

Interprofessional Academic Service-Learning in Rural Australia: Exploring the impact on allied health student knowledge, skills, and practice.

A qualitative study

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Abstract

In 2009, health, health education, and school education agencies in rural NSW, Australia, partnered with a metropolitan university to develop an interprofessional service-learning program. The program aimed to address unmet allied health needs of regional school children. Speech pathology and occupational therapy student placements were aligned to enable the provision of interprofessional student services. Despite program longevity, no formal research had been undertaken on cross-sector program impacts and outcomes. This pragmatic qualitative study explored the perspectives of multiple-program stakeholders, school principals, and senior managers from facilitating agencies, speech pathology and occupational therapy students and allied health academics. The study aimed to gain a holistic understanding of program impact and outcomes from multi-dimensional perspectives. This paper focuses on student and academic findings associated with interprofessional education and practice. Students participated in interprofessional focus groups. Academics participated in semi-structured individual interviews. Data were analysed using a constant comparative method; broad codes were developed and collapsed into three key themes: previous interprofessional practice exposure, program supervision model, and interprofessional practice impacts. Findings suggest that: 1) students had experienced either no previous interprofessional practice exposure, or exposure that effectively enhanced student understanding of teamwork practice; 2) student participation in the program enhanced continuity of care through the 'team continuum' and capacity to practice interprofessionally. Lessons learnt from this rural program have influenced the practice of a metropolitan university.

Keywords: allied health; interprofessional; occupational therapy; rural; service-learning; school children; speech pathology

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Introduction

Rural and remote (referred to as rural throughout this paper) New South Wales (NSW) children are more likely to experience social, economic, educational and health disadvantage, acknowledged precursors of developmental delay ([Simon et al 2013](#), [NSW Department of Education and Communities 2013](#), [Baum et al 2009](#), [Australian Institute of Health and Welfare 2008](#)). These children are less likely to have access to a range of allied health services to prevent and address these needs due to persistent health workforce shortages ([Spiers and Harris 2015](#), [Allied Health Professionals Australia 2013](#), [Health Workforce Australia 2013](#)). For many rural families this disadvantage and service inaccessibility can be intergenerational ([McLachlan, Gilfillan, and Gordon 2013](#)).

In 2009, regional stakeholders, public schools, the health sector and the Broken Hill University Department of Rural Health (BHUDRH) partnered with The University of Sydney's Faculty of Health Sciences in the development of an allied health service-learning program. The program, in the first instance, aimed to align speech pathology (SP) student learning experiences to the provision of services for pre-school and primary school children to address unmet speech and language needs. The program rapidly expanded to include occupational therapy (OT) students in 2010, refocusing the program to an interprofessional service-learning (IPSL) model ([Jones et al 2015](#)).

Perceived benefits of the program included enhanced service accessibility and potential impact on child health and resultant later life outcomes, growth in student placement capacity and the provision of interprofessional education (IPE) that directly aligned to interprofessional practice (IPP) opportunities for students.

Defining and describing interprofessional practice

[Freeth et al \(2005\)](#) defined IPP as 'two or more professions working together as a team with a common purpose, commitment and mutual respect' (xiv-xv). IPP is considered essential in responding to complex health needs requiring input from more than one profession ([Bridges et al 2011](#)), complexity that is reflected in rural Australian contexts. IPP is important in the provision of safer, effective and sustainable patient-centred care, achieved through enhanced interprofessional communication and collaboration, coordination of services and team work approaches ([Körner et al 2015](#)).

Provision of interprofessional education (IPE) defined as occasions when two or more professions learn from, with and about each other to improve collaboration and quality of care ([Centre for the Advancement of Interprofessional Education 2002](#)), is an approach to the development of health students for contemporary IPP ([Olsen and Bialocerkowski 2014](#), [Poling and Kiersma 2014](#)). The [World Health Organization \(2010: 10\)](#) stated that: 'Once students understand how to work interprofessionally, they are ready to enter the workplace as a member of the collaborative practice team'.

Pre-registration IPE can include clinical simulation ([Baker et al 2008](#)), interprofessional problem-based scenarios ([Boyce et al 2009](#)) and work integrated learning (WIL) experiences such as interprofessional student training wards ([Brewer and Stewart-Wynne 2013](#)). More recently interprofessional service-learning (IPSL) ([Clark et al 2015](#), [Leander et al 2014](#)) is emerging within the rural Australian context, directly aligning student learning to IPP experiences to address community identified areas of health need ([Frakes et al 2014](#), [Jones et al 2015](#)).

Interprofessional service-learning

Service-learning is an experiential educational pedagogy, students learn through direct service provision that is specific to their discipline ([Eyler and Giles 1999](#), [Jacoby 2003](#)). Service-learning is distinguished from clinical placements by the equal weighting between student learning and service outcomes. Through structured reflection, students apply their theoretical knowledge in real world settings exploring their professional and civic roles ([Seifer 1998](#)).

The provision of services in community-based settings – in this instance, rural pre-school and primary schools – enables students to learn about service continuity, health promotion, communication, collaboration and health issues that affect underserved communities ([Seifer 1998](#)). Service-learning aims to recognise and respond to societal needs, and interprofessional education aims to form teams to meet those needs, assisting health students to learning about collaborative IPP in alternative health care settings ([Clark et al 2015](#)).

The program

The Allied Health in Outback Schools Program (AHOBSP) commenced in 2009, responding to concerns raised by primary school principals on the detrimental impacts for children who were unable to access allied health services. Rural communities are characterised by persistent allied health workforce shortages ([Allied Health Professionals Australia 2013](#), [Health Workforce Australia 2013](#), [Spiers and Harris 2015](#)). The BHUDRH drew on its organisational relationship with The University of Sydney to engage representatives from the Faculty of Health Sciences, providers of allied health pre-registration education, to work collaboratively with local partners in program development.

Serial cohorts of OT and SP students from four universities, now undertake placements across four school terms. Student to supervisor ratios are 4:1 for OT, and 6:1 for SP. Students, as interprofessional teams, under the supervision of discipline and interprofessional qualified clinicians, provide screening, assessment and therapy services for school children with mild to moderate needs across twelve school sites and three regional communities. Children with more complex needs are referred to hospital clinicians. Approximately 150 children access these services annually.

Additional interprofessional program elements include a five day intensive induction in Broken Hill, weekly clinical and professional reflection sessions and mid- and end of placement focus group evaluations. Despite these evaluations, longevity of the program and perceived benefits associated with IPSL, no formal evaluation of program outcomes for cross-sector stakeholders had been undertaken. Due to the breadth of findings associated with this study, this paper focuses specifically on OT and SP student and allied health academic findings associated with IPE and IPP.

The study

This qualitative study adopted a pragmatic research design ([Sandelowski 2000](#), [Smith, Bekker, and Cheater 2011](#)), that is, a design that allowed the study questions to be addressed from multiple and diverse views and interpretations, to explore the perceptions and experiences of OT and SP students and allied health academics – one rurally based at the BHUDRH with direct responsibility for student supervision and one metropolitan based with a strategic program role – who were engaged in the development and delivery of the program. Study questions explored:

- 1) Factors that influenced participation in the program;
- 2) Effects of program participation;
- 3) Recommendations for program improvement;
- 4) Participant perspectives on the future directions of the program.

In asking these questions we hoped to gain a deeper understanding of program impacts and outcomes to contribute a rural perspective to the Australian service-learning discourse.

A pragmatic qualitative research design was selected based on the multi-sectorial nature of participants, variations in their roles within the program and potential diversity of backgrounds and experiences associated with program participation. The researchers had a desire to avoid over-immersion in the epistemological underpinnings of a chosen method that poorly aligned to the complex and multi-dimensional aims of the study ([Sandelowski 2000](#), [Smith, Bekker, and Cheater 2011](#)).

Methods

Ethics approval

A low risks ethics approval for this study was obtained from The University of Sydney Human Research Ethics Committee (approval number 2014/178). Written approval was obtained from La Trobe University.

Participants

Participants were purposefully selected ([Creswell 2007](#)) based on their roles in program development and delivery. An introductory email was sent by an independent administration officer to potential study participants, OT and SP students undertaking their placement in one school term in 2014 (via student email accounts), and to two allied health academics (via work email accounts). Participant information and consent forms were attached to this email and contact details of the lead investigator provided for additional study information. Signed consents were returned to the administration officer. All data were collected in the latter half of 2014.

Four OT and six SP students – representing all potential participants – consented to participate in one of two interprofessional focus groups (FG) conducted onsite at the BHUDRH. One rural academic with direct supervision of students, and one metropolitan academic with a strategic role in the program, consented to participate in individual semi-structured interviews: face-to-face for the rural academic, and via teleconference for the metropolitan academic.

Face-to-face focus groups

OT and SP students were purposefully allocated to one of two interprofessional FGs reflecting interprofessional program design: two OT and three SP students in each FG. FGs were selected for their ability to generate information on the collective view of the students and to generate a rich understanding of student experiences ([Morgan 1998](#)). FGs were facilitated by an independent researcher, running for approximately 60 minutes. A prepared schedule of questions was used to guide discussions. Questions were developed from findings from previous student program evaluations and study aims. Questions focused on factors influencing student engagement in the program, including: student understanding of the program prior to participation, comparison of the program to previous placement experiences, impacts of program participation, how students would describe the program to their non-participating peers, insight into program aims, suggestions for program improvement and thoughts on the future directions of the program.

Additional questions were asked as needed to encourage greater feedback. Sessions were recorded and manually transcribed. To ensure confidentiality, students were de-identified by discipline within the transcripts (due to small participant numbers and the rural location). Students were allocated FG and student numbers: e.g. Focus Group 1 Student 1 – FG1:S1, Focus Group 2 Student 2 - FG 2:S2.

Semi-structured individual interviews

One rural academic and one metropolitan academic consented to participate in semi-structured interviews, two interviews in total, running for approximately 50 minutes. The same researcher facilitated both interviews using a prepared schedule of questions. Questions were informed by study aims and previous academic feedback on the program. A level of variation existed between the questions asked of the rural and metropolitan academics to reflect their operational and strategic roles. Individual interviews were selected as a data collection method due to role variations, differing levels of seniority and geographical divide. Questions focused on factors that influenced program participation, program role, insight into why the program commenced, impact of participation in the program, program aims, how they would describe the program to

external agencies, and suggestions for program improvement and future program directions. These questions reflecting those asked of FG participants.

Follow-up questions were asked as needed to encourage greater participant feedback. Individual interviews were recorded and transcribed manually. Transcripts were provided to participants for verification. Academics were de-identified by discipline to ensure their privacy. Identifiers were allocated as Rural Academic: RA, and Metropolitan Academic: MA.

Data analyses

Data were analysed using an inductive process with the explicit aim of describing and interpreting the range of experiences associated with the phenomena, that is, their participation in the program. (Ritchie and Lewis 2003). The lead researcher read and re-read student and academic transcripts and manually assigned initial descriptive codes using a process of constant comparative analysis within and across student FG and individual academic interview data (Fram 2013, Miles, Huberman, and Saldana 2014). Broad codes were developed and collapsed into key themes and subthemes. Two researchers then independently reviewed a selection of transcripts, coded and categorised data, and identified emerging themes. All the researchers then reviewed and re-analysed results to refine descriptions of themes and subthemes (Creswell 2007). The lead researcher then coded and categorised the remaining data.

Findings and discussion

Three key themes relating to IPE and IPP were identified: previous interprofessional practice exposure; program supervision model; and impact on interprofessional practice. See Table 1 for themes and subthemes.

Table 1: Themes and subthemes

Themes		Subthemes	
1)	Previous interprofessional practice exposure		
2)	Program supervision model	1)	Types and levels of supervision
		2)	Peer roles
3)	Impact of program participation on interprofessional practice	1)	Integration of interprofessional knowledge into therapy
		2)	Service continuity
		3)	Role of socialisation

These themes and subthemes are now described in greater detail using direct participant quotes. The discussion on findings will be provided at the end of each subtheme.

Theme 1: Previous interprofessional practice exposure

The RA described their personal pre-registration experience of IPP: *'Although I hadn't done a lot of [interprofessional practice] work it wasn't because I wasn't interested. It had really been pushed at university [but] I hadn't had an opportunity to try [interprofessional practice] at university'*. This lack of opportunity was also described by students: *'You don't really get, you never get [interprofessional practice] experiences'* FG1:S2. This student then went on to describe their perception of previous IPP exposure: *'You can go on a month [long] hospital placement and liaise with [another discipline] but that doesn't say you have a relationship with*

them', and another student reflected: 'You might be able to shadow the [other profession] today, you might watch them, you just walk around with them but you don't see that connection, that side of a team. We've definitely learnt a little more about each other's profession and how we work together [here]' FG2:S3.

The MA described the faculty's goal of providing IPP experiences: 'A goal of our faculty is to make sure our students have at least one genuinely interprofessional placement. Any new placements we set up now have to be interprofessional and Broken Hill was at the forefront of that [change], however, '[for] many of our students the [Broken Hill placement] will be the one and only true interprofessional placement they have, the interprofessional aspect [of the program] is unique'. This 'uniqueness' of IPP exposure was discussed by students: 'This placement is quite different to everyone else's because we actually get to work with students from another discipline. We do class-based therapy alongside them. We know what their activities are' FG1:S2.

Theme discussion

If we are to develop future professionals who have the capacity to work collaboratively in the provision of quality health care it is imperative that we provide pre-registration health students with meaningful IPP experiences that prepare them effectively for contemporary health care practice (Poling, Labarbera, and Kiersma 2015). Authentic learning is recognised as a valued approach by health students, clinicians and academics in the development of skills, knowledge, professional and clinical attributes (Ernstzen *et al* 2009). However health students can feel poorly prepared to participate in complex health settings (Prince *et al* 2005, Laitinen-Väänänen, Talvitie, and Luuka 2007). Despite IPP being considered a key competency in health professional development (World Health Organisation 2010) and normal workplace practice, Howell, Devine and Portsman (2004) identified that students were likely to have limited IPP experience.

The acquisition of work-readiness attributes such as team work, communication and collaboration are becoming an industry expectation of student and new graduate practice (Smith, Ferns, and Russell 2014). Freeth *et al* (2005) highlighted the importance of IPE and IPP for health professionals in enabling them to respond to health care complexity and population health needs. Bainbridge *et al* (2010) described key competencies for collaborative IPP including: role clarification where learners and professionals understand their role and the role of other professionals: team functioning where learners and professionals understand the principles of team dynamics and group processes for effective IPP, and interprofessional communication where learners and professionals communicate with each other in a collaborative and responsible manner.

Findings from this study validate those of Howell, Devine and Portsman (2004). Students and the MA described the 'unique' nature of the IPP program experience, highlighting the difficulty for universities in providing quality IPP experiences and resultant impact on student learning outcomes. Student perceptions of their previous experiences, that of 'shadowing', difficulty in establishing a professional relationship, and failure to connect their experience to IPP, detrimentally impacted on their ability to gain insight into the role of collaborative teams.

Theme 2: Program Supervision Model

This theme has two subthemes: types and levels of supervision, and peer roles.

Subtheme 1: Types and levels of supervision

Students described the program knowledge held by their interprofessional supervisors:

Everything is so laid out. The [interprofessional] supervisors just know every little bit they come across. We do a [reflection session] every week and they have an agenda that has slowly been accumulated from previous student [experiences].

Things said at week 5 [of placement], these things happen. They know what to expect FG2:S1.

The RA described their professional development associated with program participation and student supervision:

I've had to learn how to manage a classroom [of children] and how to supervise [interprofessional] student groups because the program is integrated and their [practice] overlaps. The supervision model is [different], the students are in the [school classroom] together delivering therapy and there can be potentially four sessions occurring [simultaneously]. I could be observing one session for a student and [if it's going well] listening and watching what's happening in other sessions at the same time.

The MA identified the lower level of direct discipline student supervision of the program and student impact: *'The supervision, the direct supervision is low in Broken Hill and the students still learn, they still achieve, it all works'*, and program impact on faculty confidence to explore alternative supervision approaches: *'it's given academics [here] the confidence to try other models instead of that traditional one-on-one supervision'*.

Students reflected on the impact of having less direct supervision:

There's much less supervision and it really sets us up for working [post-graduation]. To be able to manage our own caseloads and still have the [supervisors support] there to ask them questions, find out if we are doing the right thing, to have [our peers as well] to discuss different aspects of [therapy] FG2:S2.

Students also described the support provide by the supervisors: *'They are so willing to help. They're not wearing rose-coloured glasses, they know what's happening with us'* FG2:S4.

Subtheme discussion

WIL literature describes the importance placed on the acquisition of new graduate generic work-readiness attributes. These attributes include clinical reasoning, adaptability, time management, planning and organisation, self-confidence, independent working and team work ([Jackson 2010](#), [Smith, Ferns, and Russell 2014](#)). Student capacity to articulate these skills to potential employers is being linked to enhanced employment outcomes for Australian graduates ([Smith, Ferns, and Russell 2014](#)). Interprofessional supervision literature proposes that it can be possible for qualified professionals from one health discipline to provide supervision to interprofessional students when the focus is on generic skills development and skills translation into practice ([Grace and Morgan 2015](#)). With increasing student placement demands ([Health Workforce Australia 2013](#)), alternative approaches to IPP experiences and supervision are being explored.

The supervision model associated with this program draws on discipline specific, interprofessional, direct, indirect, and student peer supervision ([Kuipers et al 2013](#)). Teaching staff provide an additional layer of generic supervision for classroom activities. Any model that draws on a range of supervision modalities has to ensure that the learning context is suitable, therapy provided by the students is low risk and within their scope of practice ([Grace and Morgan 2015](#)), and that supervisors are appropriately skilled to undertake these roles ([Chipchase et al 2012](#)). If these elements can be achieved then students can be provided with an opportunity to explore shared practices and generic competencies of relevance across a range of health disciplines enabling them to locate themselves within IPP teams.

Subtheme 2: Peer roles

The RA discussed the integration of peer learning and supervision roles within the program:

The idea of encouraging peer support has permeated all aspects of the program. Peer [learning] is a way of [having] more advanced peers offering recommendations for peers [who require additional support]. Having peers [who need support] observing their [more advanced] peers and seeing [how] they [practice].

The process of discussing peer roles with students was described: *'To encourage their peer learning I talk more formally with the students in [reflection sessions] that you don't go to your supervisor first in the workplace, that's not the first place you go [if you need support], you go to your peers [first], that's what I'm trying to encourage'* RA.

An example of the peer learning and supervision roles was provided by a student: *'I was looking at these pupils in [the school classroom] and going, 'I still don't know what I'm supposed to be doing with these pupils', then my [peers] came back and said, 'You can possibly try this, this and this'. Then when I saw the [class-based] session it made more sense'* FG1:S3.

The MA described implications of the peer learning approach from their perspective: *'I think the students learn how to work with their peers and to maximise their learning through their peers. That's a great workplace skill to have'.*

Subtheme discussion

Education strategies identify the need for supervisors to acquire facilitation skills to enhance student IPP experiences, rather than directing students ([Barr and Tagg 1995](#)). Facilitated learning enables students to develop greater levels of practice autonomy, enhanced self-directed learning and identification of their role within their peer groups, optimising interprofessional interactions ([Kuipers et al 2013](#)). [Sevenhuysen et al \(2013\)](#) state that peer learning can enhance student learning through the addition of peer feedback to educator feedback. Students can discuss decision-making processes, share work-place challenges and contribute to peer social-supports ([Secomb 2008](#)). Peer group supervision (PGS) is a contemporary approach to clinical supervision for allied health professionals ([Kuipers et al 2013](#)). Peers meet as a group, learn together, share professional experiences and reflect on their practice. The authors propose that the interprofessional reflection sessions held weekly in the program reflect the characteristics of PGS ([Arvidsson et al 2008](#)).

Interprofessional and peer supervision, in the context of this program, may serve an additional purpose, enabling multiple student to educator ratios ([Sevenhuysen et al 2013](#)). Given the increasing demands for student placements, multiple student-to-educator models may contribute to growth in placement capacity – as was reflected in the far west region of NSW through program establishment ([Jones et al 2015](#)) – without compromising student learning, as is evidenced by findings described in this paper.

Theme 3: Impact of program participation on interprofessional practice

This theme contains three subthemes: integration of interprofessional knowledge into therapy; service continuity; and role of interprofessional socialisation.

Subtheme 1: Integration of interprofessional knowledge into therapy

The RA described their interpretation of interprofessional practice, analogous to the role of allied health aides in therapy delivery: *'I talk to my students about being a [specific discipline] but an [other discipline [aide]]. We have a role outside of our own discipline'.*

The students described the program emphasis placed on interprofessional practice:

There's a big emphasis on working with the [other discipline] and them working with us around coordinating [therapy] timetables if we want to see a [pupil] together. We definitely don't have that much interprofessional [experience] in the other placements FG2:S3.

Students discussed interprofessional knowledge sharing associated with therapy delivery: 'Maybe something is working, we have the same [pupil] and something is working [for our discipline] during therapy so you pass [that knowledge] onto the [other discipline] and say try this [approach]' FG1:S3. Students provided examples of knowledge translation into practice:

[It could be] something as simple as holding [a pupils] hand that usually runs as soon as the classroom door opens. I held the [pupils] hand and it worked [they didn't run off]. You share the [strategy] with [the other discipline] and they do it. We can now both [manage] the [pupil] and get our [therapy delivered] FG1:S4.

Students provided insights into interprofessional knowledge seeking activities: 'We're starting to pick up on [aspects of therapy] from [the other discipline]. If you notice a [pupil] is having trouble [and it may be relevant to the other discipline] you go and have a chat with them and discuss what the problem could be' FG1:S4.

Students provided direct examples of interprofessional integration of therapy goals:

We found that we can incorporate each other's therapy goals into just everyday things that the [pupils] do. Say [the pupil's playing] and we need to [integrate the other disciplines therapy] we can do that. We're reinforcing the [other disciplines] therapy. There's that cross-over [of therapy] FG1:S4.

Subtheme discussion

Collaborative client care requires mutual respect and an understanding of the roles and responsibilities of other health professions for effective team work and quality care ([World Health Organisation 2010](#)). In rural locations, a lack of accessibility to a range of health professionals has consequences for the extension of roles and scope of practice for health care providers. The Mason Review ([Mason 2013](#)) of Australia's health workforce programs identified the need to challenge traditional professional domains of practice that impede innovation, calling for health professional role redesign to allow practitioners to work to their fullest potential and scope of practice.

[Poling, Labarbera, and Kiersma \(2015\)](#) state that if health professionals are expected to work collaboratively in the provision of safer and coordinated patient care then their education needs to include preparation on how to work collaboratively including sharing of knowledge and expertise. [Zlotkowski \(1996\)](#) argues that service-learning should require students to draw on their discipline-specific knowledge and skills in service provision to enhance their understanding of their professional roles. Interprofessional service-learning extends this to include student acquisition of knowledge of other professionals, their roles and responsibilities to enhance team work practices. In the context of this program further extension has occurred to include integration of other discipline low-risk therapy into practice.

Degrees of variance exist in the IPSL literature on the role and scope of practice for students. In a study conducted by [Clark et al \(2015\)](#), students engaged in IPSL were not required to draw on their discipline-specific knowledge. Findings identified that, whilst students reported learning outcomes associated with attitudes towards interprofessionalism and team work skills, student knowledge of interprofessional teamwork and roles of other professions was less prominent. This is attributed to the early stage of student professional identity and role development, and contrasting with the final year stages of development of student participants in the study program.

In this study, participants identified a lack of previous IPP exposure. By placement week 5, when the FGs were conducted, students were describing interprofessional knowledge sharing, the role and activities of the other discipline and integration of other discipline low risk activities into their own service provision. As IPSL gains momentum within the Australian health education context, there is a growing urgency for us to define this educational pedagogy from an Australian perspective. The authors propose that we ensure that discipline specific

knowledge and practice is a hallmark of student learning and service provision, contributing to student capacity and competence in becoming effective and valuable contributors to IPP teams.

Subtheme 2: Service continuity

Students identified the impact of the 'team continuum' approach to service delivery on their sense of contribution to service outcomes: '*In other placements you just go in and out and you don't really feel like you've made a difference. Here in this continuum of students you really do feel like you're at least making some [difference]*' FG1:S2, and: '*Our supervisors are pushing the idea that we're part of a continuum and that has really helped our understanding [and] not put so much pressure on ourselves to help so many children*' FG2:S3. Students also described the importance of the continuum: '*There were a lot of things to learn but its [good] to see that [previous cohorts] have been doing that same thing. You just have to keep doing it so that the next person knows exactly what to do*' FG1:S2. Students also contrasted the 'team continuum' approach of the program with their previous school-based placement experiences:

All the school placements I've been on, we were the first [group] to go in and we had to set up the reports and files the way we wanted them. It made it harder [for continuity]. I always wondered how anyone [else] could follow on from that FG1:S2.

Subtheme discussion

As health care increasingly refocuses to community-based service provision, service recipients and providers can be confronted with complex systems involving multiple health professionals. [Olsen and Bialocerkowski \(2014: 237\)](#) state that: 'patients and carers often describe falling through the 'cracks' and feeling 'lost' because of poor communication and collaboration between health professionals who are providing treatment', resulting in lack of service continuity. For rural Australian communities, these risks are exacerbated through persistent health workforce shortages ([Health Workforce Australia 2013](#)). In many instances, rural communities can be reliant on fly in/fly out (FIFO) and drive in/drive out (DIDO) models of care, with services being dependent on organisational rostering and clinician availability. Approaches to care can alter, based on individual clinician preferences, resulting in disjointed service delivery for recipients and existing local team members ([Wakerman, Curry, and McEldowney 2012](#)).

A core feature of IPP is the creation of collaborative teams that support continuity of service provision and improved quality of care. [Manion, Lorimer and Leander \(1996\)](#) describe a team as a small number of people who are consistent and committed to a shared purpose, with common performance goals, complementary and overlapping skills. The authors propose that an extension of this definition of a team – and interpretation of IPP teams – is required in relation to study findings, that of an interprofessional 'service-learning team continuum' (SLTC). Student cohorts, or teams, change every school term within the program, lacking the consistency and continuity associated with team and IPP team literature. However the program has developed to ensure strong linkages are established across each individual cohort of students. These interprofessional student teams drawn on and build upon the work of previous teams to inform current activity and future service provision, creating connectivity and continuity of services. This SLTC approach may provide an alternative model that can be considered in other rural locations. Additional research to explore this concept is required.

Subtheme 3: Role of interprofessional socialisation

The MA stated: '*I think the level of support and acculturation the [students] get is unique. Other [rural] communities don't have a University Department of Rural Health so when the students go there they don't have that support. I think the [UDRH] has a set of benefits that [would] be good to define*'.

A number of UDRHs have accommodation infrastructure and the RA described their role in student allocation to accommodation:

I [help] coordinate student accommodation to make sure our students are divided to encourage them to interact [socially]. They tend to gravitate to their [own discipline] so I make a very clear point that they've been accommodated across disciplines. Although there are elements of [social interactions] naturally occurring we still have to plan it so it works otherwise they swap rooms which is what has happened [previously].

Students described their anxiety on learning that they would not be co-accommodated: 'Coming out here we're quite concerned not being in the same room as our [discipline peers] and being all split up' FG2:S2, however:

It's been completely different [living out of home] and it's fantastic that [all the students] just get in together. We have What's Up and Facebook Groups and everyone goes to different places together, it's really communal. You don't have to [socialise] with your [discipline peers] you can go with someone from [another discipline] who is a student in the same position as you are FG2:S2.

Subtheme discussion

Social learning theory focuses on the relational aspects of learning and formation of communities of practice ([Lave and Wenger 1991](#)) however limited research is associated with social processes of learning within IPE and IPP environments ([Sterrett 2010](#)). The provision of shared accommodation and common learning areas for students undertaking placements in rural locations has been identified as having the potential to contribute to the development of interprofessional relationships and teamwork ([Jacob et al 2012](#)).

Study participants identified experiencing levels of anxiety when informed they would not be co-accommodated with their discipline peers however their experience of interprofessional socialisation identified the benefits accrued through student integration. Creating collegiate environments through shared social experiences may have the potential to enhance formation of IPP communities. The authors acknowledge that not all rural communities have access to accommodation infrastructure, and potential cost burdens in self-funding accommodation is a barrier to student uptake of rural placement opportunities. Additional investment in this area is required if we are to expand health student exposure to rural IPP ([Spiers and Harris 2015](#)).

Limitations

Small participant numbers reflects study design, exploration of a range of stakeholder perspectives, purposive sampling, and the realities of allied health practice and distribution of allied health academics within the rural Australian context. Additional research on program impact and outcomes for larger numbers of student cohorts and academics engaged in the program is required to enhance the generalisability of these findings. IPSL is equally concerned with impact and outcomes for service recipients, and so additional research is required on pupil, family and teacher outcomes. Community partner perspectives on impact and outcomes of participation in the program are described in subsequent papers.

Conclusion

This pragmatic qualitative study sought to contribute to the Australian discourse on IPSL from a rural perspective. Study findings have led the authors to propose an extension to the interpretation of IPP teams to include SLTC as one approach to addressing allied health service inaccessibility and fragmented service provision in rural locations. Findings contribute to our understanding of interprofessional supervision and the role of student peers in enhancing learning outcomes and placement capacity through multiple student-to-educator ratios whilst not compromising the quality of student learning. The authors acknowledge that client safety is paramount and needs to lead IPSL innovation in health education. The role and contribution of interprofessional SLTC in addressing mild-to-moderate developmental delays experienced by

rural children, needs to be carefully considered. Although this study describes valuable IPP student learning outcomes service-learning is equally concerned with outcomes experienced by service recipients. Additional research is required in this area if we are to meet the intent of service-learning, that of reciprocal benefit and value of service and learning activity.

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References

- Allied Health Professionals Australia (2013) *Policy Paper: Australia's Workforce of Allied Health Professionals*. Melbourne: AHPA
- Arvidsson, B., Skärsäter, I., Öjjervall, J., and Fridlund, B. (2008) 'Process-orientated group supervision implemented during nursing education: Nurses conceptions 1 year after their nursing degree'. *Journal of Nursing Management* 16 (7), 868–875. doi: 10.1111/j.1365-2834.2008.00925.x
- Australian Institute of Health and Welfare (AIHW) (2008), 'Rural, regional and remote health: Indicators of health status and determinants of health'. *Rural Health Series No.9*. Canberra: AIHW
- Baker, C., Pulling, C., McGraw, R., Dagnone, J. D., Hopkins-Rosseel, D., and Medves, J. (2008) 'Simulation in interprofessional education for patient-centred collaborative care'. *Journal of Advanced Nursing*. 64 (4), 372–379. doi: 10.1111/j.1365-2648.2008.04798.x
- Bainbridge, L., Nasmith, L., Orchard, C., and Wood, V. (2010) 'Competencies for interprofessional collaboration'. *Journal of Physical Therapy Education* 24 (1), 6–11 [NO DOI]
- Barr, R., and Tagg, J. (1995) 'From teaching to learning: A new paradigm for undergraduate education'. *Change* 27 (6), 12–26. doi: 10.1080/00091383.1995.10544672
- Baum, F, Bégin, M, Houweling, T, and Taylor S. (2009) 'Changes not for the faint hearted: Re-orientating health care systems toward health equity through action on the social determinants of health'. *American Journal of Public Health* 99 (11),1967–1974. doi: 10.2105/AJPH.2008.154856
- Boyce, R., Moran, M., Nissen, L., Chenery, H., and Brooks, P. (2009) 'Interprofessional education in health sciences: the University of Queensland Health Care Team Challenge'. *Medical Journal of Australia* 190 (8), 433–436
- Brewer, M., and Stewart-Wynne, E. (2013) 'An Australian hospital-based student training ward delivering safe, client-centred care while developing students' interprofessional practice capabilities'. *Journal of Interprofessional Care* 27 (6), 482–488 doi:10.3109/13561820.2013.811639
- Bridges, D., Davidson, R., Odegard, P., Maki, I., and Tomkowiak, J. (2011) 'Interprofessional collaboration: Three best practice models of interprofessional education'. *Medical Education Online* 16, 6035-. doi: 10.3402./meo.v16i0.6035
- Centre for the Advancement of Interprofessional Education (CAIPE) (2002) *Defining IPE*. [online] available from www.caipe.org.uk/resources
- Chipchase, L., Allen, S., Eley, D., McAllister, L., and Strong, J. (2012) 'Interprofessional supervision in an intercultural context: A qualitative study'. *Journal of Interprofessional Care* 26 (6), 465–471. doi: 10.3109/13561820.2012.718813
- Clark, M., McKague, M, McKay, S., and Ramsden, V. (2015) 'Deeper learning through service: Evaluation of an interprofessional community service-learning program for pharmacy and medicine students'. *Journal of Interprofessional Practice and Education* [online] 5 (1). available from <http://www.jripe.org/index.php/journal/article/view/175> >
- Creswell, J. (2007) *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. 2nd edn. London: Sage

- Ernstzen, D., Bitzer, E and Grimmer-Somers, K. (2009) 'Physiotherapy students' and clinical teachers' perceptions of clinical learning opportunities: A case study'. *Medical Teacher* 31 (3), e102–115 [doi:10.1080/01421590802512870](https://doi.org/10.1080/01421590802512870)
- Eyler, J. and Giles, D. (1999) *Where's the Learning in Service-Learning?* San Francisco: Jossey-Bass
- Frakes, K., Brownie, S., Davies, L., Thomas, J., Miller, M., and Tyack, Z. (2014) 'Capricornia Allied Health Partnership (CAHP): A case study of an innovative model of care addressing chronic disease through regional student-assisted clinic'. *Australian Health Review* 38 (5), 483-486. [doi: org/10.1071/AH13177](https://doi.org/10.1071/AH13177)
- Fram, S. (2013) 'The constant comparative analysis method outside of grounded theory'. *The Qualitative Report* 18 (1), 1–25. available from <http://nsuworks.nova.edu/tqr/vol18/iss1/1/>
- Freeth, D., Hammick, M., Reeves, S., Koppel, I., and Barr, H. (eds.) (2005) *Effective Interprofessional Education: Development, Delivery & Evaluation*. Oxford: Blackwell
- Grace, S., and Morgan, A. (2015) 'Students' experiences of interprofessional supervision: Shared characteristics of the caring professions'. *Journal of Integrative Medicine and Therapy* 2 (1):4. [doi: 10.13188/2378-1343.1000006](https://doi.org/10.13188/2378-1343.1000006)
- Health Workforce Australia (HWA) (2013) *National Rural and Remote Health Workforce Innovation and Reform Strategy*. Adelaide: HWA
- Howell, D., Devine, N., and Portsman, L. (2004) 'An interdisciplinary learning experience through applied clinical practice with community volunteers'. *Occupational Therapy Faculty and Staff Research* [online] Paper 3 available from http://encompass.eku.edu/ot_fsresearch/3
- Jackson, D. (2010) 'An international profile of industry-relevant competencies and skill gaps in modern graduates'. *International Journal of Management Education* 8 (3), 29–58. [doi: 10.3794/ijme.83.288](https://doi.org/10.3794/ijme.83.288)
- Jacob, E., Barnett, T., Missen, K., Cross, M., and Walker, L. (2012) 'Australian clinicians' views on interprofessional education for students in the rural clinical setting'. *Journal of Research in Interprofessional Practice and Education* [online] 2 (2). available from <http://www.jripe.org/jripe/index.php/journal/article/viewArticle/68>
- Jacoby, B. (ed.) (2003) *Building Partnerships for Service-Learning*. San Francisco: Wiley
- Jones, D., McAllister, L, Lyle, D., Brunero, C., Webb, T., and Riley, S. (2015) 'Improving health and education outcomes for children in remote communities: A cross-sector and developmental evaluation approach'. *Gateways: International Journal of Community Research and Engagement* [online] 8 (1) 1–22. [doi: 10.5130/ijcre.v8i1.4163](https://doi.org/10.5130/ijcre.v8i1.4163)
- Körner, M., Wirtz, M., Bengel, J., and Göritz, A. (2015) 'Relationship of organizational culture, teamwork and job satisfaction in interprofessional teams'. *BMC Health Services Research* 15, 243. [doi:10.1186/s12913-015-0888-y](https://doi.org/10.1186/s12913-015-0888-y)
- Kuipers, P., Payer, S., Bell, K., Hall, F., and Kendall, M. (2013) 'Do structured arrangements for multidisciplinary peer group supervision make a difference for allied health professional outcomes?'. *Journal of Multidisciplinary Health Care* 6, 391–397. [doi: 10.2147/JMDH.S51339](https://doi.org/10.2147/JMDH.S51339)

- Laitinen-Väänänen, S., Talvitie, U., and Luuka, M. (2007) 'Clinical supervision as an interaction between the clinical educator and the student'. *Physiotherapy Theory and Practice* 23 (2), 95–103. doi: [10.1080/09593980701212018](https://doi.org/10.1080/09593980701212018)
- Lave, J., and Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press
- Leander, S., Maloney, M., Ruebling, I., Banks, R., Pole, D., and Kettenbach, G. (2014) "The power of many minds working together": Qualitative study of an interprofessional service-learning capstone course'. *Journal of Research in Interprofessional Practice and Education* [online] 4 (2). available from <http://www.jripe.org/index.php/journal/article/viewArticle/170>
- McLachlan, R., Gilfillan, G., and Gordon, J. (2013) *Deep and Persistent Disadvantage in Australia*. Canberra: Productivity Commission Staff Working Paper
- Manion, J., Lorimer, W., and Leander, W. (1996) *Team-Based Health Care Organisations: Blueprint for Success*. Gaithersburg MD: Aspen
- Mason, J. (2013) *Review of Australian Government Health Workforce Programs*. Canberra: Department of Health.
- Miles, B., Huberman, M., and Saldana, J. (2014) *Qualitative Data Analysis: A Methods Sourcebook*. 3rd edn. Thousand Oaks: Sage
- Morgan, D. (1998) *The Focus Group Guide Book*. London: Sage
- NSW Department of Education and Communities (2013) *Rural and Remote Education: A Blueprint for Action*. Sydney: NSW Department of Education and Communities
- Olsen, R., and Bialocerkowski, A. (2014) 'Interprofessional education in allied health: A systematic review'. *Medical Education* 48 (3), 236–246. doi: [10.1111/medu.12290](https://doi.org/10.1111/medu.12290)
- Poling, D., and Kiersma, M. (2014) 'A unique interprofessional and multi-institutional education series'. *Journal of Nursing Education* [online] 53 (7) available from http://opus.ipfw.edu/nursing_facpubs/88
- Poling, D., Labarbera, D., and Kiersma, M. (2015) 'Does interprofessional education change student attitudes about interprofessional learning and patient safety?' *Health and Interprofessional Practice* [online] 2 (3):eP1074. available from <http://commons.pacificu.edu/cgi/viewcontent.cgi?article=1074&context=hip>
- Prince, K., Boshuizen, H., Van Der Vleuten, C. and Scherpbier, A. (2005) 'Students' opinions about their preparation for clinical practice'. *Medical Education*, 39 (7) 704–712. doi: [10.1111/j.1365-2929.2005.02207.x](https://doi.org/10.1111/j.1365-2929.2005.02207.x)
- Ritchie, J., and Lewis, J. (eds.) (2003) *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London: Sage
- Sandelowski, M. (2000) 'Focus on research methods: Whatever happened to qualitative description?'. *Research in Nursing and Health* 23, 334–340. DOI: [10.1002/1098-240X\(200008\)23:4<334::AID-NUR9>3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G)
- Secomb, J. (2008) 'A systematic review of peer teaching and learning in clinical education'. *Journal of Clinical Nursing* 17 (6), 703–716. doi: [10.1111/j.1365-2702.2007.01954.x](https://doi.org/10.1111/j.1365-2702.2007.01954.x)
- Seifer, S. (1998) 'Service-learning: Community-campus partnerships for health professions education'. *Academic Medicine*, 73 (3), 273–77 [NO DOI]

- Sevenhuysen, S., Nickson, W., Farlie, M., Raitman, L., Keating, J., Molloy, E., Skinner, E., Maloney, S., and Haines, T. (2013) 'The development of a peer assisted learning model for the clinical education of physiotherapy students'. *Journal of Peer Learning* [online] 6 (1), 30–45. available from <http://ro.uow.edu.au/ajpl/vol6/iss1/4>
- Simon, A., Pastor, P, Avila, R and Blumberg, S. (2013) 'Socioeconomic disadvantage and developmental delay among US children aged 18 months to 5 years'. *Journal of Epidemiological Community Health* 67 (8), 689–695 [doi:10.1136/jech-2013-202610](https://doi.org/10.1136/jech-2013-202610)
- Smith, J., Bekker, H., and Cheater, F. (2011) 'Theoretical versus pragmatic design in qualitative research'. *Nurse Researcher* 18 (2), 39–51. [doi:10.7748/nr2011.01.18.2.39.c8283](https://doi.org/10.7748/nr2011.01.18.2.39.c8283)
- Smith, C., Ferns, S., and Russell, L. (2014) *The Impact of Work Integrated Learning on Student Work-Readiness. Final Report 2014*. Sydney: Office for Learning and Teaching
- Spiers, M., and Harris, M. (2015) 'Challenges to student transition in allied health undergraduate education in the Australian rural and remote context: A synthesis of barriers and enablers'. *Rural and Remote Health* [online] 15 (2), 3069 available from <http://www.rrh.org.au/articles/subviewnew.asp?ArticleID=3069>
- Sterrett, S. (2010) 'Becoming an interprofessional community of practice: A qualitative study of an interprofessional fellowship'. *Journal of Research in Interprofessional Practice and Education* [online] 1 (3). available from <http://jripe.org/jripe/index.php/journal/article/viewArticle/33>
- Wakerman, J., Curry, R., and McEldowney, R. (2012) 'Fly in/fly out health services: The panacea or the problem?' *Rural and Remote Health* [online] 12, 2268. available from <http://www.rrh.org.au/Articles/subviewnew.asp?ArticleID=2268>
- World Health Organisation (2010) *Framework for Action on Interprofessional Education and Collaborative Practice. Study Group on Interprofessional Education and Collaborative Practice*. Geneva: World Health Organisation (WHO), Health Professions Network Nursing and Midwifery Office
- Zlotkowski, E. (1996) 'A new voice at the table? Linking service-learning and the academy'. *Change The Magazine of Higher Learning* 28 (1) 20–27. [doi:10.1080/00091383.1996.10544252](https://doi.org/10.1080/00091383.1996.10544252)