

**S**ecuring work placements for co-op programs is a complex and resource intensive process (McCallum & Wilson, 1988; Reeves, Schultz, & Laslett, 1997), which frequently proves

poorly during pre-placement interviews. For many young students comprehensive, formal interviews represent a formidable challenge. Such a situation has, for the tertiary institution involved in this study, commonly resulted in students failing to secure placements that were strongly aligned to their career aims and objectives.

Pre-planning for interviews has been reported to improve student confidence and interview performance, and is recommended as a strategy for improving job placement. Strategies include preparing questions to ask employers, and anticipation of questions from employers at interview time (Formo, 1995), and spending time to hone interpersonal communication skills, the use of mock-interview letters, or dry runs of interviews (Carter, McCarroll & Popeck, 1998; Hughes & Moore, 1999; Wilson, G., & Goodall, 1991). Some authors argue that it is unclear if non-experiential feedback like mock interviews is of any value (e.g., Henson, Stephens, & Grant, 1999).

This study reports on an action research project consisting of an investigation of the value of an intervention designed to improve students' self-efficacy with regard to their performance in pre-placement interviews. The intervention comprised the use of trial (or mock) interviews mimicking the pre-placement interview.

#### Context of the Inquiry

At Waikato we offer co-op in the form of the BSc(Technology) and BTech degrees, two of three undergraduate programs offered by

## Using Trial Interviews to Enhance Student Self-Efficacy towards Pre-placement Interviews

*Richard K. Coll • Mark Lay  
The University of Waikato • Hamilton, New Zealand*

#### Abstract

Here we report on research designed to facilitate student access to relevant work-placements for a science and technology co-op program. The research sought to improve student self-efficacy and performance in pre-placement interviews. The research resulted in a model for trial interviews based on the literature and documentation for science technology employers. These data provide a core of relevant issues deemed of significance to commercial and research organizations and as such represent a valuable resource for anyone wishing to understand the needs of potential employers. The study also revealed that the participants believe trial-interviews enhance self-efficacy and performance during pre-placement interviews.

problematic (e.g., Heller & Geringer, 1984; Lee & Swinth, 1986). Although technology-based non face-to-face means of evaluation such as video resumes and telephone interviews are becoming popular with some employers (e.g., Chapman, D., 1999; Rolls & Strenkowski, 1994), in New Zealand at least, it is still common for students to undergo interviews as part of the process to secure their placement. Students have often held only temporary or part-time positions at this stage of their career. Such positions are commonly secured on the basis of family or other personal contacts and seldom involve a formal recruitment process or comprehensive interview. As a consequence, many students have little experience in interviewing when they begin seeking work placements for co-op degrees. Despite possessing excellent resumes, students may fail to secure a placement if they perform

the School of Science & Technology (Coll, 1996). The BSc(Technology) degree consists of a full BSc degree, with two additional management papers and a total of 12 months relevant work experience (Chapman, R., & Kirk, 1992). The work experience is normally carried out as two placements, one of three-months duration at the end of the second year, and a second of nine-months duration at the end of the third year. The BTech degree is a four-year engineering-oriented degree that has a requirement of two three-month placements completed in the vacation between the second and third year and at the end of the third year. For both degrees student selection and admission to the program is carried out on a case-by-case basis, with individual students screened on the basis of academic record and personal interviews with placement coordinators. The BSc(Technology) program has been offered for over 20 years and has experienced a steady increase in enrollments (Coll, 1996), whereas the BTech is a more recent development, although it is showing strong growth. Currently nearly half the students in the School are enrolled in the degrees that include co-op. The Cooperative Education Unit (CEU), a team of academic staff who hold joint appointments between the subject discipline and the Unit, facilitates student placements (Coll & Eames, 2000).

## Research Methodology

### *Theoretical Framework*

The work of Bandura provides a theoretical basis for this study. The researchers wished to investigate and devise means of enhancing student self-efficacy towards their pre-placement interviews. Self-efficacy is a construct derived from Bandura's (1977) work in relation to human behaviour. According to Bandura (1995), self-efficacy is one's perceived performance capability in a given situation; that is, self-efficacy is an individual's perception of their ability to organize and perform tasks. It is dynamic and specific to particular areas of performance and is typically considered domain specific (see, e.g., Smith & Fouad, 1999). In the case of the present study, students' performance in pre-placement interviews. Self-efficacy helps determine the indi-

vidual's choice of activity, environment, energy-expenditure, persistence, and thought patterns as well as their emotional reactions. Consequently, despite its domain specificity, self-efficacy interacts with a person's behavioural and contextual factors (Lent, Brown & Hackett, 1994; Sweeney & Twomey, 1997). For example, a person with low self-efficacy with respect to interpersonal skills may attempt to avoid situations in which these skills are required, such as formal employment interviews. In contrast, an individual with high self-efficacy about interpersonal behaviour will likely perform more competently regardless if they have ever been involved in a formal interview. Considerable stress will likely result when the individual has no choice about being put into situations for which they possess low self-efficacy.

Self-efficacy has been investigated in a number of studies in education, for example, pre-service science teachers' self-efficacy towards the teaching of elementary science. Based on Bandura's construct, Enochs and Riggs (1990) developed the Science Teaching Efficacy Beliefs Instrument (STEBI), an instrument designed to measure science-teaching efficacy amongst primary teachers. The instrument has been utilized in a number of studies, tied to the implementation of an intervention, being training in the use of a constructivist-based curriculum, designed to enhance self-efficacy (see, e.g., de Laat & Watters, 1995, Taylor & Coll, 1999; Watters & Ginns, 1994). There are no reports of investigations of self-efficacy for students on co-op programs, although it has been claimed that co-op enhances self-efficacy towards career development (Weaver-Paquette, 1997).

### *Research Objective and Sample Description*

The purpose of this study was to gain an understanding of students' perceptions, in particular, their self-efficacy with respect to pre-placement interviews. This research purpose was refined into the research question: Do students perceive trial interviews to help reduce stress for pre-placement interviews? Because the researchers wished to probe students' views in depth, a naturalistic, case study methodology was employed (Guba &

Lincoln, 1989, 1994; Lincoln & Guba, 1985; Stull, Crow, & Braunstein, 1997).

The small number of participants raised some ethical issues, such as participants feeling coerced into participation and the confidentiality of their identity and opinions expressed during the study. Consequently, students were approached via a written request, rather than face-to-face, and participants were identified using pseudonyms in field notes and report of the research findings. Participants were selected from a cohort of science and technology majors from the BSc(Technology) program within the School of Science & Technology at the University of Waikato. The sample comprised 10 second-year New Zealand students (average age 19 years), purposefully selected to maintain a reasonable gender balance, academic ability, and a spread of science and technology disciplines.

#### *Placement Protocol*

As described previously, students complete two industry placements for each of the two degrees offered at Waikato. The first pre-placement interview, occurring at the end of the second academic year, forms the focus of the present work. This interview is conducted before the first placement and typically occurs part way through the calendar year. Placement coordinators begin the placement process by collating student resumes and conducting informal interviews to ascertain student interests and career aims. The coordinators then approach employers that have been involved in the Waikato programs previously. Given a positive response, the coordinators conduct a matching exercise based on student resumes and the informal interviews and the coordinators assessment of the student practical skills; the latter is possible since placement coordinators, being faculty have been involved in the teaching of students whom they are placing (Coll & Eames, 2000). The coordinator then provides an employer with a selection of resumes, and the employer indicates those students that will be interviewed for the position. Students are taken to the interview by the coordinator and subject to a satisfactory interview, are offered a placement that begins at the end of the academic year (i.e.,

**Table 1**  
**Interview sequence used in the study**

<b>Interview</b>	<b>Purpose</b>
Interview 1	Ascertain student background & previous interview experience
Trial Interview	Formal interview, designed to mimic pre-placement interview
Interview 2	Obtain student perceptions of trial interview
Pre-placement Employer Interview	Employer interview to ascertain student suitability for placement position
Interview 3	Obtain student perceptions of value of trial interview

November in New Zealand).

#### *Data Collection*

The principal data collection tool consisted of in-depth, face-to-face interviews (for a detailed discussion of the appropriateness of this approach see, Coll & Chapman, 2000). The participants were involved in three interviews in addition to the trial and pre-placement employer interviews (Table 1).

The first interview took place prior to the trial interview and sought to establish student views and concerns about the pre-placement interview with their prospective employer. The students then took part in a trial interview and were subsequently interviewed for a second time to establish their perceptions of the value of the trial in increasing their self-efficacy. Students underwent the pre-placement interview with an employer; finally they were interviewed for a third time to ascertain perceptions of their performance in the pre-placement employer interview. The trial interview was of approximately 20 minutes duration, followed by a 10-minute debriefing session. The other interviews were each of approximately 10 minutes duration.

The employers were also involved in the study

The views of the ten employers that interviewed the students were canvassed using informal interviews during which extensive field notes were taken. The employers were asked their views of the students' performance during the pre-placement interview. Data triangulation was achieved by examination of relevant documents, such as, student placement reports from students previously employed at the employing organization, and literature published by the employing institutions participating in the program (Denzin & Lincoln, 1998; Mathison, 1988; Peshkin, 1993). Further data were compiled from field notes and interviews with employers and placement coordinators. The semi-structured interviews utilized an interview guide that consisted of a list of issues identified prior to the interview (Patton, 1990; Wiersma, 1986). In these interviews, there was not necessarily a set order to the questions and the specific wording used varied from participant to participant. The interview guide thus served as a form of checklist to ensure that all relevant topics were covered. There is a considerable degree of flexibility retained in this approach, making it well suited for in-depth inquiries such as reported in this work. This data collection strategy was chosen because it afforded the investigators the opportunity to probe issues of interest in depth, in a manner not easily achievable, using, for example, a survey instrument like STEBI. In addition, the interactive nature of the interviews allowed participants and the interviewer to clarify ambiguity in questions and responses, something deemed desirable considering English was not the first language for some participants. The use of the interview guide helped to make the data gathering more systematic, facilitating analysis. The checklist of questions used in the interviews was developed from informal interviews with placement coordinators; being a naturalistic inquiry, the checklist was constantly re-examined and modified slightly as the inquiry matured (Guba & Lincoln, 1994; Lincoln & Guba, 1985).

#### *Structure of the Trial Interview*

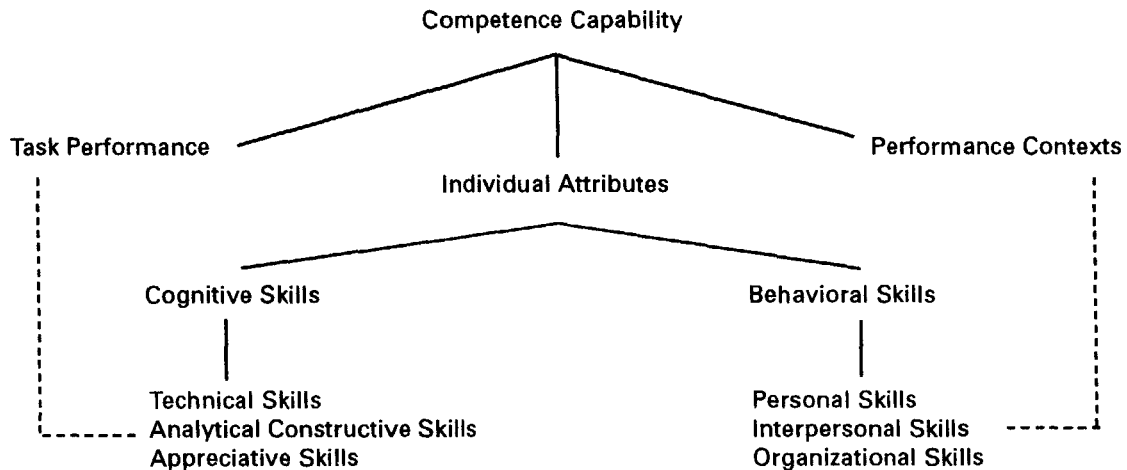
The formulation of the trial interview was based on evidence from a variety of sources; documented

literature of previous interviews held by Waikato placement coordinators, material from the literature and employers' views regarding student compatibility within modern New Zealand and overseas commercial organizations (Burchell, Hodges & Rainsbury, 1999; Hodges, Rainsbury, Sutherland & Wong, 1998; Rainsbury, Burchell & Hodges, 2000). The purpose of an interview is to afford employers the opportunity of establishing if potential employees possess the necessary competency for the role available in their organizations (Wood & Payne, 1998). Competency can be defined in a number of ways and views of competency held by educational institutions are not necessarily shared by commercial organizations. The New Zealand Qualifications Authority defines competency as "the ability to apply knowledge, skills, attitudes and values to standards of perfection required in specific contexts" (New Zealand Qualifications Authority, 1996). Commercial organizations view competency in a different manner. For example, Spencer and Spencer (1993) view competency as an underlying characteristic of an individual that is manifest in superior performance in the work place as evidenced by their behavior in a variety of work contexts. Likewise, Birkett (1993) sees competency as the way in which an individual draws on inner ability to perform tasks in specific work contexts. Rainsbury et al. (1999) propose a model of competency in which an individual's competence is composed of individual attributes, task performance, and the performance contexts (Figure 1).

Individual attributes, according to Birkett (1993) comprise technical skills, analytical skills and appreciative skills, whereas behavioural skills consist of the so-called soft skills such as personal skills, interpersonal skills and organizational skills. Interestingly, employers rate the so-called soft skills highly, compared with technical and academic skills (Burchell et al., 1999).

The structure of the trial interview comprised an attempt to reflect the definitions of competence developed in the literature along with the data obtained from interviews with employers of past students and the material provided by Human

**Figure 1**  
**Model for competency capability (adapted from Rainsbury et al., 1999)**



Resource Management (HRM) staff at a number of New Zealand commercial and Government-funded research organizations. The structure for the trial interview is provided in Table 2.

#### *Data Analysis*

All student interviews were audio-taped, fully transcribed, and participant validated. Participant validation involved participants reading transcriptions of their interviews and confirming that the data represented their views about the issues discussed. In a number of instances further informal interviews were conducted to clarify ambiguity. Data analysis involved the development of a Concept Profile Inventory (CPI) based on methods described in the education literature (Coll & Chapman, in press; Erickson, 1979, 1980; Rollnick & Rutherford, 1990). Development of CPIs consisted of examination of interview transcripts for expressions and statements that could be construed as evidence for conceptions of interest, in this instance students' perceptions of the value of trial interviews. These expressions were summarized and formed the unit of analysis. Examining the entire set of expressions in the transcripts enabled the researchers to gain a global perspective of the

participants' views. These views were then organized into a series of categories forming a *Conceptual Inventory* for an individual participant. Commonality of views among participants' conceptual inventories was deduced from examination of the individual inventories, and used to address the research question. The interpretations of the research findings are described herein and are supported by extracts from the transcriptions. Transcriptions have undergone light editing (e.g., removal of repeated words or phrases, and changes of tense) to make them more readable.

#### **Results and Discussion**

##### *Prior Interview Experience*

The bulk of the participants had not experienced any formal employment interviews, despite most holding previous summer vacation work experience. This occurred since their vacation work was secured through family, personal contacts, or associates as seen in Matthew's response to the question "have you ever had a job interview" being, "no, none at all," and Sandra similarly stated "I have had job interviews, but nothing formal, you know, did you pass your school certificate exams, are you good with customers, just really informal questions."

**Table 2**  
**Interview protocol for the trial interview**

Description of Organization	Interviewer provides a comprehensive description of the organization, its context, and the role expected of the individual applicant
Personal Overview	What aspects about you would make you suitable for this position? What skills do you possess that would assist you in this position?
Willingness to Learn	Do you enjoy learning new things? Can you provide an example of a situation in which you had to learn some new activity quickly
Initiative	Please describe a situation where you applied your initiative and explain how this was evident Describe a time when you saw an opportunity to improve something in the workplace and did something about it
Achievement Orientation	Please describe a situation where you had to extend yourself to meet a major challenge or personal goal What did you have to do, and what was the outcome? Where do you see yourself in five years time?
Teamwork & Cooperation	What skills or qualities could you add to a team you are involved in? Have you ever had to commit to a team decision that you disagreed with? How did you cope and what was the outcome?
Flexibility	If, due to unforeseen circumstances, you had to work overtime, would you be able to do so? Supposing you were given a large number of tasks to perform, on what basis would you go about prioritizing your tasks?
Written Communication	Please tell us about a substantial report or document you have prepared recently
Analytical Thinking	Please describe a complex technical problem or issue you have encountered recently How did you go about solving the problem? What was the outcome?
Written Communication	Please describe any experience you have had in recording and analyzing data
Interviewee Questions	Opportunity for interviewee to ask questions of interview panel

Not surprisingly these interviews, when they occurred, were very brief as seen in Sam's comment that "we just shook hands and it was very basic, only took four or five minutes." Interestingly, despite the informality of these casual interviews, the students were still apprehensive about them. Sam stated "I was really nervous, because I didn't

know what to expect," and Sandra said, "I wasn't really sure what I was meant to know." To counter this one participant, Cathy, undertook some pre-interview investigation "I went around and asked previous employees, like what sort of question did they ask you, so I wasn't put on the spot." It seems the students' apprehension was associated

with uncertainty over the exact nature of the interview questions and protocol. This arose since the students strongly felt there were expected answers, as seen in Shane's comment that "it's important, you know, making sure you have got the right answers for them, for their questions, so that you get the job."

#### *Self-Efficacy Towards Pre-Placement Interviews*

Although one student was not concerned about the pre-placement interview (Cathy), the remainder expressed considerable apprehension about their imminent pre-placement interviews with prospective employers. In addition to the reasons stated above, that is, concerns over the uncertainty of the nature of the interview, the students clearly anticipated a more formal, structured interview than previously experienced in which appropriate answers were expected and needed.

*Interviewer:* Could you tell me how you feel about your upcoming placement interview?

*Matthew:* Dubious. I just don't really know what to expect. I've heard that there are sort of five questions, sort of stock questions for the job interview.

*Interviewer:* Could you sort of expand on that a bit?

*Matthew:* Well, it's a fairly important event, if you know what I mean. It's just walking into a completely new situation you know. It's going to take some thought. I really don't know what to expect.

*Interviewer:* Could you just tell me what aspects of the interview worry you the most?

*Matthew:* Offending the guy.

*Interviewer:* Just tell me a bit more about that, in what way do you think you might offend the guy?

*Matthew:* That he's going to want to ask me some difficult questions and hopefully I'm not going to snap at him, or fold up.

*Interviewer:* Can you just tell me what you feel about your upcoming placement interview?

*Sandra:* I'm very nervous about it, The sort of questions we might get asked and I'm sort of looking over those thinking oh I'm not really sure how to answer them, but I feel like I want to put the best foot forward. I really want to make sure I present a good image.

*Interviewer:* Why is it you don't think you feel comfortable about answering some of those sort of questions?

*Sandra:* Oh I don't know its just I'm not sure I will be saying the right thing to make it to my advantage or whether I'm saying things that are incorrect.

*Interviewer:* So can you just tell me a bit about what you think the actual questions are that concern you?

*Sandra:* The ones like, what are your weaknesses, what are your strengths and those sort of ones and about the pay, what sort of pay rate are you wanting to get. Yeah something like that, like, what do you expect to get paid. I'm worried that I will say too much or the wrong range. The weaknesses, it's hard to pin point a weakness that can be fixed easily (respondent laughs).

*Interviewer:* So do you have the perception that the employer is expecting a certain type of answer to those questions?

*Sandra:* Yeah, I do. Like if you are saying for the strengths, I'm motivated, I'm good at teamwork or some thing like that, they sort of expect that sort of answer.

The view that the right answer was expected was universal; Shane said, "If they ask you a question, you want to get it out straight and with confidence," and despite having some ideas of what might be

asked, as seen in Shane's additional comment, "What kind of things are you good at, what skills have you learned that would be good for the job, how can you help us?" uncertainly remained prevalent. Other concerns related to the fact that an interview panel would comprise several people, Sandra stating, "I'm nervous meeting people, multiple people interviews make me more nervous, more people are looking at you, scrutinizing you," and Matthew, who was concerned about his physical appearance, expressing a view that a particular dress code was expected, "The smart dress, that's definitely going to be a concern." It was clearly very important for some participants to secure the particular placement that they were being interviewed for. For example, Tracey stated she "wanted to get a good job, and I want to be placed at home near my parents so I can save some money." This further added to the student's nervousness.

#### *Participants' Perceptions of Performance During Trial Interviews*

Participants expressed mixed views about their performance during the trial interviews with some happy about their performance, whereas others expressed concern about their performance. Shane said, "It was quite good, I think I gave good answers although I couldn't answer some questions." and Sam was pleased with his performance stating "I was fairly happy about it. I felt a bit uncomfortable in some situations where I wasn't able to answer the questions, but overall I was fairly happy." Matthew, in contrast stated, "I was fooled, I was stumped by some of the questions. Some of the questions were pretty tricky," and Sandra said, "I felt pressurized. I felt, I don't have an example to give, a substantial example to give. I think I wasn't listening properly, I got a bit lost and confused," going on further to comment, "It's difficult to think of an answer that is appropriate without taking half an hour thinking about it." These data are consistent with the pre-trial interview results with the students evaluating their performance on the basis of perceptions of their ability to provide what they consider to be the correct or appropriate responses to pre-determined questions.

#### *Changes to Self-Efficacy Towards Pre-Placement Interviews as a Result of Trial Interviews*

The principal objective of this study was to establish if trial interviews improved student self-efficacy towards their pre-placement interviews. The data suggest this was the outcome of the intervention with the students universally stating that they felt the trial interview improved the confidence about the up-coming pre-placement employer interviews. This was especially true for the students who expressed most nervousness as seen in the following responses.

Cathy stated, "It has given me things to think about, like I mean the initiative question. I really had to think about that, to find something that would fit in, what I would say." Matthew said "It has scared me a bit, and that is going to get me thinking. Hopefully by Tuesday I'll have more to say about myself, the kind of thing I can say." Sandra said "I'm still pretty nervous, but it has boosted me. I am looking forward to my placement interview now." Shane was more forthright stating:

It has definitely helped; it has given me lots of ideas of what questions they might give me, and a different way of thinking about the interview. The questions are deeper than they had been in the past, so that's good. Just thinking about these, like it helps to be able to get used to the format of an interview.

Sam was the most emphatic stating, "It has helped for sure, heaps. You know, you don't really know what questions to expect because I have never applied for a job like that before so it has helped heaps."

It is interesting that once again, the students emphasized the need to give right or appropriate answers. The trial interview thus improved self-efficacy towards the pre-placement interviews for two reasons. First, it enabled the students to gain an understanding of the type of question they would encounter in an in-depth formal interview, and second, afforded them the opportunity to practice the articulation of answers. In addition the trial interview appears to have provided information on the nature of the organization as seen in Shane's



comment that "I didn't know much about the company before."

The data from the interview after the pre-placement employer interview further suggests the students felt the pre-placement interview with their prospective employers went well, and adds further support for the view that the trial interview enhanced self-efficacy. In fact the pre-placement interviews, in general, proved to be less formal than the trial interview. Cathy said "It wasn't as formal as the trial interview," and Matthew likewise commented, "I expected something a little more formal, you know closer to the trial interview we had done." Nonetheless, the students were unanimous that having experienced the trial interview improved their performance in the pre-placement interview. Cathy stated, "It helped me to start thinking about what sort of questions would be asked. He didn't ask any direct questions and I just interjected on some things, yes I can do that, I know that." Matthew said, "It reduced my nervousness in going into a strange situation. I thought I knew what to expect and that helped because I thought I knew what I was doing." Shane also stated:

Your interview [i.e., the trial interview] helped quite a lot. It brought up a lot of things I hadn't thought about, so I had answers in my head. It made me think about what questions I might actually get asked, like certain sorts of predicaments, so I wasn't put on the spot. It did build my confidence. I was really nervous and it helped me to settle down, because I was really nervous about what they would actually ask me.

It would be inappropriate to speculate on the basis of a sample of 10 students that participated in the study, given that approximately 200 students are placed annually by the placement coordinators at Waikato. However, it is interesting to note that all 10 participants secured the placement they sought on the basis of their pre-placement interview. This compares more than favorably with previous experience in which a significant proportion of second and indeed third-year students fail to secure placements on the basis of poor performance during pre-placement interviews.

### Implications for Other Practitioners

There are two outcomes of this research of potential interest to other co-op practitioners. First is the development of a model for trial interviews based on the literature and examination of documentation for science technology employers. Despite being situated in New Zealand, a high proportion of the companies were multi-national organizations; hence, the model is likely to be applicable in other contexts. These data provide a core of relevant issues deemed of significance to commercial and research organizations and as such represent a valuable resource for anyone wishing to understand the needs of these potential employers. Second are the findings that suggest trial interviews enhance student self-efficacy towards pre-placement interviews. The core business of placement coordinators in our program, and indeed in other programs worldwide, is to secure the most appropriate placement for the students. It is regrettable if students fail to secure placements that are strongly aligned with their career aims purely on the basis of lack of performance in pre-placement interviews. If students fail to secure preferred placements, compromises are commonly made and the student may enter a placement that is less suitable or relevant and appropriately integrated into their course work, with consequent detriment to their learning. It is crucial to emphasize the core nature of co-op; that is, co-op comprises learning that is integrated into a degree (or similar) academic program of study (Coll & Eames, 2000; Wilson, 1970). In other words for co-op to be a meaningful learning experience, the work placements secured for the students must be directly relevant to their academic studies. Hence, it is essential to remove barriers to the placement process. Our experience has been that poor performance in pre-placement interviews represents a substantial barrier to this process, particularly in the case of young students. Consequently, it is our intention to provide demand-driven access for trial interviews for the second-year students in our co-op programs. This necessitates a resource commitment on behalf of the institution, although limiting the service to second-years reduces the commitment somewhat. However, it is our judgment that there

will be compensation in the form of a higher success rate in securing placements. Furthermore, we anticipate a flow-on success into the third year. That is, because students should secure good placements in their second year, this may make it easier to find suitable nine-month placements in the third-year. Naturally it will be up to other placement coordinators to judge, but we recommend that trial interviews be considered for others with similar programs to ours. For programs with large numbers, a select group of students, those deemed most likely to benefit, could be offered the service of a trial interview rather than offering a more broad-based service. An alternative is to develop a model for the trial interview based on the model designated in Figure 1 and Table 2. This could be provided to students as a resource along with suggestions for appropriate responses. Students could conduct practice interviews with peers, perhaps in a group session, mediated by a faculty member to provide feedback.

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<sup>1</sup> Correspondence regarding this article should be sent to Richard K. Coll, Cooperative Education Unit, School of Science and Technology, The University of Waikato, Private Bag 3105, Hamilton, New Zealand. Electronic mail may be sent to [r.coll@waikato.ac.nz](mailto:r.coll@waikato.ac.nz).