Exploring the link between self-efficacy, workplace learning and clinical practice

JENNIFER COX 1
MAREE DONNA SIMPSON
Charles Sturt University, Orange, Australia

Pre-registration nurse education includes both conceptual and practical elements to prepare graduates for the transition to clinical practice. Workplace learning plays an important role in developing students’ confidence, clinical skills and competency. This paper explores the, perhaps overlooked, centrality of self-efficacy to all areas of influence on students’ and graduates’ nursing practice, and proposes that clinical practice, in fact, lies at the intersection of self-efficacy and knowledge of core concepts. The potentially significant implications for both nursing education and clinical practice including the need for greater consideration of the pervasive influence of students’ self-efficacy in future curriculum development, are discussed. (Asia-Pacific Journal of Cooperative Education, 2016 17(3), 215-225)

Keywords: Self-efficacy, workplace learning, nursing education, competency, infection control

BACKGROUND

Pre-registration nurse education includes both conceptual and practical elements to prepare graduates for the transition to clinical practice. Nursing practice “encompasses both the scientific knowledge acquired during pre-registration training and the ‘rules of thumb’ that are largely acquired during on-the-job training and experience” (Dreyfus & Dreyfus, 2009, p. 1). Australian nursing students are required to participate in at least 800 hours of workplace learning (clinical placements) over the course of their program in a variety of healthcare settings (Australian Nursing and Midwifery Accreditation Council [ANMAC], 2012). The Australian accreditation guidelines stipulate that these workplace experiences should “…provide timely opportunities for experiential learning of curriculum content that is progressively linked to attaining the current National Competency Standards for the Registered Nurse” (ANMAC, 2012, p. 18).

Workplace learning (WPL) provides “integrative learning activities to promote application of disciplinary knowledge learned at university to real-world work contexts” (Smith & Worsfold, 2015, p. 22). Improvement in students’ self-efficacy and generic skills such as problem-solving, oral communication and critical thinking have been reported as outcomes of WPL (Freudenberg, Brimble and Cameron, 2011; Jackson, 2013; Subramanian & Freudenberg, 2007). For nursing students, the interactions undertaken with staff and patients in an authentic healthcare setting provide not only an understanding of the cultures and values of the nursing profession but of themselves in the professional world (Danielson & Berntsson, 2007). Thus, workplace learning is a key component in the process of professional socialization (Zarshenas et al., 2014).

In any healthcare profession, it is imperative that students are able to transfer their undergraduate knowledge and skills into practice to become competent practitioners. According to Woods et al. (2015) “…employers expect graduate nurses to be work ready, which includes meeting the competency standards and being able to function safely and independently, or in other words, ready to ‘hit the ground running’ in relation to providing clinical care” (p. 360). Despite the many hours of workplace learning undertaken during pre-registration training, new graduate nurses are often perceived (by employers) to be

1 Corresponding author: Jennifer Cox, jcox@csu.edu.au
underprepared for the demands and challenges of the clinical environment (Greenwood, 2000) and the transition to practice can be both complex and stressful (Kaithlanen, Lakanmaa, & Salminen, 2013; Newton & McKenna, 2007). New graduates often report being overwhelmed by the workload required of them, feeling “constantly challenged by their wavering confidence” (Duchscher, 2008, p. 444) and find themselves “seeking acceptance into a tradition-bound and hierarchical nursing culture” (Duchscher, 2008, p. 445).

Demanding workloads and a pervasive need to ‘fit in’ can influence new graduates’ clinical practice. One such example is in the area of Infection prevention and Control (IC). With healthcare-associated infections (HAIs) now being the most common adverse effect of healthcare, the re-emergence of infectious diseases such as Zika virus and an ever-increasing body of antibiotic-resistant microorganisms, the importance of properly applied IC practices in the healthcare environment cannot be overstated. Despite this impetus and the seriousness of the consequences, the infection control knowledge of health professional graduates, globally, has consistently been reported to be inadequate (Lugg & Ahmed, 2008; Sax et al., 2005; Shaban, 2006), potentially exposing themselves, their colleagues and their patients to life-threatening diseases.

The cause of sub-optimal IC knowledge/practice of nursing graduates is likely to be multifactorial. We have previously argued that nursing graduates’ IC knowledge, intentions and practice is influenced by: perceptions of science, health behavior beliefs, applied knowledge (microbiology) and clinical placement experiences (Cox, Simpson, Letts, & Cavanagh, 2015). Considered individually, however, none of these factors are sufficient alone to explain the systemic and ongoing sub-optimal infection control practices of healthcare workers (HCWs). As stated previously, there is little doubt that this is indeed a multi-factorial problem. However, upon closer inspection, there is one common but perhaps overlooked explanatory construct - self-efficacy - that underpins and/or influences each of the aforementioned factors.

SELF-EFFICACY – ROLE AND IMPLICATIONS FOR NURSING EDUCATION AND PRACTICE

Self-efficacy is defined as “people’s judgment of their capabilities to organize and execute courses of action required to attain designated types of performances” (Bandura, 1986, p. 391). It is neither a static nor global trait but “a differentiated set of self-beliefs linked to distinct realms of functioning” (Bandura, 2006, p. 307). Thus, a person may feel highly efficacious in relation to one domain (e.g., parenting) but have low self-efficacy in relation to another domain (e.g., career progression).

Efficacy beliefs and expectations can be developed from four principal sources:

1. performance accomplishment of similar tasks (mastery experiences)
2. vicarious experience (observation of the success or failure experiences of other people)
3. verbal persuasion (positive feedback/suggestions from mentors and/or peers)
4. self-evaluation of physiological state.

In recent decades, self-efficacy has been recognized as an important factor in student motivation and learning and as a predictor of academic success (Bartimote-Aufflick, Bridgeman, Walker, Sharma & Smith, 2015; Gore, 2006). In the context of nursing education, nursing self-efficacy has been described as the “expectations of learning the knowledge base and performing the various skills necessary to become a registered nurse” (Harvey &
Students who have a strong nursing self-efficacy will perform academic tasks with a greater degree of confidence, undertake challenging tasks more readily and persist longer in the face of obstacles or difficulties (Zimmerman, 2000). More importantly, increased self-efficacy has been linked to improved professional practice behaviors (Manojlovich, 2005). Bandura (1982, p. 122) described the important influence of self-efficacy in the following way:

Knowledge, transformational operations, and component skills are necessary but insufficient for accomplished performances. Indeed, people often do not behave optimally, even though they know full well what to do. This is because self-referent thought also mediates the relationship between knowledge and action.

Thus, this construct has potentially significant implications for both nursing education and clinical practice.

**Foundation Knowledge (Microbiology)**

Bioscience subjects, which commonly incorporate anatomy, physiology, microbiology, chemistry and pharmacology, are a central component of pre-registration nursing curricula. The application and relevance of this knowledge to clinical practice has been illustrated in a number of qualitative studies (Jordan & Reid, 1997; Prowse & Lyne, 2000). Infection prevention and control policies and practices, for example, are underpinned by an understanding of microbiology (Roark, 2005) and misconceptions about microbiological principles and/or inaccurate perceptions of risk can hamper HCWs’ capacity to implement appropriate IC precautions (Gould, 1995; Prieto & Clark, 2005). Despite the widely acknowledged importance of bioscientific knowledge as a foundation for safe and effective nursing practice (Birks, Ralph, Cant, Hillman, & Chun Tie, 2015; Clancy, McVicar, & Bird, 2000), nursing students’ anxiety about studying science and the long-held perceptions of science being difficult and irrelevant to nursing practice are well documented (Courtenay, 1991; McVicar, Andrew & Kemble, 2014). These perceptions may negatively impact student’s ability to learn and later apply microbiological and indeed scientific principles in general (Minasian-Batmanian, Lingard, & Prosser, 2005).

Self-efficacy has been shown to predict the success of nursing students in bioscience subjects. Andrew (1998) found science self-efficacy could predict up to 24% of students’ academic performance in a first-year nursing bioscience subject. Thus, enhancing students’ science self-efficacy would seem a likely focus for improving student success in these subjects. McVicar et al. (2014, p. 508), however, warned: “...the common practice of curriculum ‘cramming’ in Year 1, with bioscience teaching across the breadth of subjects and an expectation that students will be able to embrace detailed applied bioscience, is not conducive to raising efficacy”. These authors recommended, in conjunction with altering admissions criteria to pre-registration nursing programs, to include pre-entry qualifications in science, a focus on raising students’ science self-efficacy early in Year 1 in science via adjunct programs/workshops to support and develop students’ study skills, and reinforcement of the application of biosciences in subsequent years of the program as key to addressing the ‘bioscience problem’. Face-to-face science preparation (‘Get Ready for Science’) workshops run by bioscience lecturers prior to students commencing their first science subject have been shown to be beneficial for reducing nursing students’ science anxiety, increasing their confidence about studying science and improving their academic performance in the first bioscience subject (Cox & Crane, 2014).
In Australia, the bioscience subjects are often taught as general service courses by academics with non-clinical backgrounds (Birks et al., 2015) so nursing students’ perceptions of irrelevance are perhaps not surprising but could be alleviated, to some extent, by writing clinical scenarios in partnership with nursing staff. At some higher education institutions these bioscience subjects are common to a number of health programs and may therefore be undertaken by a diverse cohort of students. Thus, it may not always be appropriate for lecturers to use nursing-specific scenarios alone in those subjects. Nursing lecturers can therefore benefit students by reinforcing the theoretical microbiology during students’ IC training prior to clinical placements.

Clinical Placements

In nursing education, workplace learning experiences (clinical placements) play an important role in development of nursing students’ clinical competence, professional identity, and their self-concept (Goldenberg, Iwasiw, & MacMaster, 1997). By providing students with opportunities to perform nursing skills in an authentic clinical environment, these clinical learning experiences can facilitate mastery experiences, thereby helping “increase [students’] self-efficacy in activities they will perform as practicing nurses” (Goldenberg et al., 1997, p. 303). Similar findings of a positive relationship between WPL and self-efficacy have been reported in other disciplines such as accounting and criminal justice (Bates, Thompson & Bates, 2013; Subramaniam & Freudenberg, 2007). There is evidence, however, to suggest that students’ with lower levels of confidence about managing their workplace experiences may benefit less from work-place learning than those with higher levels of pre-existing self-efficacy (Thompson, Bates, & Bates, 2016).

Self-efficacy is not a static attribute (Fencl & Scheel, 2005) and can be negatively affected by challenging clinical placements and experiences of failure, particularly if those negative experiences occur early in the learning process (van der Bilj & Shortbridge-Baggett, 2002). Anxiety about the clinical environment can also reduce students’ proficiency for performing newly acquired skills/tasks/procedures (Cheung & Au, 2011). For some, the challenging nature of interactions with clinical supervisors (O’Mara, McDonald, Gillespie, Brown, & Miles, 2014), experiences of verbal and non-verbal bullying (Hakojärvi, Salminen, & Suhonen, 2014) and feelings of alienation can impact negatively on their self-esteem, self-confidence, motivation to learn and intention to enter the nursing profession (Chesser-Smyth & Long, 2013; Levett-Jones & Lathlean, 2009). Efficacy beliefs and expectations can influence both a person’s perception of and behavior in challenging social environments. According to Bandura (2012, p. 14), “those of low self-efficacy are easily convinced of the futility of effort when they come up against institutional impediments, whereas those of high self-efficacy figure out ways to surmount them.” In the clinical environment, nursing students who feel alienated or ostracized in the workplace are far more reticent to ask questions and are more likely to conform to poor practice than students who feel comfortable and secure in the workplace (Levett-Jones & Lathlean, 2009).

Ethical Decision-Making

Alongside clinical competency, moral competency forms an essential element of nursing practice (Baker, 1987). In fact, some authors have argued that the two are inseparable (Gallagher, 2006). There is little doubt that role modeling, both within the classroom and the clinical environment plays an important role in development of nursing students’ ethical competence and more importantly, in promoting ethical action (Pang & Wong, 1998).
Indeed, previous research has identified the hand hygiene practices of clinical mentors to be the strongest predictor of nursing student hand hygiene compliance (Snow, White Jr, Alder, & Stanford, 2006). Two international studies exploring nursing students’ experiences of infection prevention and control during clinical placements (Gould & Drey, 2013; Ward, 2010) reported students frequently witnessing poor role modeling of IC practices, particularly hand hygiene, aseptic technique and application of personal protective equipment (PPE) by clinical mentors and other HCWs. The most frequently reported example of poor practice in Gould and Drey’s (2013) UK study was failure of practicing nurses to clean their hands between patients. Three quarters of the students in that study (292/388) also reported witnessing HCWs failing to apply appropriate isolation precautions such as PPE, with a similar proportion reportedly witnessing HCWs reusing items without cleaning between patients. Driven by a pervasive need to “fit in with the culture of the clinical site” (Knowles, 2014, p. 14), many students choose not to report non-compliant or improper behavior, despite being faced with ethically challenging situations. They fear repercussions (such as receiving a negative report from their clinical supervisor) and may even change their own IC practices to ‘fit in’. Conversely, for some students, witnessing poor IC practice can make them more aware of their own practices and instill a determination to ensure that their own practices are exemplary (Ward, 2010).

It has been suggested that the failure of graduates to practice ethically despite their pre-registration training may be the result of ‘moral blindness’, the denial of an ethical problem or failure to view a practice situation from an ethical perspective (Gallagher, 2006). Alternatively, poor clinical practice may be a manifestation of ethical drift, “the gradual ebbing of standards that can occur in an individual, a group, or an organization as a result of environmental pressures. It often occurs insidiously, and even without conscious awareness” (Sternberg, 2012, p. 58). Thus, HCWs who have experienced ethical drift may not even be aware that their behavior is unethical.

Gallagher (2006) asserted the importance of moral perception in ethical competence and the need to develop nursing students’ perceptual abilities through the enhanced incorporation of medical literature and patient narratives into the ethics curriculum. Ultimately, nursing curricula must not only promote ethical ‘knowing’ but ethical ‘doing’. Gallagher (2006, p. 234) warned that “[p]rofessional actions do not necessarily improve with ethics education. Yet without an aspiration to ethical action, ethics education is futile.” Thus, observation of role models emulating moral behavior during clinical placements, developing students’ capacities to act on their values (Lynch, Hart, & Costa, 2014) and providing opportunities to self-reflect and deliberate and reflect on both positive and negative role models back in the classroom (Pang & Wong, 1998) are likely to positively influence self-efficacy for ethical decision-making.

Leadership

Leadership skill development is an integral component of pre-registration training in most health professions. It is important for students to acquire and demonstrate professional leadership skills as part of their pre-registration training. Middleton (2013, p. 84) claimed that “[n]ursing care…must be delivered by professionals with both clinical skill and personal leadership qualities to ensure care is person-centred and facilitates the optimum patient experience.” However nursing students’ often feel immense pressure to conform to the mores of the workplace and in the case of IC, this commonly manifests as failure to contest poor clinical practice, despite knowing it to be incorrect (Ward, 2010). Positive deviance, that
The link between self-efficacy, workplace learning, and clinical practice

is, “intentional and honorable behavior that departs or differs from an established norm” (Gary, 2013, p. 28) may be one process for creating change in a clinical environment where poor practice is commonplace. Positive deviance however, involves risk for the person deviating (Gary, 2013) and is therefore likely to only be displayed by those students and graduates who feel empowered and possess strong self-leadership skills. Manz (1992) defined self-leadership as “the influence people exert over themselves to achieve self-motivation and self-direction needed to behave in desirable ways” (p. 80) and he argued that self-leadership lies at the heart of empowerment. Spreitzer, De Janasz, and Quinn (1999) noted that “[e]mpowered individuals do not wait passively for the work environment to provide direction; instead, they take a proactive approach toward shaping and influencing their work environment.” Self-leadership is an important attribute in multi-disciplinary teams where distributed leadership is an expectation to enable each member of the team to contribute their knowledge and skills to the patient care. Statistical modeling undertaken by Prussia, Anderson, and Manz (1998) found that the utilization of self-leadership strategies positively influences perceived self-efficacy, which subsequently has a positive effect on performance. Although the participants in the Prussia et al. (1998) study were junior management students, it is feasible that similar trends would be present in nursing student cohorts given the underlying centrality of self-efficacy to both situations.

Health Behavior Theories

The construct of self-efficacy is integral to a number of different behavioral models, including the Health Belief Model (HBM), which have been widely used to explain and predict and influence health behaviors, including the IC practices of health professionals (Brinsley, Sinkowitz-Cochran, Cardo, & The CDC Campaign to Prevent Antimicrobial Resistance Team, 2005). According to the HBM, behavioral change is influenced by a combination of factors:

- Socio-demographic factors
- Perceived susceptibility, severity, benefits and barriers
- Cues to action (strategies to encourage/activate behaviour).

In summary, self-efficacy is an integral component of many health behavior theories, including the HBM. Regardless of the perceived incentives of changing a health-related behavior (or perceived severity of the threat of not doing so), behavioral change is only likely to occur if the individual believes “that they are personally capable of adopting new behaviours” (Rosenstock, Strecher, & Becker, 1988, p. 176). A busy workplace can make it difficult for students to develop the skills learnt as part of their pre-registration education. Workload demands and time constraints in the workplace can reduce students’ sense of self-efficacy and perceived level of control, which may, in turn, negatively impact on their IC intentions (Ward, 2013). Role modeling of good IC practices from clinical preceptors is likely to enhance students’ IC self-efficacy and facilitate increased effort and persistence toward good IC practice. Major improvements in IC practice may, however, be difficult to achieve whilst nursing students feel they have little control over their own IC practices and/or are powerless to challenge poor practices as a result of their student status and the need to obtain a ‘good report’ from their supervisor.

Where To From Here? Enhancing Students’ Self-Efficacy for IC Practice:

Given the centrality of self-efficacy to the aforementioned areas of influence on students’ and graduates’ nursing practice, there is an important need to recognize the importance of both
self-efficacy and foundational knowledge, that is, knowledge of theoretical microbiology concepts to IC practice. It could be argued that clinical practice, in fact, lies at the intersection of self-efficacy and knowledge of core concepts (Figure 1).

![Figure 1: Intersection of self-efficacy and core concept knowledge](image)

Bandura (1977) proposed that poor performance in a given area may not be due to a lack of skills and/or knowledge but due to a lack of self-efficacy to use the knowledge and skills effectively. Identification of areas where students’ self-efficacy levels are low could be used as the basis of interventions and development of tools to enhance IC self-efficacy, thereby improving students’ learning in the classroom and transition to the workplace. This process would, however, require accurate measurement of IC self-efficacy. Bandura (2006, p. 308) warned that “scales of self-efficacy must be tailored to the particular domain of functioning that is the object of interest.” Thus, development and validation of a self-efficacy scale specifically for IC would be an important first step.

Enhancing the nexus between universities, workplace learning supervisors and healthcare leaders must also become a strategic focus of nursing education. Some innovative education-service partnerships have reportedly been successful, particularly in the area of patient safety, for example, the implementation of dedicated education units within hospitals for students to have mastery experiences in a safe, supportive environment (Mulready-Shick, Kafel, Banister, & Mylott, 2009). Provision of welcoming, supportive clinical environments where nursing students feel valued as learners, team members and people will foster a sense of control and self-efficacy by enhancing students’ sense of belonging.

Students work self-efficacy may also be enhanced by being made aware, before going on clinical placements, that they may witness behavior in the clinical environment that contradicts the good clinical practice they have been taught in the classroom. This may create ethical dilemmas for them (Knowles, 2014). Moreover, it is important for students to be reminded “the line between short cuts and unethical practice is subtle and easy to cross” (Cameron, Schaffer, & Park, 2001, p. 441) and the consequences of acquiescence, for both themselves and their patients, could be life-threatening. Post–clinical-placement debriefing sessions with a particular emphasis on providing students with an opportunity to process any ethical or practice dilemmas they experienced in the clinical setting may also be of benefit.
CONCLUSION

Self-efficacy is a construct which arguably underpins all aspects of health professional education and practice. There is a need for greater consideration, in future curriculum development, of the pervasive influence of self-efficacy on all areas that influence students’ learning and subsequent clinical practice. Enhancing nursing students’ self-efficacy and understanding of microbiology may be pivotal in ensuring that all commencing nurse graduates are confident and skilled in their ability to correctly and consistently apply appropriate IC precautions in a variety of contexts. Further research is needed to develop and validate self-efficacy scales to accurately measure nursing student’s self-efficacy in relation to specific areas of the curriculum and workplace learning such as microbiology and IC. Identification of areas where self-efficacy levels are low could be used as the basis of interventions and targeted strategies to enhance self-efficacy, improve learning and teaching of microbiology and ultimately have a positive impact on IC practice.

REFERENCES


About the Journal

The Asia-Pacific Journal of Cooperative Education publishes peer-reviewed original research, topical issues, and best practice articles from throughout the world dealing with Cooperative Education (Co-op) and Work-Integrated Learning/Education (WIL).

In this Journal, Co-op/WIL is defined as an educational approach that uses relevant work-based projects that form an integrated and assessed part of an academic program of study (e.g., work placements, internships, practicum). These programs should have clear linkages with, or add to, the knowledge and skill base of the academic program. These programs can be described by a variety of names, such as cooperative and work-integrated education, work-based learning, workplace learning, professional training, industry-based learning, engaged industry learning, career and technical education, internships, experiential education, experiential learning, vocational education and training, fieldwork education, and service learning.

The Journal’s main aim is to allow specialists working in these areas to disseminate their findings and share their knowledge for the benefit of institutions, co-op/WIL practitioners, and researchers. The Journal desires to encourage quality research and explorative critical discussion that will lead to the advancement of effective practices, development of further understanding of co-op/WIL, and promote further research.

Submitting Manuscripts

Before submitting a manuscript, please ensure that the ‘instructions for authors’ has been followed (www.apjce.org/instructions-for-authors). All manuscripts are to be submitted for blind review directly to the Editor-in-Chief (editor@apjce.org) by way of email attachment. All submissions of manuscripts must be in Microsoft Word format, with manuscript word counts between 3,000 and 5,000 words (excluding references).

All manuscripts, if deemed relevant to the Journal’s audience, will be double-blind reviewed by two or more reviewers. Manuscripts submitted to the Journal with authors names included with have the authors’ names removed by the Editor-in-Chief before being reviewed to ensure anonymity.

Typically, authors receive the reviewers’ comments about 1.5 months after the submission of the manuscript. The Journal uses a constructive process for review and preparation of the manuscript, and encourages its reviewers to give supportive and extensive feedback on the requirements for improving the manuscript as well as guidance on how to make the amendments.

If the manuscript is deemed acceptable for publication, and reviewers’ comments have been satisfactorily addressed, the manuscript is prepared for publication by the Copy Editor. The Copy Editor may correspond with the authors to check details, if required. Final publication is by discretion of the Editor-in-Chief. Final published form of the manuscript is via the Journal website (www.apjce.org), authors will be notified and sent a PDF copy of the final manuscript. There is no charge for publishing in APJCE and the Journal allows free open access for its readers.

Types of Manuscripts Sought by the Journal

Types of manuscripts the Journal accepts are primarily of two forms; research reports describing research into aspects of Cooperative Education and Work Integrated Learning/Education, and topical discussion articles that review relevant literature and give critical explorative discussion around a topical issue.

The Journal does also accept best practice papers but only if it present a unique or innovative practice of a Co-op/WIL program that is likely to be of interest to the broader Co-op/WIL community. The Journal also accepts a limited number of Book Reviews of relevant and recently published books.

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.

Topical discussion articles should contain a clear statement of the topic or issue under discussion, reference to relevant literature, critical discussion of the importance of the issues, and implications for other researchers and practitioners.
EDITORIAL BOARD

Editor-in-Chief
Dr. Karsten Zegwaard
University of Waikato, New Zealand

Copy Editor
Yvonne Milbank
Asia-Pacific Journal of Cooperative Education

Editorial Board Members
Ms. Diana Ayling
Unitec, New Zealand

Mr. Matthew Campbell
Queensland Institute of Business and Technology, Australia

Dr. Sarojni Choy
Griffith University, Australia

Prof. Richard K. Coll
University of South Pacific, Fiji

Prof. Rick Cummings
Murdoch University, Australia

Prof. Leigh Deves
Charles Darwin University, Australia

Dr. Maureen Drysdale
University of Waterloo, Canada

Dr. Chris Eames
University of Waikato, New Zealand

Mrs. Sonia Ferns
Curtin University, Australia

Dr. Jenny Fleming
Auckland University of Technology, New Zealand

Dr. Phil Gardner
Michigan State University

Dr. Thomas Groenewald
University of South Africa, South Africa

Dr. Kathryn Hays
Massey University, New Zealand

Prof. Joy Higgs
Charles Sturt University, Australia

Ms. Katharine Hoskyn
Auckland University of Technology, New Zealand

Dr. Sharleen Howison
Otago Polytechnic, New Zealand

Dr. Denise Jackson
Edith Cowan University, Australia

Dr. Nancy Johnston
Simon Fraser University, Canada

Dr. Mark Lay
University of Waikato, New Zealand

Assoc. Prof. Andy Martin
Massey University, New Zealand

Ms. Susan McCurdy
University of Waikato, New Zealand

Dr. Norah McRae
University of Victoria, Canada

Dr. Keri Moore
Southern Cross University, Australia

Prof. Beverley Oliver
Deakin University, Australia

Assoc. Prof. Janice Orrell
Flinders University, Australia

Dr. Deborah Peach
Queensland University of Technology, Australia

Mrs. Judene Pretti
Waterloo University, Canada

Dr. David Skelton
Eastern Institute of Technology, New Zealand

Prof. Heather Smigiel
Flinders University, Australia

Dr. Calvin Smith
Brisbane Workplace Mediations, Australia

Prof. Neil Taylor
University of New England, Australia

Ms. Susanne Taylor
University of Johannesburg, South Africa

Assoc. Prof. Franziska Trede
Charles Sturt University, Australia

Ms. Genevieve Watson
Elysium Associates Pty, Australia

Prof. Neil I. Ward
University of Surrey, United Kingdom

Dr. Nick Wempe
Whitireia Community Polytechnic, New Zealand

Dr. Marius L. Wessels
Tshwane University of Technology, New Zealand

Dr. Theresa Winchester-Seeto
Charles Sturt University, Australia

Asia-Pacific Journal of Cooperative Education

www.apjce.org

Publisher: New Zealand Association for Cooperative Education