Sydney ICTN Local Projects Fund Final Report

Research Report to Health Education & Training Institute (HETI) on UWS's NSW ICTN local project fund

Project name: Increased Clinical Training Experiences (ICTE) SCHN12/10604

Contact persons:

Rebecca Olson[1], PhD, Rebeccca.olson@uws.edu.au, 4620 3226, Project research officer

Michelle Kent[2], m.kent@uws.edu.au, 4620 3504, ICTN ICTE IHC Event Coordinator

Nerida Klupp[3], n.klupp@uws.edu.au, 4620 3759, Lecturer in Health Sciences

[1] Rebecca Olson designed the research evaluation for this grant, oversaw data collection, completed the qualitative data analysis and drafted this report.

[2] Michelle Kent managed the project and drafted the open-ended questions for clinical placement surveys.

[3] Nerida Klupp oversaw the quantitative data analysis for this project.

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Executive Summary

This report is an addendum to the report submitted to HETI in June 2013. In this report, we describe results and findings related to the research evaluation objectives of the project. These objectives are listed below:

(9) Develop a better understanding of the presage factors (Biggs, 1993) relevant to IPE, learning and socialisation.

(10) Increase understanding of the student experience.

Findings from a realistic evaluation of the project are summarised below.

- Attending the interdisciplinary health challenge (IHC) may have improved students' attitudes towards IPE and other health professions.
- Attending the IHC improved students' perceptions of their own professions training, possibly due to the culminating and applied nature of the event.
- Older age and more experience may be factors linked to poorer perceptions of interdisciplinary collaborative.
- Clinical placements and the IHC provided students' with opportunities to apply their skills and appraise multidisciplinary (MDC) teams, as well as communication, team work and emotion work skills, as more important.
- University context and proximity may be important factors to knowledge of other health professional roles.
- The IHC provides a unique opportunity to learn about these other health profession, confirm students' assessments of the importance of IPE and improve their understanding of how MDC teams work.
- The IHC provided a safe 'real life' simulation where students pulled together their cumulative training and socialisation and applied this to the creation of a treatment plan and team work. This was described as a source of increased confidence when students performed well and realised how much they knew.
- University context is important to the success of any IPE intervention. UWS students often travel to campus from far distances and work part-time. Thus, to improve participation, the IHC (or similar events) should be held during the beginning of the semester as a mandatory part of their course curriculum.

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Background

Interprofessional education (IPE) is a teaching and research priority within health science (WHO, 1988, 2010). It involves students from differing health-related professions learning 'from, with and about each other to improve collaboration and the quality of care' (Freeth, Hammick, Reeves, Koppel, & Barr, 2005, p. 15). Several studies and systematic reviews show that IPE is feasible. However, much of this literature has focused on IPE amongst health professionals, not students (Barr, Freeth, Hammick, Koppel, & Reeves, 2006; Oandasan & Reeves, 2005; S. Reeves et al., 2008); university-based IPE is typically limited to medicine and nursing (Davidson, Smith, Dodd, Smith, & O'Loughlan, 2008, p. 113). Studies of IPE are limited in their methodological approaches, with few studies (8%) employing qualitative methods; most using pre-post study designs (51%) and some using randomised controlled trials (10%) (Scott Reeves et al., 2011). This has led to conclusions that IPE can work to improve students' attitudes towards other health professions and perceptions of interprofessional collaboration, but very little is known about what forms of IPE work best for whom and it what contexts (Cameron et al., 2009); little is known about the presage (Biggs, 1993) or student characteristics relevant to IPE learning.

Student age and experience, for example, have been examined in several studies. As Osborne (2009) summarises, these studies conclude that IPE is less effective at changing perceptions and attitudes in the early stages of curriculum. Wellmon and colleagues (2012), in contrast, found that social work students, who were on average five years older than other students in the study, revealed significantly poorer perceptions of IPE and teamwork. Others still describe this relationship as more complex. Hayashi and colleagues (2012) used two validated scales to survey, before and after IPE interventions, 285 nursing and health science university students in: first year undertaking a semester long multi-professional lecture-based unit; and in third year undertaking small group IPE teamwork training over three days. Surveys indicated a statistically significant downward trend from before the intervention to after for the first year students and an upward trend for the third year students. Instead of concluding that first year students are not as ready for IPE as third year students, Hayashi and colleagues (2012, p. 106) suggest that this trend may be due to the "unrealistically high expectation" of IPE at the beginning of students' study. They take a longitudinal approach. Given that the third year students had undertaken the first year multi-professional lectures two year earlier, they suggest that the positive results in the third year cohort may be a result of a cumulative impact of IPE, rather than directly attributed to the teamwork training. Thus, further investigation is needed to understand the significance of context and student characteristics to IPE effectiveness.

A realistic approach to evaluation (Pawson & Tilley, 2005) underpinned by a meta-epistemology, where deductive and inductive forms of inquiry are valued (Wadsworth, 2010), is needed to uncover the mechanisms likely to effect change amongst different participants in differing settings (Olson & Bialocerkowski, in press). To evaluate student experiences associated with this project, we take a realistic approach to evaluating the two IPE activities funded by HETI through the ICTN project: clinical placements and the interdisciplinary health challenge. These activities are described below.

Clinical Placements

Expressions of interest in clinical placements were solicited through flyers posted on campuses visible to health science, medicine, nursing and psychology students. Emails were also sent out through relevant units. 191 students expressed interest. 25 students from nursing, psychology, physiotherapy, podiatry and occupational therapy attended one or more Western Sydney placements at a range of clinics for swallowing, high risk foot, fatty liver, vulvo-vaginal, diabetes, podiatry, anorectal and gastrointestinal patients. Students were involved in varying ways, from observing health professional-patient interactions and multidisciplinary (MDC) team meetings to preparing the clinic, taking histories and demonstrating equipment for patients.

Interdisciplinary Health Challenge

The interdisciplinary health challenge (IHC) was run over two days near the end of the Autumn semester, 2013. Students in their second year of study and higher were invited to participate. Twenty-three students attended day one, involving observation of a doctor-patient interaction with Mrs EB, a trained actor, presenting a simulated case study. Mrs EB represented a client with complex medical and social needs including chronic health concerns, type 2 diabetes, obesity, arthritis, providing primary care for an elderly parent with dementia, social isolation and lack of support. Students discussed the case in discipline-specific groups before forming interprofessional student teams and developing a treatment plan. On day two, 19 students attended; four students withdrew due to family or university commitments. Teams presented their treatment plans in front of an audience and judges. Each team was then challenged to respond to a change in Mrs EB's circumstances and, in five minutes, revise their treatment plan accordingly. While the judges invigilated, picking a winning team and representatives from each discipline for the Australia-New Zealand competition, students socialised and played structured games as teams.

Methods

Originally, the evaluation design consisted of 1) 35 qualitative semi-structured interviews with students involved or not involved in clinical placements and/or the IHC; and 2) surveys at 4 points over the course of the clinical placements (1 before, 2 during, 1 after). Due to the lower than anticipated response to the call for interview participants and a desire to make findings more comparable to the IPE literature, this design was altered to include the mixed methods approach described below.

Ethical approval for this evaluation was granted by the University of Western Sydney Human Research Ethics Committee (H9499) as an addendum to a larger research project on IPE. A mixed methods approach was taken to data collection, in line with a realistic approach. To allow for comparison with the literature, a pre/post survey was collected from IHC participants. The paper survey featured both open-ended questions and a statistically reliable modified 12 question version (McFadyen, Maclaren, & V.Webster, 2007) of the psychometrically validated (Thannhauser, Russell-Mayhew, & Scott, 2010) Interdisciplinary Education Perception Scale (IEPS) (Luecht, Madsen, Taugher, & Petterson, 1990). In the scale, students are asked to indicate the degree to which they agreed (from 1=strongly disagree to 6=strongly agree) with statements about 'individuals in my profession' regarding training, positivity, teamwork practices, dependence on other professionals, trust and competency. Permission to use the

scale was granted by the second author (Madsen, 2013). Twenty-three students participated in day one of the IHC; nineteen participated in day two. Thus, 19 complete sets were returned and statistically analysed. Open-ended questions were analysed for all 42 surveys. Statistical analysis of the IEPS scale was completed using a paired samples t-test, comparing means before and after the IHC.

Surveys were collected from clinical placement participants four times during the study using a University blended learning website tailored to the project. The surveys administered before the students' first clinical placement and after their final clinical placement featured the modified IEPS in addition to open-ended questions. The surveys administered after the students' first and second clinical placements included reflective questions only. Eleven students completed the surveys (8 nursing students, 3 podiatry students; all female). Due to a low response rate (5 of 11 participants completed the final survey), statistical analysis is not reported for clinical placement participants. However, their responses to open-ended questions were included in qualitative analysis and content analysis was performed on responses using Krathwohl's (2002) updated Bloom's taxonomy of learning.

To allow for in-depth understanding of participants' experiences and comparison, semi-structured interviews were facilitated with four students: a female nursing student who had participated in a clinical placement; a male nursing student who had participated in a clinical placement and the Interdisciplinary Health Challenge (IHC); a female psychology student who had participated in the IHC; and a male physiotherapy student who had not participated in either events. A focus group was also conducted with five students (2 traditional Chinese medicine, 1 podiatry, 1 physiotherapy, 1 nursing) directly following their involvement in the IHC.

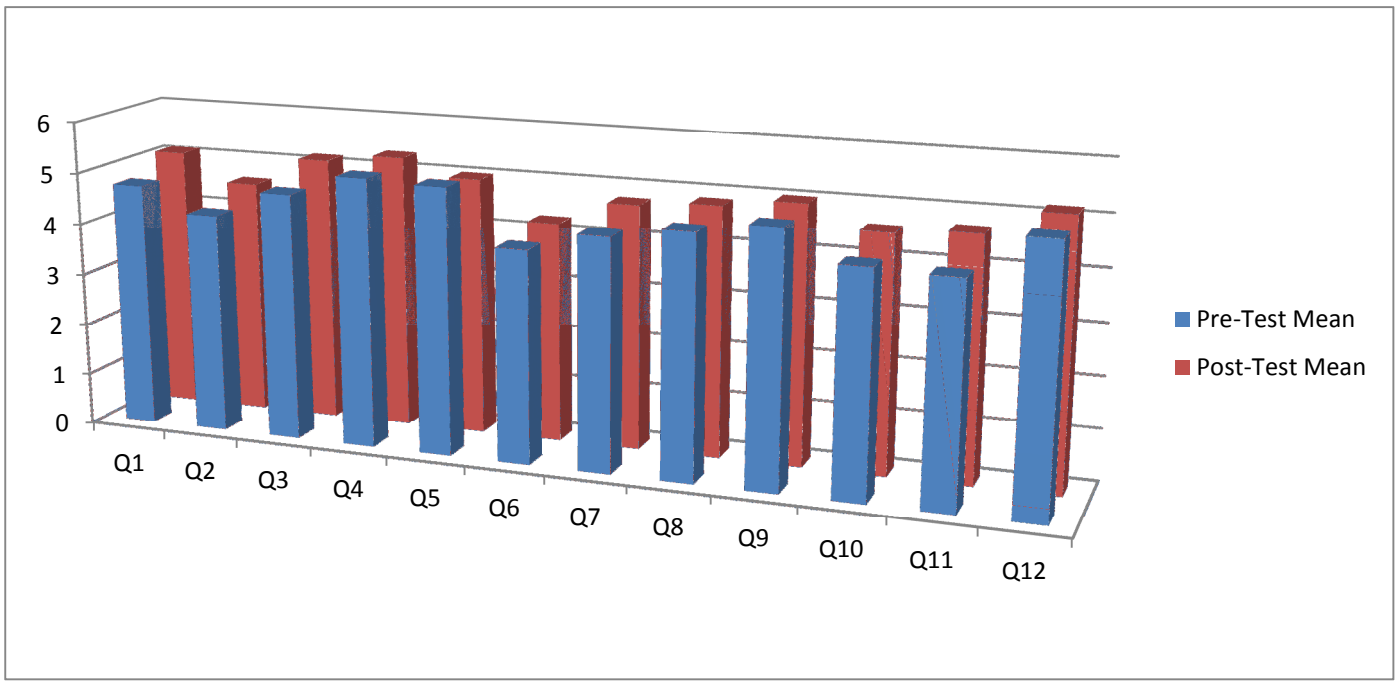
All interviews and focus groups were audio recorded and transcribed verbatim. A thematic approach was taken to ordering participants' texts (Charmaz, 2011; Flick, 2002; Glaser, 1992), underpinned by a realist/ic approach to research (Pawson & Tilley, 2005; Sayer, 1984). The texts were uploaded into Nvivo 10, a qualitative research software program (QSR International, 2013). Open coding, based on participants' expressions, was completed first (Flick, 2002; Glaser, 1992). Then, the themes of each category were summarised to allow for theoretical coding where study-wide, instead of case-by-case, themes are examined to allow the phenomena of the study to emerge (Flick, 2002; Glaser, 1992). This involved comparing conflicting experiences and analytic induction (Becker, 1998).

Below, results of statistical analysis of the IEPS administered before and after the IHC are described. Content analysis of open ended survey responses are provided second. Then the themes that emerged from analysis of the interviews, focus groups and open-ended survey questions are described. Participant numbers are used in place of names. See table 3 for a summary of participants' demographic and academic characteristics.

Results

Nineteen students completed both pre and post surveys during the IHC. Figure 1 depicts the means of participants' responses to each question.

Figure 1 Pre/post survey mean by question



Means are in the 4-5 range, indicating that on average students somewhat agreed (4) or agreed (5) with these statements. The means for responses to statement 6, 'Individuals in my profession must depend upon the work of people in other professions,' were lowest at 4.1053 (pre-test) and 4.2632 (post-test). The means for responses to statement 4, 'Individuals in my profession need to cooperate with other professions,' were highest at 5.2105 (pre-test) and 5.3158 (post-test). The figure shows a clear upward trend. With the exception of question 5, 'Individuals in my profession are very positive about their contributions and accomplishments,' students tended to agree more strongly with statements in the scale after attending the IHC. All means increased during the post-test except for question 5 which decreased by 0.16 points. This decrease, however, is not statistically meaningful. Increases in mean varied from 0.11 points (Q4, Q9, Q12) to 0.42 points (Q11).

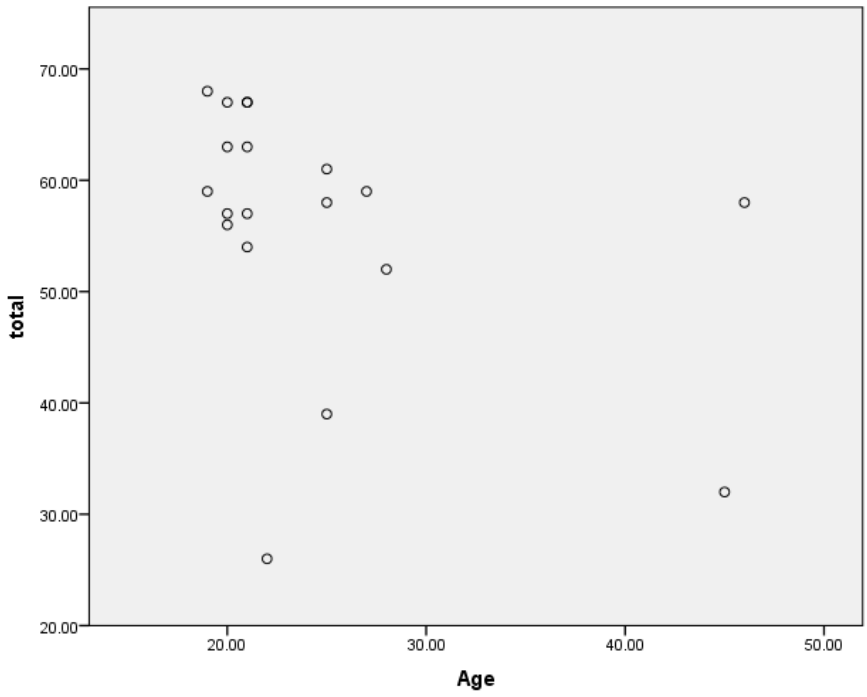
Results of a paired t-test (see Table 1) using the Statistical Package for the Social Sciences (IBM, 2013) indicate with a 95% confidence interval, however, that the difference in students' responses from the pre-test to the post-test was statistically significant in only one question. Changes in students' responses to question 1, 'Individuals in my profession are well-trained' had a statistically significant difference after the IHC (Mean = 0.37: 95%CI 0.08 to 0.66; p=0.015). Changes in students' responses to question 11, 'Individuals in my profession think highly of other related professions,' were close to being statistically significant (p=0.057). This question, however, had the largest change in mean and more variability in the data.

Table 1 Paired samples t-test for pre/post IHC

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Q01 - Q01_fu	-.36842	.59726	.13702	-.65629	-.08055	-2.689	18	.015
Pair 2	Q02 - Q02_fu	-.31579	.88523	.20308	-.74245	.11088	-1.555	18	.137
Pair 3	Q03 - Q03_fu	-.36842	1.01163	.23208	-.85601	.11917	-1.587	18	.130
Pair 4	Q04 - Q04_fu	-.10526	.93659	.21487	-.55668	.34616	-.490	18	.630
Pair 5	Q05 - Q05_fu	.15789	.89834	.20609	-.27509	.59088	.766	18	.454
Pair 6	Q06 - Q06_fu	-.15789	.89834	.20609	-.59088	.27509	-.766	18	.454
Pair 7	Q07 - Q07_fu	-.26316	.80568	.18484	-.65148	.12517	-1.424	18	.172
Pair 8	Q08 - Q08_fu	-.15789	.68825	.15789	-.48962	.17383	-1.000	18	.331
Pair 9	Q09 - Q09_fu	-.10526	.80930	.18567	-.49533	.28481	-.567	18	.578
Pair 10	Q10 - Q10_fu	-.26316	.99119	.22739	-.74090	.21458	-1.157	18	.262
Pair 11	Q11 - Q11_fu	-.42105	.90159	.20684	-.85561	.01350	-2.036	18	.057
Pair 12	Q12 - Q12_fu	-.10526	.65784	.15092	-.42233	.21180	-.697	18	.494

No difference in IEPS outcomes was found between male and female participants. However, differences were found in total baseline scores by age. There is a trend indicating that younger participants scored higher on the baseline survey. However, the small sample size and extreme data points prevented meaningful regression analysis.

Figure 2 Baseline total score by age



Findings

In this section we report the findings from content analysis of the open-ended questions in the clinical placement surveys, and then findings from the IHC surveys before describing the findings from thematic analysis of all texts.

Clinical placements

In the surveys, we prompted participants to reflect on their experiences in clinical placements. For example, we asked students to describe 'Something I got from today's session (skill/ technique/ awareness) was…' and 'I was

surprised to learn that…' Overall, students found the placements worthwhile. One participant, for example, wrote, 'all I gained was more than I initially expected' (C4). Following Nisbet and colleagues (2008) we use Krathwohl's (2002) revised version of Bloom's taxonomy as a basis for ordering participants' responses. We report 13 outcomes, many on the higher order learning side of the taxonomy, though none in the uppermost level: create. The level most reported was level three: apply. Students' described applying knowledge and skills gained through university-based learning and gaining a sense of mastery with guidance from their clinical placement supervisors. The level reported second most was analyse. After applying or observing, students reassessed skills that they had previously undervalued. Teamwork, communication and emotion work skills were among those most often assessed as being more important following clinical placements. 'Emotion work' is used here to refer to the manipulation of emotions that people perform on themselves and others in terms of intensity, direction and duration (Hochschild, 1990; Small, 1996; Turner & Stets, 2005).

Table 2 ICTE surveys: content analysis of open-ended responses

Bloom's revised taxonomy categories	*Reported change from participation*	*Examples*	*Participants*	*Total*
1.0 Remember: recognise, recall	Increased knowledge of diseases	'It increased my…knowledge of…diabetes' (C7).	1, 7	2
	Increased awareness of other work settings	'…increase my knowledge about various areas… what kind of nurse I want to be' (C4). 'learn about other positions and departments' (C9).	4, 6, 9	3
	Improved understanding of one's own professional role	'better…understanding of my role as a health professional' (C2). 'exposure to real podiatry work' (C6).	2, 4, 6	3
	Recognising emotion work	'the skills of guiding the patient when they were examined by the doctor' (C7).	7	1
2.0 Understand: interpret, summarise, compare, explain	Interpretation	'Interesting to learn how to interpret the test' (C10). '…interpret patient files' (C3).	3, 7, 10	3
	Improved understanding of how to work in an MDC team	'it involves both sides listening to each other…group work…every action requires [a] rationale' (C4).	4, 8	2
	Increased understanding of disease complexity/ patient variation	'Obesity is a multifaceted issue…' (C1) ' "Every patient is individual." I have read and listened to this quote many times in textbooks…this was [the] first time observing it' (C4).	1, 4, 8, 10	4
3.0 Apply: execute, implement	Using technology, techniques and equipment	'taking patient history' (C6). '…vital obs…preparing room, witness consultations' (C4).	3, 4, 5, 6, 7, 8, 9	7
	Applying emotion work skills	'the nurse showed me how to calm down the patient who was scared of the examination' (C7).	7	1
	Applying communication skills	'interacting with a patient one-on-one' (C9)	4, 5, 7, 8, 9	5
4.0 Analyse: differentiate, organise, attribute	Higher assessment of the importance of communication skills or emotional labour	'Empathy…communication skills and listening skills are essential…to nursing' (C4).	4, 6, 7, 8, 9, 11	6
	Higher assessment of the importance of MDC teams	'I realised the importance…of having multidisciplinary teams…the patient is never in need of just on health discipline' (C6). 'importance of working with other health professionals to promote patient health' (C8).	1, 6, 8, 11	4
5.0 Evaluate: check, critique	Reflection, evaluation on or improved confidence in one's performance	'my communication skills were improved dramatically…' (C7). 'The NING diaries…means looking back at your actions and why did you do that and if you could have improved…' (C4).	4, 6, 7, 9	4
6.0 Create: generate, plan, produce				

IHC

Like the open-ended survey responses related to clinical placements, on the whole, students found the IHC valuable. One survey respondent wrote, 'This program has been such a good experience' (S3). Another wrote, 'I was amazed that in a short given time, as a team, we all could do a fantastic job' (S2). Focus group participants made similar assessments.

FG4: ‘I think I pretty much got what I wanted.’

FG5: ‘I expected a lot of fun and it was a lot of fun.’

FG2: ‘The idea of everyone working together definitely was achieved’

FG3: ‘I feel I really benefited a lot.’

Interviewee 3 went as far as describing the IHC as the most amazing experience. ‘I have been selected to represent UWS at IHC….so that’s the most amazing experience I would say.’

In the survey administered before the IHC, students responded to the following question: ‘What do you expect to gain from being involved in the IHC program?’ One student wrote ‘fun’ (S2), another ‘a chance to put my knowledge into practice’ (S20). Three referred to ‘networking’ or getting to know other students (S3, S12, S16). Most hoped to gain clinical experience (S1, S3, S4, S13, S17, S20, S21) or a better understanding of or experience with interprofessional teamwork (S1, S3, S4, S5, S6, S7, S8, S9, S11, s12, S14, S15, S16, S17, S18, S19, S20, S21, S22, S23).

In the survey administered after the IHC, students responded to the question, ‘What did you learn from being involved in the IHC program?’ Most described learning about other professions or interprofessional teamwork (S1, S4, S5, S6, S8, S9, S10, S11, S12, S13, S14, S15, S16, S17, S18, S19). In the assessment of many students, participating in the IHC prompted them to value MDC teams and interprofessional communication skills more highly (S3, S4, S5, S6, S7, S8, S9, S11, S14, S16, S17, S18). For example:

S17: ‘How the multi-disciplinary team can benefit the patient.’

S4: ‘How one’s job can be improved by working more closely with others.’

S5: ‘The amount of involvement and cooperation needed between disciplines.’

S4: ‘the incredible benefit to the patient by working more closely with other disciplines.’

Others described improving their communication skills (S1, S2, S3) and gaining a better appreciation of patient care as complex (S12, S11, S13, S15, S18). While only one student expected ‘fun,’ two described the IHC as fun in their surveys (S3, S15) and one student described making friends (S17).

The event was not, however, assessed positively by all. One participant described disparities in the quality of the preparedness and listening skills across her team. ‘I was surprised that other members of the group were not properly prepared or did not understand instruction well’ (S16). While S16’s experience may have been less enjoyable than others, she gained valuable insight into the challenges associated with MDC teamwork. The same student described persisting doubt of another profession, despite interactions during the IHC. ‘I’m a bit ashamed that I wasn’t more open-minded towards TCM, but I haven’t been convinced by this experience’ (S16).

Several core themes emerged from thematic analysis of, mainly, the interview and focus group transcripts: 1) greater understanding of IPE and other disciplines amongst participating students; 2) appreciation of interprofessional teamwork skills; 2) the value of ‘real life’ experiences; and 3) requests for the IHC to be a mandatory part of the curriculum.

IPE

Better understanding of interprofessional education, of other students' health professions and the overarching process involved in multiprofessional teamwork were primary interests and reasons for attending for most students. Compared to the interview with the participant who had not attended (either the IHC or clinical placements), IHC and clinical placement participants demonstrated a better understanding of IPE. Interviewees and focus group participants were asked to define and describe IPE. All the participants who had been involved in the clinical placements of IHC day were able to accurately describe IPE.

> I2: 'Well it is…health professionals working together from different disciplines and not just putting in their own input but understanding each other's input and working their input around others.'
>
> FG2 'understanding what other people's roles are means that we can treat them more holistically.'
>
> I3: 'It's being [an] advocate or being [a] liaison among all the professions.'

I1, who had not participated in the IHC or ICTE programs but had completed one year of his undergraduate health science degree which involved interprofessional common units, was not able to describe IPE. 'Interprofessional means… It's a bit hard because I am not really sure what that really means….Is it to do with more than one profession?' After the interviewer defines IPE for him, he responds, 'I just haven't really experienced much…I don't really know the importance of it all [IPE] I guess.' This highlights the importance of applied learning experiences, such as the IHC and clinical placements, to pre-licensure health professional students remembering and valuing IPE.

This may be due to their engagement in the higher order learning activity of applying their knowledge and creating a treatment plan during the IHC. Directly after attending, several students described the IHC as a chance to 'be more aware of what other professions actually do….you…become aware…that these people exist and you can actually use them as resources' (FG4). Three students described a greater understanding or evaluation of other professions because of the IHC.

> FG2: 'one thing out of the whole inter-professional communication we've had is the awareness of TCM. I actually knew nothing about it….I knew it had something to do with herbs and acupuncture…but I had no idea the amount of detail and knowledge that goes behind what you do….We don't ever get into contact with you guys so I think it was really good.'
>
> FG1: 'I never knew psychology was even at UWS.'
>
> FG5: 'I never knew about Traditional Chinese Medicine…I [thought] I knew everything about UWS!'
>
> FG5: 'Like…OT, they don't do anything apart from fixing the railing. That's what my impression [was] until today.'

Understanding others' roles was viewed as necessary to being effective in the workplace and necessary to holistic care. When asked if interprofessional learning is a good idea, I2 responded, 'I think that's a good idea because….you can see the same topic from the variety of perspectives, so that when you do get into the workforce you do know how to apply them…' FG2 explained that, 'understanding what other people's roles are means that we can treat them more holistically…Mrs E just didn't need on person, she needed a whole team and because of that her treatment was more specialised' (FG2).

Yet participants wanted to understand more than others' roles; they were eager to gain a macro perspective on multidisciplinary care from the IHC. 'It can actually be very complex,' explained FG4. In class, students are instructed to refer patients to occupational therapists, nurses or other health and social care professionals when the patient's needs are beyond the scope of their practice. However, they were unsure about what happened next.

> FG2: 'We get told…you just refer to an OT, but when you refer what happens? How do you refer? What do they do? And that was really good to know today' (FG2).
>
> FG4: 'It was a great case study, great learning experience and if we could do case studies which were really detailed within TCM and understand it from a western medicine context it would be really good…learning who to refer to….we'll refer it on but we never really had that integration happening.'
>
> FG5: 'Now it makes sense after this kind of group…you know that this is the outcome the patient is going to get.'

Two primary learning outcomes attributed to participation in the IHC were improved understanding of other's health professions and improved understanding of the MDC system. Students also described teamwork skills as more important after experiencing the challenges associated MDC teamwork.

Interprofessional teamwork skills

Many participants described ideal teamwork experiences as part of the IHC or clinical placement.

> FG5: 'Everybody was so versatile…before making any decision they were always referring to each other….it was kind of a unanimous thing.'
>
> FG4: 'We were really lucky because our group was really hard working and enthusiastic but very flexible and understanding and open to new ideas.'

However, participants still recognised the challenges that are part of interprofessional teamwork. 'Quiet conflict will be there of course' (I3). For some, professional status may inhibit their reception within the group: 'Some people they think you're just a nurse, you're not a doctor so won't trust you' (I4). The need to make decisions about what to do and when to do it was another challenge. S14 declared that 'there are priorities that must be set and a profession must be allocated to drive the recovery approach of the patient.' But, how should a leader be selected? At times personalities and professions took this decision away from teams.

> FG1: 'the stronger personalities or more dominant professions…are more outspoken than other professions.'
>
> FG4: 'I think if you had some strong personalities which were a bit dogmatic and narrow minded…it can be a bit detrimental…from a treating a patient point of view, because they might not update their skills…or take advice from other people.'

Several participants described a 'grey area' that had the potential to spark conflict within the group. C4 used this term 'grey area' to describe the area where practices overlap. In physiotherapy and occupational therapy, for example, skills overlap as FG2 explains, 'I've always been confused as to the line that divides physiotherapy and occupational therapy because it is so fine. I can do exactly what they do but yet they do it too' (FG2). Anxiety treatment provides another example. The medical professional may consider anxiety treatment within their scope of practice and treat with medication; the psychologist will also view anxiety as within their scope of practice, but may treat with cognitive behavioural therapy. I2 had this experience within her IHC team. 'In the challenge…there was a

doctor [student] saying give medication and it's just not as clear as that and that's something I strongly feel against. So, I could see in the medical setting there is that conflict…we…learn from the psychological perspective and they…learn from the medical perspective.' This grey area and other inherent challenges to teamwork, required health professional students to employ a range of teamwork, communication and emotion work skills.

I2 recommended being selective about confrontation. 'If…you don't agree…you think the goal could be reached in a different way…you need to negotiate. But then I think sometimes you might not want to negotiate. It depends on how big a clash there is' (I2). I4 recommended being selective about leading. 'Knowing when you need to be able to say, oh, this person may have more knowledge than I do' (I4). Others described communication skills as central to strategic interprofessional teamwork.

I3 mentioned, several times, the importance of IHC as an opportunity for practicing the communication skills that will be required of him as a nurse. He viewed it as an opportunity to learn communication tactics that transgress differences in power and profession.

> '…how to tackle the different people and yet maintain your professional boundaries.'
>
> '…how to say your opinion, how to send your message across a team in a most effective way. Some people [are] kind of dominant… "hey, I'm from a medical field so I should lead you"….sometimes doctors might be wrong…so if you…can send your message across in such a generous way that it's not hurting anyone's ego…you're getting the best things.'
>
> 'You had to be very careful that you are not sounding rude….you should be very careful how you send your message.'

As this quote suggests, communication skills were assessed as about more than sending a clear message. Clear communication means the message is also received, and this may require emotion work: considering the way a person is likely to feel about the message while sending it and/or actively trying to change a team member's mood. I3 explained that, 'Somebody might turn up cranky so you should know how to handle that. You can't just turn your back…aggravate[] the situation. You [need to] know how to handle those kinds of things.'

Emotion work featured in the clinical placement surveys as well, with participants describing 'empathy…skills and listening skills' (C4), 'rapport' building (C6) and 'patience' (C4, C7, C9) as 'essential' (C4) professional skills. I4 echoed this assessment. 'We should concentrate on care' and concentrate on making the patient feel 'comfortable…safe….We should actually learn how to deal with others so that we can provide better treatment and better care to the patient.'

Clear communication may also require cultural understanding. I4, as an international student from a non-English speaking background, worried about cross cultural communication. She didn't want to offend clients or colleagues.

> 'I would be so careful because sometimes I might speak the wrong word…they would say discrimination.'
>
> 'We should learn how to deal with the people from different cultural background, how to communicate with them.'

> ‘We should actually learn how to deal with others so that we can provide better treatment and better care to the patient.’

Thus, after being involved in the IHC or clinical placement, participants valued cultural understanding, teamwork, communication and emotion work skills as relevant to both effective teamwork and patient outcomes.

‘Real life’ experiences

Students repeatedly referred to the value of ‘real life’ experiences. The interviewee not involved in the IHC or clinical placements valued written assessments more than unrealistic tutorial exercises. After involvement in the IHC, participants emphasised the value of ‘real world’ or close to real world experiences, as being more valuable than classroom activities.

I1, the participant who had not taken part in the IHC or clinical placements, described written assessments as more valuable than tutorial discussions. He talked about classroom-based IPE as not being memorable because it was not based in real life.

> I1: ‘working together we did go through some exercises….The teacher would give us three professions and one case study and we’d work together to try and figure out how all three of us would help out but I didn’t feel like it was…I feel like maybe a lot more examples were needed….real life examples.’

In contrast, he described written assessments as validating of his course selection and valuable to his skill development and confidence. I1 had changed from an engineering degree to a physiotherapy degree one year before the interview. He described written assignments as validating his decision.

> I1: ‘I started off not really knowing what physiotherapy was about…so you have these assignments just basically investigating what physiotherapy is….After the assignment I just felt like this is what I really wanted to do….I really saw how you could really change someone’s life by giving them the optimum functioning again.’

He also described assignments as effective means of gaining and retaining skills. ‘I find doing an assignment pretty helpful. So you’d have an assignment on maybe finding research and then you’d have an assignment on critiquing it…after doing an assignment…it feels really fulfilling that I’ve learnt all this stuff and I’d be able to do it again’ (I1).

Students who had taken part in the IHC also described the importance of ‘real world’ experiences - learning experiences outside of the classroom - to gaining epiphany experiences where they pulled together the knowledge and skills they had acquired over previous years. Students, especially I3, consistently distinguished between university-based learning and ‘real life.’

> I3: ‘You are not going to live your whole life at uni.’

> I3: ‘When you’re in uni you never know the outer world.’

Following the IHC, the focus group participants discussed whether or not the IHC was similar to real life. FG1 said, ‘It would be good to see how it [MDC teamwork] would work within a workplace environment.’ FG2 and FG4 responded that it was similar to MDC teamwork within two different hospitals.

FG2: ‘A lot of times they’ll have a multi-disciplinary team looking after a patient. On prac…I noticed that they’ll…sit around and discuss all the high risk cases….around the same table….but…the more medicine or vascular would have more say than physio or podiatry.’

FG4: ‘At the end of the day…they would all sit down and discuss the patient that they saw, if there was anything new, what the process [was] or if they needed to change anything.’

I3 described the IHC as like real life experience, but better than real life experience. He described it as a safer version of real life.

I3: ‘It’s a real life experience….you are actually caring [for] the patient….you are in a real environment.’

I3: You are working as a ‘group member to give their idea and…justify that this is my treatment but my rationale behind it is this. So you are actually dealing in a more professional way.’

FG5: ‘It’s a kind of simulation of real life so that you know before you go into practice…that these are the challenges you have to face.’

These safe real life experiences were described as ‘invaluable’ by psychology student I2. She went on to say, ‘I think it would be good if you had more practical experience to develop your practical skills with communicating with people’ (I2). The IHC was ‘invaluable’ because of its importance to comprehension and confirmation. I2, for example, explained that the IHC prompted her to realise what she knew.

I2: ‘I think now…I see how much we learnt in those first three years and going to the health challenge made me realise how much I did know because you could start to apply it and it really surfaced.’

I2: ‘Apply the theories or the treatments that they suggested but tailor them to the client.’

I2: ‘The skills I’ve been learning for the past three years, that was the first practical experience I have ever engaged in so it was really good and valuable.’

During the IHC, I3 also realised he knew more than he thought he did. ‘You realise that yes, that was the main thing that influenced me to make some decision on behalf of my profession’ (I3).

Thus, written assessments were described as more effective in facilitating skill retention than tutorial activities based on ideals and ‘real life,’ or similar to real life, simulations were assessed as most effective. These reality simulations provided students insight into clinical practice experiences and opportunities for applied summative learning.

Curriculum changes

Students found the IHC so valuable to their learning that they wanted to do it again, with other students and often.

FG1: ‘getting everything together in the final year is always really good just to…put everything into context.’

I2: ‘Would definitely want more of it [IHC] and that would be possibly in class….maybe an event so you could go and meet up with people….discuss things on a social level to build up the network.’

Some suggested that it should be a social event.

FG3: ‘make a club or group….How about other students? How about the long term? How about later on we build up a club….where we communicate with each other?’

Others suggested that it should be a mandatory and assessable part of health professional curriculum across the university.

> FG1: 'if we had something like this but on a big scale…a mandatory thing…at the beginning of semester, a great way to learn about other people's professions and how they all fit in.'
>
> FG2: 'it would be good to have an assessable day where one person from each discipline…does a case study, you have to present and it goes towards your marks.'
>
> FG4: 'involving this sort of activity in the actual curriculum…would be an amazing opportunity. Just to have a week where everyone's together.'
>
> I3: 'if this kind of training is mandatory…one day in a month…two days in a whole semester then a person or a student has a better insight of what other professions do.'

The mandatory approach was preferred by many because of the nature of the student cohort at UWS. Most students do not live on campus. They commute from, often, far distances a few days a week to attend lectures and tutorials.

> FG2: 'a lot of people are resistant to volunteering….They're like, I come to uni, I don't know if I want to come another day.'
>
> I1: 'I suppose campus life is not very existent. I probably got to uni for classes and then go home afterwards.'

Also, many students at UWS work. In the clinical placement surveys, when asked to rate how important the 'ability to organise clinics around my work commitments' was to their selecting their clinical placements, four students selected 'very important' and three selected 'important'.

UWS is largely a commuter university where most students balance work and a full-time study load, most students agreed that the IHC should be implemented into curriculum as a mandatory and assessable activity. Some, however, suggested moving the event to the beginning of semester (FG3, FG5). Having the IHC 'just before exams,' was described as a deterrent for some. So I3 concluded, 'if this kind of project happens early in the semester that would be great.'

Conclusion & future directions

This realistic evaluation of IPE, in clinical placements and the IHC, is the first to include podiatry and traditional Chinese medicine (Olson & Bialocerkowski, in press). Results indicate a trend towards improved attitudes towards IPE, one's own and other professions after a two day simulated case study. These findings highlight the importance of presage factors to IPE success. They also provide a more in-depth understanding of the learning experiences associated with IPE.

Next, we plan to undertake further statistical analysis of students' demographic characteristics and further analysis using sociological theory before submitting findings for peer-review and publication to one or more journals. We also plan to use these findings to advocate for the sustainable implementation of IHC into the health science, medicine, nursing and psychology curriculum at UWS.

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Table 3 Participants' demographic and academic characteristics

Participant	*Age*	*Course*	*Year in course*	*Gender*	*Ethnicity*	*Socio-economic status*	*First university degree?*	*Average Grades*
Interviewee 1 (I1)	20	physiotherapy	2	Male	Australian	Lower-middle class	Yes	D-HD
Interviewee 2 (I2)	22	psychology	4	Female	Anglo-Australian	Middle class	No	C
Interviewee 3 (I3)	28	nursing	3	Male	Indian	Middle class	No	D
Interviewee 4 (I4)	23	nursing	2	Female	Chinese	Middle class	No	C
Focus group participant 1 (FG1)	27	podiatry	4	Female	Caucasian	Upper class	Yes	P
Focus group participant 2 (FG2)	25	physiotherapy	3	Female	Indian	Middle class	No	D
Focus group participant 3 (FG3)	45	traditional Chinese medicine	2	Female	Chinese	Middle class	No	C
Focus group participant 4 (FG4)	25	traditional Chinese medicine	3	Female	Anglo-Australian & New Zealand	Middle class	Yes	C-D
Focus group participant 5 (FG5)	28	nursing	3	Male	Indian	Middle class	No	D
IHC survey participant 1 (S1)	45	traditional Chinese medicine	2	Female	Chinese	Middle class	No	C
IHC survey participant 2 (S2)	28	nursing	3	Male	Indian	Middle class	No	D
IHC survey participant 3 (S3)	22	psychology	4	Female	Anglo-Australian	Middle class	No	C
IHC survey participant 4 (S4)	20	medicine	3	Female	Indian	Middle class	Yes	C
IHC survey participant 5 (S5)	25	physiotherapy	3	Female	Indian	Middle class	No	D
IHC survey participant 6 (S6)	21	podiatry	4	Female	Anglo-Australian	Middle class	Yes	D
IHC survey participant 7 (S7)	21	psychology	4	Female	Italian-Australian	Middle class	Yes	D
IHC survey participant 8 (S8)	20	nursing	3	Female	Australian	Middle class	Yes	C
IHC survey participant 9 (S9)	46	medicine	3	Male	Minority	Middle class	No	C
IHC survey participant 10 (S10)	21	podiatry	4	Female	Australian	Middle class	Yes	C
IHC survey participant 11 (S11)	20	medicine	3	Female	Sri-Lankan Australian	Middle class	Yes	C
IHC survey participant 12 (S12)	25	psychology	4	Female	Persian-Iranian	Upper-middle class	Yes	D
IHC survey participant 13 (S13)	19	physiotherapy	3	Male	Indian	Middle class	Yes	D
IHC survey participant 14 (S14)	19	physiotherapy	3	Male	Asian-Australian	Middle class	Yes	C
IHC survey participant 15 (S15)	21	podiatry	4	Female	Indian	Middle class	Yes	C
IHC survey participant 16 (S16)	27	podiatry	4	Female	Caucasian-Atheist	Upper class	Yes	P
IHC survey participant 17 (S17)	20	psychology	4	Female	None described	Upper class	Yes	C
IHC survey participant 18 (S18)	21	medicine	3	Female	Sri-Lankan	Upper class	Yes	C-D
IHC survey participant 19 (S19)	25	traditional Chinese medicine	3	Female	Anglo-Australian & New Zealand	Middle class	Yes	C-D
IHC survey participant 20 (S20)		occupational therapy	3	Male				

IHC survey participant 21 (S21)		nursing	3	Female				
IHC survey participant 22 (S22)		psychology	4	Female				
IHC survey participant 23 (S23)		nursing	3	Female				
Clinic survey participant 1 (C1)		nursing	2	Female				
Clinic survey participant 2 (C2)		podiatry	2	Female				
Clinic survey participant 3 (C3)		podiatry	2	Female				
Clinic survey participant 4 (C4)		nursing	3	Female				
Clinic survey participant 5 (C5)		nursing	2	Female				
Clinic survey participant 6 (C6)		podiatry	2	Female				
Clinic survey participant 7 (C7)		nursing	2	Female				
Clinic survey participant 8 (C8)		nursing		Female				
Clinic survey participant 9 (C9)		nursing		Female				
Clinic survey participant 10 (C10)		nursing		Female				
Clinic survey participant 11 (C11)		nursing		Female				