

PROFESSIONAL SKILLS TEACHING IN THE IS CURRICULUM: ISSUES OF CONTENT, DELIVERY AND ASSESSMENT

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Abstract

This paper looks at the reasons for including Professional Skills in the IS Curriculum and examines the experiences at the University of Melbourne in outsourcing their Professional Skills Program (PSP). It also draws on the experiences at the University of Tasmania where a Professional Development Unit (PDU) was first initiated at undergraduate level in 1995. Issues of content, IS context, modes of delivery and assessment are discussed with regard to the PSP.

INTRODUCTION

In the past decade, changes to the process of software development and the advent of client based computing have increased the need for IS professionals to be formally equipped with interpersonal skills. Whilst it could be argued that the 'good systems analyst' was always alert to organisational aspects and could communicate well with their clients, the increased emphasis on user support, prototyping and Joint Application Development (JAD) has meant that many more IS professionals have communication with their client as an increased element of their role. In addition, the organisational move to IS as a core element of business means that IS professionals no longer work in a vacuum; they are expected to communicate over a wide range of situations and people. Also, the shift to package software and reuse requires a shift away from programming skills to analytical skills - for instance, package software has to be evaluated with regard to organisational needs and the software then tailored or business processes altered as appropriate. There is also currently greater attention being paid to the requirements gathering phase of the systems life cycle; it is now recognised that communication at this early stage plays a critical role (Edstrom 1977, Guinan 1988, Tan 1989)

Students of IS curricula come in many guises - many students are taking up IS subjects to form an extra set of knowledge to give them an edge in a crowded job market. Joint degrees, and IS degrees (such as the one at the University of Melbourne) that allow the development of a 'second string to the bow' in the form of subsidiary specialisations in subjects such as accounting and management, are also popular. The hybrid nature of many IS curricula give a good indication of the many and varied career options there are in the field of IS - things have radically altered from the days of the traditional career path of programmer to systems analyst to project manager and eventually IS manager.

The DEET Discipline Review of Computer Science (DEET 1994) found that many employers were concerned at the lack of communication and interpersonal skills of computing graduates. The recommendation was that institutions made provision for education on cultural, social, legal and ethical aspects of information technology. The report also identified a need for IT professionals to appreciate philosophical and social issues related to the impact of information technology on organisations and society.

Issues Associated with Professional Skills Teaching

Professional skills teaching is a relatively new concept in the IS curriculum and there are many issues associated with its introduction. The primary issue is agreement that there is indeed a *need* for such training of IS students. Although this need is well established in the literature, many IS academics still have to be convinced of the need to then incorporate it into the IS curriculum. While many academics would accept the need for students to have good written and oral skills, the notion of extending this into a fully fledged professional skills program is something else of a different magnitude. It can be argued that the teaching of teamwork, leadership, meeting skills etc are not necessary as each organisation the graduate eventually works for will inculcate the student in that particular organisation. It is certainly true that professional skills teaching can only equip students in a general way for specific organisational situations. There is also the view that providing professional skills training for students verges on a vocational role that it is not appropriate for universities to take. Many IS academics have not actually been exposed to any professional skills training themselves, so may have an imperfect knowledge of its content and philosophy. Others may have had unfortunate experiences of various training courses in professional skills and this also may influence perception.

Closely related to the above issue is *relevance* - how relevant are professional skills in general to the IS profession in particular? IS literature has indicated there are problems with the communication skills of IS professionals for well over two decades, and the speculated on the impact of this on the system development process and project success (DeBrabander & Edstrom 1977, DeMarco & Lister 1987, Guinan 1989, Dengate, Cougar & Weber 1990). The ACS devoted a whole issue of its then practitioner magazine 'Informatics' in February 1994 to the problem of communication. Entitled 'Why Users Hate Your Attitude', it amply demonstrated why this was still a problem within the IS profession (Kennedy 1994). The ACS Body of Knowledge (ACS 1996), which defines the elements of the IS curriculum which have to be present for accreditation by the ACS, has Interpersonal Skills, Ethics, Social Implications and Professional Practice as essential elements.

Lastly there is the DEET Discipline review (1994) and much anecdotal evidence that employers require these skills, and that graduates who have some training in this area find gaining employment easier.

Once the need and relevance of professional skills training has been established, there is the stumbling block of *resourcing* such a program. Professional skills teaching cannot be done effectively in student groups larger than twenty, so effectively a tutorial format has to be used for delivery. Depending on the number of students and the frequency of professional skills teaching, this could add anything between 60 and 120 hours of

teaching per semester (based on approximately 180 students). An IS member of staff asked to do this teaching could justifiably say two things - one, that it leaves them very little latitude to do anything else and could limit their career, and two, that they are not qualified to teach such a subject. An obvious solution to this problem is to outsource either partially or fully, and experiences at both the University of Tasmania and the University of Melbourne demonstrate that local conditions play a large part in this decision. Outsourcing carries with it the possibility of a generic professional skills program that does not have the same IS content and relevance that an IS member of staff can impart to the delivery of this material. This can be ameliorated by maintaining control of the outsourcing and working jointly on content, as demonstrated by the University of Melbourne experience, described fully later in this paper.

Institutions could also with some justification ask what is the *return* for such an intensive investment in resources. Certainly at both the University of Tasmania and the University of Melbourne it is marketed as 'value adding' to the degree, and is popular with students and parents of students who see it as a way of giving students an edge in a competitive job market. Obviously this situation will change as more universities add this element to their IS courses and differentiation becomes less marked.

There are further detailed issues associated with course design, such as the decision whether to designate credit within a degree for professional skills units, how assessment is to be carried out if credit is given, and how such units are to be evaluated. If the professional skills unit is not given credit within the degree, the issue of *incentives* to students (given that formal credit is the major incentive for students) become very important.

Issues associated with professional skills can therefore be characterised as falling into two main categories; issues of *introduction* within a degree such as resourcing, curriculum content, delivery mode and credit, and *implementation* issues such as assessment, student incentives and evaluation. These are summarised below in checklist form.

Issues of introduction

1. *Commitment* to the concept - professional skills in IS is a relatively new concept and not all IS staff are familiar with it or convinced that it is an important part of the IS curriculum. Is the department/school as a whole committed to the concept?
2. What *return* (in both quantitative and qualitative terms) does the department/school get for a sizeable investment in Professional Skills?
3. Professional skills teaching cannot properly be delivered in large groups - how does this affect *resourcing*?
4. Should it be delivered by IS or non IS staff?
5. The introduction of professional skills effectively increases the material to be delivered within the degree. How will it fit into the degree structure? Is the professional skills unit be a credit or non credit course?
6. Are professional skills to be a large or small element of the degree? Are they to be taught in every year of the degree, and every semester?
7. How can generic professional skills be made *relevant* to the IS curriculum, and what degree of integration with the rest of the curriculum is feasible and desirable?

Issues of implementation

1. What incentives exist for students to attend professional skills units, apart from formal credit?
2. How is student learning in professional skills to be assessed?
3. How is a course in professional skills to be evaluated?
4. If partially or fully outsourced, what degree of control over content and classroom delivery can be retained?

How these issues were encountered and dealt with both at the University of Tasmania and the University of Melbourne are described in the rest of this paper, with an especial focus on the successful outsourcing experience at the University of Melbourne.

Professional Skills Teaching at the University of Tasmania

The Professional Development Unit (PDU) was first instituted at undergraduate level at the University of Tasmania in 1995 as part of its revamped Bachelor of Computing. It was preceded by a highly successful honours level unit of the same name in 1993 and 1994. The Professional Development unit was attached to a core unit in each respective year of the degree, and constituted 10% of the practical assessment for that unit over each semester. It is delivered by IS staff over repeated tutorial sessions, and speakers both internal and external to the University utilised as necessary. It is evaluated by students through the standard University teaching questionnaire.

At the time of introduction, although professional skills teaching had been widely debated and discussed amongst academic staff, it is fair to say that the introduction of PDU was supported in varying degrees by staff. Whilst most agreed that some form of professional skills teaching was necessary, opinion varied as to how much was required and whether credit should be given. It was decided that credit should be given, otherwise students would have no incentive to attend. IS staff teach the PDU, and the Department remains committed to the PDU and the resourcing it requires. The response from students has been extremely positive to the extent that those students for whom the PDU is not a requirement requested that the material be made available to them, as they felt significantly disadvantaged by not participating (Lamp, Keen & Urquhart 1996). Responses from students via course evaluation remain consistently positive.

PROFESSIONAL SKILLS TEACHING AT THE UNIVERSITY OF MELBOURNE

The Department of Information Systems (DIS) was set up as new department by the University of Melbourne in 1995. Staff were recruited and the first intake of students to the new Bachelor of Information Systems (BIS) commenced in February 1996. The structure of the degree consists of 18 core IS units over 3 years, with 6 additional units chosen as electives. The 18 core units cover managerial and technical aspects of IS, and the electives allow subsidiary specialisations in approved subjects such as accounting, management and computer science. The approved elective stream effectively allows the student the development of a 'second string to the bow', or alternatively students can choose IS electives to strengthen their IS degree and follow interests they have developed. The student can propose other elective streams - provided they form a coherent stream of study and they can make a case for its benefit in terms of career aspirations.

In the initial design of the BIS in 1994, 'professional and analytical skills' were represented as a core theme running throughout the course. It was envisaged at the time that this theme would be fully integrated within core units. During discussions amongst academic staff in 1996 while considering the core units, it was considered desirable to incorporate a formal Professional Skills Program (PSP) into the BIS.

Introducing the professional skills element

During early discussions about professional skills teaching a number of academic staff expressed not so much reservations about the concept itself, as unfamiliarity with the content of professional skills teaching and how it would impact on their individual teaching loads. The department was committed to professional skills teaching in some form, the most compelling arguments being the need expressed by employers in the national press and surveys, the fact that it was an advertised theme of the degree, and

most importantly the fact that a professional skills program would help differentiate the new BIS degree in the marketplace by adding value to the degree.

It was decided that the new program would be outsourced as there were not available resources within the department. Negotiations were begun with the Learning Skills Unit (LSU) with a view to them teaching the program, and it was agreed to commence the PSP in semester 2, 1996. An IS academic was appointed PSP coordinator with the express role of jointly developing the curriculum with the LSU, and overseeing its implementation.

It was also decided that for the time being, the PSP would be a non credit course. It was felt that to introduce it as a credit subject would be problematic within the confines of a highly structured degree, and that in effect the first PSP would act as a pilot study leading to full adoption. Therefore, attention turned very quickly to the issues of relevance to students and incentives that could be offered to ensure full take up of the program. It was also decided that non BIS students, who were attending other BIS units, would be given the opportunity to attend the course. BIS students were told that attendance of the PSP was a requirement of the degree, and a note to this effect inserted in the handbook.

PSP Curriculum Content and Structure

It was regarded as highly important that the outsourced program have a strong IS context in order for its relevance to be perceived by students - 'generic' professional skills were not regarded as sufficient and it was felt that the program should relate well to future career roles the student might have.

IS context was supplied by providing examples of where in IS the skills taught in a given might be utilised in a given situation. For instance, in the report writing sessions students are given examples of situations where an IS type report might be required - systems investigation reports, software evaluation reports etc. Similarly the oral presentation sessions use examples of project briefings, Feasibility Studies and other IS type examples. Wherever possible, the presenters when introducing content then go on to give professional situations of where these skills were applicable, and follow this up in exercises using suitable IS scenarios. Integration with other units is achieved by using assessments from other units as vehicles for learning various skills such as report writing. All DIS staff are aware of the PSP teaching schedule and try to integrate elements with their own courses where they can. The PSP coordinator reports on the PSP at staff meetings and staff raise any questions they may have. This facilitates an ongoing dialogue about the PSP amongst academic staff.

The content of the PSP as taught in the second semester is given in Fig 1. It borrows some content from the University of Tasmania's PDU (Lamp, Keen & Urquhart 1996) but with some very explicit reinforcement about the range of IS professional situations in which these skills could be utilised.

Communication Skills and the IT professional. Why do communication skills matter? Time and Stress Management. Critical Reading - IS sources and how to cite them. Report writing 1: short report styles. Structure, types, audience. Typical IS reports. Report writing 2: Organising an argument and editing for presentation. Preparing a software evaluation report. Cross-cultural Communication: Appreciation of differing values. Role play of 'Outside Experts' in a multinational company situation. Communication Skills 1: Listening - paraphrasing, the whole message etc. Professional situations - interviewing clients .
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Communication Skills 2: Interviewing - question styles and role play between systems analyst and client.
Public speaking skills 1: nerves, plans, and practice. Typical IS presentation situations.
Public speaking skills 2: practice using an IS example and use of aids.
Teamwork 1: group dynamics and how they can affect professional teams. Typical IS teams.
Teamwork 2: leadership styles, Co-operation, competitiveness, collaboration - and how to create team products. IS project team scenarios.

Fig 1 - First Year Curriculum

The curricula for subsequent years builds on topics introduced in the first year. A layered approach is taken, with the opportunity to explore each topic in more depth in successive years. Details of provisional curricula for second and third year PSP are given in appendices. PSP Years 2 and 3 have a year long, two semester format. The first year PSP will stay with its original format, commencing in the second semester, but with some sessions on information gathering, library use and citing, together with invited industry speakers taking place in the first semester acting as precursor to the second semester program.

Implementing the PSP Program - Incentives

It was regarded as highly important that the students have some incentive to attend what is essentially a non credit course. It was agreed that for a student to put time and energy into a non credit course, relevance would have to be demonstrated to the students future ambitions in IS and also assist them assessment requirements of other subjects such as presentations. The issue of demonstrated relevance to their future career had been dealt with in terms of curriculum content, but it was felt that more could be offered. Students were told that certificates would be issued at the end of the semester, outlining hours of attendance and skills gained, and it was pointed out that such a certificate was likely to be of interest to a future employer. In addition, a 'PSP Award' for best PSP student is also offered - their name to be added to a permanent award board in department, much in the same way a 'dux' list would operate. This award has the added advantage of giving a public message that the PSP is very much part of the departments identity and that that achievement in this area is important. Students are nominated from each tutorial group, and these students receive certificates of nomination. These awards are presented at the end of term by the Head of Department at a PSP lunchtime function - again reinforcing the message that the PSP is important to the department. There are also informal awards which are not meant to be taken seriously - 'student least likely to interrupt' etc, which the students vote on themselves. This achieves at least two things - it balances out any competitiveness that might occur because of the formal awards, and builds up a positive culture about the PSP which the students are in control of. Certainly the provision of incentives and the demonstrated relevance seems to have worked - attendance has been carefully monitored and it comparable to a credit course.

Implementing the PSP program - Outsourcing

The outsourcing experience has been extremely successful and is viewed as such from both sides of the arrangement. DIS followed the general principles of maintaining control over outsourcer activities and maintaining good communication as exemplified in many experiences of successful outsourcing (Huber 1993). This translated at a local level into the maintenance of a firm hand over the IS content of the curricula to ensure relevance, and the welcoming of LSU staff as vital part DIS staff, and has paid off handsomely.

Many factors have contributed to this successful experience, with the most important being the motivation and cooperation of the staff at the Department of Information Systems interacting with the expertise and enthusiasm of the outsource staff from LSU. In effect, although the program has been outsourced, DIS, far from abrogating all responsibility, has maintained a keen interest in the content and progress of the PSP.

The structural elements ensuring the success of this cooperative venture have been:

- Regular weekly meetings allowing continual feedback and reporting on progress. DIS staff have been able to view and comment on plans for the PSP sessions, and suggest extra material and techniques. In addition, the interchange between DIS staff and the LSU (outsource) staff has promoted innovative ideas and procedures for use in the PSP classes.
- Regular input: Material appropriate to each session has been provided by the staff at DIS, which has enabled the incorporation of relevant examples into the generic content of the professional skill being addressed in each class. The LSU staff have been able to show the suitability of the skills to the professional life of information systems personnel.
- Admin cooperation: By providing the photocopying and administering room bookings and class lists, DIS has been able to convey the notion that PSP is intrinsic to the BIS degree. In addition, there is a cost saving in DIS providing these services itself.
- Support from DIS staff: Because PSP has been well-promoted and widely discussed among DIS staff, with regular reports in DIS staff meetings, the interest in PSP and the progress of the course has been widespread. It is a helpful attitudinal boost for the outsource staff to be recognised and greeted within the DIS building (“Oh! You’re the PSP person! I hear it’s all going well - you must be enjoying it!” etc.).
- Introduction through core subject: The first sight students had of the outsource staff was at a lecture time for a core subject, with the PSP leader providing a ‘guest’ lecture addressing an assessment task which was soon to be completed. This meant that both the outsource staff member and the professional skill were seen to be embedded within the course.
- Use of departmental building: Having the PSP run on site and in the usual timetable (ie, not as ‘extra’ classes at lunchtime or after hours) has aided the enculturation of PSP into the BIS scene.

The relevance of PSP to the course as a whole and to the profession/career aspirations of the students must be continually addressed in planning and delivery of the weekly sessions. Failure to make the relevance apparent would markedly decrease the drawing power of PSP and undermine the entire arrangement, so continual collaboration is essential. This should be taken into account by any outsource provider tendering services, and is also an essential consideration for the department intending to outsource a program - success relies on an on-going interest in and commitment to the program and the providers.

Evaluation of the PSP

A number of methods are used to ensure ongoing evaluation of the PSP - a 'fixit' questionnaire after two weeks, a focus group consisting of students and DIS staff, and mid term and end of semester evaluation questionnaires. Here are some comments from the mid term evaluation;

- "The classes are interactive, positive and generally good for personal growth and interaction with other students. I am not required to take the class yet I find it the most enjoyable and possibly most constructive 1 hour of my ."
- "I believe this is essential especially for a lot of people in this course."
- "I didn't really have any expectations but it has been fun."
- "The classes are going really good and I enjoy them very much. The best class of all my tutorials."
- "Useful for self development."
- "I'm not going to work in Australia and I know all about the cultures in my country so it's not useful for me."
- "Better than I expected. Very useful in the sense of confidence."
- "A way to de-stress and improve oneself."
- "Basically I'm a loner and I'll always remain one. No amount of PSP can change it. I am Asian after all. Presentations are scary but I appreciate the help given."
- "Increases my exposure to strangers. Increases my confidence."
- "Greater understanding of issues and more confidence in business dealings."
- "Helps with communication skills. Less stress involved esp. when it is not assessable."
- "All activities excellent as it gets us to mingle and practise public speaking."

Generally there were very few negative comments compared to the number of positive comments. The negative comments illustrate cases where, for that individual student, the PSP has not established relevance or use. It may be that for some students, the focus on interpersonal skills may be threatening in some way. At whatever level of development or maturity, there will always be some individuals who find this sort of training problematic.

CONCLUSION

This paper has described the motivation for teaching professional skills to IS students, the issues associated with introduction and implementation of such a program into the IS curriculum. The experiences at the University of Tasmania and the University of Melbourne in professional skills teaching have been described with regard to the issues identified early on in the paper. What both descriptions make obvious is that while the issues that need to be considered with regard to professional skills are the same for any institution considering adoption, local conditions play a large part in deciding which direction to take. For instance, one might assume that assigning credit to a professional skills program is critical to the success of such a program - however the experience at the University of Melbourne would suggest that this is not a determinant of success. Demonstrating how professional skills can be relevant in IS has the effect of both committing the students and encouraging them to see themselves as future IS professionals. This in turn ensures that the degree itself has a professional focus, such is the effect on students.

In both cases there has been a considerable commitment of resources, both in terms of teaching time, and the energy and enthusiasm of individuals involved. The key question is whether the institution gets back a return on this investment. The answer would have to be a qualified yes - its difficult to say whether there is a quantitative return - but certainly the addition of such a program is attractive to students, and parents of students and so may influence final choice of an IS degree. For the students, the benefit is not in question and is demonstrated by their comments. Presumably employers also benefit from professional skills training of graduates in a very direct way. Certainly employers in general are concerned about the current interpersonal skills level of graduates (Business and Higher Education Round Table 1993).

For the institution that is bearing the cost of such an exercise, there are substantial qualitative benefits that can be realised in the short term. Much work still needs to be done in establishing how IS professional skills are to be best delivered. The experiences outlined in this paper tend to suggest that local circumstances and resources are major influences, but the same experiences also represent beginning formation of best practice in this area.

One possibility for institutions is to view professional skills training as a research effort for which funding can be gained (on example would be the application of Council for Advancement of University Teaching (CAUT) grants), and to encourage the writing of papers and collaboration between institutions who are undertaking development in this area. Links with outside bodies such as the Australian Computer Society (ACS) and the gaining of sponsorship by employers for professional skills teaching are also possibilities.

At the time of writing, many institutions do not have professional skills teaching in the IS field. One should make a distinction between generic professional skills offerings (which many more institutions do have) and the delivery of professional skills in IS where relevance is continually demonstrated through IS related professional examples and scenarios. The experiences at both Universities have been overwhelmingly positive in terms of student response. One suspects that were employers to be surveyed they too would be very positive but this type of long term evaluation has not occurred at either institution. In both cases, from the authors' perspective, professional skills curriculum development teaching has proved to be a rewarding experience which could not be better demonstrated than by the students evident enjoyment and development, and the knowledge that what has long been a problem in the IS profession - interpersonal training - is now being remedied at undergraduate level.

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APPENDIX 1 Second Year Provisional Syllabus

Second Year PSP

Semester 1

Communication 1: Non-verbal communication skills. Why they are important in interviewing and other professional situations.

Communication 2: Advanced listening skills. Listening to your client.

Communication 3: Structure of an interview - planning appropriate questions etc. Requirements gathering

Communication 4: Communicating clearly - how to give effective instructions. Why this is important in project team situations.

Outside speaker on the need for and applications of teamwork in IS professional situations.

Advanced Teamwork 1: The Desert Survival Exercise: role playing for group dynamics.

Advanced Teamwork 2: Presenting as a Team - effective delegating and turn-taking, sharing of responsibility. Roles in a project team.

Advanced Teamwork 3: Team Presentations - project briefings

Thinking Skills 1: Traditional Socratean (argumentative) analysis. Applications of this type of analysis in IS.

Thinking Skills 2: De Bono's lateral thinking models - creative applications (random words etc). Applications in IS.

Thinking Skills 3: De Bono's thinking models - problem solving applications (PMI and Hats). Applications in IS.

Thinking Skills 4: Hat thinking - introduction. Applications in organisational settings.

Semester 2

Speaking 1: Review of strategies for confident speaking. IS speaking scenarios

Speaking 2: Speaking with technology - use of multimedia in presentations.

Speaking 3: Individual presentations and feedback. IS presentations.

Speaking 4: Individual presentations and feedback. IS presentations.

Meeting 1: Preparing for Meetings - agendas, questions, information for participants. Typical meeting situations.

Meeting 2: Meeting procedures - formal and informal, types of meetings (teleconferencing, IRC etc) which can occur professionally. Role play of project meeting

Meeting 3: Recording meetings - taking minutes, writing up notes, making summaries, reporting back, following up on action items. Follow up project meeting.

Outside speaker on professional meetings - tips, traps and techniques.

Writing 1: Overview of professional writing genres - what can be found in the discipline of IS

Writing 2: Genres of professional writing - proposals and feasibility reports.

Writing 3: Genres of professional writing - analysis reports and case reports.

Writing 4: Reflective report (800 words) - using the skills and strategies outlined in previous classes, but not requiring research (this constitutes end of semester evaluation).

APPENDIX 1 Third Year Provisional Syllabus

Third Year PSP.

Semester 1

Themes for the semester: Advanced thinking skills, people management and preparing for the job market.

Advanced thinking skills 1: Review De Bono's hat thinking model and exercises.
Advanced thinking skills 2: Problem solving with hat thinking - more difficult applications.

Advanced thinking skills 3: Decision making - proposing recommendations for specific situations, choosing between equal alternatives. Decisions in IS Management
Advanced thinking skills 4: Cross-cultural thinking - eastern versus western thinking models.

Outside speaker on IT solutions to problem solving tasks.

People management 1: Interpersonal skills - humanist and pragmatist models, overview of behavioural psychology, self-concept models. Typical scenarios.

People management 2: Effective interpersonal communication - assertiveness, uses of power. Typical scenarios.

People management 3: Conflict resolution and negotiation. Typical scenarios.

People management 4: Personal styles and how they affect the workplace - Myers-Briggs/Kiersey Jungian model. How this might operate in a project team.

Preparing for the job market 1: Resume and letter writing, hunting for appropriate positions.

Preparing for the job market 2: Preparing for and attending interviews.
(end of semester evaluation)

Outside speaker on how to make yourself marketable for an IS position.

Semester 2

Themes for the semester: completion of earlier topics (including revisiting basics), application of relevant skills, devolution of responsibility to students rather than leaders.

Communication: Telecommunications, internet and electronic communication.

Alternative thinking models: using mindmaps

Research and research proposals: using varied sources and following up your own ideas.

Writing in context: Descriptive writing - products, specifications, procedures. Project documentation.

Outside speaker on job opportunities in IS.

Applied teamwork: students decide teams and delegate roles and tasks in problem solving in project management.

Applied meeting skills: students run a focus group style meeting evaluating PSP and proposing improvements.

Applied people management: students role play customer relations situations.

Review and concluding activities for PSP as a whole.

Reflective writing (1000 words) - to be submitted electronically and to include an element of research (can use research performed for another subject). Used to evaluate how well skills are being applied.