitly refers to their enjoyment of learning, with both the English and the Biblical Studies students mentioning this as an aspect of their learning on a significant number of occasions.

We liked it. It was hard work, knackering. But it was really well balanced. I remember having so much fun, even when we were digging. […] They made it enjoyable - it was hard work, but really good fun at the same time.

[Biblical Studies]

[…] there is no other module that I'm doing this year where I look forward to the seminar in the same way I looked forward to Roots

[English]

[…] it absolutely flew by because it was just so relaxed; we just had a lot of fun.

[English]

3.7.6 Initial reluctance and expectations

On a number of courses, especially those in the first year, students experienced IBL as something of a novelty and a surprise, especially if the process involved activities that they had little or no experience in (e.g. making videos) or had negative experiences of from the past (e.g. group work). One project leader, however, makes the point that 'From the module description they can see that they are signing up to something that is a little bit different from the norm.'

A small number of projects reported that students were initially reluctant to engage in IBL. In the majority of cases, this seems to have been linked to concerns about groupwork and independent learning. The possible reasons for this are best articulated by the following quotation:

[…] problem of students arriving at the start of their project activity with a previous set of experiences based on much more didactic lecturing methods and consequently finding it difficult to engage in the more open-ended, creative learning we are hoping to foster […] students are engaging with the research project as a piece of assessment, rather than as a research process, i.e. they focus quite strongly on 'what are we supposed to do?' (which they want staff to specify for them), rather than feeling able to step back and see the process itself as valid, and see that it is a process where learners can/must work out for themselves what it is best to do. […] the need for support and scaffolding of the student learning experience in this kind of activity has grown exponentially as the culture of secondary schools prepares students less and less for independent learning characteristic of HE and of IBL in particular.

[French]

3.7.7 Understandings of inquiry-based learning

Feedback from the sample projects revealed a number of different understandings of IBL. These included:

How broad it is, a small, closed topic can be taken in a large number of different directions; working in groups of people (but not always); inquiring about information in groups; some kind of research; work with the initial question and see where that leads; end up with a completely different question that takes you in another direction, that you didn't expect; researching into things; producing a kind of dissertation; anybody doing research; group or individual; inquiry-based learning might take group work a bit further (e.g. more ideas).

[French]

Students from other modules reiterated these opinions about IBL, with particular focus upon IBL as promoting student questioning, independent and active learning:

I think inquiry based learning is a good idea because it encourages us to ask questions and this promotes self learning etc.

[…] prefer learning through experience and applying things taught through the degree, which supports the notion of IBL being 'learning by doing'.

I found the informal teaching methods and largely student-driven methods of learning to be challenging but very rewarding ultimately.

Another student characterized independent work as fundamental to how university education functions:

> *I think that's just the way it works at university, we're expected to just do it by ourselves, we're not children any more, so we don't get spoon-fed, which is fair enough.*

Students on one module [English] felt that the focus in the Roots module was on learning, rather than teaching. This was reiterated for other modules, where students stated that they were empowered to learn by the IBL they were doing, that they had enjoyed directing their own research and applying what they had learnt in their degree. Feedback on another module revealed that the students had developed their 'respect' for research in the discipline due to IBL:

> *I'm not sure if I had - sort of a huge idea of what it was before it started, but - I've definitely - gained a new sort of respect for research projects, 'cause before I just sort of, you know, you think of a research project as something, you know, maybe a bit boring, and time consuming, […] but for me, it was such a wide range of things we could have studied, and…there were two parts to the question, but then we sort of…in - researching it, we realised there were so many more aspects […] so to me, inquiry-based learning is quite appealing now, because it's not just…taking one question and sticking with it, it's sort of…covering all areas.*

Students from several modules reported finding IBL 'interesting'. Others emphasized that it was a different method of learning to the norm, that it involved independent and active learning. Students also thought that it promoted 'a questioning attitude towards questions/ opinions' and developed an 'enquiring mind'. Some students felt that a blend of lectures and active, independent learning might have been preferable.

Students are reported as being keen to experience IBL in the future, with at least one student stating explicitly that they were going to select modules on the basis that they were taught in an IBL mode, while, as we saw above, others recognized the potential usefulness of the knowledge and skills they had developed through IBL to other modules.

3.7.8 Open-endedness and IBL

Students acknowledged that inquiry and research 'allow for a lot of free thinking' and feedback from two projects explicitly mentions the issue of open-endedness. Archaeology reported that one of the reasons for undertaking their project was student "dissatisfaction with the open-ended nature of the IBL approach and its emphasis (in its current formulation) on data acquisition."

The evaluation of the French project went into more detail. Students from this course felt that a more structured inquiry task had the following benefits:

- All of the students know what they are supposed to be doing, so they can start quicker.
- Students might not come up with a question that was as challenging as the staff member, and therefore the project would not have been as interesting; students know they are going to learn 'something', either about the topic or about how they work.
- If students have a question, it is more specific, there is less ambiguity about what you need to be studying.

On the negative side, however, students might not like the question they have been given or the group they are assigned to.

Open-ended tasks had the following positive potentialities:

- Students can explore the task more and get to use all of their abilities, 'so it probably works out better, but it would take more time.'

- Students can take it further or investigate more; the result is probably more interesting, 'probably better'.
- Although it is more challenging, it is probably more helpful in defining how to work with people, because there is more discussion and communication in the team, you have to show the skills more finely.

On the negative side, if the task seems vague to the students then they have little idea about where to start: 'if it was more structured, it would be easier to start off, and it'd be less sort of a discussion, and worrying about what - what you have to do."

The following quotation effectively sums up what might be termed the ambiguity and riskiness of open-ended IBL:

> *I think an open-ended one is more challenging because it involves more discussion and communication in the beginning phase, while you're sorting out how you're going to answer the question, using people's strengths and weaknesses […] It gives you more leeway to explore different things than if it was more structured, you'd just go in and answer the question, you've got to demonstrate a way and, kind of delegating, and, you wouldn't work as well together, apart from coming back and put together the things to see if they gel.*

4 Conclusions, Recommendations and Reflections

This report has examined a purposively selected sample of nine CILASS-funded inquiry-based learning curriculum development projects within the Faculty of Arts and Humanities at the University of Sheffield. The projects were deliberately selected because they came from a range of disciplines and levels, involved a number of different approaches to IBL, and had relatively full sets of evaluative data. They should therefore be seen as indicative of the types of IBL that are going on in the Faculty but not as representative.

There were some limitations in terms of the data which was available to the CILASS team in compiling the report. The data set is strong in qualitative terms, but less strong in terms of quantitative data relating to impact. Due to the common and participative approach that CILASS takes to project evaluation, each project was able to provide Theory of Change documents and a range of other common project support and evaluation documentation (project bids, final reports). This gave a good common framework within which to situate the overall evaluation and to compare projects. However, the participative and devolved nature of the evaluation meant that some of the data was unavailable at the time at which the report was written, having been collected in departments, while some of the evaluative questions which were asked did not align well with the questions that this report sought to address. For example, there was a general lack of focus upon concrete outcomes which students had gained from IBL projects, in terms of both subject knowledge and marks awarded. It is thus difficult to discern, from our evidence base, what impact IBL had upon some aspects of students' learning. Other aspects of the data-set are very strong though. Perhaps due to the emphasis that is placed upon reflection at a programme level, there is a wealth of reflective data, from both staff and students, about the impact of IBL in terms of attitudes and perceptions of learning in general and their discipline in particular. If it was judged to be necessary to collect standardised statistical data about the impact of IBL (or any other learning approach) on student learning, it would be useful to require collection of such data by project leaders (and collation of that data by the evaluation team) at the planning stages of the project. As it stands, the Theory of Change approach as adopted by CILASS does not facilitate this process, in part due to its participative nature, which devolves much responsibility for evaluating projects to the academic staff who are leading the projects (which is one of the great strengths of the approach!).

Project leaders articulated a number of different reasons for adopting IBL pedagogies. The desire to improve student learning, in terms of disciplinary knowledge, skills and engagement, were the main drivers for adoption in the overwhelming majority of cases. As this was a strategic aim of the entire CILASS programme this is unsurprising. Another significant element was the strategic desire to improve staff engagement with IBL approaches to teaching and learning. Again, this was one of the main overall aims of CILASS and thus seems to have fed down effectively into the sample projects.

The aims of projects line up very neatly with what students and staff actually report having taken away from IBL. Although there are some limitations to the evidence base, such that we do not know as much as we would like about what students got out of IBL in terms of marks, there is a lot of evidence that they gained significant levels of subject knowledge from IBL. They also developed a very wide range of skills (disciplinary and more generic skills). Attitudes towards learning and their disciplines also seem to have been impacted positively by IBL experiences, especially in the cases of projects that promoted reflective approaches to learning. Although there were some challenges to student engagement with IBL, notably those associated with group-working and assessment, these were outweighed in the sample projects by the positive impacts. Many of the problems which students encountered when engaging in IBL were associated with lack of support for the process of engaging in IBL. This was especially evident in data for projects which had expected students to work independently in groups: those projects where support was provided online and face-to-face students were generally happier to work in groups than in those projects where they were left to their own devices. There was also a marked difference between year groups – first year students were generally less happy to work collaboratively than students in higher year groups. In future, therefore, more attention might be paid to the process support which is put in place to aid student engagement with IBL, particularly in terms of groupworking at earlier levels of study.

The two frameworks through which the projects have been examined (the 'hub and spokes' and the 'matrix') have proved highly useful in conceptualising the different elements of the projects under examination here and articulating the differences between them in terms of outcomes. Being encouraged to think about IBL pedagogy in terms of its design elements ('hub and spokes') and its overarching modes ('matrix') has been extremely helpful in terms of thinking about projects in very concrete and in very abstract terms. For example, for those projects in which students experienced problems with groupwork, using the interpretive and design frameworks, it was far easier to see where these problems may have arisen and how they might be addressed in future iterations than if they had simply been viewed through the evaluative data itself. The frameworks gave perspective to the interpretation of the data. It may be valuable, in future, for educational developers to use these kinds of design tools in collaboration with academic members of staff as tools to aid planning and thinking about IBL in the initial stages of projects (and as a reflective tool at the end of projects).

In terms of staff conceptions of IBL, the majority of projects fall within the pursuing-producing quadrants of our matrix and, in most cases, the responsibility for setting questions lies with the teacher. Students at all levels are given some freedom to set their own questions, but this is only usually in the context of a broader inquiry/ question which has been set up by the teacher. On other occasions students choose from a selection of questions which have been pre-established by staff. The projects which gave students most responsibility for setting their own questions were those that were either student-led and/or were directed at the students authoring their own knowledge. These projects were connected with the creative/ performing arts disciplines. The curricular project in which students had most opportunity to set their own questions was that in English. This seems to have been successful because the use of technology and flexible approach to facilitation adopted by the tutors made it highly responsive from week to week, meaning that the students were able to take greater control of their learning within a supported environment. However, even in this case of highly open and responsive IBL, the overall purpose and weekly inquiries were determined by the tutors in advance of the sessions. It seems that there is a balance to be struck between providing adequate support to enable students to engage effectively in their inquiries and

allowing them to benefit by giving them some freedom to determine the questions they will address and the processes by which they will address those questions.

5 References

Connell, J.P., Kubisch, A.C., Schorr, L.B., Weiss C.H. (1995). *New Approaches to Evaluating Community Initiatives* (Vol. 1). Washington, DC: The Aspen Institute.

Helsby, G. and Saunders, M. (1993). Taylorism, Tylerism and performance indicators: defending the indefensible. *Educational Studies*, 19 (1), 55-77.

Hart, D., Diercks-O'Brien, G. and Powell, A. (2009). Exploring Stakeholder Engagement in Impact Evaluation Planning in Educational Development Work, *Evaluation*, 15 (3), 285-306.

Levy, P. and Petrulis, R. (2009). First year international undergraduate students' experiences of learning through inquiry. *Reflecting Education*, 5 (1), 88-104.

Levy, P. and Petrulis, R. (2007). Towards transformation? First year students, inquiry-based learning and the research/teaching nexus. In: *Proceedings of the Annual Conference of the Society for Research into Higher Education (SRHE), 11-13 December 2007, Brighton, UK.*

Wood, J. and Levy, P. (2009). Inquiry-based learning pedagogies in the arts and social sciences: purposes, conceptions and models of practice. In: *Proceedings of Improving Student Learning (ISL) Symposium*, *1-3 September 2008, University of Durham, Durham, UK*. pp.128-142. Oxford: Oxford Centre for Staff and Learning Development.

6 Appendix – Project evaluation data matrix and descriptions

6.1 Archaeology

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
Archaeology: Athens, empire and the Classical Greek world	2	3	Y	Y	Y	Y	• Departmental evaluation report • Senate award

This unit provides the student with a detailed knowledge of the archaeology of Athens during the Classical period (479-323 BC) and an active appreciation of this city-state´s role in the Greek world. The module introduces the topography of Athens and investigates the ways in which Athenian democracy and empire were experienced in the city and in other city-states. It explores and discusses archaeological models of democracy and empire and the ways in which Classical Athens fulfils expectations. The legacy of Athens in the Hellenistic and Roman periods as well as in the early modern and modern world are also examined and related to concepts of cultural identity.

In order to engage students with such a range of sources and theories, the module incorporates a variety of opportunities for collaborative and inquiry-based learning, including in-class problem-based activities and presentations.

Project case study: www.shef.ac.uk/ibl/resources/casestudies/archaeology/athensempire.html

Project leader: Dr Jane Rempel

6.2 Biblical Studies

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
Biblical Studies: Field Archaeology online	3	2/3	Y	Y	N	Y	• 2 project leader reflective interviews • Student focus group • Head of Department reflective interview • Higher Education Academy Subject Centre report on IBL in the discipline

"I thought I was going there to do some work but I actually grew very much as a person from that experience." (Student Focus Group)

As part of three weeks of archaeological fieldwork in Israel during their summer vacation pairs of students collaboratively made video recordings of various aspects of the archaeological dig process and interviewed specialist about other aspects in which they were not directly involved. The students edited their footage to create films in the first few weeks of the autumn semester. These films were then submitted for assessment by the lecturer and fellow students. Through this project, students needed to do independent reading and research about the archaeological process from the initial conception of a project, its subsequent approval and implementation, to its final publication so they could decide what images to capture on site during the excavation process and what topics they would need to cove during interviews or in other creative ways. They developed a range of technical and transferable skills while producing usable resources for future cohorts of students in modules where it would be helpful for them to understand the excavation process.

Project case study: www.shef.ac.uk/ibl/resources/casestudies/biblicalstudies

Project leader: Dr Diana Edelman

6.3 English

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
English: Roots-Route	1 (+ 4)	2	N	Y	Y	Y	• Project leader reflective interviews • Student focus group • Student survey

Take one cult book, sprinkle with eight research methods, nineteen students and smart teaching spaces. Find a cosy corner of cyberspace and nurture for twelve weeks. Here's the result.

"With Roots, what was really good was that you did have to know what you were talking about...people paid attention to it." *English Student, 2007*

The module Roots Routes asked students to participate actively in a series of seminars using eight modes of inquiry to examine Alex Haley´s novel Roots and the popular TV-miniseries. The course's virtual learning environment and CILASS collaboratories were integral to the delivery of the module, allowing students to engage in collaborative research-led learning in real time.

Project case study: www.shef.ac.uk/ibl/resources/casestudies/english/roots.html

Project leaders: Dr Duco van Oostrum and Dr Richard Steadman-Jones

6.4 History

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
History: Paths from Antiquity to Modernity	4	1	N	Y	N (interim)	Y	• Student survey (highlights) • Student feedback • Postgraduate tutor report • Project leader reflective interview

For this project the History Department introduced IBL tasks into its core Level 1 module, Paths From Antiquity to Modernity. The wide range of staff and associate tutors teaching on the module and the large number of students involved meant that this was a difficult organizational task, but student and staff feedback reveals that it had positive outcomes for both. In feedback students reported that they had got a lot out of the collaboration, sharing and discussion involved in the module, improving their information literacy and research skills and, in some cases, developing a different attitude towards learning.

Project case study: www.shef.ac.uk/ibl/resources/casestudies/history/paths.html

Project leader: Dr Dan Scroop

6.5 Music

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
Music: Collaborative composing	3	1	Y	Y	N	Y	• Student focus group • Project leader reflective interview

This project involved the creation of a technology-rich learning space which would facilitate collaborative and creative interactions between students from different strands of the Music curriculum. It was hoped that by bringing together composers, developers and performers the learning of all would be enhanced. Another aim was to increase cooperation and collaboration between staff, to increase their awareness of the capabilities of the available resources and to develop transferrable models of pedagogic practice for the use of the collaboratory.

Project case study: www.shef.ac.uk/ibl/resources/casestudies/music/musiccolaboratory.html

Project Leader: Dr Dorothy Ker

6.6 Philosophy

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
Philosophy: Project 1: Discovering the background	2	1	Y	Y	Y	Y	• Project leader reflective interview • Student focus group • Student performance data • Student survey

This project introduced inquiry-based learning into a suite of three Level 1 modules as part of an overall effort to increase students´ engagement with and understanding of the disciplinary history and intellectual landscape of Philosophy, at the same time as developing their research, group-working and independent learning skills.

Project case study: www.shef.ac.uk/ibl/resources/casestudies/philosophy/l2.html

Project leader: Dr Rob Hopkins

6.7 Hispanic Studies

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
School of Modern Languages: Torquemada en la Hoguera	IBL	2	Y	Y	Y	Y	• Project leader reflective interview • Student survey

'Excellent. The technology really helped me get to grips with the detail of the novel, and helped me to think about the issues. I learnt loads.' (Student feedback)

This project made innovative and effective use of ICT by producing an electronic learning environment to support student inquiries and enhance their learning experience by stimulating them to engage confidently and critically with the electronic edition of Benito Pérez Galdós's novel *Torquemada en la Hoguera* (1889).

This project built upon previous teaching of the novel by directly involving the students in the challenges presented by the study of *Torquemada en la Hoguera*. It was intended to maximize the opportunities offered by research-led teaching and the interactive electronic edition, stimulating students to develop new ways of reading the literary texts and to work like researchers. Further, it aimed to improve their skills in information literacy and collaborative learning.

I think this text has stuck out because I've got a lot more involved with the text. Skills I have learnt from studying this text will help with other books.' (Student feedback)

'The sessions enabled me to play an active role in learning about the novel and working with others was enjoyable.' (Student feedback)

Project case study: www.shef.ac.uk/ibl/resources/casestudies/somlal/torquemada.html

Project leader: Dr Rhian Davies

6.8 French

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other evaluative data
School of Modern Languages: French history of the language project	1	2	N	Y	Y	Y	• 4 student focus groups • 1 student interview • Module evaluations

"I found that the collaborative research project improved my group work skills, I learnt new writing styles from other members of the group, the importance of teamwork and how to research the history of French. Furthermore, I learnt that I am confident and organised enough to manage the group and provide group members with the help that they need." (student feedback)

This project developed the inquiry-based approach to learning in a Level 2 historical linguistics module taken by students in the French Department. Because the course is conceptual in nature students sometimes had difficulty engaging with the subject matter. The project aimed to enhance existing group-based assessment tasks in order to provide more effective scaffolding for learning in the subject and to allow students to be more creative.

It was also hoped that experiences with open-ended inquiry would give students the skills to engage more effectively with the assignment that they have to complete while they are on their year abroad at Level 3; this involves devising a project to research while studying or working in a Francophone country).

Project case study: www.shef.ac.uk/ibl/resources/casestudies/somlal/historyfrench.html

Project leader: Dr Penny Simons and Professor Penny Eley

6.9 Student-led

Dept/Project	Phase	Level	Bid	ToC	Final report	Case study	Other eval. data
Student-led: Theatre Two Point Oh#	IBL	All	Y	Y	Y	N	• Project leader reflective interview • Student focus group summary

Project description from CILASS website:

theatre two point oh # (ttpo#) is a unique, student-led IBL project - an interdisciplinary and collaborative theatre initiative that aims to enhance understanding of this medium, especially with respect to performance, and at the same time utilise theatre as a tool for promoting inquiry and sharing ideas, practice and knowledge. The core idea is to utilise appropriate technology, collaborative organisation and innovative documentary methods throughout the creation, performance and evaluation of a play. One of the original ideas that inspired the project has become central to the philosophy behind this: to tailor an existing extra-curricular activity towards academic goals and to increase access to an activity that encourages "thinking outside the box" and imaginative ways of problem solving.

Crucially, the piece is a 'collective creation' rather than a pre-written text, devised by the ensemble rather than written by a single author. The focus of the project is an examination of the role of CCTV and surveillance systems in contemporary society and exploring the implications of the increasing role of such technology in areas such as policing, advertising, and the internet. In so doing, we purposefully expose the project to "surveillance" by outside individuals through use of the internet (particularly using social media sites for sharing video and images), open rehearsals (subject to health and safety limitations), and by rehearsing in a glass-fronted room (CILASS 7/Collaboratory 2).

Those involved include a core of students from various departments who are interested in theatre practice: we specifically envisage students who study theatre both within the School of English and the School of Modern languages, though we have also tried to bring in students who do not formally study theatre at all.

Project case study: N/A

Project leaders: Tom Szekeres and Laura Jenkins