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‘This is the peer reviewed version of the following article:
Grant, J., Gregoric, C., Jovanovic, J., Parry, Y., & Walsh, K.
(2018). Educating professionals who will work with
children in the early years: an evidence-informed
interdisciplinary framework. *Early Years*, 1–16. <https://doi.org/10.1080/09575146.2018.1488819>

which has been published in final form at

<https://doi.org/10.1080/09575146.2018.1488819>

“This is an Accepted Manuscript of an article published by
Taylor & Francis in *Early Years* on 6 July 2018, available
online: <http://www.tandfonline.com/10.1080/09575146.2018.1488819>”

Title: Educating professionals who will work with children in the early years: An evidence-informed interdisciplinary framework

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- JG initiated the design of the study, and led data collection and analysis. She drafted the manuscript and revised it critically for important intellectual content.
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- YP participated in design of the study and data collection. She revised the paper for intellectual content.
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Abstract:

The first five years of a child's life are irrefutably important, establishing life-long health, social and economic outcomes. To optimize these outcomes, global policy is directing professionals from a range of disciplinary backgrounds to work more collaboratively than ever before with children in the early years. Such collaborations have proven problematic as individual disciplines and pre-service education requirements vary widely. Using Community-Based Participatory Research and Diffusion of Innovation approaches, this study aimed to develop an educational framework for professionals working with children in the early years and their families, to begin a cultural change for interdisciplinary collaboration and participation across the early years. Systematic reviews, modified Delphi rounds and focus groups identified the diverse demands of multiple professions, qualification levels and workforce agendas, as well as highlighting shared outcomes, knowledge and intentions across disciplines.

Keywords: Early years, interdisciplinary professional work, higher education framework

Acknowledgments to the research team as follows; Associate Professor Julian Grant (Project Leader), Dr Carolyn Gregoric (Project Manager), Professor Jennifer Sumsion, Associate Professor Sally Brinkman, Associate Professor Kerryann Walsh, Dr Jessie Jovanovic, Dr Yvonne Parry, Dr Keith Miller, Ms Kaye Colmer, Ms Christine Gibson

Funding details: Research project was funded by the Australian Office of Learning and Teaching 2014-16 (Project ID 143938).

Disclosure statement: No potential conflicts of interest were reported by the authors

Geolocation information: Research was conducted nationally in Adelaide, Sydney, Brisbane, & Perth, Australia.

Ethics: Ethics approval for this study was provided by Flinders University (no. 6685), Charles Sturt University (no. 2014/203), Queensland University of Technology (no. 1400000811), The University of Western Australia (no. RA/4/1/7177) and University of South Australia (no. 0000033797).

REVISED MANUSCRIPT

Introduction

The early years are unrefutedly important in determining a child's life course (Shonkoff, Boyce & McEwen 2009). Despite being a wealthy nation, Australia is a middle-ranked country when it comes to the wellbeing of children and young people (Australian Research Alliance for Children and Youth [ARACY] 2013). A large gap exists between Australia's highest and lowest performing students compared to many other OECD (Organisation for Economic Co-operation and Development) countries (ibid). Additional to this, and significantly, 42.1% of Indigenous children surveyed in the 2015 Australian Early Development Census were developmentally vulnerable on one or more domains (AEDC 2015).

Australia has implemented a significant shift in policy foci to attend to the challenges of optimizing every child's health, care and educational outcomes (Commonwealth of Australia [CoA] 2015a, 2015b). A core aspect of this important work requires a highly educated early years multidisciplinary workforce to create what child development scholars call a 'fundamental cultural change required for responsive service delivery' (CoA 2009a, 20). This shift toward service integration is mirrored internationally with the OECD challenging governments globally to build unity across health, education and services for children and families in the early years (OECD 2012,). While the direction is clear, calls for service optimization and integration will be strengthened if these policies are underpinned by

a collaboratively developed framework that can be implemented in higher education programs for early years professionals who will form the interdisciplinary workforce charged with realizing these objectives.

This paper presents findings from a study that aimed to enact these service optimization and integration initiatives by developing a national interdisciplinary educational framework to bridge the critical gap between policy and interdisciplinary practice. The development of a collaborative, evidence-informed, interdisciplinary framework for learning and teaching in higher education will support the professional preparation of an interdisciplinary early years workforce, acting as a catalyst for a fundamental cultural change in this arena. The paper presents an overview of the entire study: a three-stage mixed method inquiry into developing an interdisciplinary framework to guide preservice professional preparation in higher education settings.

Background

Interdisciplinary collaboration and service integration are central to research and policy aimed at increasing access to, and equity in, health, education and social services for young children and their families (Australian Medical Association [AMA] Task Force on Indigenous Health 2013; Wong & Sumsion 2013). Collaboration and integration are argued to be essential for improving health, education and welfare outcomes for Australia's children (Fox et al. 2015), however, there is little evidence of services attaining this interdisciplinary intent (Wong & Sumsion 2013). Strategic pre-service education with shared outcomes for children, and collaborative interdisciplinary understandings is a missing component in this policy landscape.

As part of service delivery integration, collaboration involves the development of highly committed, high-intensity relationships where individuals or groups unite within a single entity to plan jointly and share resources (Centre for Community Child Health 2008, 6-

7). This requires explicit skills and knowledge and shared understandings of the needs of the children and of each others' practice.

Studies of integrated services in the UK suggest that alongside core professional expertise is a need for 'distributed expertise' to enable practitioners to become adept at recognizing, drawing on and contributing to their joint work with children and families (Edwards 2009; Whalley 2006). With a greater focus on this relational work, new approaches to pre-service education that support both knowledge-building approaches and ways of working meaningfully and productively across professional boundaries are required (Toronto First Duty 2008).

In Australia, integrated service delivery is promulgated in some jurisdictions, with South Australia, Victoria and Tasmania instigating joint departments for health, education and welfare service provision for the early years. These joint departments require health, welfare and education professionals to work in seamless inter- or trans-disciplinary teams without having the underpinning common understandings of their respective professional backgrounds and cultures. Professionals within this 'early years workforce' can be drawn from disciplines such as social work, child and family health nursing, physiotherapy, occupational therapy, speech therapy, psychology, medicine, and early childhood education. With their specific tertiary education, these professionals have no common early years education or training. The resulting barriers related to conflict, competition, communication and decision-making are identified as challenges in working collaboratively across disciplines (Pharo et al. 2014).

Compounding this problem are the philosophical differences regarding children and childhood that are held by professionals from various disciplines. These differences are manifest in the frameworks for care and education developed by the disciplines to guide their educational preparation for practice. The National Framework for Protecting Australia's

Children 2009–2020 (CoA 2009b), for example, while advocating children as being everybody’s business, remains a framework for social care. Similarly, the Early Years Learning Framework for Australia is focused predominantly on the work of early childhood educators and serves as a children’s services curriculum document for teaching and learning purposes (Australian Government Department of Education, Employment and Workplace Relations 2009). While Fox and colleagues (2015) argue that a common approach to measuring early childhood outcomes and shared ways of working are essential to meeting the needs of Australia’s most vulnerable children, this is not easily facilitated through current national professional policies and requirements. Similarly, the requirement for professionals to work within and across disciplines is no guarantee that divergent theories and practices will be explored and common ways of working collaboratively established (Whalley 2006).

A way forward is to address the ‘unspoken’ problems associated with working across disciplines and hierarchical structures (Wong, Sumsion, and Press 2012) in pre-service education. One strategy is for interdisciplinary workers to have pre-service professional learning opportunities to develop cohesive, collaborative practices across and within teams in the early years (Press, Sumsion and Wong 2010). Some examples that have led to greater interdisciplinary collaborations include joint workplace learning in mental health (Green et al. 2006) and pre-service professional experience placements for early childhood teachers in health services (Trepanier-Street 2010). While helpful, these strategies do not address the underlying differences in theoretical and professional boundaries within the early years workforce.

Interdisciplinary curricula is intended to overcome such boundaries through the “integration of knowledge from multiple disciplines in pursuit of an outcome that is not possible from a single disciplinary approach” (Holley 2017). Interdisciplinary curricula in Higher Education (HE) seek to synthesize and integrate insights to see knowledge clusters

and gaps, to better understand challenging problems, and source ways forward for cognitive advancement on problems and ideas that would be impossible from a single discipline (Goldsmith, Hamilton, Hornsby & Well 2012; Spelt, et al. 2009, p. 365). Systematic reviews of contemporary international research in this area identify interdisciplinary teaching and learning in HE either centres on individual examples of implementing such an approach, analyses the outcomes and pedagogical challenges of such education, or focuses on discourse pertaining to the socio-cultural context for interdisciplinarity (de la Horpe & Thomas 2009; Lyall, Meagher, Bandola & Kettle 2015; Spelt, et al. 2009; Woods 2007). Research centred on interdisciplinary HE curricula, as distinct from teaching and learning, remains limited and explorative relative to broad disciplines like social work, the arts, engineering or health care (see Collins 2017; Spelt 2015 for exceptions). To-date there are very few examples of large-scale curriculum change in HE, let alone in the arena of interdisciplinarity. de la Horpe and Thomas (2009) suggest that for integrated curriculum to transpire in HE there needs to be a critical mass to lead and implement such change, cognizant of the driver/s behind the need for such curricula, supported with sufficient resources and professional learning to see it succeed for learners-in-practice.

The major challenge for interdisciplinary collaboration in pre-service early years education is the current differing requirements for professional qualifications and professional agendas that make the development of a clear vision and plan for such interdisciplinary curricula a significant pedagogical challenge. In Australia, this is compounded by differing requirements between state and territory jurisdictions for some disciplines. For example, a national survey of maternal, child and family health nursing programs found inconsistencies in the coverage, depth and breadth of the content and practical requirements within courses (Kruske and Grant 2012). The requirements of the Australian Qualifications Framework [AQF] (Australian Qualifications Framework Council

[AQFC] 2013), which specifies learning objectives for qualification types and levels, add further complexity to collaborative curriculum development for working in the early years. Discipline-specific qualification levels required for work with children and families differ greatly. For example, childcare workers must have a minimum level 2 qualification,¹ education, and social work disciplines require level 7² qualifications, maternal, child and family health nurses require level 8 or 9,³ and psychology practitioners require level 9. Adding further complexity, some disciplines have accountabilities to multiple professional bodies for example, early childhood teachers need to comply with the *Australian Children's Education and Care Quality Authority* and the *Australian Institute of Teaching and School Leadership* requirements throughout their education and working lives. As such, an important and overlooked mechanism for fostering collaborative and integrated practice for professionals working with children from birth to five years is the development of interdisciplinary understandings during pre-service education. These understandings require an evidence-informed framework that represents shared understandings of what children need to thrive, of disciplinary practice boundaries and of the essential characteristics of practice for child health, wellbeing and education.

The study

An exploratory mixed-method study was designed with three aims and corresponding research stages: (i) to determine outcomes for children from birth to five years that could be shared among the disciplines (Stage 1), (ii) to map national disciplinary boundaries through

¹ 'Graduates at this level will have knowledge and skills for work in a defined context'.

² 'Graduates at this level will have broad and coherent knowledge and skills for professional work'.

³ 'Graduates at this level will have specialised knowledge and skills for research, and/or professional practice' AQFC 2013, 18.

exploring regulatory and educational requirements (Stage 2) and (iii) to determine the essential knowledge, skills and attributes for working with children from birth to five years that could be applied to all disciplines (stage 3). The ultimate goal was to immediately translate the findings into a national interdisciplinary educational framework for use in existing higher education curricula and to inform future curriculum development for early years' professionals involved in interdisciplinary work. Following Gunawardena and colleagues (2010, 219), we aimed to produce materials that melded various disciplinary knowledges and worldviews, offering insights that were unachievable via a single integrated disciplinary lens.

Design

Two interrelated methodologies Participatory Action Research (PAR) and Diffusion of Innovation (DoI), were employed to encourage collaboration and partnership within early years' education and practice. PAR is a research method that seeks to locate power with those who will be most affected by the research, in this case, the early years disciplines. Knowledge generation in PAR is inherently collaborative, based on reflection of action, and designed to create change (Reason and Bradbury 2008). For epistemological and political reasons PAR begins from the standpoint that all people working on a project, need to be involved in reflection on action for change (Brydon-Miller et al. 2013), especially when the subject of inquiry exists in an historically contested disciplinary space. Where traditional PAR works in cycles of action and reflection, this research adapted the cycles to respond to the circumstances and the particular needs of early years professionals, workers and academics (Brydon-Miller et al. 2013). 'Action' was conceptualized as current practice, and 'reflection' took the form of reviewing the best available research evidence and discussing these findings from disciplinary perspectives. Individual 'reflections' on practice were undertaken by participants in the study's Delphi surveys and focus groups. Throughout the life of the

project, a research advisory group were engaged in successive rounds of critical reflection and feedback to the research team. The resultant interdisciplinary early years, higher education framework, represents an explicit integration of theory and practice achieved through collaboration, and respect for the diverse professional knowledge, experiences and skills of all participants (Brydon-Miller et al. 2013).

Diffusion of Innovation (DoI) theory (Rogers 2003), which explains how ideas are spread among groups of people, guided the strategy for disseminating the early years higher education framework that evolved over the duration of the project. It enabled staged innovation to be communicated ‘over time’ among the members of the early years social system (ibid, p. 5) thus maximizing opportunities for its adoption.

In three overlapping stages across two years, the study used both qualitative and quantitative methods to collect data. Following Puddy and Wilkins (2011 p. 4), evidence was conceptualized using three distinct and interrelating sources across all stages including: (i) the best available research evidence in the form of literature reviews, (ii) experiential evidence collated from Delphi studies and focus groups and (iii) contextual evidence from expert reference and advisory groups. A common thread of reflection was embedded across all stages of the research through the constitution of a research advisory group to maintain experiential and contextual validity (Grant et al. 2017). Research advisory group members were leaders in their respective disciplines and were recruited nationally from across various Australian states and territories to ensure depth and breadth of representation for the study. Such a collection of evidence strengthened community participation in the research and congruent with DoI theory, engaged potential adopters in the emerging innovation for cultural change.

Data collection

In Stage 1, a scoping review of disciplinary literature and relevant frameworks for practice was undertaken to develop a set of evidence-informed outcomes for children that could be shared across all disciplines. The search covered all relevant international literature on what children need to grow and thrive across health, education and wellbeing, regardless of study design (Levac, Colquhoun and O'Brien 2010). This was essential to incorporate contextual and experiential evidence that may be derived from practice. From an original search identifying 3212 eligible papers, a total of 55 remained after screening abstracts and removal of duplicates (Figure 1). Following a bio-ecological model of supporting child wellbeing (Bronfenbrenner 2004) statements from these studies were extracted and synthesized, resulting in five outcome clusters that included, community outcomes, family outcomes, individual outcomes, service provision outcomes and sociopolitical outcomes. Statements developed from the sources were coded into the relevant cluster. For example, 'Community Outcomes' comprised three statements 'Will have positive relationships with community members' (mentioned in two papers), 'will live in safe, caring and enriching communities' (mentioned in 16 papers) and 'will live in environments free from smoke and pollutants' (mentioned in seven papers).

[Insert Figure 1 Prisma Chart about here]

The resulting five outcome clusters comprising 51 statements were critiqued by the research advisory group resulting in minor changes in expression to enhance readability. Using a modified Delphi survey method, the statements were then distributed to an expert panel of 61 self-nominating participants. They were asked to distribute the survey widely amongst their professional networks. This approach enabled checking the best available research evidence against contemporary experiential evidence provided by a range of professionals working in different contexts and in this way, the Delphi survey was used to

achieve cross-disciplinary consensus on the set of outcome statements. Delphi survey identifies group opinion as more 'valid' than individual opinion and operates on the assumption that consensus can be reached (Keeny, McKenna & Hasson 2011). In the first round, participants were asked to 'agree', 'disagree' or 'agree [but] with changes' to each statement. The research team then modified statements accordingly. In the second round, participants were asked only to 'agree' or 'disagree' to the revised statements. As the responses reached 75% consensus (Mannix 2011), no further modifications and survey rounds were required.

In Stage 2, to explore disciplinary practice boundaries, a document analysis was undertaken of all publically available national guides and regulations used to inform and register professional practice across a vast array of disciplines working with children and families. Following Ryan and Bernard (2000, 772–73), several iterations of mental maps were created to display descriptive elements related to qualification and professional requirements. An Excel database was then created for a correspondence analysis in which 15 disciplines were analyzed across 13 descriptive elements.

In Stage 3, three datasets were used to develop a set of essential universal elements for working with children and families in the early years: a document analysis, focus groups, and final Delphi survey. First, a document analysis was undertaken that comprised a scoping review of interdisciplinary literature and an analysis and synthesis of all existing national disciplinary standards ($n = 10$), codes of ethics or conduct ($n = 22$), obligations ($n = 1$) and principles ($n = 1$) for professionals identified as working with young children. Inductive coding and clustering of disciplinary competencies and standards identified 12 themes in the areas of professional knowledge and skills, and a further 12 themes related to professional attributes specifically related to working with children. These themes were then used in deductive matrix coding (Gale et al. 2013) to identify omissions and redundancies. Second,

eight focus groups with early childhood health, education, and welfare professionals were held across Australia (Table 1). The purpose of the focus groups was to identify any gaps or redundancies in the published documents, ensuring that the ‘people, place, time and conditions’ (Taylor, Kermode and Roberts 2006, 321) of most relevance to the study were considered in the final results.

For consistency across jurisdictions, the first South Australian focus group was video-recorded and used to train local focus group leaders from other jurisdictions. Focus group data were inductively coded and then clustered into themes using QSR NVivo (QSR International Pty Ltd 2012). Themes were then cross-referenced with the document analysis to validate existing themes and add those missing from the focus group analyses. These processes yielded a refined set of core knowledge and skills and a refined set of core attributes for working with children aged 0–5, as shown in Tables 2 and 3. For example, themes of leadership and legislation were added as they appeared in all standards for practice, but not evidenced in literature or mentioned in focus groups. Child development, children’s capabilities and children’s characteristics were clustered into a core theme of ‘Children’, making it applicable to all disciplines.

[Insert Table 1 about here]

[Insert Table 2 about here]

[Insert Table 3 about here]

Statements within each theme were then revised to reflect practice standards. A total of 99 elements (statements) under 17 domains (themes) identified through this process were then distributed via a Delphi survey to all stage 1 participants. Agreement or disagreement with each element was sought, aiming to achieve 75% consensus (Mannix 2011). As this was achieved in the first round, no further rounds were conducted.

Recruitment and participant

The following groups of participants involved with children from birth to five years across a range of disciplines were recruited into the research; tertiary educators responsible for training professionals, professionals currently working in the early years, and community members using early years' services.

Methods of recruitment were deliberately varied to ensure that a balanced and wide-ranging group of participants were engaged in the study, in keeping with the principles of PAR. Aboriginal and Torres Strait Islander representation was made in the research advisory group and through recruitment into the Delphi surveys.

Core to participant recruitment and diffusion of innovation (DoI) was the establishment of a secure project website from the time of study initiation.⁴ Through this online presence, open invitations were posted, links to the Delphi rounds for Stages 1 and 3 were provided, along with project updates. To facilitate DoI, ongoing engagement with the study was invited via blogs and social media.

Results

Stage 1: Common outcomes for children

The first round of the study's modified Delphi survey received 370 responses, of which 305 were fully completed. Respondents were from all Australian states and territories, with the majority from South Australia and an overwhelming majority being female (see Table 4).

Of the 51 statements, 46 reached the minimum requirement of 75% consensus and were included in the final resource. The remaining five statements without consensus were

⁴ http://www.flinders.edu.au/mnhs/early-years/early-years_home.cfm

analyzed, discussed and rewritten by the research team for redistribution in the second Delphi round (see Table 5).

[Insert Table 4 about here]

[Insert Table 5 about here]

As an example, participants' open-ended responses to the statement 'Children will have capable mothers' included feedback that it: needed to be inclusive of fathers ($n = 36$); should see 'capable' as a social construct with multiple interpretations as the term suggested blame, ($n = 20$); needed to widen focus to primary carers and/or family unit ($n = 20$), needed to be more inclusive of diverse family structures ($n = 9$); should acknowledge that primary caregivers may need support to be the best they can be ($n = 7$). Taking these comments into account, the statement was revised to: 'Children will have capable parents and caregivers'. One of the 51 statements did not reach 75% consensus in the Delphi survey round 2; as shown in Table 2, this statement was discussed and revised by the research advisory group.

Robust discussions during the final consultation with the research advisory group sought to resolve the tension between maintaining the stewardship of the individual disciplines and achieving consensus across disciplines. While individual professions have their own profession-specific outcomes, they also share similar principles and foci. It was determined that these shared elements across professions were best reflected by renaming the resource from 'common outcomes' to 'shared outcomes'. Another focus of robust debate was whether outcomes from the antenatal period should be included or excluded. From this process, it was agreed that the original focus on birth to five years should be retained. The final resource, *Shared Outcomes for Working with Young Children* (Grant et al. 2016), is now publicly available for use by educators and services as part of the Interdisciplinary Education Framework.

Stage 2: An interdisciplinary map of early years professions

Document analysis of 43 professional codes, guidelines, standards and competency frameworks was undertaken to produce a visual map of the qualification and professional requirements of 15 key disciplines typically contributing to early years interdisciplinary teamwork. Qualification factors such as the discipline-specific AQF level of learning, study prerequisites, practice requirements, length of study and offering institutions were tabulated. Professional requirements were also collated in the matrix⁵ and included authorizing bodies for programs of study and/or professional registration, registration standards, professional competencies and child-related screening conditions.

The qualifications for working in the early years ranged from level 3 vocational certificates to level 9 postgraduate awards. There were 12 different authorizing bodies for the 15 disciplines mapped, wide variances in placement locations for professional experience learning, and an array of professional registration/certification and competency requirements that rested either with the individual following course graduation, the employer during recruitment or orientation, and/or with an external administrative body to assess credentials. The resulting interdisciplinary map is available as an interactive resource on the project website. It enables users to select and compare the above-mentioned professional requirements across disciplines.

Stage 3: Universal essential elements for working with young children and families

All 97 statements distributed via online Delphi survey for the development of universal essential elements in Stage 3 of the study achieved greater than 75% agreement in the first round. In total 17 received 100% consensus, with no less than 96% agreement on any statement. Of a total 349 responses, 234 were fully completed. Similar to the Delphi survey

⁵ Available at <http://www.flinders.edu.au/mnhs/early-years/disciplines.cfm>

from Stage 1, the majority of participants were female with participants being drawn from all states and territories (Table 6).

[Insert Table 6 about here]

Participants in the Delphi survey were invited to provide open-ended responses to maximize rigor, responsiveness and utility of the resource. While there was overall widespread agreement for the statements, participants provided a further 602 comments, all of which were reviewed independently by the research team. Minor revisions were made to 46 statements. For example, ‘honour children’s right to play’ was revised to ‘value every child’s right to play’ and ‘practice with kindness, courtesy, care and compassion’ was revised to ‘practice with kindness, courtesy, flexibility, patience, care and compassion’. In total, a further two statements were added and three overlapping statements were removed. A penultimate draft of the universal essential elements was then reviewed by the research advisory group, who then approved the document for inclusion in the *Interdisciplinary Education Framework for Professionals Working in the Early Years* (Grant et al. 2016).

Discussion

Developing shared outcomes for children and agreed ways of working to achieve these is essential for meeting the needs of Australia’s most vulnerable children and families (Fox et al. 2015). Findings from Stages 1 and 3 of this study suggest that cross-disciplinary understandings of the purposes and professional dimensions of work in the early years are achievable and far less disparate than previously thought. These findings show that incorporating both specialist professional knowledges and collaboration into an interdisciplinary teaching and learning framework is possible.

For example, reaching 75% consensus on 90% of the draft shared outcomes for children in this current research suggests strong shared aspirations across professionals

working with young children and their families. Similarly, to reach no less than 96% consensus on all statements in the first round of the Delphi survey for universal essential elements was unprecedented. This suggests that shared goals and ways of working with children and families may be possible, with a united sense of the knowledge, skills and values required for early years work across education, medicine, nursing, midwifery, allied health and social work disciplines.

Many factors were critical to the success of this study. First, in the spirit of PAR, the enthusiastic participation in the research by professionals, community members and industry, enabling the diffusion of innovation to progress was paramount. Communication and dissemination began in Stage 1 with the establishment of a web presence punctuated by blog updates, invitations to participate, and the development of a LinkedIn community. The website received over 9700 views across the project duration. The research team and research advisory groups met regularly via teleconference and gave generously of their time, expertise and entry to professional networks. Second, the value that researchers and advisory groups members placed on using a combination of research, experiential and contextual evidence (following Puddy and Wilkins 2011) ensured that the final products were meaningful. Incorporating extensive scoping reviews, document analysis, focus groups, research advisory groups and Delphi surveys enabled progressive adoption and methodological rigor (Hinton et al. 2011). Congruent with PAR, iterative reflection on action, combining research and practice served as a model for tackling large-scale curriculum change in higher education.

Despite the well-documented challenges for professionals working collaboratively in interdisciplinary teams (Centre for Community Child Health 2008; Pharo et al. 2014), and the potential for philosophical differences among early years disciplines evidenced in various professional frameworks, this study's findings suggest that the challenges and differences may not be as onerous as previously conceived. Focusing on points of 'sameness' or

agreement in professional education may be an important first step in going beyond the simple coalition and integration of early years services that is typical of current Western policy initiatives in the area (Fane et al. 2016). The extent of this ‘sameness’ is perhaps most clearly evident in the Stage 3 participant comments that called for two statements to be excluded owing to duplication elsewhere in the universal essential elements, and the inclusion of a statement representing shared professional advocacy for children’s needs for high-quality practices.

The results of this study do not extend to the perception that interdisciplinary work with young children and families is simpler than first reported. Indeed, the interdisciplinary HE teaching and learning literature suggests this work involves more than seeing things from multiple angles; its about synthesizing and integrating insights and practice for pragmatic, purposeful ends (Goldsmith et al. 2012; Holley 2017). A key finding of the study is that professionals who work with children are often challenged to conceptualize how their disciplinary constructs might be reframed for greater understanding in interdisciplinary environments. For example, the 601 comments made in Stage 3 identified many of the deeper complexities of this work. These included minor discipline-specific semantics for word choice, preferences for terminology and areas of focus. This supports the notion that there is a need to consider ways of seeking ‘distributed expertise’ to help each specific discipline to come to shared understandings about the purposes and approaches for all professionals working with young children (Edwards 2009; Whalley 2006). The extensive range of qualifications and professional requirements for the 15 disciplines identified in Stage 2 suggests how easily misunderstandings and disconnections might occur in practice, even with individual willingness to successfully seek and share interdisciplinary understandings and practices.

This paper has provided an overview of our 3-stage inquiry into developing an interdisciplinary framework to guide preservice professional preparation in higher education settings. During the study, co-construction of evidentiary knowledge(s) through PAR, also enabled the expression and discussion of socially-constructed professionally-relevant views about children, childhood, and child rearing. One of the benefits of using PAR, was its strength in enabling practical solutions to practice problems (Brydon-Miller et al 2013). For example, in Delphi survey responses to the statement ‘Children will have capable mothers’ (which received only 63% agreement in the first Delphi round), 92 participant comments were received relating to participant views about raising children, the role of primary carers (including mothers, fathers and family members) and the social construction of motherhood and blame. Although beyond the scope of this paper, these responses highlight the need to more deeply explore the role of socio-political forces in the co-construction of disciplinary and interdisciplinary education for the early years workforce.

Limitations

The intent of this research was to explore and develop shared meanings for education, and ultimately practice, for a range of professionals who work independently and collaboratively with young children and their families. Although the intent of developing shared meaning and initiating a fundamental cultural shift was achieved, this may have limited ongoing impact without assessment of the uptake and use of the resource, and evaluation of the effectiveness of the resources in higher education programs. Additionally, the research remains contextual and country specific. While there may be aspects of transferability to other countries, the economic, professional and social nuances of this research remain site specific. A further limitation was the absence of explicit Aboriginal and Torres Strait Islander workers, cultural consultants or liaison positions in the development of the interdisciplinary map. Despite representation on the research advisory group and

participation of Aboriginal workers and groups in the Delphi surveys, this omission was not identified until near completion of the project. Finally, research will be needed to explore the ways in which service integration and professional collaboration using an interdisciplinary early years framework are experienced by children and families.

Conclusion

Together, the findings from this study have contributed toward a new, publicly available framework for early years higher education curricula, that can be critically claimed as co-constricted and interdisciplinary. To optimize integrated service delivery for young children at risk, this evidence informed, interdisciplinary framework offers a tangible starting point for collaboration and cultural change. This cultural change means that children and their needs form the centre of all interdisciplinary work, and are the basis of a shared language for communicating within and between the disciplines.

Starting with a pre-service higher education framework that can be embedded into all disciplinary curricula for those learning to work with young children is unique, and represents a significant opportunity to build interdisciplinarity. In doing so, not only is it possible to reduce the significant inconsistencies within courses in singular disciplines, but also to open dialog about inter- and cross-disciplinary purposes, theories and approaches in working with young children and their families.

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