

## Problem Based Management Learning-Better Online?

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### Abstracts

#### English Abstract

This paper explores and compares mature students' perspectives and experiences of face-to-face and online collaborative learning using a Problem Based Learning approach in an undergraduate Management Education module for Early Years Education and Care Managers. Data was collected for a face-to-face group (N=17) and an online group (N=9) on perceptions of learning outcomes achieved and reflective individual evaluations at key assessment points via questionnaire, on students' views of the nature and delivery of the course through focus group discussions, on grades attained and on tutor reflections. While no differences were found in grades achieved or in self-reported attainment of course outcomes, collaborative learning was perceived more favourably by online learners than face-to-face learners and these online learners demonstrated a more rapid development of academic literacy skills. The paper suggests further research areas in terms of gender and applicability of findings to 'traditional' HE students.

#### German Abstract

Der vorliegende Artikel untersucht und vergleicht die Perspektiven und Erfahrungen von fortgeschrittenen Studierenden mit gruppenbezogenen Präsenz- und Online-Lernmethoden. Zu diesem Zweck wurde ein problemorientiertes Lernkonzept angewandt und in ein Managementmodul für Frühförderung und Pflegemanagement integriert. Die Datenerhebung erfolgte einerseits für eine Präsenzgruppe (N = 17), andererseits für eine Online-Gruppe (N = 9). Im Zentrum einer Fragebobenerhebung stand dabei die Wahrnehmung erreichter Lernziele sowie die individuelle Reflexion und Evaluation von "Schlüsselstellen" des Moduls wie etwa die Rolle des Tutors.

Während es keine Unterschiede in den von den Lernenden erreichten Noten oder den von ihnen als erreicht empfundenen Lernzielen gibt, wird *gemeinsames* Lernen stärker von Online-Lernenden bevorzugt. Diese demonstrieren damit gleichzeitig eine schnellere Entwicklung von Fähigkeiten im Umgang mit wissenschaftlicher Literatur. Der Artikel schließt mit Vorschlägen für weitere Forschungsfelder, in denen die Praktikabilität und Verwendbarkeit der Ergebnisse für "traditionelle" HE-Studierende gendersensitiv geprüft werden soll.

#### Keywords:

Collaborative learning, management education, student perceptions of e-learning, problem based learning

### Background

The College, a Higher Education institution in the North of England, has a 150-year tradition of widening participation and has over the last decade expanded degree provision to provide access to those groups of students currently still underrepresented in Higher Education in the UK. In response to needs expressed by national and local employers, vocational training providers and other key players in Early Years Education and Care, the College's Management and Business Centre established a BA Nursery Management programme in 2001. To date, this degree remains the only one of its kind in the UK providing a higher-level management qualification in a rapidly expanding Service sector. Cohorts recruited in 2001 and 2002 attend the College as part-time students one evening per week during term time. However, this degree has since the academic year 2002/3 been available as an online degree for a pilot cohort from across the UK.

#### What is meant by e-Learning in this context?

The following definitions of the different delivery modes, e-learning and face-to-face might be helpful. Cooper (1999) defines e-learning as using the Internet as a communications medium where the instructor and students are separated by physical distance. A more detailed definition is provided by Meredith and Newton who state that "*e-learning is learning facilitated by internet and web technologies, delivered via end-user computing that creates connectivity between people and information, and offers opportunities for social learning approaches.*" (2004, p39). It may be problematic to define 'face-to-face' or 'traditional' teaching as a widely practiced method recognised in Higher Education that has predictable results (Salter, 2003).

Kickul and Kickul assert, "*The rapid growth of e-learning is occurring without our understanding the differences between how students learn in an online environment and in the more traditional setting*" (2004, p29). In exploring some of those differences as they are experienced and articulated by students, the current study compared the two groups' perceptions of learning outcomes achieved, grades attained and views on the nature and delivery of the module.

While the face-to-face cohorts of the degree were taught through lectures and seminars, the conversion of the programme to an online mode required a rethink of such a traditional delivery. In the development of the e-learning route at the College these key issues emerged: the importance of the use of a suitable VLE in delivering the learning, the use of Problem Based Learning (PBL) to enhance student motivation through collaboration, the need of IT skills development and the role of context as it relates to student success.

#### Context of Research

In deciding on an e-Learning mode, the team was aware that e-learning can be misunderstood as an 'information dump' and not as a process. This is in response to Honey's assertion that "*The common thread running through ... forms of e-learning is that they offer the possibility of learning from information delivered to us electronically.*" (2001, p.200). Honey furthermore states that "E-learning more often than not amounts to e-reading" (2001, p.202).

The College's chosen virtual learning environment is Granada's 'Learnwise'. This VLE has as one of its features collaborative 'Forums' in which students take part in asynchronous discussion in small teams and work on specific management and education problems. The team decided that these forums would provide a prime vehicle for student support through 'encouraging active learning', shifting from didactic to facilitative teaching' or 'building online communities' (Armitage, Brown et al, 2001)

### The Importance of Problem Based Learning within this Course

The stated aim of the BA programme is that students will develop a knowledge and understanding of the educational and management issues pertinent to their sector, and that they will also develop the requisite skills to critically analyse, evaluate and apply this knowledge. As professional knowledge requires functioning knowledge that can be put to work immediately, the management team choose to adopt a 'Problem Based Learning' approach for the online version of the programme.

Problem based learning simulates everyday learning and problem solving. Knowledge is acquired in a working context and is put back to use in that context. Students learn the skills for seeking out the required knowledge when the occasion arises. They are motivated immediately by the interaction with a 'real' problem and are active early in the process. There is a large body of literature to support the motivational aspects of collaboration on learning (Johnson and Johnson, 1989; Sharan and Shaulov, 1990; Dobos, 1996). Students are assigned to small problem solving groups and begin cooperating with tutors and peers, to build up a knowledge base of material; they learn where to go and check it and seek out more. They are guided to a wide variety of resources. Knowledge is developed, strengthened and applied.

After the successful delivery of a PBL approach to the e-learning cohort over 2 modules at Level C, the staff team decided to incorporate this didactic approach into face-to-face teaching in the academic year 2003/4. Using a Problem based learning approach has been seen to be particularly important as students on the BA programme attend part-time or are working at a distance and it is anticipated that the students will maintain their sense of belonging to the group and the programme by working together on shared problems. In so doing their skills of communication, self-direction and team working, problem solving and creativity will also be developed.

### Introduction to the module

'Key Influences on Educare Provision' is a 50-credit Level C module delivered on the BA Nursery Management programme to the face-to-face group from September 2003-May 2004 over 26 weeks and to the e-learning cohort from January 2004 to June 2004 over 17 weeks.

Problem Based Learning as an integral approach to learning and teaching largely determined the structure of the module. As the aim of BA programmes is that students will increase knowledge and understanding of issues appertaining to Early Years management, problems were framed in such a manner that they simulated everyday learning and problem solving. It was envisaged that knowledge would be acquired in a working context and is put back to use in that context. Students would learn the skills for seeking out the required knowledge when the occasion arises.

Five problems such as: *'you have taken over as the Managers of a Super Educare setting and implement changes in marketing and positioning of the organisation. Why?'* provided the main learning opportunities for students. These problems were supplemented by Guest Speakers (videoed for the e-learners); group meetings with tutor (delivered as simultaneous 'chat' on line) and seminar activities or e-tivities. These latter activities were asynchronous for the e-learners using discussion forums on the VLE. The face-to-face student cohort attended the campus once per week during the semester with a tutor available for a weekly 3-hour tutorial. Face-to-face students also had access to the online module on the College's VLE, both as a communication and resource facility. The module was assessed by 1 formative and 2 summative group assignments (40%), 1 formative and 1 summative individual report (60%).

### Research Aims

This research explores and compares mature students' perspectives and experiences of face-to-face and online collaborative learning using a Problem Based Learning approach. It attempts to find whether online and face-to-face students experience similarities or differences in undertaking problem based, collaborative management education.

In particular, the research aims to uncover students' views of the nature and delivery of the course in both learning modes. The students' perceptions of learning outcomes achieved during this module and the tutors perception s and experiences of delivering collaborative management education in the two learning modes. Lastly, the research attempts to ascertain whether there are any significant differences between the two learning modes in terms of marks achieved.

### Methodology

A multi methodological approach was adopted, using both quantitative and qualitative methods. As the focus of the study is on exploring perceptions and experience, focus groups were used to encourage the 'voice of the students' to articulate those perceptions in more depth. This is particularly pertinent as one group of students are at a distance and "we need a way of giving our invisible and silent students a voice so that they can contribute to public evaluation processes" (Gilroy et al, 2001, p.17.) Powell et al define a focus group as a group of individuals selected and assembled by researchers to discuss and comment on, from personal experience, the topic that is the subject of the research. (1996, p. 499) Kitzinger (1994, 1995) argues that interaction is the crucial feature of focus groups because the interaction between participants highlights their view of the world, the language they use about an issue and their values and beliefs about a situation.

Self reported measures and data from grades achieved by both cohorts were analysed quantitatively to find whether there were any differences in grades obtained or learning outcomes achieved.

### Sample

At the outset, there were 17 registered students on the face-to-face module and 9 on the online module. The two groups were all female and comparable both in relation to age range, from mid twenties to early fifties, and employment experience in the sector. The e-group had had experience of online learning on two modules at level C the previous year and had been introduced to PBL during their Induction Residential prior to the programme. 13 face-to-face students (1 student transferred before the start of the course, 3 had

health/family problems during the course) and 8 online students (1 student withdrew part way through the course) completed the course.

## Data collection

Individual questionnaires were completed by face-to-face students in tutorial/seminar time and by e-learners via email, at all three summative assessment points to get students' perceptions of learning outcomes achieved and their reflective individual evaluations. The questionnaire used was an adapted version of the Learning Outcomes Questionnaire (LOQ) (Norton & Norton, 2003), which in turn was based on the Learning Objectives Questionnaire developed by Norton, Horn and Thomas in 1997. In the current study, students were asked after each summative assignment to complete a version of the LOQ, which stated the learning outcomes for that assignment and asked students if they felt they had achieved those learning outcomes by selecting one of four responses: 'yes definitely', 'not sure', 'no definitely not', 'don't understand'. In addition, students were asked to respond to 3 open ended questions to elicit their experiences and perceptions of the PBL approach in relation to the assignment:

- 'What is the single most important thing you felt you learned from the module so far?'
- 'In what way has the delivery of the module through Problem-based Learning helped your understanding of Key influences on Educare provision?'
- 'In what way has the delivery of the module through Problem-based Learning hindered your understanding of Key influences on Educare provision?'

Completion rates for the questionnaires were as follows:

	Face-to-face group	e-learning group
Assignment 1	14	7
Assignment 2	14	6
Assignment 3	11	8

A focus group discussion was held with the face-to-face cohort on campus at the midway point of the module after the submission of the first summative assessment, while the e-learning group engaged in an asynchronous discussion on a discussion forum made available during a limited time frame (over a two week period) at the same point in their module. Participants in both groups were asked to reflect on the following four areas of interest:

- How did you feel when you were faced with the PBL approach at the beginning of this module?
- How did you experience the tutor support during this module?
- Tell us about working in groups.
- Tell us about your experiences with the network/access to IT and Learning Support facilities.

13 students from the face-to-face group participated in two half hour focus groups (6 in one and 7 in the other). Contemporaneous notes taken by the second author were transcribed the next day and reviewed for accuracy by first author. All 8 students (one had withdrawn by then) from the e-learning group participated in the asynchronous online discussion.

Assessment marks for both cohorts for the 2003/4 module were collated and analysed. Also available for comparison were marks for the face-to-face group for two modules taken the previous year, 2002/3.

Both tutors involved in delivering the module (each responsible for one group) were asked to record their reflections and experiences during the module.

## Findings

### Perceptions of learning outcomes achieved

Students were asked at each summative assessment point whether they felt that they had achieved learning outcomes for that assessment.

There were no statistically significant differences between the responses offered by two groups. No students selected the responses 'no definitely not' (indicating that they felt they had not achieved the learning outcome) or 'don't understand' and there were few missing responses.

Overall, although there are no statistically significant differences in students' ratings, the face-to-face students appeared to be more confident about having achieved learning outcomes, while the e-learning students are more self-critical and express more self-doubt.

### Reflective Individual Evaluations

Students were asked three open-ended evaluative questions at the three summative assessment points. Responses were categorised to identify themes and are shown in percentages in tables 1, 2 and 3.

**Table 1:** 'What is the single most important thing you felt you learned from the module so far?'

Theme	Assignment 1		Assignment 2		Assignment 3	
	f to f	e-group	f to f	e-group	f to f	e-group
Course content	36	86	64	100	100	100
Working in groups	43	14	21			

Other	21		15			
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Initially, the process of working in groups featured in a sizeable percentage of face-to-face group responses but by assignment 3, all responses related to course content.

For assignment 1, the face-to-face students made comments such as: *"working as a team efficiently"* and were less certain in their responses relating to course content: *"Possibly the factors influencing the composition of industry. Prior to research I knew absolutely nothing about it or what it meant"*. In contrast, e-learning students made comments such as *"the most important thing that I have learned so far from this module is the impact of micro factors, which effect an educare business from the external environment"*.

For assignment 2, comments ranged from *"Hadn't realized the number of factors that need to be considered in setting up your own business"* and *"team work"* from face-to-face students to *"The fact that there are so many elements, local, national and global that work together and you cannot look at anything in isolation ... provides a good point for ensuring that all relevant information is gathered before making any decisions with regard to change"* from an e-learning student.

Having progressed to assignment 3, all responses from both groups related to course content. Comments from the face-to-face group such as *"How to develop a partnership with parents"* is elaborated thus by one of the e-learning students *"Childcare and education is not just about providing for the child, there are many other factors which affect the quality of care within an establishment. Parents are a primary partner within the quality of education and care provided, however other agencies and people need also to be considered"*.

**Table 2:** 'In what way has the delivery of the module through Problem-based Learning helped your understanding of Key influences on Educare provision?'

Theme	Assignment 1		Assignment 2		Assignment 3	
	f to f	e-group	f to f	e-group	f to f	e-group
Relevance of task		43		43		88
Active research	50	29	29	29	36	
Group work	7	29	29	29	27	
Other	14					12
Did not help	14		14			
Did not respond	14		29		36	

The e-learning group were more positive in their responses to this question for assignments 1 and 2 than the face-to-face group but by assignment 3 all responses made were positive. However, a number of the face-to-face group did not answer this question.

For assignment 1, e-learning group responses were more lengthy and complex and highlighted individual research, group research and support, and the relevance of tasks to working life. Here is a somewhat tentative, yet positive comment from one of the face-to-face group: *"Having to do all the research & group discussion related to our findings has maybe deepened my understanding more than the 'talk and chalk' method"*. A member of the e-learning group responds that *"The main success of the PBL approach is that it encourages individual research, which has been both instructional and relevant to my work. This has greatly enhanced my understanding of the subjects covered. I really like the fact that the topics covered (especially the last module on communication) was not only informative but very practical. I felt what I had learned has been of benefit in the real world"*.

By assignment 2, there were some very enthusiastic endorsements of the PBL approach by students from the e-learning group such as: *"(PBL is) Brilliant - if I had had to approach this on my own I would have given up before I began simply through lack of time. By setting PBL with a group it breaks the task down into manageable 'bits', which means that you achieve your task on time (hopefully!!)"*. While most of the face-to-face students were positive, expressed in comments such as: *"I have learnt a lot more as a group, we have researched a lot of issues and I have learnt a lot about the 'business side' of nursery life"*, quite a number did not respond or felt that PBL had not helped.

At the final assessment point, assignment 3, the entire e-learning group gave positive responses to the question nearly all valuing the relevance offered by the PBL approach to their work setting as evidence in the comment *"I am really enjoying the PBL way of learning. It enables one to think through a possible scenario as opposed to specifically answering a question. It means that I can then use the same techniques when things are happening in the nursery"*. A majority of the face-to-face group felt that PBL had helped their understanding *"I researched lots of up to the minute information from a wide variety of sources"* but the remainder did not respond to this question.

**Table 3:** "In what way has the delivery of the module through Problem-based Learning hindered your understanding of Key influences on Educare provision?"

Theme	Assignment 1		Assignment 2		Assignment 3	
	f to f	e-group	f to f	e-group	f to f	e-group
Had not hindered	21	57	7	43	36	50
Understood via PBL process		43				

Doubts about transferability				29		
Improvements required				29		38
Missed traditional approach	71				46	
Difficulties in meeting as a group			57			
Hard to keep up			21			
Did not respond			7		18	13

The e-learning group generally felt throughout that PBL had not hindered their understanding but some reservations were expressed in assignment 2 responses as to their ability to apply what they'd learned in other contexts and in assignments 2 & 3 attention was drawn to the need for some improvements required in the process. The Face to face group responses were much less positive for assignments 1 & 2 but by assignment 3 more of the group felt that PBL had not hindered their understanding. Many of the Face to face group felt there was a lack of guidance compared to the traditional approach and this was expressed in responses in assignment 1 and featured again in assignment 3 responses.

At the first assessment point, assignment 1, all e-learning group students either said PBL had not hindered their understanding or that, despite finding tasks daunting initially, understanding was gained through the process. However, most of the face-to-face group felt they had missed the guidance given by the traditional approach (e.g. lectures, handouts) and weren't sure how much they'd learnt or had found it hard to find information within the time constraints. This was expressed in comments such as: *"Again, not much lecturer input, so do not feel I have learnt much. Feel some lectures would help. Found logistics of group meeting difficult & have not had much time on each task"*.

By assignment 2, a sizeable proportion of the e-learning group still felt that PBL had not hindered their understanding but some e-learners wondered if they would be able to apply what they had learned in other contexts. This was expressed in comments such as: *"I think what is lacking in the on-line delivery is the opportunity for 'live' debate, group discussion and sharing of ideas. We can only do this in a limited way through the forum and chat room."* Over half of the face-to-face group responses referred to difficulties posed by travel, family and work commitments to arranging group meetings. A number of the Face to face group found it hard to keep up and feared letting the group down. These responses range from *"Making time to get together outside college and work"* to *"It was hard to keep up at times and I was also conscious of letting our group down."*

By assignment 3, while some had reservations with some aspects of the PBL process, which they felt needed improvement; half of the e-learning group responded positively, for example *"None that I can think of. Now I am getting used to carrying out personal research I am finding it very interesting and thought provoking and am starting to reflect upon my own and my settings practice"*. A third of the face-to-face group felt that PBL had not hindered their understanding but nearly half felt a need for more guidance or face-to-face contact with the tutor. This is expressed as: *"I sometimes feel I may not be finding out as much as I could learn if I was being taught"*.

## Focus Group Results

The first question **"How did you feel when you were faced with the PBL approach at the beginning of this module?"** provoked a range of anxious responses from face-to-face students. They reported that they had felt *"Worried, sick, found it stressful, panic/didn't understand what was expected/getting information – is that what is needed? So many demands to deal with – some were tempted to give up – so different from last year and more intense"*. Students also expressed *"concern over coverage – handouts last year provided indication... lecturers gave an expert view – under PBL continually wondering if you're right"*. The e-learning group responded differently. Six of the eight students spoke favourably of the PBL approach. Five felt that although initially the task seemed daunting and it was difficult to decide how to approach it, through the process things fell into place. However, some felt that it was difficult to synthesise individual research into a group response and others that individual understanding of the whole might be limited by splitting research among group members. 3 students referred to the benefit gained by tackling problems relevant to work.

When asked **"How did you experience the tutor support during this module?"**, all the face-to-face group expressed appreciation of the tutor support *"Tutor was great – gave mobile and email access"*, some also felt that the *"early weeks [were] wasted, didn't quite understand what was required – had to decide what oneself"*. In the e-learning group, all 8 students rated the tutor support highly from *'good'* to *'absolutely brilliant!'* with regard to availability, rapidity and relevance of response, and encouragement.

Invited to **"Tell us about working in groups"** the face-to-face group expressed a cautious endorsement of group work commenting that it was *"based on who you sat with"* and *"groups should be able to share more – tends to be a competition"*. In contrast, despite some initial fears and difficulties, all 8 e-learning students valued working in groups, which as well as being enjoyable, provided considerable mutual support and spreads the workload. Two expressed some reservations as to whether this approach affected their capacity to understand all areas researched and to act as individuals.

When face-to-face students were asked to **"Tell us about your experiences with the network/access to IT and Learning Support facilities"**, students commented on the helpfulness of library staff in particular, but reported a range of barriers to accessing the module's VLE or the college network in general. This led to some groups relying on mobile phone communications. Very few face-to-face students made use of the VLE. While the e-learning group also reported access problems to the college network, with some having problems with Learnwise (e.g. getting into the chat room, unable to upload their evaluations), it seemed to be a greater concern to them that it proved difficult to obtain recommended books. Three students suggested that a refresher course to help them to use the VLE Learnwise more effectively would be helpful. With the help of the tutor and IT support services, all

e-learners managed to use the VLE, even if with some interruptions.

## Marks

**Table 4:** Comparison of marks achieved by the two groups (Figures are in percentages)

Grade point	Group presentation		Group report		Individual report		Overall	
	f to f	e-group	f to f	e-group	f to f	e-group	f to f	e-group
8	29							
7	24	50	56	50	31		46	13
6	47		44	50	31	50	23	75
5		50			8	25	23	13
4					23	13	8	
3					8			

No difference in performance was found (Kolmogorov Smirnov tests) between the two groups for the 3 assessment tasks or the overall grading.

## Comparison with modules taken in previous year by face-to-face group

The face-to-face cohort performed significantly better (Wilcoxon signed ranks test -  $Z = 3.11$ ,  $p < 0.01$ ) in the PBL based 2003/4 module, 'Key Influences on Educare' than in another Level C module, Structure of Educare Providers, taken in 2002/03 via the 'chalk and talk' method. 12 of the 13 students achieved a higher overall grade point while 1 achieved the same grade point in both modules. However, no difference was found (Wilcoxon signed ranks test -  $Z = 0.28$ , n.s.) when comparing performance on a second module, 'Internal Business', taken in 2002/3.

## Facilitators' Reflections

The tutors for both cohorts recorded their reflections during the duration. While both tutors saw their role in PBL as that of a facilitator, encouraging students to explore own knowledge and determine their own learning needs, this proved to be easier for the e-tutor, who was a full time member of staff and did not feel restrained by a 3 hour teaching slot once a week. The e-tutor reported that she generally refrained from providing information, instead prompting discussion and learning amongst the students and that students responded well to this approach. Making use of the asynchronous nature of much of the communication tools, she could raise discussions, often asking pertinent questions and checking all lines of enquiry. She also frequently questioned the currency or validity of information and contributions made by students and enjoyed the repartee in the chat room that she accessed to provide support to students on two or three occasion per week.

The experiences of the face-to-face tutor proved to be less enjoyable. Initially this tutor felt that while this was the first module that these students had studied utilizing the PBL approach, from the outset it became clear that the groups were very competitive and were demonstrating quite cliquish behaviour. The tutor met with the groups once a week to facilitate group discussion and provide support and guidance on work or drafts produced.

She reports that she met with continual frustration and panic from the groups. Without fail the groups would have met in the interim between sessions. Some group meetings were productive *"whilst others became a social opportunity and a chance to complain about the module, which usually resulted in a late, or following day phone call to myself to clarify matters"*. Students expressed their unhappiness that it had not been explained to them that they would be expected to utilize Learnwise and would like to return to the comfort of the chalk/talk style of teaching. They were very negative about the whole PBL approach and would not entertain the use of Learnwise. The sessions were spent reassuring the groups who actually were producing some excellent work. Some students would not acknowledge that it was not the approach to learning that was not working, rather the reluctance of the group to appoint a leader who would clearly direct the group activities to enable constructive activities and research to take place before the next group meeting. However despite all of this the groups managed to produce excellent work with some outstanding individual work. The tutor concludes, *"On reflection the majority of the students, especially those who had made the most fuss and achieved the best individual marks agreed that this approach had brought out the best in them!"*

## Discussion

It has become apparent from student comments that both cohorts' perceptions articulated in this research were influenced by their previous experiences on the degree programme. While the face-to-face students had been used to an approach that was linear where students follow a prescribed and progressive program of study via orderly lectures delivered in a pre-arranged sequence, the e-learning cohort had already experienced 2 modules that had allowed them a measure of autonomy and flexibility. Their 'culture shock' of facing the PBL approach had happened during their Induction Residential to the program.

Time to meet in their work groups emerged as an issue for face-to-face students at several points during the research, collaborative learning may have been limited by the logistics of students being able to arrange to meet. Although the on-line students as working practitioners and as parents with family responsibilities faced similar time restraints, the use of media-communicated communication has been used to build successful collaborative learning. Indeed as Salmon (2000) asserts that the Internet can change concepts of space and time: *"Working and learning with others who happen to live in a particular locale may become less important than finding shared professional and personal interests in online environment"*. (p 492)

Although Salter asserts that *"For both teachers and students it is often their first attempt at online education. The impact of novelty on motivation and interest may threaten validity."* (2003, p137) this is not the case here as students on the e-learning group have already completed two modules via PBL online.

One of the aims of the BA programme is for students to develop the requisite skills to critically analyse, evaluate and apply this knowledge. That the students of both cohorts achieved this aim is evident in the good marks obtained for both group and individual tasks. Students have been motivated by the interaction with a 'real' problem and are active early in the process. But this has been easier for the e-learners than the face-to-face students.

Salter also urges that *"If we espouse the view that education should allow to deal critically and creatively' with the world then communications need to flow in many directions. We need to encourage dialogue rather than teacher-student monologue"* (2003, p 140) This need for dialogue is borne out in this research as both cohorts comment on the both the importance of group work and learning from your peers and the applicability of their leaning to their everyday practice.

A large body of literature support the motivational aspects of collaboration on learning (Johnson and Johnson, 1989; Sharan and Shaulov, 1990). Again, both groups clearly articulate how working in groups 'kept them going'. Wenger (1999) also offers a perspective on learning that emphasises social learning processes within communities of practice where individuals engage in the negotiation of meaning and the mutual construction of knowledge. The e-learning group often refers to this 'community of practice' when expressing the relevance of the tasks to the everyday practice. Therefore the findings of this research stand in contrast to findings from Trippe (2000) at the University of Phoenix where students suggested that team projects and cooperative activities may not work as well at a distance. On the contrary, in this research students on-line perceive fewer barriers to collaboration than face-to-face students.

The issue of gender might also be pertinent for the group of learners whose experiences are explored in this research; both face-to-face and e-learning cohorts are entirely female. For example, a study by Kirkup and von Prumm (1990) comparing the experiences of women adult distance learners in Germany and the UK points to a pattern of preference for shared learning. This led in Kirkup and von Prummer's study to women attending local study centres more frequently than male students, despite similar obstacles of time and family constraints as articulated by the face-to-face students in this study. The availability of synchronous and asynchronous communication tools utilised by the e-learning cohort, appears to have supported that desire or preference for shared learning, without the many barriers perceived by the face-to-face cohort.

The findings demonstrate that there is no statistically significant difference for marks achieved by both cohorts. This echoes Brownson and Harriman's (2000) research that distance-learning students do just as well or better than traditional classroom students. In a similar review of studies Verduin and Clark (1991) found that students using: *"distance education methods achieved, similar, if not superior, results when compared to conventional methods of teaching"*.

Could the different use of tutors by face-to-face and e-learners be just a matter of tutor personality or were the face-to-face students still expecting more passive role or an 'entertain me' mode. (Klemm, 1998) It could be argued that in an online mode, communication techniques such as discussion group, email and chat can open up communication with information flowing in many directions allowing students more autonomy. But the role of the tutor and more importantly the perceptions and expectations of the role of tutors by students have emerged as critical issues in this research. The face-to-face cohort expresses a desire to be taught, for 'information transmission', while the e-learning cohort has accepted more readily the role of the tutor as facilitator. This facilitator role appears to 'fit' easier for the e-tutor who was not restrained by a 3 hour teaching slot, but could interact with students on a more 'demand led' basis and also enjoyed the benefits and flexibility of asynchronous 24/7 nature of on-line learning.

Salmon (2000, p 494) asserts, *"Constructivist tutors engage their students so that the knowledge they construct is usable in new and varying situations, and their goal is to enable 'meaning making' rather than transmit knowledge"*. This approach is even more pertinent in management education as learning impacts on practice and learning with peers and practitioners may be particularly important. The e-learning cohort very clearly articulates this importance of learning with peers and the challenges of social construction of knowledge.

Another area for consideration are whether the different responses, long and detailed by e-learners and much briefer by face-to-face learners, just due to time constraints for data collection for this latter group or are the differences due to students using a different medium? A study by Althaus (1997) similarly found that online students have greater time for reflection and clarification due to the benefits of asynchronicity as independent of time and location. Althaus's research found that the average answer by a student in a classroom discussion was 12 words long while in e-mail discussions the average contribution was 106 words. In this research the same outcomes occurred: short, concise comments or phrases from the face-to-face group's evaluations and focus group contributions and lengthy, discursive contributions from the e-learning group. Again, the e-learning mode appears to support one of the tenets of management learning, the concepts of 'reflection' as a critical part of learning (Reynolds, 1998). Online learning, particularly the use of asynchronous tools allows reflection before response. In comments from e-learners it emerges that students perceive that online learning gives them a one-to-one relationship with a tutor, which they value, and the opportunity for reflection.

## Conclusions

The e-learning cohort stated that online learning has given them self-confidence compared to some of their previous face-to-face learning opportunities. Students reported drawing on each other's skills and expertise through group work online. Although the face-to-face students also acknowledged the benefits of collaborative learning, this acknowledgment appeared to be much more reluctantly offered. Also, the development of literacy skills through communicating online was evident in the detailed and discursive contributions and reflections by the e-learning group.

Time constraints emerged as the major issue for face-to-face students, while the access to learning resources such as books provided barriers for e-learners. It should also be acknowledged that the issue of gender as a defining context (both cohorts are entirely female) or that of the role of professional context are not fully explored in this research. It could prove useful in future research to compare a PBL approach for full-time 'traditional' undergraduates both on line and face-to-face and for a male or mixed cohort.

Both cohorts discussed in this research have developed the skills of communication, self-direction and team working, problem solving and creativity. This became evident in their perception of learning outcomes achieved and the marks achieved. Honey (2001) identifies that 'learning has always flourished when it has been actively encouraged and supported'. The learning and assessment on the programme has been aligned (Biggs, 1999) to everyday work experiences. Both cohorts acknowledged the value of that alignment.

While the sample investigated in this research is small, we must be careful about generalising from these findings. It should also be acknowledged that much of the above findings are anecdotal or taken from self reported measures. Lastly, the question remains whether the findings are only indicative of the target group for the BA Nursery Management who are highly motivated, mature adult learners and the community of practice they are developing or can the benefits of this collaborative management learning be replicated with more 'traditional' students on Management or Business programmes?

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