

Faculty voices: what faculty think about work-integrated learning

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ABSTRACT

Faculty views on their involvement with work-integrated (WIL) learning programs is an under-researched area, yet faculty involvement and commitment is vital to the successful running of such programs. This research investigates faculty views of a WIL program at the University of Waikato and covers four main areas; their perceptions of the value of their involvement with WIL, faculty views on the value of work placements for students and influence on student performance, faculty views on the influence of placements on student skill development and future directions and faculty perceptions of assessment of placements. Using both quantitative and qualitative methods, science and engineering faculty ($N = 142$) were surveyed using both open and closed questions. Faculty were generally supportive of the WIL program, which is seen as enhancing the university's reputation, and as a good tool for student recruitment. They felt that negative impacts included a lack of recognition in workload models and promotion, and that their involvement with WIL did not improve joint research or joint funding opportunities. Faculty perceived that students learned new skills on placement, which were not learned at university, and that WIL students were more employable than their non-WIL counterparts. In contrast, WIL students were not viewed as being better prepared for graduate studies or write-up of thesis - despite thinking that writing placement reports enhanced students' writing skills. WIL students were seen as equally suitable for graduate studies, but WIL is not viewed as engaging students in deep learning. (*Journal of Cooperative Education & Internships*, 43(1), 36-53).

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Worldwide, work-integrated learning (WIL) and cooperative education (co-op) programs succeed or fail due in part, to the support given to the programs by their academic institution (Barbeau, 1980). Faculty, that is teaching staff not involved in the operation of the WIL programs directly, we suggest have a role to play in WIL - and yet their views on their place in the WIL world are largely unreported. Teaching at higher education levels is expected to educate students, to help them make sense of theory and concepts, and provide specialist knowledge. Yet, in many ways it is still only 'preparatory' for a move into the workforce (Wenger, 1998), be that in academia, in research institutions, or in industry. WIL and work placements thus can serve as a bridge, so that students can develop workplace skills and combine these with theoretical learning, which will facilitate their final move into the work arena.

It is widely reported that students learn skills from hands-on work that is not easily learned in university or higher education institutions (see, e.g., Ricks, 1996; Van Gyn, 1994; Weisz & Smith, 2005). The question arises of how to incorporate the work placements and the learning that takes place off campus within the higher education system so that it is recognized as learning by academic institutions and their faculty. Cooperative education and WIL programs have developed in a variety of ways in order to become an integral part of higher education, and to attempt to combine the workplace learning within higher education (Loken, 1997). The literature indicates that the most successful programs are those in which there is good 'buy in' from faculty who are personally involved in the WIL program when they either teach WIL students specifically, or they directly supervise WIL students (Barbeau, 1980; Loken, 1997; Martin, 1998; Matson & Matson, 1995).

Although often not directly involved in the operation of WIL programs, faculty may interact with WIL in a number of ways; support at the academic advisory board level; providing academic legitimacy for WIL programs (Grossman-Garber, Gold, & Husband, 2001; Rothamer, 2003); and providing 'political clout' in their support of WIL in their institutions (Kubiak, Page, & Riggio, 1995). Success of WIL programs may be also enhanced when WIL is embedded in the degree (McNutt, 1989). Strong academic stringency and assessment (Sovilla & Varty, 2004) are important factors, along with effective and efficient program administration (Braunstein & Loken, 2004).

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In this research we explore the views and perceptions of faculty in the School of Science and Engineering at the University of Waikato about two WIL programs. The research explores faculty perceptions of their involvement with WIL, and seeks to identify areas of concern. Such knowledge may inform possible changes to the current programs, and is likely of interest to all WIL practitioners and institutions who offer WIL programs.

FACULTY VIEWS OF WORK-INTEGRATED LEARNING

Value of Work Placements to Faculty

The literature suggests that faculty involved in WIL are often concerned that their contributions are not formally recognized. Faculty have claimed that there is insufficient recognition of this specialized contribution for tenure consideration, workload models and remuneration (Heinemann, Enright, Johnson, Murtaugh, Reed et al., 1988; McKenna, Spilde, & Nieves-Squires, 1981; Millsbaugh, 2004). Matson and Matson (1995) report that faculty often feel that they do not have enough information about the WIL programs in their own institutions, that they have misconceptions about the degree of support from other sectors within the institution, and that one of the keys for success has been maintaining the WIL program within the academic sphere - not operating WIL from a student services or a career center. Other authors have investigated faculty attitudes to WIL, reporting difficulties associated with faculty acceptance of WIL as a legitimate learning method (Martin, 1998; McNutt, 1989; Trigwell & Reid, 1998). Heinemann, Enright, Johnson, Murtaugh, Reed et al. (1988) suggest that faculty do not recognize work placements as 'teaching', and that more must be done to promote and publicize the educational aspects of work-integrated learning to interested parties. However, on a positive note, Millsbaugh (2004) say faculty who involve WIL undergraduates in their research do so because of a desire to "influence the career path of talented young students" (p. 1188).

Faculty Views of the Value of Work Placements for Students and the Influence of WIL on Student Performance

Twenty key 'benefits' for faculty involved with cooperative education or WIL are reported by (Stull & deAyora, 1996). The outstanding 'benefit' stated by participants was that the "classroom learning environment is enhanced by the presence of co-op students who have had relevant work experience" (p. 22). In contrast, McKenna, Spilde and Nieves-Squires (1981) report that faculty involved with WIL program did not significantly modify their teaching or classroom activities to utilize or incorporate the experience of the WIL students. Good general support for WIL programs and recognition of some of the benefits to students and learning is, however, reported by Contomanolis (2005), but this apparently does carry through to individual faculty attitudes. For example, faculty acknowledged that the classroom learning environment can be positively enhanced by the presence of WIL students, yet, when examining their actual classroom practices they seemingly did little to incorporate WIL experiences into teaching practices. It also is reported that interactions with WIL programs in any form (e.g., as a WIL student supervisor) does not influence the nature of course material used by faculty.

Faculty Views of the Influence of Work Placements on Student Skill Development and Future Career Directions

A number of WIL practitioners have investigated the influence of work placements on student skills, career opportunities, and rewards (see, e.g., Wessels & Pumphrey, 1995, 1996; Wilson, 1997). All report that work placements provide positive benefits for students for all the above factors. Understanding what science and business faculty perceive as valuable skills that students need to gain during degree level study also has been investigated (Zegwaard, Coll, & Hodges, 2003; Zegwaard & Hodges, 2003). Faculty apparently rate writing skills highly, along with analytical thinking, computer literacy, technical expertise, personal planning, and conceptual thinking. Science faculty rate technical skills highly, whereas business faculty placed only two hard skills at the top of their list.

Faculty views of investigating teaching methods that draw upon WIL point to a range of faculty views; from "students just pick things up in a workplace," in effect by "by osmosis" (Martin, 1988, p. 196, 197), through to faculty who report that students achieve deeper learning as a result of collaborative involvement between the employer, the students and engaging with the project. Martin says that the active involvement of faculty with work placements can enhance student learning and understanding.

Faculty Perceptions of the Assessment of Work Placements

Assessment of work placements is a topical issue worldwide (see, e.g., Coll, Taylor, & Grainger, 2002; Hinett & Knight, 1996), and the subject of a great deal of research (Boud & Falchikov, 2005; Canale & Duwart, 1999). Most research has focused on what skills are learned, which are most important, how to define and quantify non-technical skills, and the importance of measuring such skills. Often the views of educationalists and education theorists are drawn on in an attempt to understand the value and impact of different types of student learning (Wenger, 1998; Wertsch, 1991). More recent work seeks to understand how learning occurs during work placements, how learning is facilitated or inhibited by the social or educational context, and the enculturation of students into the workplace (Eames, 2000, , 2003a). However, while we might expect faculty to use a range of established and new assessment tools, there is no evaluation of how effective these tools are, or most importantly, what should be assessed when students are in work placements (Zegwaard & Hodges, 2003).

In summary, the literature suggests that faculty have concerns about recognition of their contributions to WIL programs at administrative levels, and have some misgivings about the overall acceptance and support for WIL within their own institutions. There is evidence that there is good general support for WIL, but this support is not manifest in teaching, with students' WIL experiences and skills seldom utilized in the classroom post-placement. Assessment of placements is considered problematic with an apparent gulf between what WIL practitioners and literature see as valuable, and what faculty perceives as valuable.

RESEARCH QUESTIONS

This research sought to investigate informal comments from faculty, which indicated a diversity of views on how WIL functions within a School of Science and Engineering, and the purpose of WIL generally. While improvements in faculty understanding, involvement and teaching may be driving our research, we began by focusing on faculty perceptions of work placements. The following research questions formed the basis for this work:

- What is the value of work placements to faculty?
- What are the faculty perceptions of the value of work placements to students?
- What are faculty perceptions of how work placements influence student skill development and career direction?
- What are faculty views of assessment practices of work placements?

Context for the Inquiry

The University of Waikato, the context for this work, has some 10,000 equivalent full-time students (EFTS), and approximately 1000 EFTS are enrolled in the School of Science and Engineering and the School of Computing & Mathematical Sciences. These schools offer two undergraduate WIL programs, the Bachelor of Science (Technology) (BSc(Tech)), and the Bachelor of Engineering (BE). The BSc(Tech) is a four-year degree with two work placements totaling 9 to 12 months. About 200 students complete work placements annually. The first placement, of approximately three months duration, takes place at the end of the second year, during the summer vacation before year three commences. The second placement takes place at the end of third year, and is of six to nine months duration. The BE is a four-year degree that has two three-month work placements. The first placement of approximately three months duration takes place at the end of the second year, and this is followed by a second three-month placement at the end of third year. Students are paid for their work by the employing company, and a team of placement coordinators find the placements and facilitate interaction with employers, students and faculty. A cohort of placement coordinators form the *Cooperative Education Unit* (CEU), with each coordinator responsible for the placements in an area of expertise. The placement coordinators role includes linking academic learning with workplace learning through (currently) informal means such as one-on-one interviews and discussions on report content and structure. In this institution, faculty teach academic papers and are not involved in the placement of WIL students. Faculty involvement in WIL is thus fairly limited, and consists of editing and giving feedback on a draft report, and grading the final report. Some faculty do have contact with their students on placement either in person, by telephone or email, and a small proportion of faculty (ca. 10%) visit the student in the workplace. Assessment of the work placement is based on an evaluation of the students' work performance by the employer and grading of the placement report by the university supervisor.

Methods Used in the Inquiry

The instrument employed in the present work was based on work by Matson and Matson (1995), and was developed to address the following themes:

- What do faculty perceive as the value of WIL to the University as an institution?
- What do faculty perceive as the value of WIL for themselves?
- What do faculty perceive as the value of WIL for students?
- Do faculty perceive that student performance is influenced by work placements?
- How do faculty view the current assessment of work placements? and
- What are faculty views on student careers after they have undertaken a WIL degree?

The instrument was framed around these themes, and items grouped accordingly. A preliminary version of the instrument was piloted on former faculty members, and results and feedback analyzed and used to make slight modifications (e.g., removal of ambiguous questions). Some 142 faculty from the School of Science & Engineering and the School of Computing & Mathematical Sciences were then sent a personalized explanatory letter, along with the instrument via the internal mail system. A confidential administrative number was allocated to each copy of the survey to allow a reminder to be sent to non-respondents. The instrument consisted of statements which participants were asked to rate using a five point Likert Scale, (1 = strongly disagree, to 5 = strongly agree) (Appendix A). Following suggestions of Cohen, Manion and Morrison (2000), key questions were re-phrased and repeated in the survey instrument in order to enhance validity. The instrument also gathered demographic data which were statistically analyzed for differences in responses based years of tenure, age, and faculty appointment. An open ended comment section was also provided at the end of the instrument. A total of 76 surveys were returned (54%). The responses from the surveys have been compressed from the 5 point Likert scale to disagree, neither/not sure and agree. Quotes reproduced below come from the open-ended comments section of the instrument. In the instrument the term cooperative education, or co-op, was used rather than the broader term WIL, because the former is how WIL is referred to in this institution.

RESEARCH FINDINGS

Value of WIL and Work Placements to Faculty

In general, faculty were supportive of WIL and the work placement program. Faculty felt that work placements were valued by all levels of the University – department (61% agree), school (78% agree), and the University as a whole (54% agree) (Table 1). Faculty seem to see the WIL programs as valuable to students personally (81% agree), and WIL programs were viewed as useful marketing and recruitment tools and to enhance the University's reputation (60% agree and 5% disagree). The variation of support found within the different levels of University administration may reflect the different priorities of faculty at those levels. It seems that at the school level, work placements are viewed as important as promotional and recruitment tools, and as a way to interact with industry and provide additional skills for students. Whereas, at the University management level (e.g. the President/Vice Chancellor level), the concern is more for overall recruitment across all schools and broad administration matters, for example, human resource management, accounting, international recruitment and political issues, and WIL is seen as of little importance.

There was agreement that there should be a minimum grade entry level for entry into WIL programs (65% agree), although faculty were unsure if only students with higher grades are most suited to participate in the WIL programs (24% disagree, 39% neither and 38% agree) (Table 1). However, written comments point to more 'qualified' responses, with concern being expressed about the quality of the program, the quality of the placements and the quality of the students in the program: "To be useful the co-op program needs to be more rigorous, namely taking only the best applicants and focus on finding them *quality* placements," and the desirability of making the program 'exclusive', or hard to get into, "... tempting to make this program an 'elite' one; top students and exciting positions in industry."

WIL programs were seen to enhance links and promote interaction with outside institutions (80 – 90% agree), but this was not perceived as flowing on to a personal level for individual faculty. Faculty did not see involvement with WIL programs as having enhanced their own careers (just 16% agree), nor had it enabled joint research (19% agree), or

provided enhanced access to sources of external funding (13% agree). Most faculty did not see their interactions with placement students as opportunities to identify potential graduate students (only 38% agree and 30% disagree), and almost half felt that WIL degrees had little influence on university taught courses (44% agree, 28% disagree). They felt that placements should not be compulsory for all science degrees (71% agree) (Table 1).

While it seems that faculty feel that they receive no personal benefit from involvement with WIL (links with industry, external funding sources, joint research), open-ended comments suggest that there are some faculty who feel this could be improved by more interaction between faculty members and industry: “Better creation of linkages with companies would come from visits being done by subject-specialist academic supervisors rather than co-op staff during placements,” but with provisos on time and workload allowance: “Involvement in [WIL] placements by academics seen as an undesirable activity which does not enhance promotion opportunities as much as focusing the same time on research outputs.” Some faculty saw wider ‘value’ in that work placement experiences can contribute “Links with local industry also brings feedback and perspective to what we are doing in our undergrad teaching.”

Faculty Views of the Value of Work Placements for Students and Their Influence on Student Academic Performance

The survey results indicate that on a personal level faculty are generally supportive of WIL because they see valuable skill acquisition and personal and professional development in WIL students. Faculty felt that the WIL students learn both hard (78% agree) and soft skills (79% agree) from their work placements (Table 2), and gain skills not taught at university (88% agree and 0% disagree). They also felt that some *specific* skills are learned, for example, work ethic (77% agree), communication skills (77% agree), and writing skills (71% agree). WIL students are not perceived to be much more employable than their non-placement counterparts (53% agree).

Some very mixed and contradictory views are apparent about the influence of WIL on student academic performance, as there was a perception from faculty that placement students’ grades are not substantially different from other students’ even after placements (34% agree, 12% disagree). They seem to believe that WIL students neither understand their academic course content better (42% agree, 43% not sure), nor contribute more in tutorials and practical sessions (16% agree) than other students. However, about half of the faculty still felt that it is beneficial for students to have done a placement (51% agree)

Faculty Views of the Influence of Work Placements on Student Skill Development and Future Career Directions

Generally, faculty seem unsure if WIL students are more likely to move on to employment (as opposed to postgraduate studies) after degree completion (34% agree and 52% neither/not sure). There was little support for the view that WIL prepares students solely for technical level positions (37%) (Table 3). Faculty felt that WIL students learn useful skills for going on to graduate studies (52% agree), but in contrast few (15%) think that WIL students are better prepared for graduate studies. There was also ambivalence over whether or not students learned scientific research skills (38% neither/not sure), and IT skills (46% neither/not sure). However, there is support for the view that work placements help students focus on a career path (59% agree). Despite the strong perception that writing skills are learned (71% agree), faculty were less sure that WIL students were better prepared for graduate research *write ups* (36% not sure, 39% agree). Placement students were thought to be equally suitable for graduate programs (75% agree) as non-placement students, and a placement is generally considered to be beneficial for a student who is undertaking a research program (51% agree). However, when asked a similar question, 47% of faculty are not sure that a student who has done a placement is more valuable to them as part of a research degree.

Faculty, generally, did not think WIL students are better prepared for graduate study and writing up research, suggesting that although they are seen as gaining valuable skills, these skills are not seen as sufficient to make a difference to their preparedness for research or graduate degrees. Alternative views were expressed by some faculty with one commenting: “I feel the benefit that a co-op degree brings to graduate study is in the form of a broadened perspective/wider body of knowledge as placements are often not in the exact area of graduate study students continue with,” and another writing that “In general however, co-op students tend to have more useful skills ... students that have done placements often write much better thesis drafts.”

Students who wish to enter the world of science and engineering nowadays are increasingly facing competition, and faculty saw value for students in terms of gaining skills not learned at university. There was a strong perception, and

real concern, among most faculty that students' enhanced interactions with industry as a result of their participation in WIL results in less students go on to graduate studies (i.e., masters degrees and PhD) because they are retained by their employer: "I have this 'gut feeling' that good students often go into work after BSc(Tech) placements." This it is felt occurs because the money becomes too tempting: "It is a concern and remains one, that many students after the four year BSc(Tech), and after having earned money, in the fourth year, did not return for postgrad study." In some cases WIL students are funded through masters degrees by their WIL employer and lost to the academic system. In such cases the students are removed from the realm of specific research for faculty research programs which is seen as having a negative impact on how much research and how many publications faculty members might produce: "Depletion of potential masters research students has had a negative side effect on research publication output and research student numbers." However, an alternative view was offered by one faculty member: "I think the work experience is extremely valuable for all students - some find permanent niche and some return to university highly motivated to pursue postgraduate study."

Faculty Perceptions of the Assessment of Work Placements

Faculty did not think that placements were assessed adequately by written reports *alone* (56% agree, 17% disagree), but felt that employer input was necessary (82% agree), and while some student input was perceived as desirable (69% agree) (Table 4). Faculty supported the current grading system (A+ to F) as opposed to a simple pass/fail system (59% agree), with views almost equally divided over marking being done by a specialist in the field of study or a non-specialist. Grading and marking reports are not generally regarded as a 'waste of time', and the current draft and final hand-in policy was seen as a good teaching/learning opportunity (63% agree). Faculty also perceive students as learning from this process, although not strongly (45% agree). They also consider that oral presentations could be a useful additional assessment tool (62% agree, 20% disagree), but do not see these as an alternative to written reports (68% agree). It seems faculty find assessment and grading of placements a difficult and multi-layered problem; "Grading of co-op placement reports is problematic." Faculty feel marginalized by the placement process and students being 'off campus', "the role of the academic supervisor in these degrees is very detached (and akin to a dead duck on occasions!)," which they felt makes fair and objective assessment more difficult. This might be addressed by greater involvement in the placements from the faculty: "Academic supervisor actually visiting and talking to industrial supervisor and student aided in getting a qualitative 'feel' of how placement was going." It is a widely held view that grades for placements are often higher than those achieved by the same students for their academic papers, and this too is a concern for faculty: "Grades tend to be quite high compared to academic papers. Not a simple issue – lots of variables involved but often performance in co-op papers is out of kilter (higher) with other papers for each student." While it is apparent that faculty support the application of full academic rigor to placement assessment (in particular the placement report), how this can be achieved for non-technical skills is not clear.

DISCUSSION

Faculty Views of the Value of Work Placements

Our findings are similar with that of other work (Heinemann et al., 1988; Matson & Matson, 1995; Stull & deAyora, 1996), where faculty feel that their contributions to WIL programs are unrecognized and undervalued. Faculty feel that their involvement in WIL this needs to be incorporated into workload models, have a higher priority, and perhaps have a more positive impact on their earnings. There is a lingering perception among faculty at Waikato University that workload models are inadequate in taking into account WIL contributions, supporting Matson and Matson's (1988) view that greater communication and more information needs to be made available to faculty. While faculty at Waikato think they receive little personal benefit from their WIL contributions, this is something of a 'catch 22' situation; if faculty do not venture into the workplace to visit students on placement, they are unlikely to make links and develop relationships with WIL employers. There is little chance of discussing research projects and developing joint research ideas, accessing outside funding when the parties remain separate. As with faculty at other institutions, time to undertake site visits is limited; faculty feel pressured for time, and as there is a lack of compulsion or perceived reward for site visits, visits tend to be neglected (Weisz & Smith, 2005). Some researchers have reported that faculty perceive benefits of involvement in WIL as enabling positive relationships with students,

an opportunity to get feedback on the relevance of coursework, an improved classroom learning environment and increased contact with ‘industry’ (Somers, 1995). Contomanolis (2005) states that a significant majority of faculty who participated in his study believed that WIL placements were a significant contributor to the students’ overall academic success, the learning environment is enhanced by the presence of WIL students and that WIL students often made contributions to classroom discussion based on their placement experience. However, Contomanolis also reports that faculty do not utilize this experience in their teaching, as found in the present work. While faculty consider that students learn valuable things not taught in a classroom, these examples are not utilized in their teaching, and they are not perceived as having direct benefits for academic achievement of students. Faculty generally think that ‘soft’ skills are a major learning benefit of placements (McCurdy, Zegwaard, & Dalgety, 2005) but they have great difficulty in assessing those skills as they are, in scientific terms, not able to be quantified or measured. This leads to faculty being unsure of their ability, and perhaps unwilling to accept responsibility, for assessing these skills.

Research indicates that faculty presence while students are on placement is vital for many reasons (Ricks, 1996; Van Gyn & Ricks, 1997) especially in enhancing student learning. To maximize student learning their work experiences need to be ‘translated’, combined with their course work and reflected upon to develop ‘deep learning’, rather than skills just being ‘picked up’ or gained by ‘osmosis’ (Martin, 1998; Ramsden, 1992). ‘Deep learning’ is described as “students’ ability to reflect on the work experiences, to integrate these experiences with their academic lessons and to conceptualize their learning so that they are able to ultimately bring together their work and their academic experiences to solve problems in unfamiliar environments” (Weisz & Smith, 2005, p. 606). It seems likely that students do not develop deep learning on their own, meaning that deep learning is more likely if there is faculty input into this ‘integration’ process. This suggests that faculty may benefit from a professional development program for effective WIL supervisors. Perhaps, as suggested by Jancauskas, Atchison, Murphy and Rose (2000), there needs to be a separation between teaching faculty and those that act as academic supervisors for WIL placements, and that the skill set required for each is different. Jancauskas et al. (2000) posit that faculty who supervise and mentor co-op students need specific training in order to provide the best learning experience possible for students.

Faculty Views of the Value of Work Placements for Students and Their Influence on Student Academic Performance

Contrary views from faculty lead to the conclusion that faculty would benefit from better methods of tracking student academic development and more information to determine whether WIL students develop into better students or not. Coordinators and some students believe that in many cases an improvement in grades and study habits occurs after placements. These perceptions are confirmed by research (see, e.g., Contomanolis, 2005; Weisz & Kimber, 2001), highlighting the difference between Waikato faculty and other international faculty. Factual evidence and quantitative data would be appreciated by faculty and are potentially available from institutions, but it seems that hard facts are not currently published and this area needs to be the subject of more research. Faculty are also not sure that students who have completed substantial placement reports (most often two reports) are any better prepared for graduate studies. This may be a continuation of the non-recognition of their contribution to the report writing process as real teaching, or faculty not perceiving this specific report writing as a high enough skill level. It may also be that perhaps the researchers’ view of what is required for graduate degrees, and the suitability of students for such, is different from the faculty understanding. This is an area that should be followed up in further research.

Faculty Views of the Influence of Work Placements on Student Skill Development and Future Career Directions

Once again there is much published material from practitioners about the value of placements for WIL students (e.g., Bartkus, 2001; Eames, 2003b) but little about faculty involved in WIL. There are no reports in the literature about the proportion of WIL students who go on to higher degrees (MSc and PhD). Our own preliminary research in this area indicates a similar proportion of WIL students go on to higher degrees, but this is not the commonly held perception among faculty at our institution. It is likely that a similar situation prevails in other institutions, and more faculty support might be gained if WIL students were not seen as ‘lost’ to academia, and instead seen as a potential source of research assistance with great practical and workplace skills.

Faculty Perceptions of the Assessment of Work Placements

Our findings point to a level of dissatisfaction and uncertainty with assessment of work placements by faculty, something also reported by others (Martin, 1998; Rainsbury, Hodges, Sutherland, & Barrow, 1998). This suggests that it would be worthwhile exploring a multi-faceted approach to student placement assessment. This would likely include oral presentations along with the current use of written reports and employer evaluations, as well as some student input to develop self evaluation techniques. These results indicate that there is a consciousness that the majority of the 'work' or research takes place outside of the university under the guidance of a workplace supervisor; therefore some form of assessment by the employer is critical. Contrary to this, one department at the University of Waikato determined that the greater proportion of assessment of placements should be based on the report (70%) – an item that was assessable in academic terms, based on cold hard evidence and not "airy fairy stuff" like reflective practice, personal development, and conceptual understanding. The deeper issue is perhaps the different understanding of what learning is valuable, how teaching may influence the learning, and how non-technical skills might be assessed fairly and objectively (Martin, 1998; Trigwell & Reid, 1998; Weisz & Smith, 2005). To date there has not been a great deal of investigation to inform changes in procedure, and it is hoped this paper will go some way to address that. For educators the concept of learning includes a deeper understanding of concepts, and ability to translate theoretical learning to practical application, problem-solving and trying to create within students the sheer pleasure of learning new things and a thirst to know more (Martin, 1998; Trigwell & Reid, 1998). An emphasis on grading and passing/failing limits the mindset of not only students who focus on learning things that are to be graded, but also on faculty who are conscious that they must assess for grading. This is described as a 'gap' between what faculty teach and what faculty do in their own professional practice (Boud, 1990). In scientific professional practice there is a great deal of collaboration, discussion, peer assessment and feedback, peer review and personal assessment of that feedback, learning and changes made based on that feedback - different entirely from teaching and learning in order to pass tests and exams.

Our findings support the use of a grading system as opposed to pass/fail, something supported by Coll, Taylor and Grainger (2002) who say that in teaching it was found that when only pass/fail was used, almost no student failed and there was no allowance for assessing the development of skills and knowledge. Work by Heinemann and De Falco (1992) also suggests that a collaborative assessment system which incorporates curriculum objectives should be developed in conjunction with faculty. This improves the learning for students, and enhances faculty involvement with WIL programs. Research and development of a method of collaborative assessment is being undertaken by other New Zealand practitioners (Hodges & Ayling, 2007; Rainsbury, Hodges, Sutherland, & Barrow, 1998) where assessment is inclusive of students self assessment, employer assessment and faculty assessment and the process is discussion based, hence becomes another learning experience for the students. The result is a more holistic assessment and evaluation of the learning process for the student, not simply an evaluation of skill acquisition.

SUMMARY AND CONCLUSIONS

There is widespread general support from faculty for the WIL program at Waikato University, but some reservations as to what benefits faculty derive and how much time participation takes out of a busy academic schedule. There is little actual real committed action, that is, incorporating students experiences into lectures and tutorials, making the effort to visit students on site, and establishing relationships with WIL employers. Faculty think that students learn valuable technical skills and soft skills from their work placements, and that they are perhaps more 'work-ready' than their counterparts, but are thought to be less likely to go on the graduate studies. Faculty believe that work placements add something to a students' education that cannot be gained within the university alone, but there are difficulties reconciling that perceived learning with typical current assessment practices, and recognizing non-technical skills as learning.

IMPLICATIONS

The following recommendations may be useful for other higher education institutions with WIL programs. It is hoped that this work may assist in assessing their program and informing their research and develop practical ways to maximize benefits from WIL for all parties. Armed with background information on what faculty views really are,

our plans include a series of one-on-one interviews to explore these issues, and more in depth investigation into more specific issues. Some of the areas that need to be addressed during the interviews are:

- Placement coordinators need to be more active at academic levels, for example, presentations of academic progress of WIL students, publications and research ideas. Raising faculty awareness of the benefits for students involved in WIL needs to be a priority;
- Faculty need to be more aware of the educational aspects of WIL. Eventually the development of a professional development short course will be implemented, initially for new faculty members, but later to include sessions for current faculty who enjoy WIL participation. The course needs to have a sound base of education theory, have student focused teaching ideas so that the educational aspects of WIL are explored and enhanced; and
- Inclusion of faculty on placement site visits would be actively encouraged with placement coordinators assisting with scheduling and timing. The development of protocols defining expectations of all parties need to be carefully developed to extract the most benefit possible from the limited number of visits likely to be made by faculty. Workload models could then be adapted to ensure adequate recognition of their input and time allowance for their participation. If these faculty members also had research interests that aligned well with 'industry' then this would work well to enhance joint research and funding opportunities. Difficulties would possibly be that the number of students to be supervised per faculty member may become too great, although further investigation would be well worthwhile.

It has become apparent through this research that assessment methods may need to change, in order that non-technical learning and skill acquisition achieve recognition as being of equal value to technical or hard skills. More involvement with faculty also needs to be included within the assessment. This would also tie in with a change of focus, so that deeper learning is encouraged for students, and faculty become more knowledgeable about the educational aspects of WIL, rather than focusing on basic technical skill assessment (Stull & deAyora, 1996).

REFERENCES

- Barbeau, J.E. (1980). Draw the thing as you see it: The faculty's role in program evaluation. *Journal of Cooperative Education*, 16, 85-90.
- Bartkus, K. (2001). Social skills training for cooperative education and internship students: An empirical investigation of performance outcomes. *Journal of Cooperative Education*, 36(3), 17-25.
- Boud, D. (1990). Assessment and the promotion of academic values. *Studies in Higher Education*, 15(1), 101-111.
- Boud, D., & Falchikov, N. (2005, July). Redesigning assessment for learning beyond higher education. Paper presented at the HERDSA Conference. Sydney, Australia.
- Braunstein, L.A., & Loken, M.K. (Eds.). (2004). *Benefits of cooperative education for employers*. Boston, MA: World Association of Cooperative Education
- Canale, R., & Duwart, E. (1999). Internet based reflective learning for cooperative education students during co-op work periods. *Journal of Cooperative Education*, 34(2), 25-34.
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education*. London: Routledge Falmer.
- Coll, R.K., Taylor, N., & Grainger, S. (2002). Assessment of work based learning: Some lessons from the teaching profession. *Asia-Pacific Journal of Cooperative Education*, 3(2), 5-12.
- Contomanolis, E. (2005). Integrating cooperative education based student learning in the college classroom: A study of engineering faculty attitudes and activities. *Journal of Cooperative Education and Internships*, 39(1), 11-23.
- Eames, C. (2000). Learning in the workplace through cooperative education placements: Beginning a longitudinal study. *Journal of Cooperative Education*, 35(2-3), 76-83.
- Eames, C. (2003a). Learning through work placements in science and technology. Unpublished PhD thesis, University of Waikato, Hamilton, New Zealand.
- Eames, C. (2003b). Learning to work: Becoming a research scientist through work experience placements. *Asia-Pacific Journal of Cooperative Education*, 4(2), 7-15.
- Grossman-Garber, D., Gold, A., & Husband, T. (2001). Combining research, outreach and student learning. *Connection*, New England's Journal of Higher Education, 16(1), 18-21.
- Heinemann, H.N., & De Falco, A.A. (1992). Dewey's pragmatism: A philosophical foundation for cooperative education. *Journal of Cooperative Education*, 28, 17-33.
- Heinemann, H.N., Enright, J., Johnson, P.E., Murtaugh, K., Reed, V.G., Robinson, V., & Wilson, J.W. (1988). Cooperative education and the Academy. *Journal of Cooperative Education*, 24, 109-119.
- Hinett, K., & Knight, P. (1996). Quality and assessment. *Quality Assurance in Education*, 4(3), 3-10.
- Hodges, D., & Ayling, D. (2007 June). A portfolio model of assessment in a business cooperative education programme: An interpretivist approach. Paper presented at the 15th World Conference on Cooperative Education. Singapore.

- Jancauskas, E., Atchison, M., Murphy, G., & Rose, P. (2000, June). Unleashing the potential of work-integrated learning through professionally trained academic and industry supervisors. Paper presented at the 10th World Conference on Cooperative Education, Washington, DC.
- Kubiak, C., Page, N., & Riggio, R.E. (1995). The faculty based co-op program: A model for survival. *Journal of Studies in Technical Careers*, 15(2), 63-70.
- Loken, M. (1997, June). Models of faculty involved in co-operative education programs. Paper presented at the 10th World Conference on Cooperative Education, Cape Town South Africa.
- Martin, E. (1998). Conceptions of workplace university education. *Higher Education Research & Development*, 17(2), 191-205.
- Matson, L.C., & Matson, R. (1995). Changing times in higher education: An empirical look at cooperative education and liberal arts faculty. *Journal of Cooperative Education*, 31(1), 13-24.
- McCurdy, S.M., Zegwaard, K.E., & Dalgety, J. (2005, June). The impact of students' perceptions of the labour market on enrolling in postgraduate study. Paper presented at the 14th World Conference on Cooperative Education. Boston, Massachusetts, United States of America.
- McKenna, E.D., Spilde, R.H., & Nieves-Squires, L.C. (1981). Measures of institutionalization. *Journal of Cooperative Education*, 17(1), 7-19.
- McNutt, D.E. (1989). Faculty in cooperative education equals excellence in cooperative education. *Journal of Cooperative Education*, 27(2), 23-29.
- Millspough, J.J. (2004). Value and structure of research experiences for undergraduate wildlife students. *Wildlife Society Bulletin*, 32(4), 1185-1194.
- Rainsbury, E., Hodges, D., Sutherland, J., & Barrow, M. (1998). Academic, employer and student collaborative assessment in a work-based cooperative education course. *Assessment and Evaluation in Higher Education*, 23(3), 313-324.
- Ramsden, P. (1992). *Learning to teach in higher education*. London: Routledge.
- Ricks, F. (1996). Principles for structuring cooperative education programs. *Journal of Cooperative Education*, 31(2-3), 8-22.
- Rothamer, F.R. (2003). Business faculty knowledge of adult learning styles: Cooperative education vs. non-cooperative education institutions. Unpublished PhD, University of Florida, Florida, USA.
- Somers, G. (1995). The post-graduation pecuniary benefits of co-op participation: A review of the literature. *Journal of Cooperative Education*, 31(1), 25-41.
- Sovilla, E., & Varty, J. (2004). Cooperative education in the USA, past and present: Some lessons learned. In R. K. Coll & C. Eames (Eds.), *International handbook for cooperative education* (pp. 3-16). Boston, USA: World Association for Cooperative Education.
- Stull, W.A., & deAyora, M.R. (1996). Partnership an essential condition for sound cooperative education practice. *Journal of Cooperative Education*, 20(3), 18-26.
- Trigwell, K., & Reid, A. (1998). Introduction: Work-based learning and the students' perspective. *Higher Education Research & Development*, 17(2), 141-154.
- University of Waikato. (2008). *University of Waikato Calendar*. Hamilton, New Zealand: University of Waikato.
- Van Gyn, G.H. (1994). The educational orientation of cooperative education: A critical variable in effectiveness. *Journal of Cooperative Education*, 30(1), 17-25.
- Van Gyn, G.H., & Ricks, F. (1997). Protégés' perceptions of the characteristics of the mentoring relationship and its impact. *Journal of Cooperative Education*, 32, 80-95.
- Weisz, M., & Kimber, D. (2001). Ethics in post secondary education. *Journal of Cooperative Education*, 36(2), 43.
- Weisz, M., & Smith, S. (2005, June). Critical changes for successful cooperative education. Paper presented at the Higher Education Research and Development Society of Australasia Conference, Melbourne, Australia.
- Wenger, E. (1998). *Communities of practice*. Cambridge, UK: Cambridge University Press.
- Wertsch, J.V. (1991). A sociocultural approach to socially shared cognition. In L. Resnick, J. M. Levine & S. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 85-100): American Psychological Association.
- Wessels, W.J., & Pumphrey, G. (1995). The effects of cooperative education on job-search time, quality of job placement and advancement. *Journal of Cooperative Education*, 31(1), 42-52.
- Wessels, W.J., & Pumphrey, G. (1996). The impact of cooperative education on wages. *Journal of Cooperative Education*, 32(1), 36-51.
- Wilson, J.W. (1997). On the questions asked about cooperative education. *Journal of Cooperative Education*, 32(2), 17-29.
- Zegwaard, K.E., Coll, R.K., & Hodges, D. (2003). Assessment of workplace learning: A framework. *Asia-Pacific Journal of Cooperative Education*, 4(1), 10-18.
- Zegwaard, K.E., & Hodges, D. (2003). Science and technology stakeholders' ranking of graduate competencies Part 4: Faculty perspective. *Asia-Pacific Journal of Cooperative Education*, 4(2), 36-48.

TABLE 1
Faculty views of the value of WIL placements to faculty (Likert scale 1-5, and $N = 76$)

Item	Response					Mean	SD
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
The University views Co-op as valuable	0	5	26	32	5	3.52	0.72
The School (Science & Engineering) views Co-op as valuable	1	0	13	40	11	3.93	0.70
The Department views Co-op as valuable	0	6	21	34	8	3.65	0.79
I personally view of Co-op as valuable	1	3	9	44	13	3.93	0.78
Co-op is a useful recruitment tool	0	1	9	41	21	4.15	0.67
Co-op is a useful marketing tool	0	3	10	49	11	3.93	0.66
Co-op degrees are a poor investment of university's financial resources	21	31	18	3	1	2.08	0.90
Co-op degrees enhance the university's reputation	1	3	25	30	13	3.71	0.85
Co-op degrees enhance student retention	1	7	42	20	0	3.15	0.64
Co-op degrees are a useful alternative to a BSc	2	7	26	31	4	3.42	0.85
Student placements create links with industry	0	2	4	35	32	4.33	
Students placements create links with research institutes	1	2	10	39	21	4.07	0.81
Promote interaction university and industry	2	3	12	42	13	3.87	0.86
Involvement with co-op has enhanced my academic career	11	18	28	8	3	2.66	1.04
Involvement with co-op has enabled joint research ventures	14	16	27	11	2	2.61	1.07
Involvement with co-op has enabled me to access sources of external funding	17	19	25	6	3	2.42	1.08
Involvement with co-op has enabled me to identify potential graduate students.	5	16	22	22	4	3.06	1.01
Co-op degrees have little influence on university taught courses	1	19	19	26	5	3.22	0.96
Co-op degrees should be a compulsory part of all science degrees.	21	31	12	6	2	2.14	1.02

TABLE 2
Faculty views of the value of work placements to students (Likert scale 1-5, and $N = 76$)

Item	Response					Mean	SD
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Co-op students learn "hard skills"	1	3	10	47	12	3.9	0.77
Co-op students learn "soft skills"	0	2	11	48	12	4.0	0.65
Co-op students learn skills that are not taught at university.	0	0	9	51	13	4.1	0.55
Co-op students learn a "work ethic"	0	2	15	50	6	3.8	0.61
Co-op students learn personal communication skills.	18	39	11	4	1	2.1	0.86
Co-op students learn writing skills.	0	3	14	49	7	3.8	0.65
Co-op students are more employable	1	8	12	46	6	3.7	0.84
Academic grades are similar co-op & non-co-op	2	6	36	19	4	3.25	0.82
Co-op students understand academic course content better	2	9	31	30	0	3.24	0.78
Co-op students contribute more in tutorials and practicals.	6	13	40	11	0	2.8	0.81

TABLE 3
Faculty views of how work placements influence student skill development and career direction (Likert scale 1-5, and $N = 76$).

Item	Response					Mean	SD
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Co-op students typically seek employment rather than carry on to graduate study	2	8	37	21	3	3.2	0.81
Co-op placements train students for technical support positions	0	9	35	26	2	3.3	0.72
Co-op students are better prepared for graduate studies	5	25	31	8	3	2.7	0.91
Co-op students learn useful skills for students going on to graduate studies.	1	8	26	35	3	3.4	0.80
Co-op placements help focus their career paths	0	7	23	40	3	3.5	0.73
Co-op students learn writing skills.	1	8	12	46	6	3.7	0.84
Co-op students better prepared for graduate research write-ups	5	13	26	25	3	3.1	0.99
Co-op students learn computer (I.T.) literate	2	17	33	20	0	3.0	0.80
Co-op students learn scientific research skills	3	18	28	24	0	3.0	0.87
Co-op students are equally suitable for graduate research programs.	2	3	13	43	12	3.8	0.86
A student who has done co-op placements is more valuable for MSc	5	13	35	17	4	3.0	0.95
There is no benefit in a student having done a work placement	6	31	24	8	3	2.6	0.94

TABLE 4
Faculty views of the assessment practices of work placements (Likert scale 1-5, and $N = 76$).

Item	Response					Mean	SD
	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Co-op placements are adequately assessed by written reports	4	36	19	12	0		0.84
Employer input is unnecessary	20	38	8	5	0	3.01	0.83
Students should have input (self assessment)	3	18	26	23	1	2.57	0.90
Placement reports should be graded (i.e. A+ to F) rather than just pass/fail.	7	11	11	34	8	2.66	1.17
It is unnecessary for placement reports to be assessed by a specialist	4	32	15	18	2	3.35	1.00
The 'draft-to-final' hand-in on placement reports is a valuable teaching opportunity	1	6	19	41	4	2.75	0.79
Students learn very little from feedback on written reports.	4	27	29	8	1	3.58	0.82
Marking reports is a poor use of my time.	7	28	23	6	6	2.64	1.06
Oral presentations are a useful <u>addition</u> to written reports	3	11	13	40	4	1.97	0.97
Oral presentations are a useful <u>alternative</u> to written reports	13	35	10	12	1	3.44	1.01

APPENDIX A
Survey Instrument Used in the Study

Demographic Questions	
Appointment level; <i>(Please tick the appropriate box).</i>	
Lecturer <input type="checkbox"/> Senior lecturer <input type="checkbox"/> Associate Professor <input type="checkbox"/> Professor <input type="checkbox"/> Other (please detail)	
Previous involvement with co-op degrees.	
Have you done a co-op degree as a student? <i>(Please tick the appropriate box).</i> Yes <input type="checkbox"/> No <input type="checkbox"/>	
Prior to this survey, have you been involved with a co-op degree as a supervisor? <i>(Please tick the appropriate boxes and continue with the questionnaire. You may choose more than one option).</i>	
No <input type="checkbox"/> at University of Waikato <input type="checkbox"/> at another institution <input type="checkbox"/> in industry <input type="checkbox"/>	
How many years have you been teaching at University of Waikato?	Years:
Have you worked in other academic institutions? Please state type of institution e.g. polytechnic, other universities	Yes <input type="checkbox"/> No <input type="checkbox"/> Type:
Have you worked in other research institutions? Please state type of institution e.g. CRI	Yes <input type="checkbox"/> No <input type="checkbox"/> Type:
Have you worked in a research capacity in a commercially oriented company?	Yes <input type="checkbox"/> No <input type="checkbox"/>

Cooperative Education Survey	
<i>Please rate the following statements and tick the box that best represents your views.</i>	Strongly Disagree Disagree Neither Agree Strongly Disagree Agree
Value to University	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Having work experience for students as part of a degree is a useful recruitment tool to attract students to the university.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
A co-op degree for students gives the University of Waikato an advantage over other universities;	
a/ as it enhances the university's reputation	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
b/ as an alternative to a BSc as an undergraduate science degree.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
c/ as a marketing tool	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
d/ it creates links with industry (commercial enterprises)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
e/ it creates links with research institutes such as CRIs.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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Co-op degrees are a poor investment of the university's financial and personnel resources.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op degrees enhance undergraduate student retention.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op degrees have little influence on the university taught course content.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
The employers of co-op students are the main beneficiaries in co-op partnerships.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Value of co-op for Academics	Strongly Disagree Neither Agree Strongly Disagree Agree
I personally think co-op education is valuable.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
I think that my department views co-op education as valuable.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
I think that my school (i.e. Science and Technology) views co-op education as valuable.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
I think that the University views co-op education as valuable.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Involvement with the co-op degrees has enhanced my academic career.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op student placements promote interaction between the university and industry.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Involvement with the co-op degrees has helped me set-up joint research ventures.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Involvement with the co-op degrees has helped me access sources of external funding.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Supervising co-op students allows me to identify potential graduate students.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
A graduate student who has done co-op placements is more valuable for MSc and /or Ph.D research projects.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Non-co-op and co-op students are equally suitable for graduate research programs.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
I prefer that undergraduate students do not undertake a co-op degree.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
I prefer co-op students to "fast-track" to graduate studies (3 month final placement) rather than complete a 9-month final placement.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
There is no benefit in a student having done a work placement of any duration for my graduate research program.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Value of placements	Strongly Disagree Neither Agree Strongly Disagree Agree
Co-op students learn "hard skills" (practical skills) while on placements.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op students learn "soft skills" (e.g. relationship building) while on placements.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op students do not learn much in the way of skills while on placements.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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Co-op students learn a "work ethic" from a placement.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op placements enable students to learn skills that are not taught at university.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op placements develop students' personal communication skills.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
A co-op placement should be a compulsory part of all science degrees.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op placements and placement reports enable students to learn writing skills.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op placements help develop useful skills for students going on to graduate studies.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op students learn scientific research skills whilst on placement.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op placements help students focus their career paths.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op student performance	Strongly Disagree Disagree Neither Agree Strongly Disagree Agree
Co-op placements help students understand academic content from taught courses.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op students are more computer (I.T.) literate after a placement.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
After placements co-op students contribute more in tutorials and practicals.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op students use their placement experiences as examples in tutorials and practicals.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op degrees should have a minimum entry level requirement based on grades from on-campus taught courses.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Students with higher grades for their on-campus taught courses are most suitable for co-op.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
The academic undergraduate grades for on-campus taught courses are similar for co-op and non-co-op students.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Non co-op students generally achieve higher grades in their on-campus taught courses during their undergraduate degrees.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Assessment of Placement	Strongly Disagree Disagree Neither Agree Strongly Disagree Agree
Co-op placements are adequately assessed by written reports alone.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op students should have input into the assessment process of placements (i.e. student self-assessment).	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Employer input for a placement assessment is unnecessary.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Oral presentations by co-op students would be a useful <u>addition</u> to written reports for assessing co-op placements.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Oral presentations by co-op students would be a useful <u>alternative</u> to written reports for assessing co-op placements.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Assessment of co-op placement reports is a poor use of my time.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op placements should be assessed using the full academic grade range (i.e. A+ to F) rather than just pass/fail.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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Students learn very little from the feedback for their written reports.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
It is unnecessary to have the co-op placement reports assessed by a specialist in the field of study.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
The use of 'draft-to-final' hand-in of placement reports is a valuable teaching opportunity for the academic supervisor.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
After co-op degree	Strongly Disagree Disagree Neither Agree Strongly Disagree Agree
Co-op graduates are more employable after completing their undergraduate degree than non co-op graduates.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Co-op degrees train students for technical support positions.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
After completing a co-op degree students typically seek employment rather than carry on with graduate studies.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
After completing a placement, co-op students are better prepared for graduate studies than non-co-op students.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Students who have completed a co-op placement report are better prepared for graduate research write-ups (e.g. thesis writing).	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
After graduation co-op graduates are most likely to continue into (<i>tick as many as you think appropriate</i>) a/ work <input type="checkbox"/> b/ P.G.Dip <input type="checkbox"/> c/ M.Sc <input type="checkbox"/> d/ M.Sc(Tech) <input type="checkbox"/> e/ M.Phil <input type="checkbox"/> f/ Ph.D <input type="checkbox"/> g/ other (<i>please explain</i>)	
Please continue over page	
Please feel free to comment on any aspect of these questions.	
Thank you for your participation in the research. Your contribution is much appreciated.	