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Maximizing work integrated learning experiences through identifying graduate competencies for employability: a case study of sport studies in higher education

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Cooperative education, practicum or work integrated learning (WIL) experiences aim to develop appropriate competencies that enhance employability. The purpose of this study was to identify employers expectations of key student and graduate competencies, to ensure students are 'WIL ready', and graduates are in turn 'work ready'. A mixed method case study approach included an online quantitative survey of sport industry supervisors and university academic supervisors, and a qualitative open ended survey administered to sport management graduates. Findings indicated that to maximize the WIL experience for students and to enhance employability academic programs within the university need to provide opportunities for students to develop competencies including the ability and willingness to learn, the use of initiative and personal organizational skills. WIL experiences should be designed to allow for students to develop in the areas of communication, self-confidence, relationship building as well as teamwork and cooperation to increase the likelihood of graduate employment. (Asia-Pacific Journal of Cooperative Education, 2009, 10(3), 189-201).

KEYWORDS: Work integrated learning, graduate, student, competencies, sport.

The overall aims of cooperative education, practicum, or work integrated learning (WIL) experiences are to prepare students for the workplace by developing both generic and specific competencies that will enhance employability. According to Yorke (2004), employability involves the appropriate knowledge, skills and personal attributes to help people gain employment and make an effective contribution at work. The purpose of this paper is to assist higher education stakeholders (students, academic and workplace supervisors) by identifying employer's expectations to ensure students are 'WIL ready', and graduates in turn, are 'work ready'. The context is that of a higher education sport studies case study.

Careers in sport are often not well defined and until recently have centered around physical education teaching or within the fitness industry (Hayes & Gunson, 1999). However, over the last 10 years, a broader range of career opportunities has become available to graduates of sport degree programs. Incorporating a WIL experience into a degree program in sport and recreation is therefore seen as a vital stepping-stone in facilitating career guidance and future employment within the industry (Fleming & Ferkins, 2006). Many authors support the concept that programs of study that include a component of experiential learning in an

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authentic work place setting can provide an effective means for developing a comprehensive skill set desired by potential employers (see reviews by Braunstein & Loken, 2004; Dressler & Keeling, 2004; Patrick et al., 2008). It has also been highlighted in the literature that it is often problematic for higher education providers to equip students with appropriate skills, especially behavioral skills and that universities do not sufficiently emphasize the development of behavioral skills to prepare graduates for professional life (Burchell, Hodges & Rainsbury, 2000; Coll & Zegwaard, 2006). It is important therefore to determine what are the attributes valued most by employers in a discipline context (in this case sport), and what competencies the higher education institute should concentrate its efforts on so that both the learning experience for the student in the workplace and the likelihood of employment as a graduate can be maximized.

DEFINING COMPETENCY

The definitions and meaning of competency are numerous and often used in a similar context to the terms generic skills and attributes (Barrie, 2006; Coll & Zegwaard, 2006; Spencer & Spencer, 1993; Weisz, 2000). From an educational perspective, the New Zealand Qualifications Authority (1997) defines competency as the ability of individuals to apply knowledge skills, attitudes and values to standards of perfection. However, from an industry perspective, competency can be seen to be the underlying personal characteristics of an individual that facilitate superior performance in a given situation (Spencer & Spencer, 1993). An individual is deemed competent if he/she has the generic skills and attributes relevant to the tasks to be undertaken (Coll & Zegwaard, 2006). Attributes can be defined as fundamental characteristics of a person (Weisz, 2000); they are the personal qualities that are applied by an individual to a specific task or situation. Skill can be defined as an attribute or ability to perform a task to an acceptable level, the routine implementation of the acquired knowledge or attributes (Canter, 2000). Birkett (1993) believes that it is the relationship between contextual task performance and individual attributes that constitutes competence. Weisz (2000) comments that many co-op employers used the terms attributes, competencies and behaviors interchangeably to mean non-discipline specific skills, or generic skills. Barrie, (2006) in a study of Australian academics, found that there was a lack of common understanding of the terms. For the purpose of this paper and to allow comparison with similar studies the term competency will be used and represented as:

> The personal characteristics of an individual that result in superior performance in a given situation … Competency is related to the manner in which individual attributes, such as knowledge, skills and attitudes are drawn on in performing tasks in specific work contexts, which result in overall job performance. (Coll & Zegwaard, 2006, p. 31)

Individual attributes consist of both cognitive (hard) skills and behavioral (soft) skills. These cognitive skills are technical knowledge, analytical and appreciative skills (Birkett, 1993). Technical skills represent the ability to apply technical knowledge with some expertise. Spencer and Spencer (1993) indicate that technical skills contain a minimum threshold necessary to be able to perform a job with basic competence. Analytical and constructive skills are concerned with problem identification and the development of solutions, whereas appreciative skills refer to the ability to evaluate complicated solutions and make complex and creative judgments (Coll & Zegwaard, 2006). In contrast, behavioral skills are a function of the individual's personality and comprise interpersonal skills and organizational skills. Behavioral skills comprise personal skills that relate to how one responds and handles various situations including managing relationships between people (Birkett, 1993). Coll and

Zegwaard (2006) comment that behavioral skills are primarily affective in nature and associated with a blend of innate characteristics and personal and interpersonal skills.

GRADUATE COMPETENCIES IN SPORT AND RECREATION

A report on graduate recruitment in the leisure industry in Australia highlighted that a strong knowledge-base alone does not guarantee a new graduate employment, and that the personal attributes and capabilities of the graduate are considered to have a greater influence on success in the workplace (Bell, Crebert, Patrick, Bates & Cragnolini, 2003). Bell et al. (2003) considered to what degree the work placement, as part of a degree program, contributed to the development of generic skills and abilities. Results of this investigation acknowledged that there was strong support for university work placements as an important contributor to graduate skills development for employment. Among graduates of the leisure management program at Griffith University, 82% of respondents agreed that university work placements provided sufficient opportunity to develop generic skills and abilities (Bell et al., 2003).

Sleap and Reed (2006) also highlight the importance of work placements in developing appropriate attributes for graduates in sport science. In their study it was reported by graduates that work placements had clearly been helpful in developing communication skills, interpersonal skills, reliability, self confidence and awareness of work culture. The graduates also acknowledged that university experiences had also contributed to the development of many work skills such as time-keeping, self confidence, leadership, teamwork, initiative and presentation skills. Fleming and Eames (2005) reported similar findings in a study of sport and recreation cooperative education students. Responses to a questionnaire indicated that the cooperative education experience had enabled students to learn oral and written communication skills, time management, reflective thinking, critical analysis, teamwork, problem solving and research skills. Interview responses from the sport and recreation cooperative education students confirmed the importance of the development of interpersonal skills, and also highlighted that students gained confidence, leaderships skills and a range of practical and technical skills during their cooperative education experience.

In a small study examining New Zealand job advertisements in sport during a three-month period, Wiersma and Bradbury (2004) identified behavioral skills' such as communication, customer service, motivation, passion and enthusiasm, as well as practical work experience as being important requirements for employability in the sport and recreation industry. A search of the literature failed to identify any research that described the competencies that students should have developed through their university studies to enable them to undertake a successful WIL experience in the sport and recreation industry. Overall there is very little published research on the perceptions of the skills or graduate competencies that employers desire of sport and recreation graduates entering the workforce. However, researchers have investigated the competencies relevant to business and to science and technology graduates (Burchell, Hodges & Rainsbury, 2000; Coll & Zegwaard, 2006; Hodges & Burchell, 2003; Rainsbury, Hodges, Burchell & Lay, 2002). Each of the listed studies utilized generic categories adapted from Spencer and Spencer (1993) that are claimed to account for 80-95% of superior performers in technical and managerial positions. The competency categories used in these studies have been used as a model for this current research so that cross sector comparisons can be made.

The aims of this current study were to identify

- Key competencies needed by sport and recreation students entering their work placements;
- The difference between student and graduate competencies;
- How the following people (students, academic practicum supervisors, theoretical paper coordinators and work place supervisors) could help students maximize their work place experience.

METHOD

This study employed a collective case study methodology (Bassey, 2003; Stake, 2008), mixing qualitative and quantitative approaches to enhance the richness of the data (Cohen, Manion, & Morrison, 2003; Hussey & Husssey, 1997; Yin, 2003). The mixed-method case study allowed the researchers to gain an in-depth understanding of the issues of interest and to explore meaning from a number of angles and across different educational contexts (Merriam, 1998). First, quantitative research was undertaken within the context of the Bachelor of Sport and Recreation (BSR) at AUT University Auckland, New Zealand. The BSR is a three-year degree program designed to prepare students for careers in the areas of sport science, sport and recreation management, coaching, physical activity, nutrition and health, physical education, and outdoor education. Second, qualitative research was undertaken within the context of the Bachelor of Business Studies (BBS, major in sport business management), and the Bachelor of Sport & Exercise (BSE, major management & coaching) at Massey University, Palmerston North, New Zealand. The cooperative education component of all these degrees involves final year students completing a major project over two semesters based within a sport or recreation organization. The learning experience is facilitated and supported by an industry supervisor from the placement organization as well as by an academic supervisor from the university.

In the quantitative BSR study, industry supervisors (17/45) and academic supervisors (12/15) of BSR students (2006/2007) completed an on-line survey. Supervisors rated 24 specific competencies of work place learning for the cooperative education student and for the graduate (adapted from Burchell, Hodges & Rainsbury, 2000; Coll & Zegwaard, 2006; terms were defined for clarity, Figure 1), using a seven-point Likert scale (1=unimportant; 7=important). Participants were prompted to add any further competencies if they deemed it appropriate. Mean values and standard deviations were calculated for all competencies. The analysis assumes that the scale is linear with equal intervals. Chi-squared analysis was applied to determine significant differences between competencies required of cooperative education students and graduates. Non-parametric statistics were used, as this was deemed more appropriate for the small sample size and non-normality in the data. Ethics approval was gained from the AUT University ethics committee.

In the qualitative BBS and BSE study, a questionnaire was emailed to a sample of previous graduates (30/100), some of whom had also been work place supervisors. The three open-ended questions focused on

1. How the following people (students, academic practicum supervisors, theoretical paper coordinators and work place supervisors) could help students maximize their work place experience?;
2. The five most important competencies that students should focus on during their work place experience to make them employable; and

3. How the above people could assist students in developing these competencies before and during the practicum?

The descriptive responses were coded and then combined into themes. The nature of qualitative and case study research seeks to form a unique interpretation of events rather than produce generalizations, but it is expected that the findings of this current project can be transferred to other WIL contexts. The credibility and dependability of the research was enhanced by triangulating the data involving relevant documentation (e.g., course/paper outlines, graduate profiles, etc.) and literature (Stake, 2008; Yin, 2003). The reporting of the descriptive responses attempts to convey the holistic understanding and meaning of the phenomena under study (Merriam, 1998).

RESULTS

Quantitative

Industry supervisors responded from the following sport or recreation organizations: Regional sports organizations (4), schools (4), recreation centers (2), sports performance centers (2), regional councils (2), sports club (1), physical activity and health promotion agency (1), outdoor recreation (1). Three years was the average length of time participants had been involved as industry supervisors for BSR cooperative education students. Only one participant had been in the role of industry supervisor for one year. The results from the industry perspective (Table 1) indicate that the five most important competencies for a student to have developed prior to starting their cooperative education placement were: *Ability and willingness to learn* (mean 6.18); *initiative* (5.59); *personal planning and organizational skills* (5.35); *interpersonal understanding* (5.12) and *concern for order, quality and accuracy* (5.00). Similarly the top three competencies were rated in the same order for the graduate as for the student: *Ability and willingness to learn* (6.88); *initiative* (6.76); *personal planning and organizational skills* (6.53). *Relationship building* (6.53) and *teamwork and cooperation* (6.35) were also rated in the top five of importance for the graduate.

From the academic supervisor's perspective (see Table 2), the cooperative education student's, *ability and willingness to learn* (5.75) was ranked the highest followed by *interpersonal understanding* (4.75), *computer literacy* (4.67) *written communication* (4.58), *personal planning and organizational skills* (4.42) and *initiative* (4.25). For the graduate, the top four competencies were the same as the industry supervisor's perspective. However, *conceptual thinking* (6.33) was ranked in the top five by the academic supervisors. Mean values for all competencies from the industry perspective were above five (out of a possible seven) for the graduate. However, only six competencies had a mean value above five for the student. Similar trends were found from the academic supervisors' perspective. Industry supervisors rated the least important competencies for a student to have prior to starting their cooperative education experience as: *Directiveness* (2.94); *impact and influence on others* (3.06); *developing others* (3.05); *team leadership* (3.05) and *organizational awareness* (3.41). The least important competencies for graduates were *impact and influence on others* (5.06), *written communication* (5.06) and *information seeking* (5.12). When the data were separated into behavioral versus cognitive competencies (for categories see Figure 1), the behavioral ones had higher average mean values for both students and graduates when compared to the cognitive values.

From the industry data, when analyzing the number of responses for a rating of seven (important), there was a significant correlation between the responses for the student and for the graduate (correlation coefficient = 0.74). Chi-squared analysis compared the proportions of ratings of the competency as seven between student and graduate. The null hypothesis was that there was no significant difference between the proportions for students compared to graduates. For the competencies *teamwork and cooperation* and *analytical thinking* the Chi-squared values exceeded the critical value of 3.841 with one degree of freedom. Therefore, it is concluded that the proportion was significantly higher at the 5% level of significance for the graduate.

Qualitative

There were nine key themes developed from the qualitative findings: *Enthusiastic participation, self sufficiency, and personal organization* were similar to the top three highlighted key competencies from the quantitative findings, *ability and willingness to learn, initiative and personal planning,* and *organizational skills*. The following typical comments from a student, academic and workplace supervisor, respectively, highlight each theme. These comments have been compiled and published in "*How to make the most of work integrated learning*: *A guide for students, lecturers and supervisors"* (Martin & Hughes, 2009):

Immerse yourself... don't go into a [workplace] situation trying to be an observer, but to utterly embrace the experience.

Keep reinforcing the importance of showing initiative and being proactive.

Have action plan type documents and make sure the students are involved in completing these. This may help them see the bigger picture and how things are broken down into smaller tasks.

The soft skills themes identified, *communication skills, self confidence,* and *customer relationship management,* support those highlighted in job adverts as being important requirements for employability (Wiersma & Bradbury, 2004).

Learn how to 'talk' to different people and realize that people need to be communicated to in different ways.

Encourage openness so that students understand it is better to ask for help than to get things wrong when it matters.

Get the student to put themselves in the customer's shoes and understand what it is that they want of the service that you provide.

The context specific competencies of developing *professional networks, industry & business knowledge, and professional ethics* were the other three themes identified.

When in [the workplace] organization leave the student persona at the door and imagine yourself as a member of staff, and what the required conduct would be for actions, dress, etc.

Ensure the students know clear expectations on their behavior before they undertake their [project(s)]. Maybe they need to have practice meetings, or an induction to being in the workplace.

Have clear expectations for the students about professionalism, and how the organization operates. Ensure there is a good process in place to induct students into the organization.

DISCUSSION

The findings of this study highlight that personnel within the sport and recreation industry and academic supervisors believe that the most important competencies, that is, *ability and willingness to learn/enthusiastic participation*, *initiative/self sufficiency and personal planning*, and *organizational skills*, are needed by both a cooperative education student and a graduate. To enhance employability, these competencies need to be supported and reinforced throughout

the student's undergraduate program in addition to being emphasized during the cooperative education experience.

In order to create *ability and willingness to learn*, students need to be exposed to new, exciting and authentic experiences relevant to their discipline of study (Coll & Zegwaard, 2006). In the university setting, this can be achieved by lecturers sharing industry relevant experiences to inspire students and create enthusiasm for the discipline. In the industry setting, the student experience needs to be meaningful, have clear objectives, and the nature of the tasks carried out by the student need to be challenging while attainable. In order to foster a sense of achievement, students need to be encouraged to reflect on their experiences in order to acknowledge that new learning has occurred (Fleming & Martin, 2007).

Development of *initiative* and *personal organizational skills* can be facilitated through learning strategies such as project work, which occurs in both the university and industry settings. Undertaking a project for the organization during these sport and recreation cooperative experiences has been reported by students to develop *initiative* and *personal organization,* as well as providing opportunities for increased *self sufficiency* and the development of *self confidence* (Fleming & Eames, 2005; Martin & Leberman, 2005). While *personal organization* is constantly reinforced through their program of study, it is during the industry experience that the students develop the *self confidence* necessary to develop not only *self sufficiency* but *initiative* within their practice.

Academic supervisors' ranked *computer literacy* and *written communication* in the top five competencies for the students to have developed prior to starting their cooperative experience. This may be a reflection on the requirements for students to complete the academic assessments (e.g., reflective journal & final project report). The work activities undertaken by students during their cooperative experience may not necessarily require these competencies, and this may account for the different focus in the ranking for these competencies by industry and academic supervisors"

Be familiar with Microsoft documents, including MS Word and MS Excel as well as other computer programs and computers in general.

Give warning to students about the computer programs they are likely to need to use and offer them places to look for information on how to use them if they don't know.

Be willing to teach the students how to use computer programs if they don't know and mentor them while working on it until they feel confident to do it by themselves.

It is important to note that supervisors considered all competencies listed in the survey to be relatively important for a graduate but overall not as important for a student. This reinforces the importance of the development and ongoing active utilization of these competencies throughout the cooperative education experience. Furthermore, students should focus on the competencies of *relationship building* and *developing teamwork and cooperation* during their industry placement, as these were ranked within the top five desired of the graduate but not of the student. Previous research within the BSR program has highlighted that the amount of time (350 hours) spent during the cooperative education experience is important for *relationship building* and enculturation into the community of practice (Fleming & Eames, 2005). From the industry perspective, the biggest gap between student and graduate competencies (identified as statistically significant) was *teamwork and cooperation* and *analytical thinking*:

It's not what you know, it's who you know. Ask the contact to consider their current networks and how they could extend and develop these.

Give the students opportunities to develop and extend their networks via ex-students, visits to organizations, guest lectures, exposure to a range of networks in the community...

Ask students what their job prospects are and then expose them to networks which may help.

Teamwork, cooperation and analytical thinking are the competencies that are needed for solving problems and creating solutions in collaboration with others in the workplace context. Therefore, these competencies are likely to be considered more important for a graduate than a student who is new to the workplace setting.

The findings of this study are consistent with those identified by Coll and Zegwaard (2006) where science and technology, and business sector employer cohorts ranked *ability and willingness to learn* as the top desired competency. *Initiative* was also identified as one of the top five competencies by both groups. *Customer service* skills are highlighted as a key competency by the business sector, correlating with the outcomes reported by Wiersma and Bradbury (2004). However, the findings of the current study align more closely to those of the science and technology sector, in that *customer service* skills were not ranked among the top five competencies. This could be due to the diverse range of organizations within the sport and recreation industry where a customer relationship management approach is not considered essential to the core business. Also consistent with Coll and Zegwaard (2006), are the findings of the least important competencies required by graduates, which included *directiveness*, *organizational awareness*, *developing others,* and *impact and influence on others*.

As employment opportunities in some areas of sport are limited, that is, sport performance and exercise science, transferable skills are essential for creating expanded opportunities in related vocations. In addition, there is considerable diversity within the sport and recreation industry such that a full range of skills cannot be covered in any one degree structure. A graduate with specific knowledge may be considered an advantage to some employers, but more often this knowledge is better learned within the specific work context where it will be utilized. This is supported by the findings of this study that indicate that *technical skills and competence* were ranked 14 out of 24 in importance for a graduate. This is further illustrated when the importance of behavioral skills is compared to cognitive skills (often referred to as the soft and hard skills, respectively). The supervisors rated the behavioral skills of greater importance than cognitive skills for both students and graduates. It is frequently reported in the literature that universities do not emphasize the development of the behavioral skills and that the focus is more on the cognitive skills (Coll & Zegwaard, 2006; Wiersma & Bradbury, 2004). However, cooperative education experiences included within the curriculum have been shown to support the development of behavioral competencies (Dressler & Keeling, 2005). The findings of this study highlight that students' need a certain level of behavioral competencies prior to starting their cooperative experience and that it cannot be assumed that the development of such competencies can be left entirely for the work integrated learning component of a degree in sport and recreation.

CONCLUSION AND IMPLICATIONS

To enhance employability in the sport and recreation industry, work integrated learning programs need to be designed so that students are provided with opportunities to facilitate the development of competencies including the *ability and willingness to learn/ enthusiastic participation*, the use of *initiative/ self sufficiency,* and *personal organizational skills*. *Relationship*

building/ developing professional networks as well as *teamwork and cooperation* aims to develop *communication skills, self confidence, and customer relationship management.*

The mixed method approach allowed comparison with and confirmation of previous statistical survey findings (Burchell, Hodges & Rainsbury, 2000; Coll & Zegwaard, 2006) and also reported the descriptive responses (from students, academic practicum supervisors, theoretical paper coordinators and work place supervisors), which aim to help students maximize their work place experience (Martin & Hughes, 2009). It is hoped that the findings of this study will be transferrable across a range of higher education sectors, and assist students, academic and workplace supervisors in developing and enhancing key student attributes throughout their WIL experience in order to increase the likelihood of employment as graduates. Specific activities within the workplace setting should be negotiated as part of the learning experience in order to foster the development of key attributes.

Further work is needed to identify and communicate to the higher education providers the attributes (knowledge, skills, attitudes, values) they value in graduates in order to create successful WIL partnerships and further develop students *industry & business knowledge, and professional ethics*. Academic staff can then map activities and assessments that currently take place throughout the degree to employer's expectations to ensure students are 'WIL ready' and graduates in turn are work ready. In turn, employers, at a time economic challenges, need to be more aware of how they can maximize the student's WIL opportunities, which will also add further value and ensure return on investment to their organization.

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FIGURE 1
Definitions of competencies (Coll & Zegwaard, 2006 - from Spencer & Spencer, 1993)
*Behavioral competencies (as categorized by Coll & Zegwaard, 2006).

Teamwork & cooperation * (fosters group facilitation and management, conflict resolution, motivation
Flexibility * (adaptability, perceptual objectivity, staying objective, resilience, behavior is contingent on the situation)
Relationship building * (networking, establish rapport, use of contacts, concern for stakeholders e.g. clients)
Conceptual thinking (pattern recognition, insight, critical thinking, problem definition, can generate hypotheses, linking)
Technical expertise (job related technical knowledge and skills, depth and breadth, acquires expertise, donates expertise)
Organizational awareness (understands organization, knows constraints, power and political astuteness, cultural knowledge)
Concern for order, quality & accuracy * (monitoring, concern for clarity, reduces uncertainty, keeping track of events and issues)
Impact & influence on others * (strategic influence, impression management, showmanship, persuasion, collaborative influence)
Initiative * (bias for action, decisiveness, strategic orientation, proactive, seizes opportunities, self motivation, persistence)
Customer service orientation * (helping and service orientation, focus on client needs, actively solves client problems)
Developing others * (training, developing others, coaching, mentoring, providing support, positive regard)
Directiveness * (assertiveness, decisiveness, use of power, taking charge, firmness of standards, group control and discipline)
Team leadership * (being in charge, vision, concern for subordinates, builds a sense of group purpose)
Analytical thinking (thinking for self, reasoning, practical intelligence, planning skills, problem analyzing, systematic)
Self control * (stamina, resistance to stress, staying calm, high Emotional Quotient, resists temptation, not impulsive, can calm others)
Organizational commitment * (align self and others to organizational needs, business-mindedness, self sacrifice)
Ability and willingness to learn * (desire and aptitude for learning, learning as a basis for action)
Interpersonal understanding * (empathy, listening, sensitivity to others, diagnostic understanding, awareness of others' feelings)
Self confidence * (strong self concept, internal locus of control, independence, positive ego strength, decisive, accepts responsibility)
Personal planning and organizational skills
Written communication
Information seeking * (problem definition, diagnostic focus, looking deeper, contextual sensitivity)
Achievement orientation * (task accomplishment, seeks results, employs innovation, has

TABLE 1
Industry supervisor ratings of the importance of competencies for the student prior to starting their cooperative education experience and the graduate

	STUDENT		GRADUATE	
	Mean (SD)	**Ranking**	**Mean (SD)**	**Ranking**
Teamwork & cooperation	4.35 (1.32)	10	6.35 (1.06)	5
Flexibility	5.0 (1.37)	5	6.05 (1.20)	10
Relationship building	3.52 (1.94)	18	6.52 (0.87)	4
Computer literacy	4.52 (1.62)	9	5.35 (1.58)	18
Conceptual	4.11 (1.83)	12	5.41 (1.58)	16
Technical expertise	3.47 (1.97)	19	5.58 (1.33)	14
Organizational awareness	3.41 (1.97)	20	5.35 (1.41)	17
Concern for order, quality & accuracy	5.0 (1.70)	6	6.23 (1.09)	6
Impact influence on others	3.05 (1.68)	21	5.05 (1.25)	24
Initiative	5.58 (1.33)	2	6.76 (0.66)	2
Customer service	4.11 (1.76)	13	5.94 (1.20)	11
Developing others	3.05 (2.33)	22	5.29 (1.45)	20
Directiveness	2.94 (1.75)	24	5.29 (1.05)	19
Team leadership	3.05 (2.11)	23	5.23 (1.30)	21
Analytical thinking	3.76 (1.75)	17	5.88 (1.27)	13
Self control	4.75 (1.81)	15	5.88 (1.11)	12
Organizational commitment	4.11 (2.26)	14	5.47 (1.42)	15
Ability, willingness to learn	6.17 (1.38)	1	6.88 (0.49)	1
Interpersonal understanding	5.11 (1.90)	4	6.05 (1.20)	9
Self confidence	4.05 (1.75)	8	6.05 (1.20)	8
Personal planning, org skills	5.35 (1.58)	3	6.529 0.87)	3
Written communication	3.82 (1.88)	16	5.05 (1.60)	23
Information seeking	4.17 (1.47)	11	5.11 (1.27)	22
Achievement orientation	4.76 (1.71)	7	6.05 (1.39)	7

TABLE 2
Academic supervisor ratings of the importance of competencies for the student prior to starting their cooperative education experience and the graduate

	STUDENT		GRADUATE	
	Mean (SD)	**Ranking**	**Mean (SD)**	**Ranking**
Teamwork & cooperation	3.83 (1.47)	9	6.25 (1.14)	6
Flexibility	3.83 (1.11)	11	6.08 (1.16)	9
Relationship building	3.17 (1.80)	17	6.42 (1.08)	4
Computer literacy	4.67 (1.67)	3	5.50 (1.57)	16
Conceptual	3.33 (1.50)	16	6.33 (0.98)	5
Technical expertise	2.75 (1.86)	19	5.00 (2.04)	20
Organizational awareness	2.42 (1.38)	22	5.00 (2.04)	19
Concern for order, quality & accuracy	3.58 (1.51)	12	5.92 (1.16)	11
Impact influence on others	2.50 (1.83)	21	4.08 (1.56)	23
Initiative	4.25 (1.29)	6	6.67 (0.78)	2
Customer service	3.33 (1.67)	14	6.17 (1.27)	8
Developing others	1.92 (1.38)	24	4.25 (1.14)	22
Directiveness	2.58 (1.62)	20	4.42 (1.38)	21
Team leadership	2.08 (1.51)	23	3.92 (1.31)	24
Analytical thinking	3.58 (1.44)	13	6.17 (1.27)	7
Self control	3.83 (1.34)	10	5.50 (1.17)	15
Organizational commitment	3.08 (1.68)	18	5.17 (1.47)	17
Ability, willingness to learn	5.75 (1.42)	1	6.67 (0.78)	1
Interpersonal understanding	4.75 (1.96)	2	5.92 (1.16)	10
Self confidence	3.33 (1.50)	15	5.00 (1.35)	18
Personal planning, org skills	4.42 (1.38)	5	6.42 (1.05)	3
Written communication	4.58 (1.68)	4	5.58 (2.02)	14
Information seeking	3.83 (1.47)	8	5.67 (1.30)	13
Achievement orientation	4.08 (1.16)	7	5.75 (1.14)	12

ABOUT THE JOURNAL

The Asia-Pacific Journal of Cooperative education (APJCE) arose from a desire to produce an international forum for discussion of cooperative education issues for practitioners in the Asia-Pacific region and is intended to provide a mechanism for the dissemination of research, best practice and innovation in work-integrated learning. The journal maintains close links to the biennial Asia-Pacific regional conferences conducted by the World Association for Cooperative Education. In recognition of international trends in information technology, APJCE is produced solely in electronic form. Published papers are available as PDF files from the website, and manuscript submission, reviewing and publication is electronically based.

Cooperative education in the journal is taken to be work-based learning in which the time spent in the workplace forms an integrated part of an academic program of study. Essentially, cooperative education is a partnership between education and work, in which enhancement of student learning is a key outcome. More specifically, cooperative education can be described as a strategy of applied learning which is a structured program, developed and supervised either by an educational institution in collaboration with an employer or industry grouping, or by an employer or industry grouping in collaboration with an educational institution. An essential feature is that relevant, productive work is conducted as an integral part of a student's regular program, and the final assessment contains a work-based component. Cooperative education programs are commonly highly structured and possess formal (academic and employer) supervision and assessment. The work is productive, in that the student undertakes meaningful work that has economic value or definable benefit to the employer. The work should have clear linkages with, or add to, the knowledge and skill base of the academic program.

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The editorial board welcomes contributions from authors with an interest in cooperative education. Manuscripts should comprise reports of relevant research, or essays that discuss innovative programs, reviews of literature, or other matters of interest to researchers or practitioners. Manuscripts should be written in a formal, scholarly manner and avoid the use of sexist or other terminology that reinforces stereotypes. The excessive use of abbreviations and acronyms should be avoided. All manuscripts are reviewed by two members of the editorial board. APJCE is produced in web-only form and published articles are available as PDF files accessible from the website http://www.apjce.org.

Research reports should contain; an introduction that describes relevant literature and sets the context of the inquiry, a description and justification for the methodology employed, a description of the research findings-tabulated as appropriate, a discussion of the importance of the findings including their significance for practitioners, and a conclusion preferably incorporating suggestions for further research. Essays should contain a clear statement of the topic or issue under discussion, reference to, and discussion of, relevant literature, and a discussion of the importance of the topic for other researchers and practitioners. The final manuscript for both research reports and essay articles should include an abstract (word limit 300 words), and a list of keywords, one of which should be the national context for the study.

Manuscripts and cover sheets (available from the website) should be forwarded electronically to the Editor-in-Chief directly from the website. In order to ensure integrity of the review process authors' names should not appear on manuscripts. Manuscripts should include pagination, be double-spaced with ample margins in times new-roman 12-point font and follow the style of the Publication Manual of the American Psychological Association in citations, referencing, tables and figures (see also, http://www.apa.org/journals/faq.html). The intended location of figures and diagrams, provided separately as high-quality files (e.g., JPG, TIFF or PICT), should be indicated in the manuscript. Figure and table captions, listed on a separate page at the end of the document, should be clear and concise and be understood without reference to the text.