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Do Master Early Childhood Teacher Education Programs Provide Adequate Coverage of Infants and Toddlers? A Review of Content

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Abstract: In Australia, growth in the demand of early childhood services for young children aged birth to three years has placed increased pressure on the early childhood education sector as new policy stipulates the need for qualified teachers. The new policy has resulted in a growth in Master of Early Childhood Education programs in Australian universities. These programs are designed as initial teacher education programs for people with a non-education Bachelor degree wanting to become a qualified early childhood teacher in 18 months.

Little is known about the structure as well as the content of these new programs in their ability to address infants and toddler education. This paper explores 18 postgraduate Master education programs that were approved by the Australian Children's Education and Care Quality Authority (ACECQA) and listed on their website as at January 2014. Our aim is to examine programs for the amount of content and assessment that focuses on infants and toddlers. Utilising information from program websites and course guides, data was examined using content analysis to reveal the nature and extent of inclusion of learning, focused on infants and toddlers. Four interviews were also conducted with teacher educators. Findings are important for early childhood teacher education in Australia if the overall goal is to improve quality for all children, including the very youngest in education and care.

Introduction

Scholars have emphasised the importance of providing children with a high quality early educational experience. This experience, which includes both the physical space (i.e. an environment conducive to good learning) and the access to good educators, serves as the foundation of successful future learning. Few could argue that a good beginning to life is not the foundation for future development, health and wellbeing.

Despite this recognition, policy and practice in early childhood education and care in Australia still appears to lack focus and integration. In short, there are a number of divides that face the early childhood education sector. One divide is between the relative qualifications of educators across the early childhood education sector, with qualifications of staff in early learning centres, including childcare, often diverse and typically lower than those in primary schools (Elliot, 2006). Another divide includes the Australian Government Productivity Commission (2015) who suggested that those working with children under three years of age hold a certificate III as long as they work with at least a diploma holder. "In many centres this would mean more certificate III workers and less diploma qualified

workers than are currently required” (Australian Government Productivity Commission, 2015, p. 18). There appears limited understanding of the importance of bachelor qualified staff working with the youngest of children in early childhood education and care.

This divide is concerning as the quality of early education and care is moderated, amongst a range of variables (e.g. the learning environment, access to educational resources), by well educated teachers. We argue that a quality pre-service early childhood degree education should be well rounded and include theoretical and practical experiences with infants and toddlers. This issue forms the basis of our study. Our philosophy is based on the notion that a rich understanding of content within early childhood teacher education is important for attaining and maintaining a high-quality early childhood education and care sector.

We attempt to unpack a particularly salient and relatively new, some would say alluring, early educational degree, the Master of Teaching (early childhood). In particular, we examine course content and assessment of Masters programs with respect to infants and toddlers aged birth to three years. The Master teacher education programs in Australia are potentially appealing as they provide a pathway for a person with a non-education Bachelor Degree to become a qualified early childhood teacher in 18 months to two years.

As important as this age is, in terms of providing the foundation for future educational and social emotional development, in Australia, this age range was found to have received little attention in undergraduate early childhood teacher education, with a greater focus on kindergarten (3 years old) and school aged children (5 years onwards) (Garvis, Lemon, Pendergast & Yim, 2013). These findings are not unique to Australia, with a number of American states reporting similar (Recchia et al., 2010). Given the rise in Master Degree programs in Australia for early childhood education and care, it is important to know if the content within the programs adequately addresses infant and toddler education.

Eighteen Australian Master Degree early childhood teacher education programs are examined. We focus on the pedagogical processes that are used to educate future early childhood teachers. Specifically, we examine whether pre-service teachers (also known as student teachers or novice teachers) engage in practical experiences (also known as practicum or professional experience) with children aged birth to three years. We also explore course content and how pre-service teachers are assessed on their knowledge and level of understanding of the content.

The programs examined were on the approved qualifications register by the national Australian Children’s Education and Care Quality Authority (ACECQA) as at January 2014. Since this time, qualification regulations and requirements with ACECQA have changed with greater requirements for the mapping of content for birth to 3 years. This study reports on programs prior to the mapping, with students graduating as qualified early childhood teachers during 2015 and 2016.

Content analysis is employed to investigate two research questions in relation to Master programs focused on early childhood:

1. What coverage of infants and toddlers is studied by early childhood pre-service teachers?
2. How is the knowledge about infants and toddlers assessed in early childhood teacher education?

Literature

Within Australian early childhood education and care, A National Quality Framework was developed in 2013 to raise quality and drive continuous improvement across all early childhood education and care services. The Framework mandates that all childcare programs are to employ a degree trained early childhood teacher. Early childhood teachers can be

qualified in two ways: (1) a 4 year undergraduate Bachelor Degree; (2) or, an 18 month to two year postgraduate Master degree - providing the student has a non-education Bachelor degree. Recent Australian government data (COAG, 2010) has highlighted a shortage of qualified early childhood teachers, and thus, the government has a mandate for more teachers, in this sector, to be trained in tertiary institutions.

The Australian government mandate on employing degree qualified early childhood teachers has come from overseas research showing links between educational qualification and the quality of early childhood education programs (Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2011). Qualified early childhood staff are particularly important in the early years, especially for infants and toddlers (Duncan & Magnuson, 2013; Ireland, 2006). Thus, there is an assumption underpinning the Australian National Quality Framework that qualified early childhood teachers will make a difference to the quality in services provided, thus translating into better outcomes for children (Nolan & Rouse, 2013). Further, research supports that a qualified workforce will improve children's outcomes across all age ranges (especially infants and toddlers), as better education in the early years provides the necessary skills for children to successfully negotiate key transitions in their lives (Manning, 2014).

Australian Government requirements also demand that qualified teachers work with older aged children as part of a universal access agreement that allows all children, in the year before schooling, access to an early childhood teacher (Rouse, Morrissey, & Rahimi, 2012). Previous Australian research suggests that qualified teachers in childcare centers end up working with older children; while diploma and certificate qualified educators (or sometimes unqualified staff) work with the younger children (Rouse, Morrissey & Rahimi, 2012). Therefore, younger children tend to receive little time with a qualified early childhood teacher. Recent evidence (Nolan & Rouse, 2013) suggests that this may be due, in part, to pre-service early childhood teachers' preference to work with older children as opposed to younger children as well as the pay and working conditions in long day care.

In a recent Australian survey of early childhood pre-service teachers in one Australian institution, Rouse, Morrissey and Rahimi (2012) noted many comments from students dissatisfied about the infant/toddler practicum in which they had engaged. Participants commented that they 'already knew' how to work with this age group, and that they aspired to work with older children. Rouse, Morrissey and Rahimi (2012, p.97) concluded that "...as it currently stands, the infant/toddler practicum, while essential in building competent early childhood teachers, is problematic and a challenge". Responses indicated dissatisfaction with the quality of supervision, the absence of teacher-mentors, and the lack of opportunities to practice new approaches. However, Australian research also reports infants and toddler placement being a positive experience for students. Thorpe, Ailwood, Brownlee and Boyd (2011) explored the beliefs of pre-service teachers in their third year of study of a Bachelor of Education (early childhood specialisation).

In another Australian study, a content analysis of Bachelor degree early childhood teacher education programs (aged birth to eight years) highlighted that infants and toddlers received limited attention compared to older children (Garvis, Lemon, Pendergast, & Yim, 2013). While the range of early childhood teacher education programs claim to have a broad reach (from birth to eight years of age), typically there is a light touch in the earlier years (0-3 years) (Garvis et al., 2013). Garvis and Lemon (2015) together with Ireland (2006) note that there is not a strong tradition of teachers being involved in infant/toddler programs across Australia. Similar findings have been reported in the United States with birth to three years also receiving little recognition and attention over the past 10 years (Recchia & Shin, 2010). There is also a perception in the United States, and some Westernised countries, that the educational preparation required of infant and toddler 'caregivers' is less rigorous than that required of 'teachers' of older children (Recchia & Shin, 2010).

Nordic countries also appear to have problems with infant and toddler teacher education programs with teachers in Iceland, Sweden and Norway highlighting a number of dilemmas when working with very young children - suggesting that the youngest of children in care were marginalised (Alverstad et al., 2014). Early childhood teachers appear to have a limited understanding of what professional work with young children included, with attitudes of “just changing nappies” sometimes expressed (Alvestad et al., 2014, p. 682).

The focus on older children (three years onwards) may be because of traditional views about infants (birth to twelve months) who are perceived as incapable and dependent (Cannella, 1997), often leading caregiving adults to underestimate their potential as learners. This focus, however, has hopefully changed or is in a state of transition given the recent focus within the Early Years Learning Framework (2009), which highlights children as capable and competent in meaning-making. In early childhood teacher education, it is important that such views about children are challenged. Garvis et al. (2013) suggests that in order to overcome this deficit view, what is required is teacher transformation in the Australian early childhood education sector. Agbenyega (2012, 142) notes that as “pre-service early childhood teachers do not know what to expect in child care and kindergartens; a transformational approach to teacher preparation is crucial for preparing them to adapt to changing pedagogical and contextual situations”. By allowing pre-service teachers to experience the learning of infants and toddlers, they are able to connect their learning and understanding of young children across all early childhood settings, linking understanding of how children transition between prior to formal (i.e., childcare and kindergarten) and formal schooling (i.e., primary school). Adequate time within early childhood teacher education programs is, therefore, needed to achieve such knowledge and experience to show that learning about infants and toddlers is just as important as learning about older children.

Context

In Australia, the early childhood sector is rapidly growing with a noticeable increase in the number of private and non-for profit childcare providers. According to the Australian Bureau of Statistics (2011), 864,300 children (aged birth to five years) attended formal childcare in Australia in 2011. Childcare in Australia was available for children from 6 weeks of age; however, only 22% of children under the age of two attend formal childcare. Between two and three years of age, however, participation in formal childcare significantly increases, where up to 54% of children are enrolled. Alarming, in Australia, there is a current shortage of childcare places, where it is suggested that an extra 148,600 places are required (Australian Bureau of Statistics, 2011).

In Australia, early childhood is overseen by the Australian Children’s Education and Care Quality Authority (ACECQA). Their role is to support the improvement of early childhood provision and quality. Part of their responsibility is the approval of programs for early childhood teachers. Universities submit an application and fee to ACECQA for approval of their teacher education program. Initially, all university programs were approved, but they had to be re-accredited with specific guidelines by 2017. This meant that, under new requirements, there had to be specific guidelines for birth to three years mapping and assignments. The application requires justification of alignment with guidelines for curriculum of what should be learnt. The curriculum content summary is listed in Table 1 (ACECQA, 2014, p.5).

<p>Psychology and child development, such as:</p> <ul style="list-style-type: none"> • learning, development and care • language development • social and emotional development • child health, wellbeing and safety • early intervention • diversity, difference and inclusivity • learners with special needs • transitions and continuity of learning (including transition to school). <p>Education and curriculum studies, such as:</p> <ul style="list-style-type: none"> • Early Years Learning Framework • the Australian curriculum • numeracy, science and technology • language and literacy • English as an additional language • social and environmental education • creative arts and music • physical and health education • curriculum planning, programming and evaluation. 	<p>Teaching pedagogies, such as:</p> <ul style="list-style-type: none"> • alternative pedagogies and curriculum approaches • play based pedagogies • guiding behaviour / engaging young learners • teaching methods and strategies • children with diverse needs and backgrounds • working with children who speak languages other than, or in addition to, English • contemporary society and pedagogy. <p>Family and community contexts, such as:</p> <ul style="list-style-type: none"> • developing family and community partnerships • multicultural education • Aboriginal and Torres Strait Islander perspectives • socially inclusive practice • culture, diversity and inclusion. <p>History and philosophy of early childhood, such as:</p> <ul style="list-style-type: none"> • historical and comparative perspectives • contemporary theories and practice • ethics and professional practice. <p>Early childhood professional practice, such as:</p> <ul style="list-style-type: none"> • leadership • management and administration • professional identity and development • advocacy • research
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Table 1. Content within early childhood teacher education programs

The above content does not specifically mention the education and care of infants and toddlers (or any age group) for Bachelor degree and Master degree programs. However, the education and care of infants and toddlers is specifically mentioned by ACECQA for lower ranked qualifications such as diploma and certificate qualifications.

There are also requirements to be met for practical experience (also known as practicum and professional experience) during teacher education programs (i.e. with children aged birth to 5 years of age). This experience occurs in licensed centres or schools under the supervision of a qualified teacher (for example in Queensland, Tasmania and Western Australia this can occur in school). For Master degree programs, pre-service teachers are required to complete 60 days. The Master degree have time requirements based on age range. For example, placements must include a minimum of ten days of practical experience with children aged birth to two years. Placements must also occur with children aged 3 to 5 years and above five years. Exact number of days across age ranges depends on if the program is

for birth to five years, birth to eight years or birth to 12 years. This suggests variation in placement contexts.

Focus of Study

Based on the above clear gap in our knowledge, this study explores Master programs in early childhood teacher education across Australia. To reiterate, the Master programs provide initial teacher education to qualify pre-service teachers as early childhood teachers. To be eligible for this study, the Master program had to be approved by ACECQA and listed on their website (programs prior to re-accreditation in 2017). All approved programs had 10 days of professional experience with infants and toddlers.

During the research period (2014), there were eighteen Master programs listed on the ACECQA website that provide qualifications in early childhood education. Institutions were based in the Australian states of Queensland, New South Wales, Victoria, South Australia and Western Australia. There were no universities that appeared on the ACECQA website that had approved programs in Tasmania, the Australian Capital Territory and the Northern Territory. The programs were accessed by going to the search engine of degrees under the website section 'Qualifications List'. The terms chosen for searching were ECT (early childhood teacher) and master level. This provided a list of the eligible master programs for further investigation.

Method

Two data sets were collected in this mixed methods study (content analysis of websites and interviews with four teacher educators). The researchers conducted a content analysis of the ACECQA website and associated university websites. Content analysis is "...a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use" (Krippendorff, 2004, p.18). Coding for manifest content (Wallen & Fraenkel, 2001) was used, acknowledging what was stated on websites. From this analysis it was possible to determine how much theoretical and practical experiences of birth to two years was imbedded within Master programs in early childhood education across Australia.

The websites of each of the institutions were scrutinised for specific content in titles and subject/course outlines relating to young children (birth to two years) and professional placements with this age range for each of the eighteen programs identified as eligible for this study. It is a requirement, in Australia, that all institutions publish content about their subject/courses. This includes a description about course content as well as learning objectives and graduate attributes. The researchers, therefore, began by downloading all program descriptions, course outlines and other information supplied about the Master programs online. All universities had information about weekly topics, assessment tasks and outcomes. The website search investigated if: (1) content on infants and toddlers was included as an individual subject or mentioned within a weekly topic as an embedded area; (2) there was a professional placement for pre-service teachers for birth to two years; and (3) assessment items focused on birth to two years to demonstrate an understanding of young children and suitable pedagogy. This information was summarised, providing a first glimpse of the relative inclusion, or otherwise, of infant and toddler aged content in the Master programs under scrutiny. The coding for manifest allowed a review of current information available and provided opportunity for the collection of data.

The names of universities were removed, with information about their location (state/territory within Australia) and Master program information left for analysis.

Interviews were conducted with four teacher educators at four different institutions (their state locations have been removed so they cannot be identified). Two of the teacher educators were program convenors, while the remaining two teacher educators were course convenors. All of the teacher educators taught into current Master programs. They were recruited via an online advertisement sent to teacher educators. Follow up emails were also sent to try and increase the sample size. Four responded and agreed to participate in a short interview. The participants were aware of the entire Master of early childhood teacher education program at their institution and taught into some of the units. The four participants came from four different institutions across Australia that had Master programs.

Participants were asked specifically about content for birth to two years for infants and toddlers in a short twenty minute interview based on a series of semi-structured questions. Questions were based on the coverage of infants and toddlers and the types of pedagogy and assessment explored. The interviews were transcribed and content analysis was used to provide a snapshot from within the university context. Findings from both the website search and interviews are presented below.

Key Findings

In our search, we found it difficult to find units that specifically related to the education of infants and toddlers across all early childhood Master programs analysed. That is, it was difficult to find an entire unit per semester that focused on infants and toddlers or mentioned the wording ‘infants’ and ‘toddlers’ in either a weekly overview of topics, outcomes for the unit or in the course descriptions. This may have meant that they took a holistic approach to early years in the program to include all of the age ranges in each of the units each semester. Out of the eighteen programs under investigation, only four offered a specific unit of study that focused on infants and toddlers for at least one semester. The focus within these programs was specific time and focus to infants and toddlers as opposed to perhaps the holistic teaching offered at other universities. A description of each institution that did offer a unit is listed in Table 2.

Location	Program	Focus of Learning
New South Wales	Master of Teaching (including ten days of professional experience)	Curriculum for birth to three years
New South Wales	Master of Teaching (including ten days of professional experience)	Contemporary approaches for birth to three years
New South Wales	Master of Teaching (including ten days of professional experience)	Curriculum for birth to three years
South Australia	Master of Teaching (including ten days of professional experience)	Literacy and numeracy for birth to three years

Table 2: Description of institution and unit focused on infants and toddlers

Of the remaining programs, not presented in Table 2, none mentioned the word ‘infant’, ‘toddler’ or associated words to show that this age range was embedded within the overview of the unit, in either the weekly schedule, outcomes, or description of the unit. A search was also conducted for the words birth to eight years. All programs used this wording, however we are unsure how much time within programs was devoted to a specific focus on infants and toddlers within the early childhood age range. While it is assumed that all programs cater for infants and toddlers, it became unclear, from looking at the content, how much time was devoted to infants and toddlers.

Not surprisingly, the four programs listed in Table 2 had specific assessment items that focused on infants and toddlers. These assessment items were assignments that were graded to show the pre-service teacher’s level of understanding and critical analysis (words used within assessment criteria). Assessment items were also explored within the remaining programs. None of the programs at the institutions in Victoria, Queensland and Western Australia had specific assessment items that focused on infants and toddlers. Rather, the focus was on older children (three years and older) in the year before formal schooling settings or formal schooling. Some assessment items were also kept broad in which students would explore a child developmental theory or provide a theoretical evaluation of a learning approach or pedagogy (again for children aged three years or older).

All of the programs examined only offered ten days of practical experience working with children aged birth to two years. While this is listed on the ACECQA website as a minimum, no university extended the time for pre-service teachers working with infants and toddlers.

In our interviews conducted with four teacher educators, the educators spoke about their early childhood Master programs. All of the teacher educators agreed a greater focus within their programs was placed on children aged three years and above. While the programs were focused on birth to eight years, more time appeared to be spent on the year before schooling and the first years of schooling. They suggested that there was a greater focus on literacy and numeracy before formal schooling, suggesting early childhood teachers working in kindergarten needed to prepare students for schooling and begin to develop the skills necessary for literacy and numeracy. Three of the teachers suggested the ‘push-down’ from the first year of schooling to childcare had meant more time was needed to learn about child development in the three to five years age range. A greater focus was also on transition to schooling.

Two teacher educators suggested the focus on the year before formal schooling could be because of the current universal access agreement within Australia that allows children in the year before formal schooling access to a qualified early childhood teacher and early childhood teacher education program. At the moment, universal access does not extend to infants and toddlers, suggesting degree qualified staff are often placed with children who are within universal access programs. They suggested the limited number of days in placement (10 days) with infants and toddlers compared to the 3-5 years age range (most days out of placement) also contributed to the development of programs and how they needed to prepare students for placement.

Two of the four teachers suggested that they attempted to embed some of the initial ideas from working with infants and toddlers into their teaching; but only briefly within the short teaching semesters. They suggested that they may spend approximately 20 minutes teaching the students specifically about infants and toddlers across all of the Master program at their university. The other two teachers said they did not focus specifically on infants and toddlers within their teaching.

All of the four teachers suggested that they did not focus on infants and toddlers in assessment tasks (including assignments and presentations), rather, they gave students the

option to choose which age range they would like to investigate. This would allow the students freedom to choose an age range of their interest. The students could also conduct a self-audit of their own skills and choose an age range that they thought they might need to improve. All of the teachers said the pre-service teachers would choose the age range three to five years as they considered this more relevant to their learning, especially as there were more days for placement with three to five year olds. The teacher educators also said the majority of students wanted to work with either kindergarten or young children in the early years of schooling.

Discussion

Our investigation of Master of early childhood teacher education programs in Australia highlights a number of existing disparities in the pre-service education of those entering the early childhood education and care sector. The study presents an argument for quality pre-service early childhood degree education to include theoretical and practical experiences with infants and toddlers as a matter of urgency for Australian early childhood teacher education.

While many institutions offer programs that state, in their graduation title, that they cater for early childhood or early years education, it appears that only a handful of institutions across Australia provide early childhood teacher education that includes an entire semester of study on infants and toddlers or there is some evidence that it is embedded within units. While courses may advocate an embedded approach across age ranges in early childhood education programs, it is unclear how much is actually spent on this age range within these programs. It is unclear if more time is actually spent on older children. What is important to note is that some institutions have specifically chosen to focus an entire semester learning to infants and toddlers, also highlighting to students the importance of this age range.

While ACECQA may have changed requirements to include greater content for programs accredited by 2017, some early childhood educators may graduate in programs between 2014 and 2017 that may or may not have less of an understanding of infants and toddlers. It is unclear the extent to which content was learned within an embedded approach.

Gaps may also appear across the different states and territories, with the Australian state of New South Wales having the highest representation in regards to education on infants and toddlers in Master programs approved by ACECQA with a specific focus in individual units. It is unclear what changes have been made to programs after the re-accreditation, however, this study provided a snapshot of programs up until January 2014. What this study does highlight is the different approaches used within early childhood teacher education in Australia. While some universities have chosen an embedded approach to age ranges, other universities have made a specific focus on individual units for age ranges. It is unclear which approach is more effective for student learning. However, the different approaches may also highlight potential differences in outcomes of Australian graduates from early childhood teacher education.

Future research into the potential competences and capabilities of Australian early childhood teacher education graduates is needed to see if variation occurs because of differences in programs. If variation is true, it can become problematic given that an early childhood teacher qualification conferred in one state or territory is recognised across the country. Teachers are, therefore, able to easily move between different states and territories. A larger study is therefore required to accurately assess early childhood teacher graduates capabilities and their competence with different age groups.

Findings from this study are potentially important for other countries that share similar qualifications and program structures for qualified early childhood teachers, especially those that may also be in a state of transition. This could include the United States, where research also suggests that the focus on infants and toddlers may not be as strong as that of older children. Greater consideration is, therefore, needed about the content within early childhood teacher education programs and the amount of time pre-service teachers have practical experience working with infants and toddlers in childcare settings. Within Australia we require more studies exploring and evaluating the variation in programs.

Recommendations for programs and future research

Some recommendations can be drawn from this study for further consideration within early childhood teacher education programs across Australia. While ACECQA now requires universities to map content and assessment for infants and toddlers, we can still explore the effectiveness of the variation that seems to occur within early childhood teacher education programs. These recommendations are aimed at enhancing educational quality by improving early childhood teacher education across all Australian states and territories. These include:

- Carefully focussing on the required period of time for pre-service teachers to gain the knowledge and practical experience required to work with infants and toddlers (currently a minimum of ten days) and ensuring that this time is comparable to what is currently required for older children. Questions need to be asked if ten days of professional experience is enough, or more is needed to ensure students develop the necessary knowledge and skills.
- Ensuring universities across Australia collaborate in an effort to develop content that is consistently taught to future educators of infants and toddlers. This will provide consistency in learning about infants and toddlers and reduce the current identified problems of portability of qualifications across Australia.
- More studies into effective early childhood teacher education programs for infants and toddlers within Australia are required to enhance quality. Given the variation in the delivery of programs, a better understanding is needed of graduate capability and competence. This may include initial assessment of student knowledge and understanding upon graduation.
- More studies are also needed exploring the views of teacher educators, pre-service teachers and recent graduates about their experiences within university programs, specifically with a focus on infants and toddlers. It would be interesting to also see if pre-service teachers had increased efficacy for working with infants and toddlers if they spent more than ten days in a childcare setting.
- Given that this program showed programs in a state of transition, graduates from these programs may have less of an understanding of infants and toddlers compared to students in programs that have been re-accredited. If this is true, professional learning is required for recent graduates regarding infants and toddlers.

Limitations of study

While this study provides some insight, it also has a number of limitations. The first limitation is that it does not provide a complete picture as only four teacher educators across Australia were interviewed. Likewise, some teacher educators may embed content about infants and toddlers, but not publish this in the online material (although this should be mandatory), including the weekly topics explored by pre-service teachers. It may also be

difficult to create a complete picture of the pre-service teacher experience of early childhood education without talking with pre-service teachers who are currently in, or have recently graduated from, early childhood teacher programs in Australia.

The other possible weakness of this study is that the content analysis was undertaken during a time of transition in which programs were being reaccredited. The programs in this study may have changed after January 2014 to address reaccreditation requirements of ACECQA.

Concluding Remarks

One of the immediate areas of concern from our findings is the potential variation in the way content is delivered within early childhood teacher education programs. If pre-service teacher education is different in delivery of knowledge and understanding, particularly with respect to childhood theories and professional experience, then clearly child outcomes will differ across states. Given Australia's recent focus on quality early childhood education and care (Australia's National Quality Framework), pre-service teacher education should be aligned with this framework and ensure that suitable knowledge and professional experience is provided to students in a consistent and measurable way. While ACECQA has introduced mapping for infants and toddlers as part of the reaccreditation approach, it is unclear if variation has been reduced. It is hoped that these reaccreditations may fill some of the gaps as they develop a deeper understanding of what early childhood teachers should know.

Given the growing reliance on the early childhood care and education sector, and the veracity of arguments outlining the benefits of investing in human capital development in society (Heckman, Stixrud, & Urzua, 2006), exploring early childhood teacher education is important. In time, and with careful and consistent implementation, early childhood teacher education programs have the ability to align with public policy, ensuring that all Australian children are presented with comparable quality of education.

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