

Brewer, M. L., Flavell, H., Trede F., & Smith, M. (2016). Creating change agents for interprofessional education and practice: A leadership programme for academic staff and health practitioners. *International Journal of Leadership in Education*, Accepted manuscript.

Abstract

Universities face increasing pressure not only to embed interprofessional education within health education curricula but also to prepare graduates as catalysts of change for interprofessional, team-based approaches to healthcare delivery. Currently, few leadership programmes exist that support the expansion of interprofessional education. This paper describes the development, implementation and evaluation of a leadership programme aimed to build faculty and health practitioners' capacity to become change agents for interprofessional education and practice. The programme was delivered by two Australian universities, each in partnership with a local healthcare provider. A mixed method approach was adopted to measure participants' pre and post knowledge, reactions to the program, planned and reported behavioural changes and organisational outcomes. The program was positively evaluated and reported to increase participants' understanding of interprofessional education and practice. Follow up with participants suggested the program had facilitated the implementation of interprofessional education and practice in both academic and practice contexts.

Introduction

Interprofessional practice is widely recognised as one of the key strategies to address global healthcare issues (World Health Organization, 2010). Interprofessional practice is defined as: "two or more professions working together as a team with a common purpose, commitment and mutual respect" [Freeth et al., 2005 pp.xiv-xv]. However, merely organising health professionals into teams does not result in interprofessional practice. One strategy that has been shown to develop health professionals' capability for interprofessional practice is interprofessional education (Frenk et al., 2010), which is defined as "two or more professions

learn about, from and with each other to enable effective collaboration and improve health outcomes” (World Health Organization, 2010, p.7).

Recent reviews of interprofessional education highlight the range of learning experiences provided to future health workers in the UK (Barr, Helme & D’Avray, 2014), Canada (Ho et al., 2008), the US (Chen et al., 2015) and Australia (The Interprofessional Curriculum Renewal Consortium, 2013). Despite the expansion of interprofessional education, studies show that many of these experiences occur only once (Abu-Rish et al., 2012), and activities are typically voluntary, not based on any explicit learning outcomes, are not assessed and no formal evaluation is conducted (Rodger & Hoffman, 2010). Even when students have been exposed to interprofessional education within the university, limited opportunities exist for interprofessional education within fieldwork/clinical placements (Davidson et al., 2008) where students transfer their learning to real world contexts.

This situation is not surprising given the multiple structural, cultural, fiscal and curricula barriers to embedding interprofessional education (Lawlis, Anson & Greenfield, 2014). Addressing these barriers requires significant change to organisational practices both within universities and healthcare providers. Wide-scale organisational change such as this requires effective leadership at the highest levels; however, change can also be generated by leaders—local champions and change agents—operating within their own networks (Kotter, 2014). To build a ‘volunteer army’ of change agents (Kotter, 2014) Curtin University partnered with Charles Sturt University to develop a leadership programme for both academic staff and practicing health professionals. This programme was designed to build their capacity to lead interprofessional education and/or interprofessional practice within their organisation. For the purposes of this paper, and the programme under investigation, leadership is defined as: ‘the process of influencing others to understand and agree about what needs to be done and how it can be done effectively, and the process of facilitating individual and collective efforts to

accomplish the shared objectives' (Willumsen, 2006 p.404). This definition is in keeping with contemporary thinking about leadership in education (Fairman & Mackenzie, 2015).

Leadership programme

The leadership programme was adapted to the Australian context from the University of Toronto's Centre for Interprofessional Education ehpic™ programme, which has been delivered for over 10 years (Nelson, Tassone & Hodges, 2014). The adaptation and pilot testing of the programme was funded by the Australian federal government. Many of the key elements of ehpic™ were retained as they were highly relevant to the Australian context: appreciative inquiry (Cooperrider & Whitney, 1999); a range of leadership models including Kotter's change model (1996) and Bolman and Deal's leadership frames (1997); the use of the organisational readiness IP-COMPASS tool (Parker, Jacobsen, McGuire, Zorzi, & Oandasan, 2012) and the development of a leadership action plan to facilitate the transfer of learning to practice. The programme aligned with best practice guidelines for interprofessional education leadership development: competency/capability driven; content aligned with participants' pre-existing knowledge; experiential learning; regular feedback to participants; diverse educational methods; and reflection in and on action (Hall & Zierler, 2015; Shrader et al., 2015; Steinert, 2005). The promotion of self-identity and self-awareness, critical to the development of facilitation (Howkins & Bray, 2008) and leadership capabilities (Fairhurst & Connaughton, 2014) were also retained from the original programme.

Three key changes were made as part of contextualising the programme to Australia. First, to ensure the programme participants were supported by their organisation to implement their planned changes, each university selected a partner organisation directly involved in offering fieldwork/clinical placements for students. Second, following consultation with senior leaders within these organisations, the adapted programme was reduced from five days to two days to enable clinical staff to manage workload and attend. Third, the Canadian

interprofessional framework was substituted by an Australian framework (Brewer & Jones, 2013) to ensure relevance to the local context. The Australian capability framework describes key elements of interprofessional practice, thus establishing the learning outcomes for interprofessional education. These elements include: a client-centred approach which is empowering, goal directed and respectful; a focus on client safety and quality where safety is viewed holistically to encompass physical, psychological, environmental and cultural aspects; and collaborative practice including interprofessional communication, role clarification, team function, conflict resolution and reflection.

The adapted programme (see Table 1) was piloted in collaboration with the Canadian team to test the measurement tools, streamline the Australian elements and to build the Australian staff's capacity to facilitate the programme via a train-the-trainer approach. The final programme then ran twice, facilitated by the Australian team. A detailed programme report and resources were created (Brewer, Flavell, Trede, Smith, & Jones, 2014) and disseminated via the project website (Brewer et al., 2014).

[insert Table 1 about here]

Table 1. Programme modules and learning outcomes

| Module | Title | Learning Outcomes |
|---------------|--|---|
| 1 | Overview of programme and participants | Understand the programme aims and structure Understand the role of participants and facilitator/s |
| 2 | Setting the scene | Define both interprofessional education and interprofessional practice Demonstrate an understanding of the education/practice continuum Examine the evidence for interprofessional education and interprofessional practice |
| 3 | Practice education system | Develop an understanding of the practice education system Examine interprofessional education programmes in Australia Understand your role as a change agent |

| | | |
|---|--|--|
| 4 | Interprofessional practice capabilities, assessment and evaluation | Critique the application of interprofessional practice capabilities in action Understand some key principles of assessment and evaluation of interprofessional education and interprofessional practice |
| 5 | Delivering and implementing interprofessional education and interprofessional practice | Identify the skills and abilities required to facilitate interprofessional education effectively |
| 6 | Collaborative leadership | Explore your organisation's readiness for interprofessional education and interprofessional practice Understand key approaches to collaborative leadership |
| 7 | Sustainability | Create and implement an action learning plan to lead change in your context Consider the factors for sustainability of change |

Given the imperative to develop leadership capability in the current and future workforce for interprofessional education and practice this study addresses the following research questions:

- (1) what outcomes did the leadership programme generate?
- (2) what enablers and/or challenges did participants face in leading interprofessional education and interprofessional practice in their work context?

Method

Study setting

The programme was delivered at both Curtin and Charles Sturt Universities which provided the opportunity to test it in different contexts. Curtin is an urban university with students from 26 health professions, the majority of whom are located on the one main urban campus. Curtin partnered with the South Metropolitan Health Service which provides services for a catchment of 840,000 people. Charles Sturt is a rural university with students representing 19 health

professions, many of whom are located across multiple campuses. Charles Sturt partnered with Albury Wodonga Health, which has a catchment of approximately 250,000 people.

Study Design

Freeth and colleagues (2005) model for evaluating the outcomes of interprofessional education was used to inform the study. This model identifies different levels of outcomes starting with the immediate reaction to the learning experience (see Table 2). The evaluation of Level 4b outcomes (capturing the benefits to patients/clients) was not within the scope of this project due to the short term nature of the funding. A mixed method evaluation of the process and impact of the programme, in keeping with best practice guidelines (Spencer, 2014), was undertaken. The decision to adopt a mixed method approach was based on the practical aims of the research (Bryman, 2012): to judge and improve the leadership programme’s capacity to increase interprofessional education and practice. Quantitative data were collected at different points before, during and following the programme to better understand the impact of the leadership development on changes in knowledge, skills and reactions, whilst qualitative data collection focused on the higher level outcomes relating to behavioural and organisational change. Table 2 provides an overview of the timing and methods of data collection as aligned with the different level outcomes (Freeth et al., 2005).

[insert Table 2 about here]

Table 2: Programme evaluation process

| Timing | Programme outcome | Outcome level | Method | N (Total = 53) |
|------------------------|-----------------------------|----------------------|--|---------------------------|
| Pre and post programme | Changes in knowledge/skills | Level 2b | 19 item questionnaire with a 5 point Likert scale from novice to expert | 47 (Pre) 52 (Post) |
| End of Day 1 and 2 | Reactions | Level 1 | 11 item questionnaire with a 5 point Likert scale from strongly agree to strongly disagree plus 4 open ended questions | 52 |

| | | | | |
|-------------------------------|---|-------------------|--|--------------|
| End of Day 2 | Planned behavioural changes | Level 3a | Questionnaire with 5 open ended questions (combined with 11 item questionnaire above) | 52 |
| 6 months post programme | Behavioural changes, and changes in organisational practice | Levels 3a & 4a | Focus groups Questionnaire with 1 closed and 3 open ended questions | 26 28 |

Ethics approval to conduct the research was obtained from the two Universities' Human Research Ethics Committees where the programme was delivered.

Participants

Fifty three staff participated in the leadership programme: 19 (36%) academic staff involved in student clinical training from the two Australian universities and 34 (64%) practicing health professionals from the local healthcare providers. Fifty two (98%) were female. A diverse range of professions (Nursing, Physiotherapy, Speech Pathology, Occupational Therapy, Dietetics, Social Work, Midwifery, Podiatry and Medical Imaging) and roles (heads of department, staff development educators, directors of services, project officers and clinical education directors) were represented. Participants were either selected by executive staff within their organisation, based on their perceived influence as change agents for interprofessional education/practice, or volunteered to participate.

Procedure

As a key quality improvement process, the participants' evaluation of the programme was gathered using anonymous hard copy questionnaires completed by 52/53 participants at the end of day one and two. These questionnaires, adapted from another interprofessional education professional development programme (Curran, Sargeant & Hollett, 2007), obtained feedback on the structure and content of the workshop (rated on a five-point Likert scale from strongly agree to strongly disagree), and the facilitation (rated on a five-point Likert scale from poor to outstanding).

To evaluate the impact of the programme on knowledge, and to ensure the programme was tailored to the participants' existing knowledge, a needs analysis was completed by 47/53 participants using an anonymous online questionnaire in the two weeks prior to the programme. Participants were asked to rate their knowledge on a 5 point Likert scale from novice to expert. The same questionnaire was repeated at the conclusion of the programme (Table 3). The questionnaire was developed and field tested over a 10-year period by the team of experts from the University of Toronto.

Behavioural change was evaluated using three additional methods. First, immediately post-programme 52/53 participants' responded in writing to a series of open ended questions to identify how they felt prepared to lead change within their organisation, the changes they thought they could make and what else they needed to lead change. Second, 28/53 participants completed an anonymous online questionnaire sent approximately six months post-programme focused on whether the programme had impacted on their ability to lead interprofessional education and practice, changes in their leadership practice and how their colleagues might describe their behaviour post-programme. Third, 26 participants attended the focus group held at their relevant university six months post-programme to provide an update on their action plans and how the programme had impacted on their leadership of interprofessional education and practice. The two focus groups were recorded and transcribed verbatim.

As this research was led by the programme designers, two strategies were employed to manage bias. Firstly, an external evaluator was employed to oversee the evaluation process. The evaluator attended both pilot workshops and the first focus group where participants' feedback was observed and recorded. Debriefing sessions were held to compare and contrast findings with those of the research group. Secondly, an experienced research officer was employed to conduct all initial data analyses. To enhance credibility the qualitative data was cross-checked by the lead researcher to confirm key themes (Bryman, 2012).

Analysis

Quantitative data of the Likert Scale were entered into SPSS version 22. The descriptive statistics were reported in percentage of agreement and paired sample t-test was applied to test the difference between the pre and post measurements. The significance level was set at 5%. Qualitative data were imported into Nvivo 10© and inductive analysis, which aligned with the exploratory nature of this research, undertaken (Thomas, 2006).

Results

The overall outcomes of the leadership programme are organised within Freeth and colleague's (2005) model followed by the key enablers and/or challenges participants faced in leading interprofessional education and interprofessional practice in their work context. For the sake of brevity responses to only two focus group questions are reported here.

Reaction outcomes

The programme yielded positive reactions with between 49 and 53 (94-100%) of participants having agreed or strongly agreed that the programme content and structure was relevant and facilitated their learning. All participants rated the facilitator(s) as good or outstanding on both days one and two.

Knowledge/skill outcomes

The programme demonstrated changes in participants' knowledge. Paired sample t-tests of pre and post programme knowledge self-ratings showed changes were statistically significant for all items (Table 3).

[insert Table 3 here]

Table 3: Comparison of pre and post programme means (pre N=47; post N=52)

| | Pre Mean(SD) | Post Mean(SD) | p | 95%CI | |
|---|-------------------------|--------------------------|----------|--------------|--------------|
| | | | | Lower | Upper |
| Principles of interprofessional education | 2.37(1.047) | 3.84(.721) | p<0.001 | -1.864 | -1.066 |
| Principles of interprofessional practice | 2.42(1.139) | 3.84(.785) | p<0.001 | -1.880 | -.957 |
| Rationale for interprofessional practice | 2.64(1.144) | 3.98(.680) | p<0.001 | -1.804 | -.863 |
| Interprofessional competencies | 2.19(1.065) | 3.64(.759) | p<0.001 | -1.872 | -1.033 |
| Programme/curriculum design | 2.16(1.153) | 3.21(.989) | p<0.001 | -1.487 | -.606 |
| Programme/curriculum implementation | 2.19(1.215) | 3.21(.925) | p<0.001 | -1.472 | -.575 |
| Patient/client-centred care | 3.28(1.076) | 4.21(.709) | p<0.001 | -1.307 | -.554 |
| Relational-centred care | 2.05(1.188) | 3.50(1.042) | p<0.001 | -2.004 | -.901 |
| Interpersonal processes and communication | 3.09(1.151) | 3.79(.683) | .002 | -1.120 | -.275 |
| Group dynamics and interprofessional practice | 2.84(1.194) | 3.70(.741) | p<0.001 | -1.299 | -.422 |
| Dealing with conflict | 3.07(1.078) | 3.51(.703) | .033 | -.846 | -.037 |
| Reflection as a competence | 3.30(1.145) | 3.81(.824) | .024 | -.954 | -.690 |
| Facilitating interprofessional practice in small groups | 2.42(1.096) | 3.53(.827) | p<0.001 | -1.553 | -.680 |
| Facilitating group development | 2.50(1.194) | 3.81(.833) | p<0.001 | -1.747 | -.872 |
| Giving and receiving feedback | 2.93(1.142) | 3.67(.680) | .001 | -1.164 | -.324 |
| Appreciative leadership | 1.93(1.203) | 3.42(.663) | p<0.001 | -1.936 | -1.041 |
| Evaluation methods for programmes/projects | 2.23(1.212) | 3.14(.743) | p<0.001 | -1.341 | -.473 |
| Assessment methods for learners in interprofessional education and practice | 1.95(.950) | 3.23(.751) | p<0.001 | -1.630 | -.928 |
| Assessment methods for teams in interprofessional education and practice | 1.81(.906) | 3.12(.697) | p<0.001 | -1.628 | -.977 |

Behavioural/organisational outcomes

In addition to the knowledge changes three areas of impact were evaluated qualitatively: how the programme had prepared them as leaders, what they hoped or believed that they could achieve in leading interprofessional education and/or practice (immediately post) and what they felt they had achieved (approximately 6 months post). Immediately following the programme 52 participants (98%) reported that they felt encouraged to make changes in their practice. The most frequent comments on how they felt prepared to lead change within their organisation (Table 4) related to increased knowledge and skills (98% of questionnaire respondents; 87% of total participants). A change in their attitude (e.g. increased ‘enthusiasm’, ‘confidence’) was also commonly cited (55% of respondent; 49% of total).

[insert Table 4 about here]

Table 4: Reported programme outcomes at the end of day 2 (N=47)

| Theme | Number of respondents | Key words and/or comments |
|--|------------------------------|--|
| How participants felt prepared to lead change | | |
| Increased knowledge and skills | 46 | Increased knowledge of the key principles, drivers, benefits, evidence, frameworks, guidelines, tools, plans, practical examples/ideas |
| Changed attitude | 26 | Increased confidence/enthusiasm/motivation Felt inspired/empowered See self as a leader |
| Changes participants hoped/thought they could lead | | |
| Engage more leaders/change agents | 22 | Advocate/promote/role model interprofessional education and/or practice Develop an interprofessional practice working group Inspire others |
| Embed interprofessional practice into work practices | 13 | Include interprofessional practice in meeting agendas or patient handovers |
| Develop an interprofessional education programme for students and/or staff | 12 | Develop interprofessional student orientations to the facility Embed interprofessional education into simulations Hold interprofessional education debriefs for students |

| | | |
|-------------------------------------|----|--|
| | | Establish interprofessional student placements e.g. a training ward |
| Secure executive/managerial support | 11 | Request managers undertake this programme Request dedicated interprofessional education facilitators Include interprofessional practice in key processes (e.g. performance management processes, strategic plans, service development) |

What else they needed to lead change within their organisation

| | | |
|------------------------------|----|---|
| Executive/managerial support | 36 | Buy-in, commitment from executive Recognition of the value of interprofessional education and practice Leadership of cultural change within the organisation Resources including staff and time allocation for interprofessional education and/or practice |
|------------------------------|----|---|

Forty-seven percent of respondents planned to make changes related to their leadership, whilst 23% hoped to use their influence to secure support for interprofessional education/practice from their managers/executive. Just over half (53%) planned to make changes related to embedding interprofessional education/practice within their organisation.

Approximately six months later 25/28 (89%) of the questionnaire respondents reported an improved ability to lead interprofessional education/practice. The three participants who reported no such impact stated this was because they were already leading interprofessional education/practice or had changed employment. The planned changes (Table 4) were achieved for a number of participants as indicated by the results of the two focus groups where half the respondents reported increased engagement in interprofessional practice, half reported changes to patient care and half reported either increased interprofessional education activities or facilitation of interprofessional education. Only one quarter mentioned changes they had achieved that were specific to leadership.

[insert Table 5 about here]

Table 5: Reported programme outcomes from follow-up questionnaire (N=28)

| Theme | Number of respondents | Comments |
|---|------------------------------|---|
| Increased knowledge | 18 | Greater appreciation of the differences between multidisciplinary education and interprofessional education and how to articulate these |
| Embedded interprofessional practice in their work | 13 | Increased willingness to embed interprofessional practice as part of my everyday work Intentionally including interprofessional practice in planning and reflection on incidents Being more receptive to the input of other professionals into patient care |
| Changes to patient care | 13 | Collaborating more with physiotherapists, nurses and occupational therapists rather than working in isolation Viewing the patient at the centre of the team Advocating for the patient in a non-confrontational manner |
| Increase in interprofessional education activities for staff and students | 7 | Inclusion of two or more disciplines in as many simulation sessions as possible |
| Interprofessional education implementation strategies and facilitation techniques | 7 | Application of techniques from the programme e.g. storytelling, think-pair-share |
| Leadership | 7 | Having elevator conversations with influential people Advocating for interprofessional leadership to support interprofessional practice |

In both the questionnaires and focus groups there was evidence of the programme's impact beyond the individual with a small number of changes at the team, programme and organisation level in both university and health care contexts. These included: changes to patient care (e.g. the inclusion of patients and their carers in goal setting, the adoption a team approach with shared patient goals); increased collaboration between the health sector and the university including the establishment of a formal alliance between a university, their programme industry partner and the local medical service to provide interprofessional education to staff and students; the expansion of an allied health student working party to include nursing; radiography students with podiatry and physiotherapy students in an

interprofessional clinic; the establishment of an allied health educator position to enhance interprofessional education within a health service. Two participants discussed the use of the University of Toronto's IP-COMPASS tool (Parker et al., 2012) with key executive in their organisation to plan the implementation of interprofessional education and practice at a strategic level.

Key enablers

Responding to the online follow-up survey several months post-programme, participants described a number of factors which were crucial to enabling their leadership of interprofessional education and interprofessional practice in their work context. The most commonly cited (76% of participants) was the need for managerial and/or executive support to achieve their planned changes. This support took the form of the appointment of formal leaders or paid interprofessional education facilitators, the establishment of governance groups such as working parties or committees, and workload allocation for interprofessional education/practice. A small number of participants described the need for 'cultural change' in their organisation.

These reports of several enablers to leading change aligned with the results of the two focus groups where many of the 26 participants (49% of total participants) reported progress on their action plans. Several of the key lessons learned from the implementation of their action plans related to leadership, specifically the need: to lead by example (role modelling); for constant leadership and commitment to facilitate the desired change and to continue to develop their power and influence. Additionally, the value of celebrating successes to encourage others and keep the momentum of change going was identified as important. The realisation that interprofessional education was a developmental process that needed to be scaffolded across the curriculum was also a common lesson discussed. Another lesson related to both students and leadership was recognition that universities needed to develop a student leadership

programme to build their capacity to function as change agents. The final most common lesson reported in the focus groups related to patients/clients. Participants commented on the importance of focusing on the patient/clients' experience and goals to facilitate the process of interprofessional practice. In addition, lessons were learned on the value of promoting (sharing) positive patient and student experiences to engage others interest in interprofessional education and/or practice.

Key challenges

Participants faced a number of common challenges in implementing the action plan they developed during the programme. The most cited challenge related to a lack of time allocation for staff to organise and participate in interprofessional education and/or practice. This often related to scheduling issues (e.g. a lack of common time for interprofessional education) and the organisation's prioritisation of profession-specific professional development over interprofessional education for staff. Processes that inhibit interprofessional practice were also identified, particularly existing referral procedures which meant the majority of patients or clients were referred separately to professions and thus received separate appointments/services.

Discussion

Leadership programmes that build staff capacity for interprofessional education and practice are essential to address the transformative, structural, operational and cultural changes (Reeves, MacMillan & van Soeren, 2010) needed to move to interprofessional healthcare delivery (George, Frush & Lloyd Michener, 2013). Without increased leadership capacity in both education and practice settings students will have little opportunity or support to build their capabilities for interprofessional practice and transfer these into their future work.

Few interprofessional leadership programmes have been published to date. The outcome data available have focused on knowledge outcomes for students (Pecukonis et al.,

2013), retrospective self-reported knowledge (Newton, Wood & Nasmith, 2012) or briefly reported reflective essays (Simmons et al., 2011). This study provides additional insights into the current knowledge of interprofessional leadership development with evidence of outcomes at all four levels of Freeth et al.'s (2005) model encompassing changes in knowledge/skills, reactions, behaviour, and organisational practice. Building on a successful leadership programme from Canada, the train-the-trainer approach was successful with all participants having rated the Australian team's facilitation as good or outstanding and over 94% rating the programme's structure and content positively (level 1 outcome). More importantly the programme impacted on participants' self-reported knowledge of interprofessional education and practice with the majority having reported increased knowledge across all areas measured (level 2b outcome).

The adapted programme was also successful in promoting the transfer of knowledge and skills to participants' work environment with increased knowledge of interprofessional education and practice (level 2b) the most commonly cited impact of the programme. Knowledge and skill changes are often cited in interprofessional education programmes (Reeves et al., 2012), and more broadly in literature on leadership professional development (Steinert, Naismith & Mann, 2012). Less reported are the behavioural (level 3a outcome) and organisational (level 4a) changes observed in this study (Steinert et al., 2012). The majority (89%) of participants who completed the follow up evaluation (47% of total participants) felt that the programme had increased their ability to lead interprofessional education and/or interprofessional practice. Other self-reported behavioural changes included: increased collaboration with other professions, increased interprofessional education activities for both staff and students, and increased client/patient centred practice. Changes at the organisational rather than individual participant level were also reported. These included, but were not limited to, the inclusion of patients and their carers in meetings and goal planning, the establishment

of formal working relationships between professions and organisations, the use of the IP-COMPASS tool in planning interprofessional education and practice at an executive level and embedding interprofessional practice into incident management.

A comparison of what participants hoped they could achieve (immediately post-programme) and what they felt they had achieved (several months later) indicated that they were generally more successful in progressing local-level initiatives rather than developing other change agents/leaders or obtaining greater executive/managerial support. In keeping with the interprofessional literature (Lawlis et al., 2014), the majority of challenges reported in the focus groups (scheduling issues, time allocation, and cultural change to demonstrate valuing or commitment to interprofessional education and practice) require high level leadership and organisational change. Further to this, many of the lessons learned (e.g. the use of power and influence, leading by example, celebrating successes, raising awareness in others) relate directly to effective leadership (Kouzes & Posner, 2012). It was evident during follow up with the programme participants that gaining senior staff understanding of the change required was the biggest obstacle.

Despite the challenges faced by the participants in their work place, this programme successfully impacted on many of the participants and their organisations. The number of individuals with the knowledge, skills and leadership to assist in the wide spread adoption of interprofessional education and interprofessional practice within the local contexts increased as a consequence of participation. This 'volunteer army' (Kotter, 2014) is essential to achieve transformational change and build collaborative partnerships between health services and higher education. An important next step is for organisations in both sectors to build an environment that nurtures these leaders (Marshall, 2006) through greater executive support (Lawlis et al., 2014). An important element of this support is the continuation of a community of practice (Laksov & Tomson, 2016). Minor changes to place even greater emphasis on the

leadership aspects of the programme (e.g. appreciative inquiry and organisational change models) might address participants' difficulty in recruiting more leaders and attaining executive buy-in. The use of metaphors to explore understandings of leadership might also add value (Arnold & Crawford, 2014). Research is needed to measure the long term impact of the programme on participants, their colleagues and organisations. This should include studies on alternative approaches such as coaching and mentoring, action learning, and fellowships (Swanwick & McKimm, 2104). Based on the recommendation from a review of 25 years of leadership research (Parry, Mumford, Bower & Watts, 2014) future studies should explore methodologies such as ethnography, case study, observation, and interviews (O'Sullivan & Irby, 2014). Another important development is the adaptation of this programme for senior students to prepare them as change agents for more integrated service delivery models (Frenk et al., 2010). Embedding interprofessional education and practice in transdisciplinary settings is another key area of advancement needed in the field.

Limitations

This study has a number of limitations. First, although data was collected at several points it focused heavily on participant self-reports. Whilst, self-reports are the key measure used in professional development programmes (Steinert et al., 2012), they are subject to bias due to social desirability, self-image preservation, and the inaccuracy of self-assessment (Spencer, 2014). To address this bias an external evaluator conducted an independent evaluation. Second, whilst the development of self-reported questionnaires by the study authors is common practice in professional development programmes (Steinert et al., 2012), the study may have been enhanced through the use of valid and reliable tools. However, interprofessional leadership is a highly contextual and sociocultural phenomenon which may not lend itself to such measures. Third, the representativeness of the data from the post-programme follow-up must be questioned with only half of participants having completed the follow up questionnaire (53%)

and focus groups (47%). Finally, this study is based on a small sample size of staff who either viewed themselves as potential leaders or were viewed by their executive as potential leaders. These participants are likely to have the motivation and commitment needed to sustain the momentum for leading change. Despite these limitations this study provides useful insights into leadership programmes for interprofessional education and practice, and, more broadly, the benefit of leadership development to support collaborative partnerships between higher education and industry to achieve graduate outcomes.

Conclusion

A critical mass of leaders for interprofessional education is urgently needed if we are to advance interprofessional practice in Australia and across the globe. This paper outlines the impact of a leadership programme designed to build the capacity of both academic staff and health practitioners to lead interprofessional education and/or interprofessional practice within their organisation. The data gathered at all four levels of a popular interprofessional education outcome model suggest the programme has the capacity to support change at the individual, team and organisational level. Tailored leadership development such as this is essential to remove the current reliance on individual champions to influence change in health education and practice. The provision of all programme resources on the project website for staff to adapt to their own university or healthcare context will facilitate building more agents for change to interprofessional models of healthcare delivery.

Competing Interests

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References

- Abu-Rish, E., Kim, S., Choe, L., Varpio, L., Malik, E., White, A.A. ... Zierler, B. (2012). Current trends in interprofessional education of health sciences students: A literature review. *Journal of Interprofessional Care*, 26, 441-451.
- Arnold, N. W. & Crawford, E. R. (2014). Metaphors of leadership and spatialized practice, *International Journal of Leadership in Education*, 17, 257-285.
- Barr, H., Helme, M. & D'Avray, L. (2014). *Review of interprofessional education in the United Kingdom, 1997-2013*. London: CAIPE.
- Bolman, L. G. & Deal, T. E. (1997). *Reframing organizations: Artistry, choice and leadership*. San Francisco, CA: Jossey-Bass.
- Brewer, M.L. & Jones, S. (2013). An interprofessional practice capability framework focusing on safe, high quality client centred health service. *Journal of Allied Health*, 42, e45-e49.
- Brewer, M., Flavell, H., Smith, M., Trede, F. & Jones, S. (2014). *Creating a collaborative practice environment which encourages sustainable interprofessional leadership, education and practice*. Retrieved from <http://healthsciences.curtin.edu.au/studying-health-sciences/interprofessional-education/leadership-programme/>
- Bryman, A. (2012). *Social research methods*. 4th. New York: Oxford UP.
- Chen, F., Delnat, C. C., & Gardner, D. (2015). The current state of academic centers for Interprofessional Education. *Journal of Interprofessional Care*, 29, 497-498.

- Cooperrider, D.L. & Whitney, D. (1999). *Appreciative inquiry*. San Francisco: Berrett-Koehler.
- Curran, V., Sargeant, J. & Hollett, A. (2007). Evaluation of an interprofessional continuing professional development initiative in primary health care. *Journal of Continuing Education in the Health Professions*, 27, 241–252.
- Davidson, M., Smith, R. A., Dodd, K. J., Smith, J. S. & O’Loughlan, M. J. (2008). Interprofessional pre-qualifying education: A systematic review. *Australian Health Review*, 32, 111-120.
- Fairhurst, G. & Connaughton, S.L. (2014). Leadership: A communicative perspective. *Leadership*, 10, 7-35.
- Fairman, J. C. & Mackenzie, S. V. (2015). How teacher leaders influence others and understand their leadership. *International Journal of Leadership in Education*, 18, 61-87.
- Freeth, D., Hammick, M., Reeves, S., Koppel, I. & Barr, H. (2005). *Effective interprofessional education. Development, delivery & evaluation*. Oxford: Blackwell.
- Frenk, J., Chen, L., Bhutta, Z.A., Cohen, J., Crisp, N. Evans, T. ... Serwadda, D. (2010). Health professionals for a new century: Transforming education to strengthen health systems in an independent world. *The Lancet*, 376, 1923-1958.
- George, A., Frush, K. & Lloyd Michener, J. (2013). Developing physicians as catalysts for change. *Academic Medicine*, 88, 1603–1605.
- Hall, L.W. & Zierler, B.K. (2015). Interprofessional education and practice guide No. 1: Developing faculty to effectively facilitate interprofessional education. *Journal of Interprofessional Care*, 29, 3–7.
- Ho, K., Jarvis-Selinger, S., Borduas, F., Frank, B., Hall, P., Handfield-Jones, R. ... Rouleau, M. (2008). Making Interprofessional Education Work: The Strategic Roles of the Academy. *Academic Medicine*, 83, 934-940.

- Howkins, E. & Bray, J. (2008). (Eds.), *Preparing for interprofessional teaching: Theory and practice*. Oxford: Radcliffe Publishing.
- Kotter, J. P. (1996) *Leading Change*. Boston, MA: Harvard Business School Press.
- Kotter, J. P. (2014). *Accelerate*. Cambridge, MA: Harvard Business Review Press.
- Kouzes, J.M. & Posner, B.Z. (2012). *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*. San Francisco, CA: Jossey-Bass.
- Laksov, K. B. & Tomson, T. (2016). Becoming an educational leader – exploring leadership in medical education. *International Journal of Leadership in Education*, DOI: 10.1080/13603124.2015.1114152.
- Lawlis, T.R., Anson, J. & Greenfield, D. (2014). Barriers and enablers that influence sustainable interprofessional education: A literature review. *Journal of Interprofessional Care*, 28, 305–310.
- Marshall, S.J. (2006). *Issues in the development of leadership for learning and teaching in higher education*. Carrick Institute for Learning and Teaching in Higher Education Occasional Paper, Sydney, Australia.
- Nelson, S., Tassone, M. & Hodges, B. (2014). *Creating the health care team of the future: The Toronto model for interprofessional education and practice*. New York: Cornell University Press.
- Newton, C., Wood, V. & Nasmith, L. (2012). Building capacity for interprofessional practice. *The Clinical Teacher*, 9, 94-98.
- O’Sullivan, P.S. & Irby, D.M. (2014) Promoting scholarship in faculty development: Relevant research paradigms and methodologies. In Y. Steinert. (Ed.), *Faculty development in the health professions: A focus on research and practice* (pp.375-398). Montreal, CA: Springer.

- Parker, K., Jacobson, A., McGuire, M., Zorzi, R. & Oandasan, I. (2012). How to build high-quality interprofessional collaboration and education in your hospital: The IP-COMPASS tool. *Quality Management in Health Care*, 21, 160–168.
- Parry, K., Mumford, M.D., Bower, I. & Watts, L.L. (2014). Qualitative and historicometric methods in leadership research: A review of the first 25 years of *The Leadership Quarterly*. *The Leadership Quarterly*, 25, 132-151.
- Pecukonis, E., Doyle, O., Acquavita, S., Aparicio, E., Gibbons, M. & Vanidestine, T. (2013). Interprofessional leadership training in MCH social work. *Social Work in Health Care*, 52, 625-641.
- Reeves, S., MacMillan, K. & van Soeren, M. (2010). Leadership of interprofessional health and social care teams: a socio-historical analysis. *Journal of Nursing Management*, 18, 258–264.
- Reeves, S., Tassone, M., Parker, K., Wagner, S.J. & Simmons, B. (2012). Interprofessional education: An overview of key developments in the past three decades. *Work*, 41, 233-245.
- Rodger, S. & Hoffman, S.J. (2010). Where in the world is interprofessional education? A global environmental scan. *Journal of Interprofessional Care*, 24, 479-491.
- Shrader, S., Mauldin, M., Hammad, S., Mitcham, M. & Blue, A. (2015). Developing a comprehensive faculty development program to promote interprofessional education, practice and research at a free-standing academic health science center. *Journal of Interprofessional Care*, 29, 165–167.
- Simmons, B., Oandasan, I., Soklaradis, S., Esdaile, M., Barker, K., Kwan, D. ... Wagner, S. (2011). Evaluating the effectiveness of an interprofessional education faculty development course: The transfer of interprofessional learning to the academic and clinical practice setting. *Journal of Interprofessional Care*, 25, 56-157.

- Spencer, J. (2014). Faculty development research: The 'state of the art' and future trends. In Y. Steinert (ed). *Faculty development in the health professions: A focus on research and practice* (pp.353-374). Montreal, CA: Springer.
- Steinert, Y. (2005). Learning together to teach together: Interprofessional education and faculty development. *Journal of Interprofessional Care*, 19, 60-75.
- Steinert, Y., Naismith, L. and Mann, K. (2012). Faculty development initiatives designed to promote leadership in medical education. A BEME systematic review: BEME Guide No. 19. *Medical Teacher*, 34, 483–503.
- Swanwick, T. & McKimm, J. (2014). Faculty development for leadership and management. In Y. Steinert. (Ed.), *Faculty development in the health professions: A focus on research and practice* (p.53-78). Montreal, CA: Springer.
- The Interprofessional Curriculum Renewal Consortium, Australia. (2013). *Curriculum Renewal for Interprofessional Education in Health*. Canberra, Department of Education.
- Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27, 237-246.
- Willumsen, E. (2006). Leadership in interprofessional collaboration – the case of childcare in Norway. *Journal of Interprofessional Care*, 20, 403-413.
- World Health Organization. (2010). *Framework for action on interprofessional education and collaborative practice*. Geneva: World Health Organization.