Readiness for interprofessional learning: a cross-faculty comparison between architecture and occupational therapy students

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Abstract

Health and wellbeing includes a need for built environments to accommodate and be inclusive of the broadest range of people and a corresponding need to ensure graduates are ready to engage in this field of interprofessional and inter-industry practise. All too often, interprofessional education in higher education is neglected with a tendency towards educational silos, particularly at a cross-faculty level. This paper reports on an initiative that embedded universal design practice education into the curricula of first year architecture and third year occupational therapy students and evaluated the impact on students' readiness for interprofessional learning. The Readiness for Interprofessional Learning Scale (RIPLS) was given to students at the beginning and end of the semester during which students participated in a variety of online and face-to-face curriculum initiatives. Results showed that at the beginning of semester, occupational therapy students were significantly more positive about interprofessional learning than their architecture counterparts. Post-results showed that this trend continued but that occupational therapy students became less positive on some items after the interprofessional learning experience. This study provides insights into the interprofessional learning experiences of a group of students who have not previously been studied within the available literature.

Keywords

Architecture, interprofessional education, occupational therapy, survey, universal design

History

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Introduction

The design of built environments has a direct impact on peoples' ability to participate within their communities. Buildings and public spaces that are not inclusive deny people opportunities to participate in society and ultimately deny their natural human rights (Watchorn & Layton, 2011). Many people mistakenly believe that the importance of inclusive or universal design is confined to the needs of people with disabilities or to the frail aged. However, as argued by Hitch, Larkin, Watchorn, & Ang (2012), `Regardless of whether you have: a mobility, sensory or other impairment; are a young person with a knee reconstruction; use a pram; need to make deliveries to a particular site; are an older person; or, a younger person, good universal design allows access for all to the places and spaces that give meaning to people’s lives’’ (p. 382).

Occupational therapists and architects are interested in the design of built environments; however, research is limited regarding respective roles in this field of practice and their capacity to work/learn together through interprofessional education. Within higher education, interprofessional education faces a number of barriers and challenges to avoid the proliferation of educational silos. These include, but are not limited to, organizational hurdles and attitudes of faculty staff (Curran, Sharpe, & Forristall, 2007); increased professional specialisation (Hall & Weaver, 2001); validation of student assessment processes (Reeves, Freeth, McCrorie, & Perry, 2002); and, student concerns to the relevancy of interprofessional learning opportunities (Tunstall-Pedoe, Rink, & Hilton, 2003). However, while challenges exist, increased interprofessional education opportunities are supported in much of the literature and are seen as the key to greater interprofessional collaboration in the workplace (Allan, Campbell, Guptill, Stephenson, & Campbell 2006; Carlisle, Cooper, & Watkins, 2004). Hitch et al. (2012) noted that `While occupational therapy and architecture continue to be educated in separate higher educational spaces and places, without any reference to each other’s discipline and role, a mutual lack of understanding and collaboration will continue to be a fertile ground for poor design from both perspectives’’ (pp. 380–381).

At the university in question, the architecture and occupational therapy programs are co-located on the same campus within close proximity. However, there had previously been limited opportunity for staff from the two programs to explore areas of shared interprofessional practice despite some informal discussions over time amongst staff who supported such initiatives. Occupational therapy students were already involved in an interprofessional education subject with other students studying within the Faculty of Health. However, it was felt that the interprofessional education of occupational therapy students needed to extend beyond the traditional health disciplines if real change is to occur in the future regarding accessibility and built environments. Architecture students at the time did not have an equivalent opportunity for interprofessional education.

This paper explores an initiative that embedded interprofessional education for first year architecture and third year...
occupational therapy students, in universal design practice. The paper reviews the literature and context regarding local and global initiatives for universal design, related terminology and relevant literature regarding interprofessional education. The paper then describes how this initiative was evaluated using the Readiness for Interprofessional Learning Scale (RIPLS) (Parsell & Bligh, 1999). Results of the study are presented and examined in the context of universal design practice and interprofessional education more broadly. This is the first known study to report on interprofessional education between architecture and occupational therapy students.

**Background**

**What is universal and inclusive design?**

The terms “universal” and “inclusive” design are often used interchangeably. Other terms such as “accessibility”, “barrier free design”, “visitability” and “design for all” are also in use, sometimes synonymously (Hitch et al., 2012). For the purposes of this article, the term “universal design” will be used. The Principles of Universal Design are detailed in Table I. While these principles are highly valued in the occupational therapy profession (CAOT, 2009) there are few guidelines that inform architectural practice in this area (Hitchcock, Lockyer, Cook, & Quigley, 2001).

**Drivers for the implementation of universal design**

There is an increasing emphasis on diversity, equity and access in the social and political agendas globally. While maturation does not necessarily coincide with reduced function, an aging population (Australian Bureau of Statistics, 2009), is associated with increased prevalence of conditions influencing quality of life and accessibility (Spirduso, Francis, & MacRae, 2004). One in five Australians has a disability, with physical disabilities being the most common category (Australian Bureau of Statistics, 2004). Global estimates indicate that approximately 15% of the world’s population currently live with some form of disability and that, with an aging population and increasing prevalence of chronic disease, this number is growing (World Health Organization, 2011). The trend over the last 30 years to de-institutionalization has also enabled many people with substantial disability to move to community living, where environments are not necessarily accommodating of such diverse needs (Australian Institute of Health and Welfare, 2008). In 2006, the United Nations adopted the Convention on the Rights of Persons with Disabilities (United Nations, 2006) with accessibility being one of the founding principles. There are also social and professional trends influencing universal design. In Australia, “aging in place” initiatives support older people to continue living at home, rather than relocating to residential care (Bookman, 2008). However, many older adults continue to live in inaccessible housing (Royal Australian Institute of Architects, 2005), making aging in place unlikely until universal design becomes a reality. “Visitability” is an international movement that aims to make all new homes conform to minimum standards of visitability by people with mobility impairments (Maisel, 2006; Milner & Madigan, 2004). In Australia, discussion at a state and national level has taken place about the prospect of introducing such requirements as either mandatory or aspirational (Building Commission, 2008; Disability Investment Group, 2009; Victorian Competition and Efficiency Commission, 2005). Although progress on these initiatives has not progressed beyond the discussion stage, the legislative, demographic and social drivers are making it increasingly important for universities to ensure that graduates are adequately prepared to work in these newer, emerging and increasingly global areas of practise where interprofessional collaboration is valued.

**Occupational therapy, the built environment and interprofessionalism**

Occupational therapists are skilled at understanding the needs of individuals and how participation can be facilitated by various home and other built environmental modifications (Ainsworth & De Jonge, 2010; Conway, 2008). However, they are not necessarily skilled at understanding the design process (Hitch et al., 2012). Conversely, architects generally do not have an understanding of how built environments can influence the participation of people with diverse abilities and community roles. Although this dichotomy continues to affect design outcomes, occupational therapists are increasingly taking on roles as access consultants within the architectural and building industries. While roles that influence broader social change have long been entrenched in occupational therapy practice (Dunn, Brown, & McGuigan, 1994; Townsend & Polatajko, 2007), more recent work by Parnell & Wilding (2010) reinforces the view that “occupational therapists have something unique and important to offer those who plan and develop our shared built environments” (p. 345). Bringing together both skill sets in an environment of interprofessional collaboration will assist in ensuring that built environments in the future cater for the broadest range of people without discrimination or disadvantage.

There is a large body of knowledge relating to interprofessional education although its effect on professional practice is not always fully understood (Reeves et al., 2010). The Centre for the Advancement of Interprofessional Education (2002) describes interprofessional education as being “when two or more professions learn with, from and about each other to improve collaboration and the quality of care”. While the World Health Organization (WHO) recognizes interprofessional education as integral to every health professionals’ education (Barr, 2010; WHO, 2010), little acknowledgment has

| Table I. The principles of universal design (Connell et al., 1997). |
|---------------------|----------------------------------------------------------------------------------|
| Principle | Descriptor |
| 1) Equitable use | The design is useful and marketable to people with diverse abilities. |
| 2) Flexibility in use | The design accommodates a wide range of individual preferences and abilities. |
| 3) Simple and intuitive use | Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills or current concentration level. |
| 4) Perceptible information | The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities. |
| 5) Tolerance for error | The design minimizes hazards and the adverse consequences of accidental or unintended actions. |
| 6) Low physical effort | The design can be used efficiently and comfortably and with a minimum of fatigue. |
| 7) Size and space for approach and use | Appropriate size and space is provided for approach, reach, manipulation and use regardless of user’s body size, posture, or mobility. |
been directed toward collaboration outside of traditional health care services that may contribute directly to health, wellbeing and participation.

While some studies have embedded universal design practice into the curriculum of design and architecture students (e.g., Chang, Tremblay, & Dunbar, 2000; Olgunyurt & Demirkan, 2009), there is almost no evidence of an interprofessional approach. The only study which took this approach (Dong, 2010) investigated teaching universal design to undergraduate industrial design and engineering students, using occupational therapy students as voluntary consultants.

Teaching and learning initiative

A series of online and face-to-face teaching and learning activities related to universal design were introduced into the curricula of a second semester, first year architecture and a third year occupational therapy subject. These subjects were core to each discipline area. First year architecture students were chosen as the teaching staff wanted to incorporate content in relation to universal design as early as possible into the students’ education. Third year occupational therapy students were chosen as it was at this stage typically where assessment of built environments and accessibility issues was already addressed in the curriculum. The study by Dong (2010) also set a precedent for such an approach and it also ensured that timetabling and structural issues as outlined by Hammick et al. (2007) did not act as a negative influence on students’ attitudes to the program.

Face-to-face teaching included occupational therapy students being taught architectural drawing by architecture staff and occupational therapy staff providing teaching in relation to health, wellness and diversity to architecture students. Online teaching resources were common to both sets of students including online lectures, resources and a series of interactive interviews with key stakeholders including architects, occupational therapists and access consultants, academics and an equity and diversity representative. These teaching activities were provided to each student group, however, during semester, students were also given the opportunity to come together and participate in a full-day workshop with a range of discussion activities, and the opportunity to hear from a person with some mobility impairment. An integral aspect of the workshop was also the opportunity for students to undertake together a series of virtual and real life simulations of wheelchair use and vision impairment. Due to the nature of the occupational therapy course, students undertook the subject in one of two five-week intensive blocks. While all occupational therapy students had access to the same teaching and learning resources, only the students who were in the second five-week block were able to participate in the workshop with architecture students. At the completion of the semester, both occupational therapy and architecture students were required to apply the principles of universal design and other elements into key assessment tasks for their respective units. Architecture students incorporated this into their studio design projects, while occupational therapy students were required to incorporate the architectural drawing skills and the principles of universal design into a series of recommendations for modifications to a private home for a hypothetical case-study client.

Methods

Study aims

The study aimed to explore the readiness for interprofessional learning of occupational therapy and architecture students who participated in the interprofessional education program.

Design

A pre/post-intervention design was adopted which employed the RIPLS. This scale was administered in week one of the semester and again in week twelve. To ensure there was no undue influence, the questionnaire was administered by a person who had no involvement or responsibility for teaching or marking student work.

The RIPLS was initially developed by Parsell & Bligh (1999) and designed to assess the readiness of students for shared learning (Thannhauser, Russell-Mayhew, & Scott, 2010). Whilst designed with the intent of assessing health care students’ readiness for interprofessional learning, there were no other available scales that explore this issue for professions outside of the health care sector. The RIPLS is a recognized standardized assessment with adequate psychometric properties (Thannhauser et al., 2010) and focuses on characteristics that facilitate and act as barriers to interprofessional education. Since the original scale was published, other versions have been published (Reid, Bruce, Allstaff, & McLernon, 2006) and the study described in this paper used the RIPLS that was adapted for use by an Australian interprofessional network (Health and Socialcare Interprofessional Network, 2009). Minor changes to the wording of some items were made to take account of the fact that architecture students are not part of the health care professions who were typically investigated using the RIPLS.

Data collection

The RIPLS questionnaire (baseline measure) which was administered in week one of the semester was completed by 96 out of 114 first year architecture students (84.2% response rate). Of these, 68.8% (n = 66) were male and 30.2% (n = 29) were female with one student not reporting gender. The average age of architecture students was 20.08 years (SD = 3.38). Forty-four out of 49 occupational therapy students (89.8% response rate) completed the baseline measure, with 9.1% (n = 4) being male and 90.9% (n = 45) being female. The average age of occupational therapy students was 22.51 years (SD = 5.54). The RIPLS questionnaire (post-intervention measure) which was administered in week 12 of the semester was completed by 49 architecture students (43% response rate) and 45 occupational therapy students (91.8% response rate). Of the 49 architecture students, 63.3% (n = 31) were male and 36.7% (n = 18) were female. In relation to occupational therapy students, 11.1% (n = 5) were male and 88.9% (n = 40) were female. The difference in gender between the two groups was typical of the gender differences within the two professions.

Analysis

Analysis of data was undertaken using SPSS Version 18 for all descriptive and inferential statistics. A t-test was used to compare the two groups of students’ responses on the RIPLS; and an ANOVA examined the influence of gender.

Results

Readiness for interprofessional learning

On a Likert Scale of 1 to 5 with 1 being ‘strongly disagree’ and 5 being ‘strongly agree’, students rated their responses on each of the 19 RIPLS items. Using SPSS, a t-test was used to analyze responses by architecture and occupational therapy students to both the baseline and post-intervention measures. These results are contained in Table II. To account for family wise error (Field, 2000), alpha was reduced to 0.02.
In Table II it can be seen that in the baseline measure, occupational therapy students were significantly more positive with regard to interprofessional learning on all RIPLS items except for three items where there was no significant difference between the two groups. These items were 14, 16 and 17.

The post-intervention measure shows a similar pattern with occupational therapy students being more positive with regard to interprofessional learning, with occupational therapy students continuing to be more positive about interprofessional learning than their architecture colleagues. However, on a number of items there was no substantial closing of the gap between occupational therapy students and architecture colleagues. However, on a number of items there was a trend for both groups of students to move towards being less positive at the end of the teaching and learning initiative than they had been at the outset.

Given the gender imbalance between the two student cohorts further analysis was undertaken to examine the influence of gender on the results. An ANOVA analysis with gender as a covariate was undertaken revealing that gender was influential on only four of the items. Results for the baseline measure are reported in Table III where it can be seen that female students

<table>
<thead>
<tr>
<th>Statement</th>
<th>Architecture M(SD)</th>
<th>OT M(SD)</th>
<th>Questionnaire one</th>
<th>Architecture M(SD)</th>
<th>OT M(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Learning with other professionals will make me a more effective member of a team.</td>
<td>4.44(0.5)</td>
<td>4.75(0.44)***</td>
<td>4.39(0.57)</td>
<td>4.67(0.48)</td>
<td></td>
</tr>
<tr>
<td>2 Clients would ultimately benefit if professionals worked together.</td>
<td>4.43(0.56)</td>
<td>4.89(0.32)***</td>
<td>4.37(0.60)</td>
<td>4.74(0.43)**</td>
<td></td>
</tr>
<tr>
<td>3 Shared learning with other professionals will increase my ability to understand practice problems.</td>
<td>4.38(0.53)</td>
<td>4.64(0.49)***</td>
<td>4.33(0.63)</td>
<td>4.67(0.48)**</td>
<td></td>
</tr>
<tr>
<td>4 Communication skills should be learned with other professionals.</td>
<td>4.18(0.68)</td>
<td>4.57(0.50)***</td>
<td>4.18(0.78)</td>
<td>4.41(0.75)</td>
<td></td>
</tr>
<tr>
<td>5 Team working skills are vital for all professionals to learn.</td>
<td>4.44(0.60)</td>
<td>4.82(0.39)***</td>
<td>4.43(0.68)</td>
<td>4.70(0.46)</td>
<td></td>
</tr>
<tr>
<td>6 Shared learning will help me to understand my own professional limitations.</td>
<td>3.98(0.79)</td>
<td>4.43(0.59)***</td>
<td>3.84(0.83)</td>
<td>4.50(0.51)***</td>
<td></td>
</tr>
<tr>
<td>7 Learning between students before qualification and for professions after qualification would improve working relationships after qualification/collaborative practice.</td>
<td>4.13(0.68)</td>
<td>4.57(0.50)***</td>
<td>4.08(0.64)</td>
<td>4.39(0.65)</td>
<td></td>
</tr>
<tr>
<td>8 Shared learning will help me think positively about other professionals.</td>
<td>3.78(0.73)</td>
<td>4.43(0.73)***</td>
<td>3.71(0.98)</td>
<td>4.36(0.61)**</td>
<td></td>
</tr>
<tr>
<td>9 For small group learning to work, professionals need to respect and trust each other.</td>
<td>4.42(0.59)</td>
<td>4.77(0.48)***</td>
<td>4.33(0.69)</td>
<td>4.68(0.47)</td>
<td></td>
</tr>
<tr>
<td>10 I don’t want to waste time learning with other professions.</td>
<td>1.81(0.80)**</td>
<td>1.39(0.49)</td>
<td>1.80(0.84)</td>
<td>1.55(0.90)</td>
<td></td>
</tr>
<tr>
<td>11 It is not necessary for professionals to learn together.</td>
<td>2.02(0.85)***</td>
<td>1.40(0.66)</td>
<td>2.12(1.03)***</td>
<td>1.42(0.72)</td>
<td></td>
</tr>
<tr>
<td>12 Problem solving can only be learnt effectively with professionals from my own background.</td>
<td>1.96(0.92)**</td>
<td>1.48(0.55)</td>
<td>2.06(0.85)</td>
<td>1.67(0.80)</td>
<td></td>
</tr>
<tr>
<td>13 Shared learning with other professionals will help me to communicate better with clients and colleagues.</td>
<td>4.07(0.68)</td>
<td>4.45(0.73)***</td>
<td>3.78(0.96)</td>
<td>4.02(0.88)</td>
<td></td>
</tr>
<tr>
<td>14 I would welcome the opportunity to work on small group projects with other professionals.</td>
<td>4.22(0.65)</td>
<td>4.43(0.76)</td>
<td>3.96(1.02)</td>
<td>4.19(0.50)</td>
<td></td>
</tr>
<tr>
<td>15 I would welcome the opportunity to share some generic lectures, tutorials and workshops with other professionals.</td>
<td>3.87(0.83)</td>
<td>4.30(0.56)**</td>
<td>3.76(0.92)</td>
<td>4.14(0.56)</td>
<td></td>
</tr>
<tr>
<td>16 Shared learning and practice will help me clarify the nature of clients' problems.</td>
<td>3.97(0.68)</td>
<td>4.21(0.60)</td>
<td>3.88(0.78)</td>
<td>4.19(0.50)</td>
<td></td>
</tr>
<tr>
<td>17 Shared learning before and after qualification will help me become a better team worker.</td>
<td>4.15(0.70)</td>
<td>4.30(0.51)</td>
<td>3.86(0.87)</td>
<td>4.35(0.48)**</td>
<td></td>
</tr>
<tr>
<td>18 I am not sure what my professional role will be/is.</td>
<td>2.69(0.97)**</td>
<td>2.09(1.00)</td>
<td>2.37(0.86)**</td>
<td>1.79(0.86)</td>
<td></td>
</tr>
<tr>
<td>19 I have to acquire much more knowledge and skill than other professionals in my own faculty.</td>
<td>3.12(0.94)***</td>
<td>2.46(0.95)</td>
<td>3.24(0.83)***</td>
<td>2.65(1.02)</td>
<td></td>
</tr>
</tbody>
</table>

Table III. Gender differences for questionnaire one.

<table>
<thead>
<tr>
<th>RIPLS Item</th>
<th>Male N (Mean)</th>
<th>Female N (Mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Shared learning with other professionals will increase my ability to understand practice problems.</td>
<td>70(4.3)</td>
<td>69(4.62)***</td>
</tr>
<tr>
<td>7. Learning between students before qualification and for professions after qualification would improve working relationships after qualification/collab prac.</td>
<td>70(4.04)</td>
<td>69(4.49)***</td>
</tr>
<tr>
<td>10. I don’t want to waste time learning with other professionals.</td>
<td>70(1.89)***</td>
<td>69(1.46)</td>
</tr>
<tr>
<td>19. I have to acquire much more knowledge and skill than other professions in my own faculty.</td>
<td>68(3.26)***</td>
<td>67(2.58)</td>
</tr>
</tbody>
</table>

***p ≤ 0.001.

p Values based on comparison between architecture and occupational therapy students for each questionnaire. The p value has been noted on the mean score that is higher indicating greater agreement with the statement.

**p < 0.01; ***p < 0.001.
regardless of course, scored items 3 and 7 significantly higher than males, while male students scored items 10 and 19 more highly.

The same analysis was undertaken for the post-intervention measure and results are reported in Table IV, where only two items were found to be influenced by gender. It can therefore be argued that although gender accounted for some difference in responses on a couple of items, the issue of gender was not overly influential with regard to the pattern of responses.

As the second block of occupational therapy students did not attend the one-day workshop, responses were examined for any difference between the two groups of occupational therapy students on the second questionnaire. A statistically significant difference was found for item 10 (I don’t want to waste time learning with other professions) between Block One (mean = 1.2) and Block Two (mean = 1.9) (p = 0.014). There appears to be a little difference in response between the two groups, despite different levels of interaction with architecture students and staff.

### Discussion

This study explored the experiences of occupational therapy and architecture students who participated in a program designed to embed universal design practice into the curricula of both programs within a context of interprofessional education. It embedded teaching and learning activities into the curriculum and assessment tasks of two core subjects from both undergraduate programs as recommended by Gilbert (2005). Other studies (Curran, Sharpe, Flynn, & Button, 2010; Dong, 2010) have examined interprofessional education but only as a voluntary ‘“extracurricular activity”’ for students. This is important as it underpins the degree of institutional support for the initiative described in our study that is not always evident (Barr, Koppel, Reeves, Hammad, & Freeth, 2005 as cited in Curran et al., 2010).

Results indicated that overall student attitudes towards interprofessional education did not become more positive. Occupational therapy students were initially more positive in their attitude to interprofessional education and remained more positive than architecture students following the teaching and learning initiative. However, both groups showed a tendency to become less positive over time on some of the items. Whether or not occupational therapy students attended the interprofessional one-day workshop was not significant in relation to the attitudes of occupational therapy students. These findings are consistent with other studies as noted by Curran et al. (2010).

A number of factors may have contributed to these findings. It is possible that the year level gap between first and third year was too great. Tunstall-Pedoe et al. (2003) noted that students need to be confident and secure in their professional identity and feel on an ‘“equal footing”’ (p. 169) with other students. It could be argued that this was not the case for first year architecture students. This may have contributed to the gap between the two student groups. It is also not inconceivable that while architecture students felt that they had benefited in their understanding of disability and diversity, occupational therapy students’ understanding of design had not been similarly enhanced. This may have been due to insufficient consideration being given to the educational factors as outlined by Reeves & Summerfield Mann (2003) that are essential for successful interprofessional education. However, this remains a challenge for these two students groups as it is easier to anticipate the benefits for architecture students than it is for occupational therapy students from this type of program (Hitch et al., 2012).

It is also useful to return to the definition of interprofessional education as “when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (Centre for the Advancement of Interprofessional Education, 2002). In this study, teaching was provided by educators from each discipline as recommended by O’Neil & Wyness (2005), which constitutes the ‘“learn with”’ aspect. However, it is possible that aspects relating to learning ‘‘from’’ and ‘‘about’’ each other were not sufficiently explicit within the pedagogy, therefore failing to meet the criteria for a complete interprofessional education experience. As emphasized by Reeves & Summerfield Mann (2003), the mere bringing together of students does not necessarily result in the development of skills for effective interprofessional collaboration.

Another aspect that may have contributed to the findings as previously reported by Parsell & Bligh (1998) and Pirrie, Hamilton, & Wilson (1999) was the unequal number of students between the two groups, particularly in relation to the one-day workshop. Ondasan & Reeves (2005) identify an equal mix of learners from each profession as being an important element of effective interprofessional education.

While a number of studies have explored the influence of learner characteristics such as parental occupation, student maturity and previous work experience on student attitudes to inter-professional education (Hammick et al., 2007; Tunstall-Pedoe et al., 2003), this study is one of the few that has explored the influence of gender. The study found that gender was not particularly influential in the attitudes of architecture and occupational therapy students as measured on the RIPLS. This finding is in part supported by Pollard, Miers, & Gilchrist (2005) who although finding some differences between male and female allied health students, recommended caution in drawing any conclusions in relation to gender. One of the complicating factors here is the frequent disparity in gender that is evident in allied health professions with females often dominating a number of courses in the interprofessional education sector.

While the findings of this study provide an insight into the interprofessional attitudes of a group of students who have not previously been investigated, several limitations should be noted. The study did not explore the influence of learner characteristics (other than gender) on student attitudes nor did it explore the impact of systemic or organizational factors (Reeves & Summerfield Mann, 2003). While sample sizes were not large, response rates to both questionnaires were acceptable and support confidence in the findings.

### Concluding comments

This study, the first of its kind to explore interprofessional education for architecture and occupational therapy students, had findings similar to those of other studies based on more traditional
interprofessional education in the health sector. Statistically significant differences between the two student cohorts were also found that could not be attributed to gender differences. The study findings provide further evidence that when designing interprofessional education programs, educators need to ensure that all of the characteristics of interprofessional education as described by CAIPE (2002) need to be embedded at an in-depth level in the teaching and learning program.

While our understanding of the impact of interprofessional education continues to evolve, evidence in relation to the long-term impact and outcomes for clients of such an approach is mixed (Pollard et al., 2005; Reeves et al., 2002, 2010). Longitudinal studies are needed to explore these issues and how interprofessional education can best be embedded within the curriculum to ensure the best outcomes for students, academic staff and ultimately interprofessional collaboration in the workplace (Reeves, 2010). Our understanding of interprofessional education would be further enhanced by not only evaluating the attitudes of students to interprofessional education but also explore the experiences of teaching staff, given that to teach interprofessional education it is important to ensure that those staff who teach, actually understand what it is and have a common understanding of the value that it brings to the student experience. Extending our understanding of interprofessional education beyond the health professions is critical for considering the broader health and well-being of citizens globally and to ensure that graduates are ready to take advantage of these emerging and contemporary roles in universal design practice.

**Declaration of interest**

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

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