Evaluation of a Team Project Based Learning Module for Developing Employability Skills

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Abstract

This paper presents a case study, in which a new module, aimed at enhancing students' employability skills, is evaluated. Employability skills for graduates from higher education are regarded as essential outcomes from their degree programmes, but it can be difficult to provide appropriate opportunities to develop these skills in the context of their studies. This paper describes a new module, called Live Projects, designed to provide project based learning on campus, but involving local businesses and organisations, to provide the projects and become clients for a team of students.

Evaluation of the first year of running the module was through a student questionnaire, client surveys and assessment by the tutors. Results showed satisfaction from students and clients with the outcomes. Students reported a positive experience, and recognised that they had developed employability skills, such as team working, project management and professional skills. Clients reported a good level of satisfaction with the outputs from the projects, and were enthusiastic in supporting the venture, seeing the benefits employers might gain from employing students who have developed these skills. The partnership between the university and local organisations is also an important form of engagement with the local community.

Keywords: Team work, project based learning, employability skills, assessment.

Introduction

Following on from a merger of several schools at the University of Salford, undergraduate degree programmes were redesigned to include a greater emphasis on skills regarded as highly desirable by employers, such as information and communication technology (ICT) and team working (Yorke and Knight, 2003; Prichard et al., 2006). Previous work by the author has described how these have been integrated into the first year of undergraduate programmes in Salford Business School, by embedding IT (Information Technology) skills into a module, called Management Development Programme 1 (MDP1), so that students were made aware of the wider applications of IT within business, and had the opportunity to use the full range of available business IT resources (Whatley, Ireland & Bell, 2011). The current work describes a second year module Management Development Programme 2 (MDP2), designed to follow on from the first year MDP1 module, in which students have the opportunity to not only develop team working skills, but also to apply discipline skills they are learning in other modules, through team project work in a real life context.

Findings from evaluation of the first year MDP1 module indicated that the students appreciated the opportunities to develop the various IT and employability skills offered, and regarded them as important for their future prospects. The task now facing the academics at Salford Business School was to provide suitable opportunities for students to further develop these IT and employability skills and to develop their team working skills, within a business oriented environment. The solution chosen was a modification of a previously successful Team Project module, which was delivered to undergraduate students taking a range of business IT programmes, and which tapped the willingness and support of a number of local business organisations in providing projects (Cooper and Heinze 2007).

This paper presents findings from the first year of implementing the MDP2 module, called Live Projects. After giving the case for teaching with team projects, supported by a literature review, the delivery of the Live Projects module is described, the methods used for evaluation are outlined, followed by analysis of the research findings, and finally an evaluative discussion of the success of the module, in the light of feedback received, is provided.

Pedagogical Assumptions of Teaching with Team Projects

Learning in higher educational establishments has traditionally been concerned with learning about and formulating theories, but over time, and partly driven by demands of industry, some universities have incorporated project or problem based learning into the teaching and learning methods used (Kolmos, 2009), in order to provide students with opportunities to develop some of the skills demanded by industry. Project based learning brings together learning through experimentation and learning by doing. In particular, for subjects such as programming, the classroom instruction can be supported by practical work (Poindexter 2003). But project based learning can be applied to many other disciplines, where students can benefit from a more practical based learning experience.

Graduate employability is a term that encompasses several elements, such as knowledge and skills and personal self-esteem. Generic skills also known as transferable skills have varying listings, but most commonly used lists include for example: working in a team, creativity, planning and communication (Dacre Pool and Sewell 2007). Higher education institutions are taking up the challenge of preparing students for work, by teaching skills associated with employability, such as team working (Yorke and Knight 2003; Prichard et al. 2006; Dacre Pool and Sewell 2007). Hordyk (2007) suggests there are benefits for the employer of teaching employability skills, such as an improved competitive edge, performance and profitability, but acknowledges that team working in the student context is different to in the workplace environment.

Employability skills have various priorities, exemplified in curriculum definitions, such as from general business and management:

> *"effective performance, within a team environment, including leadership, team building, influencing and project management skills" (Education 2007);*

or from librarianship and information management:

> *"Work in groups or teams as a leader or participate in a way that contributes effectively to the group's tasks" (Education 2000).*

Government bodies have recommended including key skills in the teaching curriculum since the 1950's, in the guise of "core skills", "key skills" or "general skills", aimed at preparing people for the world of work. These include literacy, numeracy and information technology, and are enshrined in compulsory education (Hyland and Johnson 1998), but other skills such as "working

with others", "presenting", "problem solving" and "managing own learning", were added after the Dearing review of post-compulsory education in 1996. Hyland and Johnson (1998) further argue that these latter skills are context specific and so cannot be taught as generalised or transferable skills, but that opportunities or experiences are the best way to help learners to acquire abilities to act in an acceptable manner towards others in certain circumstances.

The growing use of team working in organisations requires that universities produce graduates with knowledge and experience of team working and who have developed some team skills. The team project is an opportunity to learn from mistakes, and develop collective and individual skills. According to Atherton (2005), the range of activities, linking them together and synthesising the problems, provides opportunities for developing cognitive, affective and psycho-motor skills. Team projects incorporate elements of collaborative and co-operative working, promoting team working skills acquisition (Prichard et al. 2006), and encouraging learning in a social situation. Observing others is one way of learning rules, skills, strategies and so on, the basis of "social cognition", or cognitive learning (Schunk 2000:24). Thus imitation of others to reproduce the observed behaviour, as in apprenticeships, is applicable to learning about using practical skills, which can be achieved in student team projects.

Project based learning is a form of constructivist and collaborative learning, allowing several students to work together on a problem, and learn from each other as they co-construct knowledge. So carrying out projects in a team, involves both co-operative and collaborative learning. Learning may be considered co-operative, because individuals rely on each other to perform their allocated parts of the project (Johnson et al. 1991), but also collaborative as they together develop synthesis and application skills. Co-operative learning can be regarded as process driven, but requiring attention to social processes in order to achieve the goal (McConnell 2000).

According to Mergendollar (2006), team projects are a form of problem based learning (PBL) in which learners are self-directed, assisted by guidance or coaching from tutors, in their pursuit of a solution to a problem. But the author would argue that project based learning provides greater learning opportunities than problem based learning on its own. Team projects and problem based learning, particularly in the computing and information systems disciplines, are a good way to promote constructivist learning and team working in an experiential learning environment (Griffiths and Partington 1992). Students in higher education bring varying amounts of previous experience to the learning situation, depending upon their state of maturity, so collaboration between students is a means of sharing experience in relation to the problem to be solved. Activities and reflection within project based learning are designed to bridge the gap between an individual's experience and their development relating to the activity.

Blumenfeld et al. (1991) describe project based learning as "*a comprehensive approach to classroom teaching and learning that is designed to engage students in investigation of authentic problems*". The study in this paper is based on project based learning, which incorporates problem based learning. Problem-Based Learning (PBL) may be defined as a method of instruction, requiring hands-on, active learning to investigate and resolve a messy, real-world problem. PBL also refers to a mode of learning where students identify their existing knowledge, what they need to know to solve a problem and where they might find this information, and is often implemented through working in groups. Tutors support the PBL process as facilitators, by providing scaffolding for students to build up their own knowledge.

The desired outcomes from student team projects are learning about team working processes and skills associated with the products of the tasks; the team project is a vehicle for experiential learning. However, it is very difficult to assess the degree of developing these skills, unless students are given an opportunity to reflect on their performance in team working. Personal development

planning (PDP) literature talks about team working skills, but does not specify what sorts of skills, or how they can be acquired (Edwards 2005). Joy (2005) suggests that only skills such as programming in a particular language or web site design can be assessed as learning skills against given criteria, the softer skills cannot be readily measured.

Livingstone and Lynch (2000) suggest that team projects need to be structured if they are to provide maximum benefit to students, which is contrary to arguments in favour of pure problem based learning activities. One proposed structure for project based learning is the division of activities into process oriented and product oriented components (Whatley, 2012). Figure 1 shows these divisions overlaying the Task, Team and Individual needs of a project, adapted from Adair (1986).

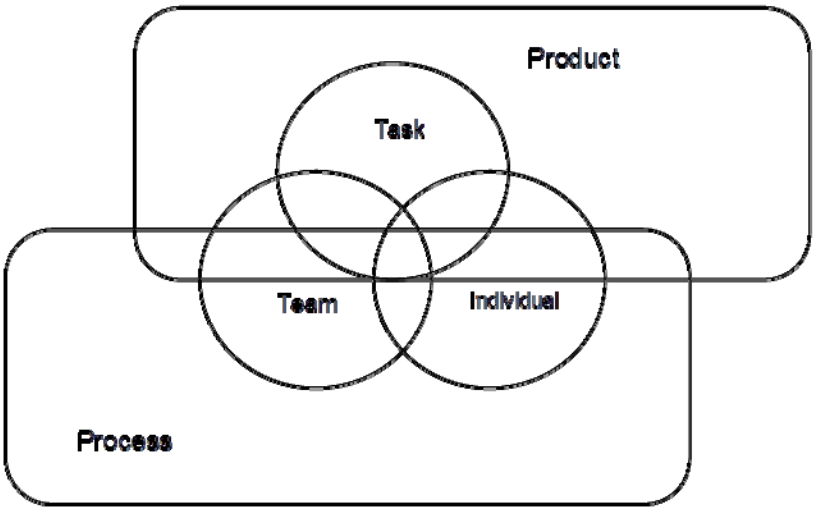

Figure 1: Interplay between product and process in team

The interplay between task, team and individual is crucial for achieving the process and product in organisational teams, and they play a role in achieving learning and in practicing skills that may be transferable to the workplace. Undergraduate team projects are very complex, a number of motivational and commitment issues may arise, and students at many universities have reported difficulties in team working, resulting in negative experiences of the learning activity, e.g. (Chiasson and Dexter 2001). It is whether and how teams overcome these issues that determine the success of a project.

There is some debate concerning the extent to which team projects in an educational setting can prepare students for team working in the workplace (Dunne and Rawlins 2000). In the field of health teaching, a study comparing the effectiveness of PBL and team projects did cast doubt on whether PBL does help to develop transferable skills suitable for project working in the workplace (Mennin 2007). Further, it is noted by Hordyk (2007) that there is a need for further understanding of the differences between project team working in the workplace and in the educational setting. Hyland and Johnson (1998) say that any skills learned can only apply to that context, suggesting that there is no such thing as a transferable skill. Although other studies carried out in higher education suggest that the results may be transferred to the workplace, e.g. problem solving skills (Murthy and Kerr 2003; Lou 2004; Banks and Millward 2007; Mennin 2007).

The proposed new module adopted best practice in team project based learning, in order to develop employability skills, including communication skills, problem solving skills and team working skills. The added dimension of using external organisations to provide projects, gave

opportunities to develop professional skills through communication with clients. The next section describes the new module in detail.

Describing the Module

The module under investigation in this paper is a new module offered to students from different undergraduate degree programmes in the business school, including Business and Management, Business Information Technology (BIT), and Leisure, Hospitality and Tourism Management. Although many of the modules that these students took in their first year were common to all of the programmes, there are some differences according to their degree specialism, so students bring different skills to the new module. In the 2010 to 2011 academic year about 300 students took the new MDP2 module. The students were allocated to 41 different projects, so there were roughly eight students in each team. Although the team members were allocated randomly, membership was adjusted to provide balanced teams with members from all programmes of study. Some of the projects included a significant element of IT, so at least one of the BIT students was allocated to each of the teams where IT skills were important. A team of five tutors, including the module leader, were assigned to support the student teams, which they did through meetings with the teams on a fortnightly basis. Tutors had expertise in marketing, hospitality, data analysis, finance and IT, so students were free to ask for help from other tutors as required. The module also featured a weekly lecture, covering topics such as project management, working in teams, conducting research, report writing, as well as guest speakers who gave their perspective on project working in organisations. Lectures were aimed at being inspirational, rather than providing instructions for completing tasks.

The design of the proposed Live Projects module was based upon the best features of a previous Team Project module, which was delivered to students on information technology related undergraduate programmes. The main difference in this new Live Projects module was that it is based on a multidisciplinary team of students, rather than a multi-year team of students as the Team Project module was. It was anticipated that individual students would learn from each other as they tackle the various problems posed by the projects, so for instance the BIT students would help others in their teams to develop their IT skills, and students taking marketing would help others to apply principles of marketing in carrying out the project work.

The module leader took responsibility for sourcing projects for the teams, for example from local businesses, start up businesses and charitable organisations. A project request page was set up on the school website, so that interested parties could request a project, and provide contact details, and a brief outline of the problem the project would provide. All project requests were followed up to establish the suitability of the project proposed, before being finally accepted. The Live Projects started at the end of September, and had to be completed by April of the following year, giving approximately six months of working time, although the Christmas vacation and examination periods occupied 6 weeks in the middle.

Assessment of the students was based on a combination of reports on outcomes for the client, individual reflection on learning, presentation at an Expo at the end of the project, with peer, client and tutor assessment. Formally the grading was 50% Group project, 10% Expo presentation and 40% Individual contribution, so the group work component was weighted slightly higher than the individual component (60% to 40%). Part of the graded outputs from the project comprised milestones to be achieved throughout the project (Appendix A), including a client contract, project plan and interim and final reports. Final group project grades included assessments from the client and from the team tutor as well as assessment of deliverables. Final individual grades included peer assessment and tutor observation of individual contribution as well as assessment of an individual reflective report and the weekly learning log.

The Expo presentation gave the students an opportunity to present in an alternative format to the more usual formal presentation supported by PowerPoint slides. It was an assessment format adopted for the Team Projects module in previous years, and incorporated in the MDP2 module as an example of good practice. Expo presentation involves putting together an exhibition stand to showcase the achievements of a team in their project. The Expo was attended by the students, their clients, members of staff and prospective students, as part of their Open Day activities. Grading of the teams was carried out by members of academic staff, using criteria related to the team's communication with visitors, both verbally and by posters, other literature and electronic formats.

Methods Used for Evaluation

In this section the methods used to gather feedback from the students, tutors and clients is presented, which is followed by analysis of project types.

This paper presents an evaluative study into the first year of running this new module, as a case study of teaching and learning methods. A case study method involves studying a phenomenon in a real-life situation, often used when research and theory are at an early stage of investigation, and informative descriptions of the phenomenon are required (Bonoma 1985). They are useful for questions of "how?" and "why?", where there is limited control over the environment, and the focus is on events at a particular point in time, to identify patterns or features (Yin 1994:6).

Although case studies may not be generalisable in a scientific sense, selecting a exemplar case to study can be useful for forming theories, so the exploratory nature of case study makes it a suitable interpretive method for an evaluation of a new module. As Stake (2000) suggests, they can be used to add to experience of a domain, and improve our understanding of the context under investigation.

Several methods are often used for gathering data for a case study, and in this paper, data from student, client and tutor feedback, gathered through surveys and the assessment tools, is used to evaluate the outcomes of the first year of running the Live Projects. The purpose of this research is to identify good practice within the delivery methods adopted for the new module, and to establish reasons for elements of success and issues observed that hindered the success. At the university students are asked to complete a module evaluation questionnaire at the end of each taught module, which asks about the management of the module as well as their opinions on aspects they felt were of most benefit to them and least beneficial. The questionnaire was distributed to the students at the Live Projects Expo in April. There was a response rate of about 25% to the questionnaire, of which about half added comments to the three open questions asked:

- What did you find most useful about this module?
- What did you find least useful about this module?
- Are there any changes you would recommend making to this module?

Questions asking more specific details about issues and tensions were added to the module questionnaire, in order to determine whether the tutor's level of support were adequate:

- Were there any tensions or particular issues your team experienced?
- How did you attempt to resolve these tensions or issues?
- Were these tensions or issues resolved satisfactorily?

In addition questions were added, asking for feedback on the usefulness of the material presented by guest speakers in some of the lectures, and the teams' usage of various tools provided to sup-

port their team working, such as Microsoft Project for drawing up and monitoring the project plan, the weekly time sheets and the Guardian Agent system for allocating tasks to team members (questionnaire parts relevant to this study are given in Appendix A).

Organisations providing the projects included SME's (13), charities or local clubs (14), large organisations (5), colleges (3) and entrepreneurial or start up business (5). The types of projects provided were marketing or raising awareness (18), web site design or other IT application (13), market research or other research (5), supporting a new business (5) and event organising (3).

At the end of the projects all clients were asked to grade their team, using the questionnaire form given in Appendix B, which asked their opinions on aspects such as the team's understanding of the business context, their problem solving approach, how well the team organised themselves, communication and running meetings with the client. Although a 100% response should have been expected from clients, in practice four of the clients did not return their grade form. Finally, a review meeting gathered feedback from the tutors involved in the module.

Analysis and Discussion of Findings

Student and client questionnaire and grading feedback was analysed, in order to identify good practice, as perceived by students and clients. Reasons for any good practice observed and for elements of success and issues observed that hindered the success were being sought from the feedback. The literature suggests that this type of project based learning results in benefits to students, but that issues sometimes prevent the full extent of benefits being achieved. The module was aimed at developing a range of employability skills, including problem solving, communication, project management, team working and professional skills, as benefits to students. This research was aimed at finding the students' perceptions of the benefits in the form of skills achieved as well as their perceptions of issues that hindered them from gaining these benefits. The findings are reported below under the following headings (numbers in brackets refer to the number of respondents who mentioned that item):

- Benefits perceived by students;
- Organisation of the module;
- Client and student satisfaction with the client;
- Tutor perceptions.

Benefits of Project Based Learning Perceived by Students

When asked: "What did you find most useful about this module?" several students mentioned skills in their responses, without being prompted to reflect on skills. Their responses were categorised as in Table 1, showing the main skills and benefits individuals mentioned. Not all students completed this part of the questionnaire.

Table 1: Breakdown of responses to the question about the most useful aspects of the module

Items mentioned as useful from the module	Number of respondents who mentioned this item
IT skills	2
Team working skills	10
Leadership	1
Communication skills	2
Project and time management	6
Working with students from other programmes of study	5

Some examples of phrases students used in the responses are: *"learn how to do websites", "working in a team of people I have never met before", "learning to work as a team", "social learning, people with different abilities working in a group", "learn how to develop a project from scratch", "striving towards deadlines", "improve problem solving skills", "how goal planning can help you in future"*.

Another aspect mentioned frequently was: Working with clients (7). Students appreciated the opportunity to talk directly with people working in a real business, and as a result having to behave in a professional manner in their dealings with clients. They regarded the experience as good for their future working lives (5). Examples of their comments in this respect are: *"working with a real client", "speak directly to real clients", "learned a lot about local community services and business organisations"*.

From the limited number of responses the student perspective is that the Live Projects module did help them to develop a range of skills, relevant to employability, including professional skills. There were negative comments as well, some said that they did not like working with students from other programmes of study (4), for example, *"being put in groups with team members from different timetable arrangements", "being put with people on different courses"*, and a comment about issues with language and understanding: *"having to work in groups with people who have very poor English"*. Most of the negative comments were related to the ways in which the module was organised and managed, and these are presented in the next section.

Organisation of the Module

There are logistical issues in offering a module across a number of programmes of study, particularly related to timetabling, and some student teams did experience difficulty finding times to meet up outside of the designated tutorials, because of various work and family commitments (4), for example this comment: *"being put in groups with team members from different timetable arrangements"*. Three individuals also mentioned this as a particular issue their team had, for example the comment: *"struggled to meet due to different timetables"*.

The tutorials, and feedback provided by tutors was appreciated by students, and specifically mentioned as most useful by nine individuals, but seven individuals cited tutor feedback as least useful about the module. These responses may have been influenced by specific issues regarding the tutor meetings, which were not elaborated through the questionnaire.

It was the lectures that seemed to generate the most criticism, only one individual said lectures were the most useful. Others said that the lectures were not useful or were badly timed (9), for example the report writing lecture was after the first report had been submitted (The lecture had been designed to provide feedback on the first report). One of the additional questions asked

about the guest speakers who had given lectures, and many of those who completed this part of the questionnaire indicated that they found these lectures to be very or partly useful, showing a measure of satisfaction with the lectures. The lecture was scheduled for 9.00 a.m. which the tutors thought was the reason for a low turnout at lectures as the weeks progressed.

Three of the respondents thought there was too much work involved in this module, and some reported poor contribution from some team members (3). Difficulties getting team members to produce the work was specifically mentioned as an issue by 4 individuals, and in a few cases where individuals had low levels of English understanding, there was frustration in team members, and this may have been contributory in these individuals retiring from full participation in the project. One issue raised was that the team had difficulty understanding the information given to them, but the team had solved this issue by meeting up and discussing it and coming to a joint understanding.

Although students liked completing projects for outside clients, an issue raised was the need to sometimes travel to meetings with the client (3). This of course, would not be an equally distributed issue, as it depended upon the location of the client's premises, and whether the client chose to meet the students on the university campus. Clients who were sole traders, or who operated their business from home, were encouraged to meet their teams at the university. In contrast, one large organisation invited the team to their premises regularly, and meetings included tours of the organisation and meetings with Directors.

Students were encouraged to use a number of tools to help them manage their projects, such as MS Project, the group pages on Blackboard and social media for communication. Feedback indicated that where tools had been used by the team they had proved useful, and some teams used Facebook to good effect for communication and file sharing.

Client Satisfaction and Student Satisfaction with Clients

Of the 41 projects, 24 were successful for the client in that the client was satisfied with the outputs from the team, which may not have been the outputs originally requested, but amended to outputs agreed by both parties to be achievable in the time available. Five of the projects did not achieve outputs satisfactory to the client, or the project was withdrawn as not suitable for the students' levels of expertise. The remainder of the projects were partly successful, either because the students struggled to produce what was requested, or the client "lost interest" in the project part way through, so did not give adequate feedback and encouragement to the team.

Each team's experience with their client was different, and although the clients were given some information on what was expected of them, the actual practice varied considerably. Small businesses can often find it difficult to devote the time needed for supporting their project, and two of the clients disappeared altogether after a few weeks. One student said that client feedback was the least useful part of the module, and some clients were slow to give feedback. Other clients did not know how to use the grading criteria on the final client feedback form, and either graded them very harshly, comparing their work to that expected of employees, or awarded top marks across the board, without considering the criteria. The following quotes indicate a good level of satisfaction with our teams, and that feedback works both ways:

"The team have worked hard to complete the project on time and come up with some interesting and relevant proposals."

"Good, we have met regularly & Z as team leader has led the team & kept all members in touch although I think he may have experienced some difficulties in getting co-operation from all the team. He mentions this in the interim report too and has probably found this frustrating although all credit to him in ensuring the project is delivered well & is on track."

"On the whole, I have found the team to be professional & committed. I was heartened to read the comment & sentiment on page 8 of the interim report – that "we find that this is a very worthy goal and look forward to making that dream become reality" – fantastic!" from a charitable organisation.

Tutor Perceptions

Tutors had to deal with a number of issues as projects progressed, such as absent team members, who re-appeared just before the final report submission, and inappropriate communication with clients. Two of the teams had serious disagreements and had to be split into separate teams, and have a reserve project assigned to them. One team, who had been a very cohesive team the previous year, started off with their own entrepreneurial idea to pursue, as a continuation from their work on MDP1, and later had to be separated. The team of tutors had to agree ways to deal with issues as the projects progressed, taking into consideration the expectations of all stakeholders.

During the fortnightly tutorial meetings, tutors assessed progress, gave advice and feedback and gave encouragement to the team. Students reported that they liked the feedback on the whole, but the manner in which tutors approached this task varied, as tutors had different views on problem solving and expectations for the milestone deliverables. Assessment of the teams was very time consuming, as each project was unique, and the grading criteria needed to be interpreted according to the teams' experience of the project. Tutors had kept a record of events over the period of the projects, to refer back to, particularly in assessing individual contribution in the team. Nonetheless, blind second marking and reviewing did result in equitable grading, as tutors eventually agreed with each other.

The Group Grade comprised marks for the final report, other documents submitted over the period of the project, the client feedback and tutor assessment of performance by the team. Group grades ranged from 28% to 82%, with an average of 64%. Of the 3 teams who failed, only 1 was an unsuccessful project, according to the client; the others failed because the team did not manage or report well on the project progress.

Grading for individuals comprised a mark for the final individual reflective report, tutor assessment and peer assessment including that of the team leader. The average individual grade was 57%, ranging from fail grades of less than 40%, to 95% awarded to a really successful team leader. Individual reflective reports were to be based upon their weekly learning logs, and should show evidence of development of the individual student over the course of the project. Failed students were those who did not fully contribute to the project, of which there were 12 in the end.

Tutors agreed that the Expo was an excellent event, with a real buzz of enthusiasm from the students, who put considerable effort into their team stands. Owing to the number of teams, the Expo took place over two days, with 21 teams on each day. Their clients were invited along, and most of them did so, also members of academic staff; these visitors were asked to grade each team that they were able to talk to on the day, within the 2 hours of the Expo. Expo grades ranged from 43% up to 88%, with an average of 71%.

All of the tutors agreed that this module proved to be very hard work, compared to traditionally organised modules. They tried to respond to team requests for help in a timely manner, but sometimes students' expectations, and even those of the client may not have been realistic, as shown in this quote from a client:

"The team has remained focused. It seems to have been difficult to arrange team meetings and more support could be given for strategies for getting the team working as a whole. It has been difficult for the team so far as the mentorship and advice they have sought has been slow in coming. I do not know the level of Tutor support they are getting. However, it might be useful to or-

ganise the work in the future around a project management framework, where the client receives regular updates on project implementation including the in-house support and issues arising from this."

Tutors organised their tutorials in different ways, sometimes having a whole group tutorial for 2 hours, and later on as the projects progressed arranging for team meetings at the tutorials, lasting about 20 minutes for each team. The team meetings mode seemed to work best for providing feedback to teams on their progress and providing help. Later in the projects one tutor instigated individual presentations on progress in the meetings, another asked for teams to produce press releases on their projects, and other tutors asked for updated CV's from individuals. All of these activities were beneficial in keeping the team members motivated and enabling some reflection on progress.

In general, feedback from the tutors verified that individuals had gained significant employability skills, in spite of having to deal with many team working issues. In many cases having to address these issues served to make the learning even more real.

Evaluative Discussion

One of the purposes of this module was to enable students to develop employability skills, and students did indeed report that they had developed a range of skills through engaging in the module. However, as Hyland and Johnson (1998) suggest, the activities in a module can only provide opportunities to develop skills, and as Joy (2005) says, they cannot be assessed in the same way that discipline related skills can be. This provides the module team with a dilemma, because assessment of individuals within the module is necessary, but deciding what can be assessed satisfactorily within project work is problematical. Reflection on learning is difficult to assess, and instead, grading of individual reports becomes an assessment of how the report on activities and learning has been written and presented.

Any interplay between team, task and individual means that the individual contribution to the project tasks is tied up with the team performance, and with their individual learning, which is unique to each student. As a vehicle for students to learn about team working, as well as learning about discipline specific material, the Live Projects module worked well, although it is difficult to measure the outcomes. To what extent the skills developed prepared students for their working life as graduates, cannot be ascertained, but some students recognised the significance of what they were doing in the Live Projects to their future prospects.

Some of the negative experiences of team working appeared to hinder students from gaining the maximum from the module, confirming the work of Chiasson and Dexter (2001). In particular, the ability to find times to meet as a team, absent team members and poor contribution from others, did demotivate teams, who had to strive to overcome these issues, and accept that not all students were equally motivated by their project. Individuals who did not adequately contribute to the project work, were unable to articulate their learning experiences in a way that would gain them a high grade for the individual report, so these students did gain low grades, and in many cases failed the module. Grading was designed to be fair to students, according to their contribution, so that an individual who did not start to make a meaningful contribution until late in the project could not expect the same grade as an individual who had contributed steadily throughout. However, sometimes the quality of a contribution may not be obvious to other team members; simply being present at team meetings does not constitute meaningful contribution.

In this research the extent of collaborative learning was not measured, but sharing experiences was mentioned by some students as a positive benefit. There was certainly cooperative learning observed by the tutors in these projects, as tasks were shared out between the team members, and the results had to be brought together in a whole at the end. Whether this type of project based

learning is also problem based learning, can be debated. Problem based learning is only a part of the work involved in the Live Projects module, and whereas true problem based learning should not be structured, the scenario of project based learning does lend itself to a certain level of structure being imposed, as was present in this module. However, feedback does suggest that more structure in terms of activities, reporting and assessment would be desirable.

Issues relating to the organisation of the module were recognised by the students, and commented on in their responses to the questionnaire. For example a request that lectures are more relevant to the tasks being undertaken at particular times, hence giving a more coherent structure to the module, in giving students better guidance and clearer instructions. However, providing more instructions and templates for reports and other deliverables may prevent students from engaging in self-directed learning and being creative.

Success in this module relies on the good will and willingness to help from our project clients, which was found to be variable in quality. In some cases the project turned out to be different to that stated in the project brief on the submission form, and the team, along with guidance from the tutor, had to agree a project that was suitable. Some projects were more difficult than others, and a few were scaled down according to the ability level of team members. So the learning possibilities of the teams varied considerably in terms of the subject matter, although the learning in terms of project management and team working were similar.

Students suggested in their feedback, that projects should be more related to their programmes of study (11), so an IT based project would be given to a team of mainly Business with IT students, a marketing project to Business and Management students, who have chosen the marketing option etc. However, one of the objectives of this module is to give opportunities for students to learn from each other, which would be lost to a certain extent if this were put into practice. In the past tutors have recognised a lack of creativity skills in some Business with IT students and in the Live Projects tutors have seen a good level of creativity, resulting from interdisciplinary discussions within teams, something that Cohen (1999) said was often absent from information systems developed by single discipline teams. Similarly, learning web site design is recognised to be a key skill desirable in all business and management students, so collaborative learning is an important feature of the Live Projects, which is being recognised by students and tutors.

Conclusions and Future Plans

Team projects are a suitable vehicle for teaching employability skills, including team working as well as practical discipline related skills. Students learn together through a combination of collaborative and co-operative activities, in a constructivist, experiential and situated manner, as they work through team processes to produce an output, a model suggested by project based learning. The module described in this paper shows the theory of learning through team projects in a practical and real world setting.

Students recognised that they had gained various employability skills, including team working, project management and professionalism, and that because the skills were gained in a “pseudo business” environment through their partnership with an outside client organisation, there were additional benefits in preparation for their future working lives. Clients perceived that student teams were committed to their projects, and worked hard to satisfy their requests. Some clients were perceptive, and recognised the difficulties experienced by the students, whereas other clients stood back and provided little help and feedback to their team. The Live Projects module relies upon a reciprocal relationship being established between the team and the client organisation, and perhaps the tutors should provide more guidance to clients as to what is expected of them, in order to fulfil their part of the partnership. In terms of the projects, clients who provide more regular and timely feedback do tend to see improved deliverables from the projects. Many of the cli-

ents are future employers, and the Live Projects experience gives them added insight into ways universities endeavour to prepare students for the world of work.

The tutors had to deal with a number of issues of team working, including lack of commitment and participation from some individuals, but the enthusiasm from the better performing teams grew as the projects progressed, resulting in excellent deliverables for their clients. In future a regular check on the students' weekly learning logs will be made, to try to identify issues of non contribution earlier in the projects. Assessment of the module was partly on the product of the project, but also on the process of carrying out the project, with a need to grade deliverables and processes equitably across a wide variety of different project types. Those students who failed the module, did deserve to, and were provided a reassessment opportunity over the summer.

From an administrative point of view, there were a number of suggested changes that should be made to the delivery of the module, principally to ensure that any lectures are directly relevant to the stage of the project the teams are at. The inspirational lectures from guest speakers will be continued, and included in the schedule at the most appropriate times. The tutors need to work with clients to ensure that projects are suitable for the ability levels of the teams, and teams could have individuals assigned that have skills more directly linked to the subject of the project. Tutorial meetings were found to be successful, as an opportunity for the tutor to discuss the work with the team, and assess progress, rather than the whole class tutorials. Some teams would have liked to have more meetings, and as each project is different, a personalised touch is essential for each team, although scheduling any more tutor time will be difficult.

There was an emphasis on sourcing clients from the local business and charity community, as part of the engagement priorities of the university. This presents issues of maintaining equality of project types and learning opportunities, which need to be addressed by the tutors.

The module tutors will be considering whether the multi-disciplinary approach has benefits over a multi-year approach, which was adopted in the previous Team Project module. The numbers of students involved will limit the possibility of offering this module to all three years of the students' programmes of study, but the alternatives are worth exploring further, such as mentors for teams from the third year students, and involving first year students in some way as a form of preparation for the second year Live Projects.

The module is being delivered again this year and evaluation at the end of the year will include focus groups with students, tutors and clients, to more clearly establish which aspects constitute good practice, and should be maintained. Greater use could be made of the individual reflective reports, to identify the extent of achieving employability skills.

Clearly different aspects of learning prove to be of benefit to students at different times in their working lives, as highlighted in this quote from a student who went on an internship after completing the second year on the undergraduate degree:

"Finally, my Management Development Project increased my confidence with regards to talking to different people of whom I have never met; I found this very useful with regards to meeting new people at Hughes. Also, during my time at Hughes I have been able to assist in the planning of an exhibition which has allowed me to see how an exhibition is carried out on large scale. As my team and I planned and designed a small one for the university, it was interesting to see the comparison".

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Appendix A: Survey used for feedback on lectures, support tools and issues in the projects.

Please would you give us feedback on the following aspects of the MDP2 module.

Guest Lectures: Tick the box if you attended that particular lecture, and if you did attend, please rate how useful you found the lecture material.

Lecture theme	**Speaker**	Attended the lecture	Very useful	Partly useful	Neither useful or not	Not very useful	Not at all useful
Project management	Esme Caulfield						
Market research/ consumer behaviour	Fiona Cheetham						
Management consulting	Kevin Kane						
Writing and feedback	Ilene Alexander						
Customer relationship management	Mhorag Goff						
Client and consultant	David Roberts						

Helping to manage your project: Tick the box if you used each tool, and rate how useful you found the tool to be in managing your project.

Project management tool	Used the tool	Very useful	Partly useful	Neither useful or not	Not very useful	Not at all useful
Microsoft Project or Excel for producing a project plan						
Risk assessment						
Budget for project						
Guardian Agent system						
Weekly time sheets						
Blackboard Group Area						
Facebook or similar for communication						

Were there any tensions or particular issues your team experienced?

How did you attempt to resolve these tensions or issues?

Were these tensions or issues resolved satisfactorily?

Appendix B:
Live Projects Client Feedback Questionnaire.

Dear Client, your satisfaction with your team is important for us. Please complete this form and return it to your team so that they can reflect on your comments and enclose it as part of their academic report.

Client Contact name:	
Organisation name:	
Team Number:	Date:

Indicative Grades:	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Overall level (indicative)	*"Shining example"*	*"Profes-"*	*"Went beyond expectations"*	*"Fulfilled the requirements"*	*"Need for improvement"*	*"Just about managed"*	*"There is a lot to learn"*

Please comment on each category below, giving an indicative grade for each category. The grade of "Shining Example" should be reserved for **truly exceptional performance**.

Category	***Comments***	***Grades:***
General project issues		
Understanding of the business context and business problem – have team understood your organisation, relevant processes and problem related areas?		/6
Problem Solving – is the proposed solution appropriate for your business problem?		/6
Team operation		
Meetings with you – how organised and effective were these?		/6
Communication – were you informed of all relevant developments?		/6
Project report – how useful and appropriate was the *Interim Project Report*?		/6
Organisation – how organised was the team in general?		/6

General skills and development		
Your satisfaction – how satisfied are you with the team overall? Do you have any suggestions for improvement?		/6

Thank you for your time. Please return this form to the team as soon as possible.

Biography

Janice Whatley is a lecturer in Salford Business School at the University of Salford. Janice has a doctorate in information systems from the University of Salford, within which the Guardian Agent system for supporting student team projects was created. Janice has also published in the areas of improving teaching and learning for students in higher education, and developing IT and team working skills, and she is a member of the Information Systems, Organisations and Society Research Centre. Janice is also interested in encouraging collaboration between students, having recently co-ordinated the European funded CAB Project, to enable students to learn through collaborating online with students from other European countries. Present teaching includes multimedia, e-learning, team working and IT skills development. She is the school's Employability Champion and Retention Officer, so student progression and careers is very important in her work.