‘Co-op Lite’: An International Industry Experience Course for Electronic Commerce

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Abstract

Cooperative education has a well recognized track record in providing students with an industry based anchor to the academic studies they take during their university study. However, the costs of administering a co-op program are usually significantly above the costs per student for a typical lecture style taught course, which often results in required financial subsidy from other sources (student or school) and constraint on numbers. This paper describes one approach to designing ‘co-op lite’ industry experience courses which can provide both academic rigor, substantial academic learning opportunities and ease of scalability, together with a relatively low administrative overhead which makes it more feasible under normal course funding criteria. The Bachelor of Electronic Commerce (BECom) is a 20 course, three year degree introduced at the Waikato Management School in 2000. The degree comprises a required core of 12 courses, which are a mix of management and computer science, and one of which is the industry experience course which is the subject of this paper. The remainder of the 20 courses comprise a six course major in one of eight subject areas, and two option courses. The aim of the degree is to produce graduates who are at least technically literate and confident in the technologies used to support electronic commerce, at least literate in the basics of business and management subject areas, but also skilled and project experienced in the area of their major subject concentration. About 450 students are enrolled in the degree in 2005. The Industry Experience course in the BECom was designed to both provide a rich co-op field work experience for students, and add to their academic knowledge, without requiring additional funding for co-op administration. To do this, the course is taught on-line, and *without* coordinators who find jobs, match students to jobs, and visit students and employers in the field. One of the key components is a web based discussion board (DiscussionWeb) for required weekly journal comments and interaction, which facilitates interaction among students in assigned small groups of approximately 10. Other electronically submitted components of assessment are a 3000 word report, and a self-assessment on performance in the host organization, which is backed up by supervisor comments if possible. Students are responsible for arranging their own work placements, and are supported in this with a variety of on-line materials (such as preparing CV), as well as lists and contact details of prospective placements located by a telemarketer hired for three months to find possible positions. However, many students locate excellent positions through their own efforts, including many in overseas countries, often being their home countries. The paper describes in more detail the processes used to administer the academic and placement sides of this course.

Literature Review

Cooperative education (co-op) at university level has a hundred year history of linking experiential field learning to academic programs (Sovilla & Varty, 2004). There are several learning theories that can be used to understand the acknowledged success of co-op education (Eames & Cates, 2004), but with the variety of different administrative implementations of co-op program, it is difficult to establish exactly what the key components in learning may be. Hodges, Smith and Jones (2004) provide comment on the issues of assessment of the workplace learning component of coop, and discuss a learning outcomes approach as a way forward. A framework for workplace learning is developed by Zegwaard, Coll and Hodges (2003) which puts forward three models which may be appropriate for different circumstances. Further on the issue of assessment, Coll, Taylor & Grainger (2002) comment on things that can be learned about workplace performance assessment from the teaching profession.

On the administration side, there is a common model of student work experience placements being coordinated and administered by field coordinators, who establish relationships with employers, and is involved in the processes of selection of employer by student and student by employer. This role usually involves field visits to the employer’s location, interaction with the student and supervisor

at the site, and assisting with the assessment of the student's performance in the placement. However, this model may be undergoing change (Hall, 1999) as new models of business and communications technologies become established. The impact of email and other electronic communication technologies on communication between student and mentor (Hayward, DiMarco, Kranz, & Evans, 2001), student and coordinator, and student and academic supervisor is still unfolding, but the potential for significant change is clear. Taylor (2001) comments on the impacts that information technology may have on administration of co-op programs. Technology may also be helpful in preparing students for the field work placement (McRae, 1999). Canale and Duwart (1999) suggest that the Internet can provide infrastructure to support reflective learning.

The Economic Difficulty with Co-op in New Zealand

It is not easy to establish and grow co-op programs in New Zealand. There is not as high a level of public and business awareness of co-op as there is in Canada and the USA, where many universities have prominent co-op programs across a range of faculties, and co-op has percolated down to broad acceptance even at the high school level. In New Zealand, Government funding of university tertiary students depends on the subject area, and in the management area is just over $6000 per equivalent full time student (EFTS), or approximately $1000 per student per course based on average course loads. Funding for courses in science is about double this. Perhaps less than half of the funding actually finds its way to the departments administering co-op programs, as the university central administration and faculties each take their cuts. This is usually not enough to support the traditional staff infrastructure needed for co-op courses.

The number of students that can be serviced by a single full time co-op coordinator is often small – perhaps as few as 10-15 students per semester or as high as 40-50. Costs associated with the support of a coordinator are also significant – travel, vehicle, accommodation while traveling, and so on. Therefore there often needs to be a top-up of funding above normal EFTS course revenue to make a co-op function possible, either through additional student resource fees, or funding subsidies from faculties using co-op to support overall degree programs.

In our interaction with prospective employers, the benefits to employers may often not be clear to them either. While some employers rightly see participation in co-op program work placements as a low risk way to find future graduate permanent employees, others may see a significant effort in participating in the usual activities such as job description writing, traveling to the university to interview candidates, and the time required to train a student before they are on the verge of becoming a productive employee, and then they leave to go back to university. Many do it out of loyalty to their local university and supporting the benefits of education, rather than as a cost justified business decision.

So, we have a situation where it may be difficult to persuade senior academic administrators that co-op courses are desirable, will help boost student numbers, and the extra costs needed to run them are justified over other investment options. At the same time, the lower awareness of the benefits of co-op makes it more time consuming to recruit and maintain employers who will take co-op students, decreasing the number of employers and students that a co-op coordinator can effectively service.

A Different Way of Looking at Co-op

Proponents of co-op programs are enthusiastic supporters of the concept, usually seeing first hand evidence of the life-changing experiences that often result from the placement. However, they may view the benefits of co-op as inseparable from the processes and infrastructure that they have experienced first hand in their co-op experiences, either as a former student, academic faculty member, or business person recruited into the role of coordinator.

It may be worthwhile to take a step backwards and as the question "where is the value created in a co-op experience?" While this is difficult to establish across a range of approaches to coop, one might

postulate some of the highest value adding components such as:

- Student skill building
- Student perceptions about courses still to take and job opportunities
- Student academic learning (often not emphasized in co-op placements), and
- Student international experience.

That same person might speculate on the lowest value adding components, such as:

- Administration of the program
- Employer visits by coordinators, and
- Matching of job to student.

This raises the issue of how much value does the "coordinator" function provide - the link between employer, student and university. Certainly, it is a major portion of the cost in running a co-op program. In an ideal world, the role is highly desirable, providing many service and communication channel benefits to all parties. However, in a less than ideal world, where budgets are tight, we may need to examine whether we can achieve many of the benefits without the role of a coordinator.

So, if we can put our efforts and resources, both people and money, into achieving the high value outcomes, while giving up some of the low value, high cost components of running co-op programs, we might be able to encourage more co-op activities within the constraints of ordinary course EFTS funding.

The BECom "Co-op Lite" at Waikato

The three year Bachelor of Electronic Commerce degree was introduced at the University of Waikato in 2000. Because of the applied nature of the degree, and the need to instill in graduates the knowledge and skills in demand by prospective employers, it was decided to incorporate an industry experience co-op type course into the core 12 courses of the degree, and have this course run in the summer between students' second and third years of study. The number of students who have taken the course so far appears in the table below.

Year of Course	Students
2000/1	7
2001/2	27
2002/3	67
2003/4	97
2004/5	131

The environment and objectives of the course include:

- Link student's university learning to real world employer requirements
- Subsidy or top up funding for co-op function not feasible
- Build a co-op experience course within the constraints of normal course funding, and
- Operate the course with a minimum administrative infrastructure.

The 'co-op lite' course is aimed at providing an industry experience with an organization involved with electronic commerce systems and processes. Students locate and seek agreement with an external organization involved in electronic commerce activities, with the goal of entering into a mentoring relationship with a member of its staff. Once on the job, they then carry out duties assigned by the mentor, and learn about the workings of the organization by watching the mentor at

work. It is entirely field based. Contact with the academic supervisor of the course and participation in the course activities are through electronic communication, so that the location of the work experience host organization can be anywhere in the world.

The course duration is a contiguous 13 week period beginning in mid November. During this thirteen week period, a minimum of four weeks fulltime, or 150 contact hours if part-time, must be spent on location with the organization which has agreed to host the student, although longer periods on-site with the host organization are desirable if possible

One of the major differences in this course from traditional co-op courses is that there has been a shift in the primary job finding responsibility, from co-op program administration and coordinators, to the student. This makes the job finding process more like a true job search process, and opens up the possibilities of jobs in other countries. Because there is no formal contact between employers and the university, there is probably less time spent by employers on recruiting process, such as trips to campus for interviews, and writing of evaluation reports. However, this also has the downside of making the links between university and employer weaker.

The Academic Component of the 'Co-op Lite' Course

The course counts as an ordinary academic course weight toward the 20 course requirement of the BECom degree. To be able to take the course, students must have successfully completed 2 years of the 3 year degree. While there is assessment on the completion of learning activities, responsibility for the execution of learning processes is devolved to the student. This can be seen as a transition between the structured, curricula- and assessment-driven university courses in their degree, and the life long learning for which they will have to take responsibility if their careers are to flourish.

Self chosen research topics are a key component of the academic part of the course. Three research topics are chosen by the student as area they want to learn more about, perhaps as an extension to a course they have already taken. Each topic must be supported by a named book purchase, to provide structure and outcomes for the learning. The topics are often focused on technical knowledge and skills not covered in normal taught courses, such as PHP or Dreamweaver, but can also be more general business or management topics. Examples such as the following are given to enrolling students to help them formulate their research topics and select a supporting book.

> A student in the finance major is interested in security of Internet B2B transactions. She looks on Amazon, and finds 'Building SET Applications for Secure Transactions' by Mark S. Merkow. This book does not cover all the protocols she wants to learn about, but it is a start, and she decides to buy the book and supplement it with articles from banking journals.

The second component of the academic part of the course is a weekly discussion requirement through a web discussion board. Students are assigned membership in an electronic group of approximately ten, and must contribute one 200 word posting, and one or more response postings each week. The desired within-group interaction has a critical mass with the required weekly contributions, and often takes on a life of its own as additional threads of discussion are spawned. The desired interaction includes discussion of software, systems, and processes in use in the workplace, sharing of experiences in work environments, raising of the awareness of skills in demand by employers, and development of a supportive group/team learning environment, even though participants may be spread around the world.

The third academic assessment component is the final 3000 word report, which has a fairly tightly specified structured outline for report sections, with a specified word count allowed for each. The report also has a section for the student to reflect and comment on their work experience.

The final piece of assessment is a short self evaluation on the student's performance in the workplace. Students are encouraged to seek feedback on their supervisor or mentor on their performance, and incorporate and paraphrase that into their self evaluation, but the onus is on the student to critically assess their performance, and reflect on their future career, with questions such as

"what skills/experience and knowledge would you need as a full time employee in this organization?". This approach is quite different from the normal co-op process of employers evaluating students, and it is superior in several ways. It removes variability in evaluations, such as generous supervisor, poor student; or good student, but poor environment or over critical supervisor.

How the 'Co-op Lite' Course Runs

The course runs for 13 weeks, from mid November to mid February. As students are responsible for finding their own jobs, they are encouraged early on to start the process of searching for an industry experience host company, as illustrated in the following extract from the course outline.

> **May-July:** decision to take course, preliminary look at course requirements, preliminary checking out of possible work experience sites
> **June-August:** enrolment in course
> **June-September:** preparation of CV, collect job leads from website, develop own leads, target a list of prospective sites, make phone/email/letter contact with prospective firms
> **September-October:** confirm employer of choice, submit details of organization form to course coordinator, submit learning agreement to course coordinator and have agreement signed
> **Mid November:** first weekly submission required on DiscussionWeb

The 'co-op lite' approach shifts from the administrators of the course having the responsibility to provide a suitable placement, to the student having that responsibility. However, job leads are provided to students through the mechanism of a telemarketing person, hired for a three month period to find suitable companies and positions. The jobs found are posted on the course website, which is restricted to course enrollees. The telemarketing person is selected for tenacity, as there are usually many callbacks and follow-ups required to extract a job description and a willingness to consider applicants from prospective employers. Email rather than site visits is used by the telemarketer to send out information on course to employers, and getting back job descriptions from them. The telemarketing process uses a structured approach, starting from lists of employers from previous years, supplemented by leads suggested by employment ads in newspapers, and expanded to other firms in the same industries where interest has been high.

Conclusions

With increasing pressure on budgets, the traditional role of coordinator in co-op programs may be under threat. If co-op programs can only be run using the coordinator model, then some institutions may find it beyond their interest or ability to fund co-op programs, thus depriving students with a well proven learning environment to consolidate and extend the knowledge acquired in the classroom. The 'co-op lite' approach has allowed the running of a co-op program for Bachelor of Electronic Commerce students at the University of Waikato with much reduced costs, and seems to be successful. By eliminating the traditional coordinator role, and partially replacing it with Internet technology supported communication between student and course coordinator, the costs have been greatly reduced, financially facilitating the integration of this form of co-op into the degree. Whether this approach can be ported to other environments without loss of value generating workplace experience is yet to be determined.

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