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Journal

2 Editorial
Berenice Nyland

4 Why is group teaching so important to Chinese children’s development?*
Bi Ying Hu, Xitao Fan, Sylvia Sao Leng leong and Kejian Li

13 Thirty-one is a lot!
Assessing four-year-old children’s number knowledge during an open-ended activity*
Rachel Pollitt, Caroline Cohrssen, Amelia Church and Susan Wright

23 What makes people sick?
The drawing method and children’s conceptualisation of health and illness*
Prane Liamputthong and Sydel Fernandes

33 Insides and outsides:
Investigating preschoolers’ understanding of biological and environmental aspects of essentialism with novel categories*
Diana Grace, Melissa Straiton, Willow Hewett-Reeves and Michael Platow

42 Colour, magnets and photosynthesis*
Frances O’Brien and Sandra Herbert

47 Organisational capacity building:
Readiness for change in Australian child care*
Elise Davis, Lara Corr, Kay Cook, Margaret Sims, Kim-Michelle Gilson, Christina Ting and Rahila Ummer-Christian

55 Children’s school readiness:
The experiences of African refugee women in a supported playgroup*
Rebecca New, Andrew Guilfoyle and Bronwyn Harman

63 Teacher knowledge, child interest and parent expectation:
Factors influencing multicultural programs in an early childhood setting*
Karen Guo

71 Diversity in teaching and learning:
Practitioners’ perspectives in a multicultural early childhood setting in Australia*
Sylvia Buchori and Toni Dobinson

Online Annex
AJEC Vol. 40 No. 1 includes an Online Annex component. Access and further information can be found at:
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81 Early childhood teachers’ views towards using constructivist internet-based environments to support children’s learning activities:
A mixed-methods study*
Pei-Wen Tzuo, Jyh-Chong Liang and Lai Poh Emily Toh

91 Learning from early childhood philosophy, theory and pedagogy:
Inspiring effective art education*
Wendy Boyd and Lexi Cutcher

99 Young children’s perspectives of outdoor learning spaces:
What matters?*
Jane Merewether

109 What works and why?
Early childhood professionals’ perspectives on effective early childhood education and care services for Indigenous families*
Rachel Leske, Dixie Sarmardin, Annette Woods and Karen Thorpe

119 Patterns of parent involvement:
A longitudinal analysis of family–school partnerships in the early years of school in Australia*
Graham Daniel

* Denotes primary research articles
WELCOME TO THE first edition of AJEC for 2015. Also welcome to another year where vigilance and advocacy will be required as the early childhood workforce, in all its guises, struggles to keep successive governments responsive to the reform agenda.

I note from the Commonwealth Government there will be another review and this will address the role of the federal and state governments in policy making and service provision in early childhood. An issues paper titled ‘Roles and responsibilities in education’ was released in late December 2014, to be followed by a Green paper later this year and a White paper in 2016. Education will be a key issue in the Federal Government’s reforms and early childhood education and care (ECEC) accountabilities have become blurred across government lines, state and national, as the agenda for ECEC has undergone historical change. Two aspects of this initial ‘issues’ paper I was interested in were the contextualisation of the discussion and how the sector is viewed by the government. The section on the evolution of ECEC services provides a succinct description of where we are now. The other aspect of the paper that was notable was the statement that ECEC is ‘market oriented’. Does this imply the market will decide on questions of quality provision and access? Access was identified as a major problem to be addressed in the government issues paper. In the research reported on in this issue of the journal, there is a strong suggestion that access must be more than supply and cater for particular groups in our society. Market orientation is explained, in the paper, in terms of choice theory and the economic benefits of ECEC to workforce participation in both the long-term and short-term. The wellbeing of the child and family will benefit from long-term rewards and in the short-term, ECEC serves as a support for increased participation in the workforce. While acknowledging the importance of both of these aims, there are problems when the sector is viewed from an economic standpoint and other questions are not separated out. ECEC needs to also be about every child’s right to quality early childhood experiences and choice theory ignores socio/economic realities and therefore is limited when applied to the real world. I am not alone in holding these reservations and it is important we continue to engage in debate and remain part of the political process.

In these times of shifting sands it is a pleasure to note the quality and range of research that is occurring in the early childhood field. Research is an essential part of any reform process so informed decisions about policy and practice can be made. The research presented here contains examples that will challenge the reader and others that will affirm present positions. There is a mix of studies in these 14 papers with some focusing on content knowledge while others explore teacher knowledge and practitioner perspectives. The role of parents in early childhood education is also a focus.

Hu, Fan, Leong and Li acknowledge that their empirical research into group teaching in Chinese kindergartens may be ‘alarming’ to western early childhood education scholars. At the same time they explore where and when ‘free play’ occurs and suggest that their study could lead to reflection and policy change in relation to the role of free play in the Chinese early childhood curriculum. A valuable question for all of us, as it is accepted that in relation to play, practice and rhetoric are often at odds. Pollitt, Cohrssen, Church and Wright examined teacher-led activity in more play oriented settings. Starting with an activity, designed by the researchers, children’s understandings of mathematical concepts were explored. Using open-ended questioning, at the time of the exercise, individual children’s engagement was encouraged. Responses are discussed and examples of how children’s mathematical competence, in an environment where assessment strategies were inclusive and multifaceted, are provided. The examples of children’s work illustrate the efficacy of this approach. Liamputtong and Fernandes have also used children’s drawings to express children’s present knowledge, in this case the health knowledge of refugee children. They employed a ‘draw and write’ technique and situated this in a postmodern framework in order to deconstruct the lived experiences of a group of Burmese children. The paper contributes to our knowledge of refugee children in relation to health knowledge, provides ideas for appropriate health education programs and has useful insights into methodologies for researching young children’s experiences.

Tzuo, Liang and Toh have tackled an issue that has become increasingly important and that is children’s learning in the internet age. This is a mixed methods study, conducted in Singapore and starting with the premise that the internet is not only pervasive but beneficial. Using established survey instruments, findings include the importance of teacher preference when choosing resources and the influence of individual technical knowledge on the use of CIBE (Constructivist Internet-Based Environment) to support children’s learning.

Children’s understanding of their worlds and how they interpret experiences are investigated in two papers that have different approaches to research and children’s thinking and learning. Grace, Straiton, Hewett-Reeves
and Platow investigate essentialist thinking in young children and their beliefs about environment and biological factors to help categorise and interpret experience. Children were perceptive of differences and change and used their knowledge of the world to offer their own explanations to an experiment, offered as a game, which involved devising categories that could not easily be seen as biological or social. Results indicate flexibility in the children’s interpretations with implications for the development of attitudes and prejudices.

On a different note, Boyd and Cutcher seek to explore early childhood pedagogies that encourage ‘uninhibited enthusiasm’ for painting and drawing in the preschool years and the difference this will have on art as competent expression in later years. Using an action research model, an art project was the focus of the investigation with two children’s theories and decision making about their art shared.

Implications for school settings are cautionary.

Papers that emphasise changes in content to the learning environment refer to the national and Victorian learning frameworks, the Early Years Learning Framework (EYLF) and the Victorian Early Years Learning Development Framework (VEYLDF). O’Brien and Herbert utilised interviews and reflective journals to investigate science education and teachers’ use of the VEYLDF. One focus of the findings was the relationships between planning for science and the VEYLDF. In a different context, Family Day Care (FDC, Davis, Corr, Cook, Sims, Gilson, Ting and Ummer-Christian) use the EYLF as a contextual impetus to drive changes in practice with a focus on social and emotional wellbeing. This paper employs a theoretical model, TTM (Transtheoretical Model), to ascertain readiness for change. Conclusions are drawn that have significant implications for policy makers and services that provide resources for capacity building across early childhood organisations and settings.

Merewether presents a paper on children’s perceptions of outdoor learning spaces. An important thrust of this paper was to encourage the child’s voice through the data collection. As in other papers in this edition of the journal, drawings and conversations were important and child directed tours of the environment were audio-recorded, as well as child-led photographs. Some of these photographs appear in the paper. This research is a timely reminder of how we should listen to children when making decisions about the design and use of outdoor settings.

Working with families has always been an important part of early childhood education and the next five papers are a reflection of how diverse and complicated these relationships might be. New, Guilfoyle and Harman explored how one group of African refugee women, in a supported playgroup, experienced preparing their children for school and challenges encountered in the transition process. Interpretive phenomenology was the chosen methodology as a suitable vehicle to express a range of perspectives and the act of shared meaning explored in order to discuss possibilities within interactions. Research like this can give vulnerable and marginalised groups a voice and in a country like Australia, with such a diverse population, these voices are crucial for our wellbeing. Guo has emphasised the importance of culture, equity and social justice in her study of families of minority cultures in a New Zealand early childhood centre. This research gave insights into staff, parent and child perspectives and the conclusion suggests that practices may need to go beyond the dominant child-centred ideology to include the opportunity for ‘agential actions of children and families’. Buchori and Dobinson have also taken up the question of multiculturalism and conflicts that may arise when concerns for children’s success in conventional programs become a conflict. This was an interesting story as the centre studied had a high level of migrant families and of the four staff participants two were migrants themselves and of the two born in Australia one had an Indian background and the other an Anglo-Celt background. That these teachers experienced a lack of confidence in celebrating cultural diversity is a situation that is worth exploring as such staff demographics are not unusual. Leske, Sarmardin, Woods and Thorpe examine the issue of the relationship that Indigenous families in Mount Isa have with ECEC services on offer. The importance of non-licensed services is emphasised as many families find them flexible and responsive. The research suggests that the uncertainty of funding for ECEC centres that are not licensed needs to be investigated if marginalised families are to receive ECEC programs they can engage with. Finally, Daniel reports on family–school partnerships. Using the ‘Growing up in Australia: the Longitudinal Study of Australian Children (LSAC)’ large scale data is used to investigate the relationship between family and schools, focusing on forms of involvement. The message in the paper is the need for increased attention to family–school partnerships because of the potential of improved outcomes.

These articles cover many topics and the research perspectives adopted are widely varied. The government issues paper mentioned above seems a far cry from the approach and content of these papers. Are early childhood researchers filling in the silences left by the ‘market orientation’ approach or are we on a separate path? I commend this edition to you and hope you find the assorted approaches to ECEC and the actors who participate in making the system a social and common good an interesting read.

Berenice Nyland
RMIT University

In China, the kindergarten—typically a school with multiple classrooms for young children—is the most prevalent form of early childhood education (ECE) program serving children aged three to six. Currently, about 60 per cent of the nation's children in this age group are served by 150,420 registered kindergartens. One of the challenges the Chinese government faces is to meet skyrocketing parental demand for kindergarten education across China, especially in rural and remote areas where, historically, public support for ECE has been minimal (Hu, Zhou, Li & Roberts, 2014; Hu & Roberts, 2013). Generally, quality ECE programs are publicly funded and serve affluent families in urban areas, whereas programs of poor quality are mostly privately owned and serve socioeconomically disadvantaged families in rural areas (Hu & Roberts, 2013). Location and funding sources seem to create the most significant differences in the unbalanced development of ECE in China (Hu et al., 2014). Unfortunately, more kindergartens are currently located in rural areas (64.15 per cent) than urban areas (35.84 per cent), and more kindergartens are owned privately (70 per cent) than by public agencies (30 per cent). The Chinese government has thus embarked on a journey to realise equity in ECE by providing all children with at least one year of quality ECE by 2020 (State Council of the People’s Republic of China, 2010).

In order to build an equitable ECE system across China, both policy-makers and scholars face the pressing issue of defining and measuring the quality of ECE programs in Chinese sociocultural and policy contexts (Hu & Li, 2012). To achieve the national goal of providing quality ECE for all, they need sound ECE program quality measures to help make financial and policy decisions. It is clear that only when the quality of all ECE programs is transparent to parents, professionals and, more importantly, to federal and local governments will these stakeholders be able to provide responsive support and resources, integrating an array of initiatives, such as targeted professional development efforts and public subsidies to boost the quality of ECE services. For this purpose, it is useful to consider a golden standard for the definition of quality ECE provided by the National Association for Young Children (NAEYC) in its position statement on developmentally appropriate practices (DAP) (Copple & Bredekamp, 2009). While DAP concepts are recognised worldwide, their profound influence on ECE curriculum development and practices are well acknowledged, and their applicability in China has been considered, it is also important to note that DAP concepts were developed in western contexts and primarily serve children who live in the west.

Why is group teaching so important to Chinese children’s development?

Bi Ying Hu
Xitao, Fan
Sylvia Sao Leng leong
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THIS EMPIRICAL STUDY ON early childhood education (ECE) in China looks into a randomly selected sample of 91 kindergartens and 178 classrooms providing ECE for children aged three to six in Zhejiang Province. Drawing on internationally established theories on ECE and adopting the Chinese Early Childhood Environment Rating Scale (CECERS), a measurement instrument specially designed for quality assessment of ECE programs for Chinese children, the researchers have sought to find out how important and effective whole-group teaching is as compared with individual, child-centred free play. Some of the findings may appear alarming to ECE scholars in the west, and this phenomenon, as well as the limitations of this study, indicates fruitful avenues for future research.
Theoretically, Chinese ECE has undergone a reform since the 1980s to integrate western theories of ECE—best represented by the NAEYC’s DAP statement—into the Guideline for Kindergarten Education (Ministry of Education in People’s Republic of China, 2001). Indeed, DAP concepts are embedded in the most recently revised Guideline, also called the New Outline. However, do we know to what degree Chinese kindergartens actually value DAP, which feature, for instance, child-initiated play as the cornerstone of a quality ECE program? Most ECE scholars might applaud the Chinese government’s efforts to overhaul the quality of ECE and to foster a young generation who can effectively compete in the global economy by integrating western theories and practices, such as learning centres, child initiation and expression, and a project-based approach to learning. ECE professionals who are critical conceptualisers of ECE quality, however, posit a different view on ‘what constitutes quality ECE for Chinese kindergartens’. These ECE scholars are strongly opposed to the spread of context-free, universal standards of quality, such as DAP, in other contexts (e.g. Tobin, 2005). Standards and expectations relevant to one culture may not be appropriate for another social and cultural context (Limlingan, 2011). Tobin, for example, does not believe that knowing how children develop can suggest ‘any particular best practice, any particular student/teacher ratio, any particular approach to dealing with misbehavior, or any particular strategy for serving children of recent immigrants’ (2005, p. 426). Tobin maintains that the quality of ECE should reflect the culture, values and needs of the local community, which is supported by evidence from analysing videotapes of ECE programs in different cultures, such as China and the United States (US). He further argues that the underlying core standards for ECE in the US are individualism and constructivism, whereas a contrasting set of core standards, such as collectivism, supports Chinese ECE. Over the past two decades, Chinese ECE has shown some changes reflecting China’s modernisation and ECE reform efforts; however, the program continues to be teacher-centred, with a strong emphasis on mastery of knowledge, obeying authority and utilising highly structured activities (Tobin, Hsueh & Karasawa, 2009). Chinese traditional and cultural standards support the use of teacher-led whole-group teaching instead of child-initiated play (Hu, Vong, Chen & Li, 2014; Tobin et al., 2009).

In this article, the authors attempt to answer the question regarding the validity of free play and group teaching—two seemingly opposite curricular approaches—in relation to Chinese children’s developmental gains. The paper first presents a review of literature on the importance of play to children’s development, then considers the role of play and group teaching in Chinese kindergartens, and then discusses findings from a large observational study that has examined the implementation of both free play and group teaching in 178 randomly selected Chinese kindergarten classrooms and their correlations/contributions to children’s development.

**Why is free play important to children’s development?**

Play is ‘an important vehicle for developing self-regulation as well as for promoting language, cognition, and social competence’ (Copple & Bredekamp, 2009, p. 14). Among those who hold strong beliefs about children’s play as the vehicle for exercising abilities in actively constructing their own knowledge are renowned child development theorists, such as Jean Piaget and Lev Vygotsky. In order to fit the definition of true play, the activity in which a child is engaged must be (1) voluntary, (2) actively involving the child, (3) free from external rules, (4) focused on the process rather than the product, and (5) pleasurable (Sluss, 2005). Both empirical evidence and best practices in ECE have recognised the benefits of play to children’s social and cognitive development (Sluss, 2005). Play in a rich environment increases children’s abilities in problem solving, flexibility in thinking and risk taking, and abstract thinking (Sluss, 2005). Play also allows learning to be supported or scaffolded by more competent peers, which often encourages children to see a new perspective, build social competence, and ‘construct meaning from emotionally challenging experiences’ (Haight, Black, Ostler & Sheridan, 2006, p. 210). Moreover, alarming statistics have been reported on the negative effects of a modernised lifestyle, such as the widespread use of technology with a subsequent reduction in the amount of play outdoors and an increase in child obesity and related health issues. Parents, ECE professionals, and policymakers have been cautioned on the urgency of increasing children’s play in outdoor environments.

In seeking valid evidence for child-initiated play in Western contexts, researchers in the past few decades have embarked on a mission to discover the relationship between program quality and desired child outcomes (Burchinal et al., 2008). As a result, empirical findings have flourished and provided evidence for the benefits of quality ECE, in which child-initiated play is highly recommended, for children’s cognitive, social and physical development (e.g. Burchinal et al., 2008). Among these national and longitudinal studies that have examined the relationship between ECE quality and developmental gains of children, the Early Childhood Environmental Rating Scale-Revised (ECERS-R), which highlights the experiences a child receives in the program in terms of his or her interactions with the physical environment, the materials, peers and adults, has been the most frequently used tool in assessing program quality (Gordon, Fujimoto, Kaestner, Korenman & Abner, 2013). The underlying quality standards embedded in ECERS-R reflect extensive knowledge of DAP (Copple & Bredekamp, 2009). One of these important quality standards being emphasised throughout ECERS-R is...
support for children's free play. Specifically, for a rating of good (i.e. 5 on a 7-point Likert scale), the criterion of ‘substantial amount of time’ for children's access to free play must be met for all items in the Activities subscale (i.e. fine motor, art, music/movement, blocks, sand/water, dramatic play, science, math, and use of TV and computer). Indeed, to meet this time criterion, one-third of the operation time of the ECE program (e.g. three hours for a nine-hour program) must be devoted to child-initiated play. In other words, in order to receive a score of 5 (i.e. good) in all curricular activities, an ECE program must appreciate child-initiated free play both quantitatively and qualitatively, supported by well-organised learning centres full of stimulating materials and well-planned activities, all aligned with the concurrent theme.

Both DAP guidelines and empirical findings suggest that ECE practitioners should provide children with plenty of opportunities for play. ECE practitioners in most western countries have taken this message well and transformed their beliefs into daily practices by endorsing child-initiated free play as the predominant curricular approach. Interestingly, quality concepts such as the DAP are embraced not only nationally, in the US and many European countries, but also universally, as many Asian countries, such as Korea, Turkey, Taiwan and China, have adopted similar concepts in their recent ECE reforms (Tobin, 2005). In China, the Ministry of Education has conducted ECE curriculum reform since the 1980s to embrace western/European philosophies of whole child development and their approaches to pedagogy and curriculum (Zhu & Zhang, 2008). In 2001, the New Outline further incorporated Western educational theories and approaches in ECE with simplified learning objectives and increased emphasis on the importance of children's free play and self-discovery (Hu, 2014). As a national curriculum guideline, the New Outline has significant implications for daily practices in ECE classrooms, teacher training, and high-stakes decisions such as quality ratings and evaluation of teacher performance for tenure and promotion. However, anyone familiar with the traditional cultural practice of ECE in China would most likely pose this question: To what degree do Chinese ECE practitioners endorse child-initiated learning versus whole-group teaching, and which contributes more to Chinese children's development?

### The roles of play and group teaching in Chinese early childhood programs

Chinese ECE professionals support a balanced approach to teacher-directed whole-group teaching and child-initiated free play as the best path to quality ECE curricula (Hu, 2014). While Chinese ECE scholars and practitioners recognise the importance of play to a child’s optimal development and are trying to promote free play in kindergarten curricula and teaching, they also value whole-group teaching, which is a more didactic approach to children practising communication skills in structured conditions. If well designed and implemented, whole-group teaching can offer many advantages, such as instructional efficiency in fostering a sense of community and belonging, even for young children aged three to six (Nikolakaki, 2012; Stevenson & Lee, 1995; Zhu, 2007). A framework for effective group teaching was proposed by Yu (2005), which includes: (1) clear learning goals; (2) promotion of students’ language and higher-order thinking skills development; (3) a harmonious learning environment, with students and teachers showing mutual respect for each other; (4) flexible curriculum activities; and (5) respecting the individual child’s unique way to learning.

Empirical evidence in western literature also seems to support features of quality whole-group instruction that Chinese practitioners value (Huang & Tian, 2012; Zhou, 2004). For example, the well-known Classroom Assessment Scoring System (CLASS; Pianta, La Paro & Hamre, 2007)—a theoretically and empirically sound tool that looks at how ECE teachers provide instructional, emotional and classroom management support to enrich children’s learning while taking care of their emotional needs—shares many quality concepts that are highly congruent with the ‘best’ practices recognised by Chinese ECE practitioners. From a western view, these features of quality teaching need to be observed throughout daily routines and in a variety of activities, including small and large group activities. In Chinese kindergartens, whole-group teaching activities best capture these quality concepts of CLASS. One recent study showed that whole-group teaching in Chinese kindergartens received the highest score on CLASS in all quality dimensions as compared with other teaching situations, such as free play and routine activities (Huang & Tian, 2012).

In the US, empirical investigations of the relationships among cost, quality and child outcomes are abundant, thus providing a strong basis for policy formation and classroom practices, exemplified by the nationwide implementation of the Quality Rating and Improvement System (QRIS) (Tout et al., 2010). By contrast, in China there is a severe paucity of research to guide policy and practice (Hu & Li, 2012). Also, in China there is as yet no accreditation available at the national level to inform practitioners of an agreed-upon definition of quality; instead, each province develops and utilises its own kindergarten quality evaluation system (QKRS). These systems have been criticised for their lack of focus on process quality (e.g. participation in activities and interactions) and for overemphasis on structural issues (e.g. teacher qualifications and training). What is also lacking is valid evidence of the process and methodologies employed for assessment (Hu, 2014). Chinese teachers are almost always observed on their group teaching, exclusively for high-stakes decisions. In other words, how Chinese teachers guide children during child-initiated, centre-based learning or play is granted much less importance compared with how they deliver whole-group instruction.
In addition to ideological considerations, more pragmatic factors account for Chinese teachers’ preference for group teaching, such as underfunded programs with overwhelmingly too many children per adult. Also, teachers believe that if they are not actively teaching or leading the group, learning will not occur. In fact, many Chinese kindergarten teachers report feeling more like good and responsible teachers when they give a group lesson instead of guiding children’s free play (Hu, 2014). Let us not forget that Chinese kindergarten teachers and directors are under tremendous pressure from parents wishing to equip their youngsters academically and persistently preferring the use of goal-oriented group teaching to learner-centred free play (Hu, 2014). All of the aforementioned reasons contribute to the prevalence of group teaching by Chinese teachers who have not been adequately prepared to facilitate centre-based teaching (Hu, 2014). Whole-group teaching represents such a vital dimension of quality ECE in China that it warrants adequate representation in quality definition and measurement.

With an understanding of this ideological, pragmatic and political basis of group teaching, the rationale for Chinese kindergarten practitioners’ predominant use of whole-group teaching on a daily basis becomes clear, though whether the practice of whole-group instruction actually brings about the desired outcome is unknown. While many western researchers would argue against the developmental appropriateness of group teaching as the most prevalent form of teaching in classrooms for three-, four- and five-year-olds, findings from this study urge international scholars to reconsider the traditional, cultural and political influences on the validity of whole-group teaching and subsequent effects on desired child outcomes (Hu, 2014; Tobin, 2005; Tobin et al., 2009). Another interesting phenomenon also worthy of investigation is Chinese children’s engagement in free play, which might convey meanings that differ from how free play is perceived, interpreted and carried out in western contexts.

The current study

In this article, we share some major findings from China’s first large-scale study on the correlations of such factors as cost, quality and outcomes for ECE policy formation. Funded by the Ministry of Education as one of China’s top-priority projects in social science in 2011, this study was conducted in a large province located on the central eastern coast of China with a total resident population of about 54.63 million. A stratified random sample of 91 kindergartens was selected to represent all the kindergartens in Zhejiang Province, based on location, funding source and current quality rating of each kindergarten. Next, the researchers observed the program quality in a randomly selected sample of 178 classrooms (usually two classrooms per kindergarten), which breaks down into 45 classrooms for three-year-olds (K1), 53 for four-year-olds (K2), 74 for five-year-olds (K3), and six mixed-age classrooms.

To select an instrument for the study, the researchers considered ECERS-R, which is by far the best-researched instrument and used worldwide in more than 20 countries with different socioeconomic backgrounds for measuring ECE quality in international contexts (Gol-Guven, 2009). However, a number of issues have emerged in using ECERS or ECERS-R in different social and cultural contexts (e.g. Lambert et al., 2008; Sheridan, Giota, Han & Kwon, 2009), resulting in a consensus among international ECE researchers that changes and modifications are necessary for enhancing the relevance and appropriateness of early childhood quality measures when applied in non-western contexts.

Therefore, the authors developed the Chinese Early Childhood Environment Rating Scale (CECERS; Li & Hu, 2012) based on a rigorous adaptation of ECERS-R (for details, see Li et al., 2013). Designed specifically to measure program quality in Chinese kindergartens, CECERS has 51 items organised in eight subscales, utilising a 7-point scoring system: 1 (inadequate), 3 (acceptable or minimal), 5 (good), and 7 (excellent). The main adaptations made of ECERS-R to enhance the cultural relevance of the tool include modifications to the examples and interpretations listed in many indicators for cultural appropriateness, changes in scoring criteria and the elimination of indicators that were considered irrelevant to Chinese ECE contexts. A comprehensive validation study (Li et al., 2014) examined various types of validation evidence for CECERS, and further supported CECERS as a culturally relevant and psychometrically sound measure for ECE program quality in Chinese social and cultural contexts.

CECERS contains the original seven subscales of ECERS-R with an additional subscale: Whole-Group Instruction (seven items). The raters assess whole-group teaching using a combination of observation, examination of documents (e.g. curriculum planning on a daily, weekly and yearly basis, teachers’ reflection journals and logs of child performance), and interviews with teachers (see Table 1 for a detailed layout of the subscale and its content). The contents of Table 1 were also presented in a recent article of a comprehensive validation study on CECERS (Li et al., 2014). The Whole-Group Instruction subscale measures the quality of whole-group teaching, whereas the Activities subscale assesses centre-based free play in different curricular activities (e.g. language arts, math, science and art). For a sample adapted assessment item, please see Li et al., 2014.

Finally, a total of 1012 children, with six children randomly sampled from each classroom, were tested on the Children’s Developmental Scale of China (ages three to six) (CDSC; Zhang, Zhou, Chen, Zhao & Wang, 1992). CDSC is a norm-referenced test that assesses children in language (i.e. vocabulary, understanding and expression/use of language), early math (classifying, reasoning, numbering and calculating), social cognition (basic social knowledge, perception of social relationships and moral judgement), and physical movement (gross motor and fine motor skills).
Table 1. Assessment item and content of Whole-Group Instruction

<table>
<thead>
<tr>
<th>Assessment item</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objectives and content of teaching</td>
<td>Content appropriateness, clarity of teaching objectives, alignment of the objectives and content with children's interests and background experiences</td>
</tr>
<tr>
<td>Emotional support</td>
<td>Emotional atmosphere, teacher’s responsiveness to children’s emotional needs, mutual respect between students and the teacher</td>
</tr>
<tr>
<td>Instructional design and organisation</td>
<td>Adequacy of teaching preparation, organisation of teaching activity, use of space, furnishings, materials</td>
</tr>
<tr>
<td>Teaching process</td>
<td>Classroom management (behaviour, time), efficiency</td>
</tr>
<tr>
<td>Instructional support</td>
<td>Instructional approaches, support for language and thinking/skill development, feedback for children’s learning</td>
</tr>
<tr>
<td>Student performance</td>
<td>Children's engagement, attention, attitudes, social-emotional behaviours</td>
</tr>
<tr>
<td>Classroom culture</td>
<td>Equality and equity issues within whole-group teaching (e.g. teachers’ acceptance of individual differences)</td>
</tr>
</tbody>
</table>

Table 2. Means and Standard Deviations of Whole-Group Instruction items

<table>
<thead>
<tr>
<th>Objectives and content of teaching</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Mode</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicability</td>
<td>176</td>
<td>3.9091</td>
<td>1.39907</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Integrativeness</td>
<td>176</td>
<td>3.3295</td>
<td>1.31993</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Clarity</td>
<td>176</td>
<td>4.1136</td>
<td>1.44564</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Basis of interests and experiences</td>
<td>176</td>
<td>3.9659</td>
<td>1.18995</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Level of richness and challenge</td>
<td>176</td>
<td>3.2955</td>
<td>1.30195</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Emotional support</td>
<td>175</td>
<td>4.0571</td>
<td>1.28972</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Emotional atmosphere</td>
<td>175</td>
<td>4.3143</td>
<td>1.40138</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>175</td>
<td>3.9029</td>
<td>1.33337</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Instructional design and organisation</td>
<td>176</td>
<td>3.3352</td>
<td>1.06159</td>
<td>3.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Preparation</td>
<td>129</td>
<td>3.9457</td>
<td>1.34809</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Design process</td>
<td>176</td>
<td>3.7045</td>
<td>1.26635</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Organisation</td>
<td>176</td>
<td>3.4866</td>
<td>1.45401</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Utilisation of materials and equipment</td>
<td>147</td>
<td>3.7483</td>
<td>1.26515</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Teaching process</td>
<td>176</td>
<td>3.5455</td>
<td>1.21335</td>
<td>4.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Behaviour management</td>
<td>176</td>
<td>4.0909</td>
<td>1.29735</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Provision of opportunities</td>
<td>176</td>
<td>3.9432</td>
<td>1.36786</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Duration</td>
<td>176</td>
<td>3.8295</td>
<td>1.50216</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Teaching process and efficiency</td>
<td>176</td>
<td>4.1250</td>
<td>1.36329</td>
<td>5.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Instructional support</td>
<td>176</td>
<td>3.1761</td>
<td>1.11494</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Use of language models</td>
<td>176</td>
<td>4.1818</td>
<td>1.30533</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Teaching methodology</td>
<td>176</td>
<td>3.4205</td>
<td>1.34565</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Instructional mechanism</td>
<td>176</td>
<td>3.1932</td>
<td>1.42915</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Development of logical thinking</td>
<td>176</td>
<td>3.4432</td>
<td>1.30369</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Feedback and evaluation</td>
<td>176</td>
<td>3.6136</td>
<td>1.18497</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Student performance</td>
<td>176</td>
<td>3.6761</td>
<td>1.08111</td>
<td>4.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Participation and focus</td>
<td>176</td>
<td>4.4091</td>
<td>1.25253</td>
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<td>6.00</td>
</tr>
<tr>
<td>Emotions and aptitude</td>
<td>176</td>
<td>4.0795</td>
<td>1.06060</td>
<td>5.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Logical skills</td>
<td>176</td>
<td>3.4773</td>
<td>1.28265</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Expression and creativity</td>
<td>176</td>
<td>3.8636</td>
<td>1.32822</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Classroom culture</td>
<td>158</td>
<td>3.5063</td>
<td>1.21952</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Value orientation</td>
<td>157</td>
<td>3.3949</td>
<td>1.38563</td>
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<td>6.00</td>
</tr>
<tr>
<td>Equity and justice</td>
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<td>4.0933</td>
<td>1.47619</td>
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<td>6.00</td>
</tr>
<tr>
<td>Respect and appreciation</td>
<td>147</td>
<td>4.0748</td>
<td>1.19982</td>
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</tr>
</tbody>
</table>

Major findings

This paper reports the mean scores for the subscales of Whole-Group Instruction and Activities, and their correlations with Chinese children’s development outcomes as measured by the CDSC, while controlling for parental education as the proxy of the socioeconomic status of the family.
Table 3. Means and Standard Deviations of Activities items

<table>
<thead>
<tr>
<th>Item</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Mode</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drama and play</td>
<td>178</td>
<td>2.2022</td>
<td>1.1949</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Space and materials</td>
<td>178</td>
<td>2.4157</td>
<td>1.5681</td>
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<td>6.00</td>
</tr>
<tr>
<td>Management and use</td>
<td>113</td>
<td>2.9115</td>
<td>1.3729</td>
<td>3.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Design and relevance</td>
<td>105</td>
<td>2.8476</td>
<td>.98821</td>
<td>3.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Blocks</td>
<td>178</td>
<td>2.4438</td>
<td>1.28867</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Space and materials</td>
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<td>1.72041</td>
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</tr>
<tr>
<td>Management and use</td>
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<td>1.48969</td>
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</tr>
<tr>
<td>Design and relevance</td>
<td>112</td>
<td>3.0179</td>
<td>1.05679</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Fine motor</td>
<td>178</td>
<td>3.2360</td>
<td>1.06323</td>
<td>3.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Types and quantity</td>
<td>178</td>
<td>4.0562</td>
<td>1.66289</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Management and use</td>
<td>157</td>
<td>3.7006</td>
<td>1.25813</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Design and relevance</td>
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<td>3.3613</td>
<td>.95267</td>
<td>3.00</td>
<td>6.00</td>
</tr>
<tr>
<td>Math</td>
<td>178</td>
<td>2.4551</td>
<td>1.33222</td>
<td>1.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Types and quantity</td>
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<td>6.00</td>
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<td>Management and use</td>
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<td>1.34437</td>
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<td>6.00</td>
</tr>
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<td>Design and relevance</td>
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<td>3.3371</td>
<td>1.28392</td>
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<td>6.00</td>
</tr>
<tr>
<td>Science/nature</td>
<td>178</td>
<td>2.3034</td>
<td>1.22502</td>
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<td>5.00</td>
</tr>
<tr>
<td>Space and materials</td>
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<td>2.6949</td>
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</tr>
<tr>
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</tr>
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<td>6.00</td>
</tr>
<tr>
<td>Music</td>
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<td>1.9607</td>
<td>1.06491</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
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<td>1.57924</td>
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</tr>
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<td>Design and relevance</td>
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<td>4.00</td>
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<tr>
<td>Art</td>
<td>178</td>
<td>3.0618</td>
<td>1.27186</td>
<td>3.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Space and materials</td>
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<td>3.5730</td>
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</tr>
<tr>
<td>Management and use</td>
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<td>1.39163</td>
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</tr>
<tr>
<td>Design and relevance</td>
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<td>3.6404</td>
<td>1.09180</td>
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</tr>
<tr>
<td>Sand/water</td>
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<td>2.3596</td>
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</tr>
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<td>2.7679</td>
<td>1.30820</td>
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<td>4.00</td>
</tr>
</tbody>
</table>

Mean scores for Whole-Group Instruction and Activities

A review of Tables 2 and 3 unveils a picture in which whole-group teaching captures much better quality in Chinese kindergartens than do free play activities. On the scale of 1 (inadequate), 3 (minimal), 5 (good), and 7 (excellent), the overall quality rating for the 178 kindergarten classrooms was slightly above minimal. Of the eight subscales, Activities received the lowest score of 2.51 (slightly below minimal). The total score of Activities is almost 1 standard deviation lower than the total score of Whole-Group Instruction ($M = 3.5$, $SD = 1$). The total scores for all the items in Whole-Group Instruction ranged from the lowest score of 3.1 (for Instructional Support) to the highest score of 4.05 (for Emotional Support), whereas the mean scores for Activities ranged from the lowest score of 1.96 (for Music/Movement) to the highest score of 3.06 (for Art).

Although substantial adaptation has been made to take into consideration the predominant use of whole-group teaching and contextual constraints, the low score Chinese kindergartens receive for play is mainly due to a significant lack of (1) appropriate amount of time, (2) appropriate materials in support of free play, and (3) activities that can enrich children’s play thematically. Observation notes show that, on average, children spent more than 60 minutes on whole-group teaching on a daily basis, whereas less than 25 minutes was given to free play. A careful examination reveals that the lack of time for play is a pattern found consistently in all curricular activities (e.g. art, music, manipulative play and blocks).

Correlations between CECERS and child development outcomes

Table 4 shows both the bivariate correlations and partial correlations of Activities and Whole-Group Instruction subscales, respectively, with CDSC’s four subscales (Language, Early math, Social cognition and Movement). The partial correlations controlled for parent education (years of education, averaged across mother and father). The findings here show first that the ECE program quality indicators as represented by Activities and Whole-Group Instruction have statistically significant and consistent positive relationships with the child development outcomes (approximately in the range of 0.20–0.30), except for Movement, which is unrelated with the CECERS program quality indicators. Moreover, when compared on their correlations with child development outcomes, the Whole-Group Instruction subscale shows a slightly stronger relationship than the Activities subscale, a pattern that holds true across CDSC’s four subscales. After controlling for parental education, slightly lower (in the approximate range of 0.10–0.20) partial correlations were found between CECERS scores and child...
development outcomes, but the same relationship pattern was observed for Whole-Group Instruction and Activities. These correlations and partial correlations are considered favourable compared with similar findings for ECERS and ECERS-R (e.g. Burchinal et. al., 2008; Peisner-Feinberg et al., 2001).

Table 4. Correlations between ‘Whole-Group Instructions’ and ‘Activities’ subscales with child development outcomes

<table>
<thead>
<tr>
<th>CDSC subscales</th>
<th>Whole-Group Instruction</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>0.26** (0.19**)</td>
<td>0.19** (0.11**)</td>
</tr>
<tr>
<td>Early math</td>
<td>0.26** (0.18**)</td>
<td>0.18** (0.09*)</td>
</tr>
<tr>
<td>Social cognition</td>
<td>0.25** (0.19**)</td>
<td>0.22** (0.16***)</td>
</tr>
<tr>
<td>Movement</td>
<td>0.07* (0.09*)</td>
<td>0.00 (0.02)</td>
</tr>
</tbody>
</table>

*Partial correlation coefficient after controlling for parental education (number of years of education) is shown in parenthesis.

**p < 0.05. ***p < 0.01

Discussion

The findings from this study lead to two main conclusions. First, whole-group teaching is not only the most predominant, but also an efficient approach to early childhood education in China. The consistent relationship found between the quality of whole-group teaching and child outcomes, especially cognitive development, provides validity evidence for the definition of group teaching and its value in Chinese sociocultural contexts. The findings also provide empirical support for Chinese scholars’ beliefs about quality whole-group teaching (Hua, 2008; Zhu, 2010). Indeed, when well organised and delivered by skilled teachers, whole-group teaching facilitates children’s well-rounded development (Nikolakaki, 2012; Stevenson & Lee, 1995). As discussed earlier in this paper, pragmatic reasons, such as limited resources, large class sizes (usually more than 30 children), and high student–teacher ratios (over 20 to 1), have also contributed to whole-group teaching in Chinese kindergartens (Wu, Young & Cai, 2012; Zhu, 2007). The observed consistencies in the features of Chinese ECE programs being academically focused and teacher-centred, however, can be attributed to a deep-rooted culture of collectivism (Tobin et al., 2009). Therefore, in Chinese early childhood programs, whole-group teaching reflects contextual strengths and needs and is therefore culturally relevant and developmentally appropriate. ECE researchers and policy-makers should feel comforted by this outcome, since all kindergarten quality evaluation systems assess whole-group teaching. Furthermore, Chinese ECE practitioners should be encouraged to continue to use the group-teaching approach for organising, delivering and enriching children’s learning activities, since quality whole-group teaching offers so many advantages (e.g. instructional efficiency and fostering a sense of community and belonging).

Second, judging by the seven items assessed (Objectives and Content of Teaching, Emotional Support, Instructional Design and Organisation, Teaching Process, Instructional Support and Classroom Culture), Chinese kindergartens have shown relative strength in Emotional Support (emotional atmosphere in the classroom, teacher’s responsiveness to children’s emotional needs and mutual respect between children and the teacher), but (comparative) weakness in Instructional Support (teacher’s instructional approaches, tact of teaching, support for children’s language and thinking/skill development and feedback for children’s learning). Specifically, five concepts were assessed in Instructional Support (see Table 2). ‘Use of language models’ and ‘Evaluation and feedback’ received relatively better scores, whereas ‘Instructional mechanism’ received the lowest score, indicating the greatest need for future improvement in this area. ‘Instructional mechanism’ looks at how the teacher takes incidental teaching opportunities and responds to children’s learning needs, interests and curiosity by using a variety of strategies such as questioning and provocation. The weakness in this area is not surprising, considering the cultural environment of collectivism that encourages teachers to achieve group goals at the expense of children’s individual interests and creativity.

This study has also shown that, while play is important to the development of Chinese children, these children are actually deprived of meaningful free play. The consistent, but weak, correlations found between Activities (highlighting the importance of free play) and child outcomes look questionable to anyone who strongly believes in the value of free play (and places it far above whole-group teaching). Though most Chinese ECE scholars acknowledge the importance of free play and favour a balanced approach that integrates teacher-directed whole-group teaching and child-initiated free play as the best approach to a quality ECE curriculum (Hu, 2014), results from this study fail to support this notion. According to the raters’ observations, Chinese children, on average, have only one chance (of usually no more than 30 minutes) at free play in a whole week! The intriguing question raised by this research is: How could free play activities produce any significant impact on children’s development when children are actually deprived of free play? As recommended by the NAEYC (Copple & Bredekamp, 2013) and the authors of ECERS-R (Harms, Clifford & Cryer, 2005), young children should have at least one hour, and preferably two to three hours, daily for free play supported by adequate materials. The lack of opportunity, time and materials for free play, as well as its disconnection from ongoing themes, helps one understand the absence of correlation between the free play factor and Chinese children’s developmental gains.
This finding provokes reflection on what constitutes an appropriate amount of free play time when defining the quality of ECE in Chinese contexts. When developing CECERS based on ECERS-R (Harms et al., 2005), Li and Hu (2012) considered the predominance of group activities and contextual constraints in Chinese ECE programs and significantly reduced the amount of time required for measuring the quality of free play activities. For example, only three play sessions of 30 minutes or less, instead of a substantial amount of time, were required for a score of 5 in ECERS-R. The rationale for lowering the standards for free play was rooted in cultural and practical considerations, as supported by the descriptive results of the current study (since the mean score is 3 out of 7). Nevertheless, further studies utilising both correlational and qualitative methodologies are needed to provide empirical support for setting the criteria for appropriate amount of play time.

The results of this study by no means imply that free play, as compared with group teaching, is of less value to Chinese children’s developmental gains. In fact, the finding that so little time is allocated to free play urges ECE policy-makers to rethink policies and to build a better support system for promoting quality play in Chinese kindergartens. In addition to a national guideline that stresses the importance of free play, provincial departments of education need to adopt the national guideline by incorporating free play into current quality rating standards and assigning it appropriate weight. Only when free play is tied to quality ratings will practitioners be more willing to implement the guideline. Otherwise, the importance of free play will remain enshrined in words but not in deeds. Moreover, Chinese kindergarten teachers need to gain practical skills for implementing developmentally appropriate play in a child-centred approach (Hu, 2014). Therefore, professional development efforts toward the improved quality of free play and child-centred learning should be provided to both pre-service and in-service teachers.

Concluding remarks and implications for future studies

This study has its limitations, which point to endeavours for future research. First, it took place in one province in China, and thus its findings cannot be generalised to other contexts in China, especially areas where socioeconomic development has been slower. It is important to collect data using other well-established ECE quality measures, such as ECERS-R and CLASS, to obtain concurrent validity evidence. Future studies can also consider using longitudinal designs for collecting latest child development outcome data to provide predictive validity evidence. It is a worthy effort to help international professionals gain a better understanding of what constitutes quality whole-group teaching in Chinese kindergartens and its potential for maximising children’s development and learning. Last but not least, Chinese ECE scholars need to focus on the impact of both whole-group teaching and play on children’s self-regulation and social competencies, which were not targeted in this study. For example, we might assume that whole-group teaching is stressed in order to encourage what Chinese professionals and parents want for their children—a sense of collectivism, such as group responsibility and cohesion. Therefore, researchers might ask: How does whole-group teaching encourage children to be more group-oriented than individualistic?

Pondering on the results of this study, we feel excited about the validity evidence found for the definition of quality ECE that emphasises quality whole-group teaching; on the other hand, we are disappointed that free play has been neglected by Chinese kindergarten practitioners. Freerobel once said that ‘play is the highest expression of human development in childhood, for it alone is the free expression of what is the child’s soul’ (1912, p. 50). Keenly aware of empirical evidence on the importance of free play to young children, we, instead of jumping at a premature conclusion that free play is less important than whole-group teaching to Chinese children’s development, wish to disseminate this most important message: Chinese kindergartens need to increase their use of free play as the New Outline has stressed, so that the impact of free play on children’s development in Chinese sociocultural contexts can be more accurately examined. More importantly, the findings of this study encourage all Chinese early childhood professionals to explore how to balance the use of group teaching and free play activities to maximise Chinese children’s outcomes quantitatively and qualitatively and to realise the goals of Chinese ECE as pronounced in the national Guideline for Kindergarten Education.

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End note

The data presented here were included in a recent article of a comprehensive validation study on CECERS (Li et al., 2014). That article, however, does not specifically focus on the issues discussed in this paper.
References


Introduction

Children are born with innate mathematical abilities and have the capacity to engage in ‘significant mathematical thinking and learning’ from a very young age (Clements & Sarama, 2009, p. 3). Early mathematical thinking may begin with comparisons of set sizes; these comparisons may be ‘the foundation for basic mathematical ideas that are essential to an understanding of number’ (Saracho & Spodek, 2008, pp. 21–2). This exploration of quantity occurs without necessarily counting or knowing the total sum of the amounts. Certainly, children demonstrate a wide range of mathematical thinking and have their own understandings of ‘preschool arithmetic’ (Clements & Sarama, 2009; Doig, 2005; Vygotsky, 1978).

Assessment is ‘the process of observing children in everyday experiences, analysing those observations and recording the information’ (ACECQA, 2011, p. 1). Numerals and quantity are one of the earliest mathematical concepts children learn (Clements & Sarama, 2009). Consequently, assessing children’s knowledge of number symbols and their relationships with quantity is a critical first step if early childhood educators are to address the gap between what we know about young children’s mathematical understandings and how we enact practice in the early childhood setting (Ginsburg, Jacobs & Lopez, 1998).

Early childhood education in Australia has undergone a significant change and there is now an unequivocal emphasis on the quality of educational programs provided in early childhood settings across the country (ACECQA, 2011, DEEWR, 2009). The Early Years Learning Framework for Australia (EYLF, DEEWR, 2009) sets out a range of learning outcomes, including numeracy-related concepts and practices. The EYLF also states that observations and assessment of children’s learning and development should directly inform the teaching and learning cycle. Yet research suggests that there is a gap between how we teach children mathematical concepts and how we assess children’s mathematical understanding (Baroody, 1989; Fleer, 2008; MacDonald, 2009; Tishman & Palmer, 2005). Authentic assessments of children’s mathematical understanding in the early years are the starting point for understanding what to teach and how to teach it (Clements & Sarama, 2009; Klibanoff, Levine, Huttenlocher, Vasilyeva & Hedges, 2006; Stake, 2010; Sun Lee & Ginsburg, 2009). In other words, if educators are unsure how to assess children’s understanding and skills, then effective teaching of mathematical concepts is unlikely to be responsive to children’s academic needs.

This paper is concerned with how early childhood practitioners can authentically assess children’s understanding and knowledge of number in a play-based...
program. To this end, we begin by providing a brief review of key issues in assessment in early childhood mathematics, and to consider how varying approaches to assessment can capture children’s capacity to make associations between number symbols, verbal numbers and the quantity assigned to numbers.

Assessment in early childhood mathematics

Children learn at different rates and in different ways. Assessment should accordingly be ongoing, take many aspects of learning into account, and be integrated in the learning program—to adapt planned learning experiences to better fit each child’s interests and needs, and to evaluate the effectiveness of the program itself (Hughes, Gullo & Kindergarten Interest Forum, 2010). Assessment in early childhood needs to be personal, meaningful, real, relevant to children’s everyday experiences, and informed by context (Carruthers & Worthington, 2006). Furthermore, mathematics assessment needs to be connected to the child’s prior knowledge and grounded in social contexts such as play, to support the further learning of mathematical concepts and strategies (Carruthers & Worthington, 2006; Perry, Dockett, Harley & Hentschke, 2006; Perry & Dockett, 2002; Sun Lee & Ginsburg, 2009). Authentic assessment builds on what children already know (Fleer, 2008), and provides ways for children to express their understandings in ways that are meaningful to them (Clements & Sarama, 2009).

In recent years, there has been an increasing interest in developing ways to engage young children in developmentally appropriate mathematics activities and assessment that are embedded in a play-based curriculum (Carruthers and Worthington, 2006; MacDonald, 2012). This interest has emerged in response to the field’s growing recognition of the importance of assessment and its impact on cycles of planning, informing curriculum and guiding teaching practice (DEEWR, 2009). Unlike summative assessment, formative assessment is ongoing and includes cycles of teaching, learning and planning:

*Each child’s learning and development is assessed as part of an ongoing cycle of planning, documenting and evaluation. It is an interactive process that drives development of the program* (ACECQA, 2011, p. 32).

Formative assessment helps the educator to understand children’s learning processes and to identify their strengths, skills and understandings (DEEWR, 2009), as children may demonstrate capabilities that exceed or do not yet meet their assumed level of understanding (Walsh, 2013).

Despite the importance of assessing children’s understanding and skills, there has been little discussion to date about how to enact accurate, formative assessment within a play-based curriculum for preschool children. The diversity of children’s mathematical skills needs formative assessment strategies that are open-ended, because children express meaning using a variety of creative, inventive and sophisticated processes (Edwards, Gandini & Forman, 2011; Gardner, 2011; Wright, 2011). Traditional approaches to assessment that include closed questions and interview format strategies are less productive for preschool children and may not provide sufficient scope for children to communicate non-verbally or to express connections to existing knowledge in ways that are meaningful, based on the child’s own experiences, existing knowledge, contexts, cultures and ways of being in the world (Wright, 2012; Carruthers & Worthington, 2006).

Standardised assessments often test one area of mathematical understanding in isolation and may not provide for the interrelated and creative ways in which children understand and represent numerals and quantity (Bobis, 2008; Smith & MacDonald, 2009). Modes of expression typically employed by young children include aural and musical, kinaesthetic, visual and spatial, all of which contribute to communication (Wright, 2012). While drawing, children make sounds, talk, gesture, move, incorporate objects in their work, use their bodies to act out an aspect of their work and make references to others’ work. Children draw on these processes to create meaning from ‘lots of different stuff’ as it is a way to communicate and make meaning before learning to write (Kress, 1997, p. 7).

There is a renewed interest in children’s mark-making as a platform for assessment in general (Carruthers & Worthington, 2006; MacDonald, 2012; Wright, 2012), and in particular as a way to assess children’s mathematical understanding (Carruthers & Worthington, 2006; MacDonald, 2012). Creating opportunities for children to express their mathematical understanding enables educators to understand children’s reasoning and to facilitate children’s application of thinking strategies to new mathematical concepts, creating a strong foundation of mathematical knowledge on which to build (Kilpatrick, Swafford & Findell, 2001; Perry & Dockett, 2002; Thomson, Rowe, Underwood & Peck, 2005).

However, evidence suggests that children are typically not provided with sufficient opportunities to build on the wide range of existing mathematical abilities and knowledge they bring to the early childhood setting (Carruthers & Worthington, 2006; Ginsburg & Ertle, 2008) and instructional support enacted in Australian early childhood settings has been found to be quite low (Tayler, Ishimine, Cleveland, Cloney & Thorpe, 2013). Higher quality instructional support assists children to integrate new mathematical knowledge with existing knowledge, ensuring that mathematical concepts continue to hold meaning and relevance for each child (NAEYC & NCTM, 2002). A critical first step to achieving high-quality teaching about numbers and quantity is to assess what children already know.
Study design

This study is interested in both the product and the process of children’s work. The narrative inquiry approach (Chase, 2005; Clandinin, 2007) taken is aligned with the study’s focus on the narration of the experience as it unfolds and the final product—the child’s drawing in this case (Kramp, 2009). The children’s descriptions of what they are doing and why they are going about it in a particular way is of primary interest as it is at this point that the teacher observes and analyses the mathematical reasoning reflected in the children’s discourse and work as their thinking evolves, is constructed and is represented (Wright, 2012, MacDonald, 2013). Consequently, analysis must also be flexible and endeavour to include the scope of children’s responses to the assessment activity, including both the processes and outcomes of mark-making and sustained conversation (Carruthers & Worthington, 2006; MacDonald, 2013; MacDonald & Lowrie, 2011). By analysing the product and the narrative together, each artefact provides evidence of ‘what children know and understand, based on what they make, write, draw, say and do’ (VEYLDf, 2009, p. 13).

This approach provides opportunities for verbal and non-verbal modes of communication that are integral to the meaning-making processes (Carruthers & Worthington, 2006; Kramp, 2009; MacDonald, 2013; Siraj-Blatchford, 2009; Wright, 2011), and allows for the experiences of an individual to emerge (Creswell, 2008). The open-ended, conversational nature of the activity in the familiar environment of the early childhood setting provides time for children to see, discover and share understandings that might otherwise be missed or not communicated (Cohen, Manion & Morrison, 2010). Drawing captures ‘the process of constructing a mathematical concept or relationship’ (MacDonald & Lowrie, 2011, p. 40) and enables children to record and share their thoughts. The combination of children’s narratives and representations of mathematical ideas enables the observer to capture the processes involved as children construct ideas about mathematics as they unfold (MacDonald, 2013). Essentially, children’s mark-making and accompanying narratives provide an insight into their mathematical reasoning, facilitating authentic assessment.

Procedure

The study was conducted at three early childhood centres in metropolitan Melbourne over a three-week period. Each centre offered a play-based curriculum and reported being influenced by the Reggio Emilia approach (Edwards et al., 2011). The philosophical approaches of the centres supported the study method, as the children were familiar with working alongside educators and discussing their ideas. Forty-seven children, age ranging from 4.1 to 5.7 years, participated in the study across the three centres. Centre directors, teachers and parents all provided informed consent to the study, and children provided (ongoing) assent by agreeing to participate after the researcher had explained what they were being invited to do.

A selection of ten wooden numerals (0 to 9) and a range of drawing materials were set up as an open-ended, small group activity (see Figure 1). The space was organised so that small groups of children could draw and discuss their work together. Children were invited to select a numeral to trace around. It quickly became apparent that some children wished to draw two- or three-digit numbers and so a second set of ten wooden numerals (0 to 9) was added to the first set.

The first author asked each child to draw ‘how many’ the numeral(s) they had selected represented to them and engaged in conversations with the children about their work, taking handwritten notes of remarks made by the children as well as general observations about how the representation of numerals and quantity took place. The conversations between peers were documented when they demonstrated evidence of children's numerical skills and understandings.

The following prompts were used to sustain conversations with children about their representations of ‘how many’ the numerals meant to them:

- Is there anything you would like to show/tell me about the number you have chosen?
- Would you like to draw me a picture of how many the number (5) is?
- How do we know it is (5)?
- Would you like to show/tell me about the number (5)?
- Would you like to tell me about your drawing?
- I wonder … what do you think would happen if …

Asking open-ended questions was a purposeful strategy as it took the focus away from getting it ‘right’ and tried to evoke more detailed and in-depth responses. They enabled the researcher to follow the children’s lead and ‘go with the flow of children’s ideas’, supporting increased engagement with the activity, providing opportunities for children to talk about their work (Pianta, La Paro & Hamre, 2008), facilitating sustained shared thinking, an interaction during which two or more individuals collaborate intellectually to solve a problem or clarify a concept (Siraj-Blatchford, 2005, p. 1). Children’s responses to the questions enabled the observer to assess the accuracy of the connections between numerals and the associated representations of quantity. Encouraging the children to talk about their work while they were drawing supported higher order thinking and extended responses to questions, providing greater insights into children’s thinking processes (Barden, 1995; Walsh, 2013) and enabling the observer to challenge children’s thinking.
Figure 1. Children chose wooden numerals to trace around

The activities were designed to facilitate assessment, which was highly effective in creating opportunities for ‘maths talk’ (Klibanoff et al., 2006; Cohrssen, Church, Ishimine & Tayler, 2013) and peer scaffolding.

Findings

The wooden numerals provided a focus for mathematical discussions and were an effective way to engage children’s interest in, and focus on numbers. The ways in which children were observed to use the wooden numerals varied (see Figure 2) and frequently, more than one strategy was employed.

Each child engaged with the activity when invited and conversed with the researcher during the activity. The researcher (first author) collecting data is an experienced early childhood educator, but did not have extended contact with the children. Despite not having an existing relationship, all the children participating in the study were willing to join the small group activity and freely offered their commentary as work progressed (see examples in extracts below). Thirty-eight children discussed their numeral(s) with one or more peers, 28 children interacted with one or more peers while counting and 28 interacted with one or more peers while representing the quantity of the selected numeral. The activity, designed to facilitate assessment, was highly effective in creating opportunities for ‘maths talk’ (Klibanoff et al., 2006; Cohrssen, Church, Ishimine & Tayler, 2013) and peer scaffolding.

When asked to draw ‘how many’ the numeral represented, children provided highly individualised responses that included for example counting on fingers, using blocks as counters, referring to their own age and the age of others, comparing and drawing objects and symbols, referring to street numbers, and demonstrating number beats with music and gesture. At times, ‘how many’ was expressed as length, height, distance, time, size, capacity and speed demonstrating the children’s dynamic and interrelated understanding of mathematical concepts and highlighting both the range of ideas children bring to mathematical thinking, and children’s creative capacity for expressing their mathematical reasoning.

Data provided by the children, in the form of drawings and accompanying narrative, reflected multiple strategies for representing numbers and demonstrated links to children’s lived experience. Four key and frequently occurring characteristics of children’s work are illustrated and discussed below.

Spontaneous physical movement, using gesture and concrete objects

Forty-two children used gesture and movement in conjunction with their drawings to represent quantity. Thirty-two used gesture and movement to explain height or distance, as well as the concept of zero. Highlighting the importance of assessment taking place in a familiar environment where children can move freely and select resources to support their own learning, Charlie (4.6 years) demonstrates, in the example that follows, his understanding of ‘31’ by sourcing Lego blocks to move and group.

Charlie looked through the wooden numerals and stated that he was ‘going to do it in big order and then smaller order’. He placed the numerals from 10 to 1 on the table, verbally counting backwards without errors. He looked at the wooden 1 and compared it with the 7 before suggesting that we play a game in which the numbers are mixed up and we have to put two together, ‘like 44’. Charlie made 11 and then 55. He continued to explore the numerals and then carefully traced the numerals to make 31 (see Figure 3).
Figure 3. Charlie traced the number 31, corrected the 3, drew three ticks to represent the quantity of three, and a further tick to show that he had 'got it right'.

Charlie: Okay, hang on, let's work it out ... (Charlie counts out 10 sets of three by moving first each set to one side, and then moves the one left over). Okay, there is 10 and this one here.

Researcher: Wow, that is a lot. How many is that altogether, I wonder?

Charlie: Um, okay, hang on ... (Charlie audibly counts each block in each set up to 30. He comes to the single block and says) And one more makes 31, all of these are 31.

During this activity Charlie stood up to work, walked and ran back and forth between the Lego container and the table, carried and sorted the blocks for counting, drew ticks to represent 3, tapped out the ticks when counting, moved each set of blocks when counting out the 10 sets and 1 more for 31, and individually tapped each block when counting 31 in total. Later the same day, Charlie drew 31 circles in a notebook to show 'how many altogether (see Figure 4), demonstrating the extent to which this activity promoted ongoing reflection. He wrote 31, reversing the numeral 3, and then encircled the 31, stating that this is 'the wrong way' to write it.

Figure 4. Charlie's work later the same day

The data demonstrates that Charlie has mastered the counting principles. He used counting all and counting on strategies, and accurately grouped and described the Lego blocks as 10 sets of three with one left over. Charlie independently corrected the direction of the 3 in his work (lower right hand corner of Figure 3) and by ticking his work, demonstrated awareness of a symbol typically used in formal school-based education for 'getting it right'.

It is interesting to note that nine of the 47 children used symbols such as +, – and = to explain their counting strategies. Of these nine children, seven used mathematical symbols to add sets together and calculate...
the sum. Twenty-five children referred to ‘more than’, ‘less than’, and ‘counting one more’, suggesting that they were familiar with mathematical concepts and language and ready to explore the symbols for addition and subtraction (Clements & Sarama, 2009).

Pictographic representations and verbal references to real life

The data revealed that children’s understandings of numerals and quantity related to their personal, social and cultural contexts and were grounded in everyday understandings. Thirty-five children referred to their own lived experiences while counting, 27 did so while representing the quantity of the wooden numeral, and 42 children referred to their own lives when discussing the numeral with the researcher or with peers. Examples of these references to their lives included the street numbers of their homes, birthdays, and references to personal possessions or experiences. For example, when asked ‘how many’ the numeral five represented, 15 children responded ‘I am five’, as though they embodied the quantity. A further nine children referred to the age of a sibling. Three children allocated ages to the figures in their drawings. In this way, numbers were a way to count and compare ‘bigness’ and ‘how many’ thus served as a measure of age. Street numbers were described as showing ‘how many your house is’, and ‘how many your house is now that you have moved’ and consequently counting the difference between the house numbers tells us ‘how many houses you have moved away’.

Alice (4.9 years) drew a row of flowers (see Figure 5) to represent the ‘total amount’ but then explained that it can also represent ‘volume’, from smallest or softest to largest or loudest as it reminded Alice of the symbol for volume on her computer.

Figure 5. Alice’s work (4.9 years), linking increasing quantity to increasing volume on her computer

As he was working, the tail of a creature he drew reminded Tom of an 8, prompting him to write 8 beside it. He tapped eight figures in his work and counted to eight using one-to-one correspondence.

Tom practised writing the numeral 5 three times before shouting out, ‘I can do it!’ When asked ‘how many’ the numeral 5 represented, Tom replied that he is ‘that many’ and drew a self-portrait. As the conversation continued, Tom said that now he could ‘make a 5’, he wanted to make a card for his father’s 50th birthday.

If Tom had created this work without the purposeful provocation of the wooden numerals and the perseverance on the part of the adult in encouraging both the child’s sustained engagement with the activity and his narration of his meaning-making, it is likely that the product would have been the focus, rather than the process of producing the work. It is through Tom’s detailed explanations that his recognition of the number symbols of 5, 8 and 50 could be identified.

Many children referred to zero, describing it as ‘the crack between you and your body when you lie on the floor’, ‘nothing, but when you write it down, it is something’, ‘like an “O” as well’, and ‘even though you can see it (the numeral), it is still nothing’. One child provided a detailed explanation of zero, explaining that adding zeros to a number ‘makes a number bigger, even when it is making it smaller because zero is nothing, so we are putting more nothing with the number’. Encouraging children to articulate their understanding of mathematical concepts provides the early childhood educator with an insight into the child’s existing knowledge and points of reference.
Reversed numerals and writing right to left

Thirty-five children reversed one or more drawn, traced or written numerals and/or started work on the right-hand side of the page and proceeded towards the left. For the most part, children did not attend to the fact that their numerals were reversed. When another child talked about orientation, however, children changed the direction of numerals. Consider, for example, Alice and Lotte’s work undertaken as they sat side by side and discussed their drawings (Figures 7 and 8):

Figure 7. Alice’s work (4.9 years)

Lotte: What is that? (Pointing to the 5 on Alice’s drawing.)

Alice: That’s a five.

Lotte: No, that’s a two, see. (Lotte points to her representation of the numeral 2. Both look similar.)

Alice: (Picks up wooden 2 and compares it with the traced symbol in her drawing, then turns the two upside down.) Looks like five to me.

Lotte: (Places the wooden 5 and 2 side-by-side.) They are not the same …

Alice: No, only when you put it like this. (Turns the 2 upside down.)

After this discussion, Alice re-wrote the numerals above the traced (reversed) numerals (top right corner of Figure 7), having learnt about the spatial orientation of the numerals from her more knowledgeable peer. Six children were observed to correct reversed numerals after these conversations, demonstrating the importance of peer discussion and collaboration during mathematical tasks.

As reported by Johansson (2005), numeral reversal observed in this study did not impact upon children’s understandings of quantity: even if a numeral was reversed, children named the numeral correctly and still represented quantity correctly. Bethany’s (4.7 years) representation of the numeral 5 demonstrates this clearly. Bethany started her work by tracing the wooden numeral 5 in reverse. She then wrote five B’s in an ordered row to show ‘how many’ 5 represents (see Figure 9).

Figure 9. Bethany’s work (4.7 years)

Bethany narrated her work, saying: ‘I will draw 5 Bs for my name (writes the third B and pauses). This looks like 8 … (continues to write Bs) and now these are bees with wings on. Hang on … (pauses then points with pencil) first is two “Bs,” second is one “8” and next is two bees. (Counts and taps each item with her pencil 1, 2, 3, 4, 5!)’ This monologue is rich with mathematical understanding. Bethany demonstrated that she understands the relationship between 5 and how many ‘5’ represents even when the set contains different items—one being a number. The third letter B could also be a number 8, demonstrating recognition of the similarity between an 8 and a B. This example also demonstrates how children’s thinking evolves as they draw and explore their understandings of these symbol systems.

Evidence suggests that if unaddressed, number reversal that persists into later primary years has an impact on arithmetic problem solving (Johansson, 2005). Bethany’s work, however, demonstrated mastery of one-to-one correspondence, the ordinality and cardinality principles, and the abstraction rule. She also compared set sizes and added sets. The reversal of the 5 in her drawing
did not appear to have any impact on her mathematical understanding but rather highlights the interrelated, complex, highly creative and inventive nature of children’s mathematical thinking.

**The complexity of children’s understanding of number and representations of quantity**

In the following conversation, Lily (5.3) and Sophia (4.9) are using numbers as units of age, they are counting on, measuring, comparing, estimating and ordering. Their discussion is an example of how children can explore all of these concepts, simultaneously. The observation takes place with Lily and Sophia sitting side by side. They are using the wooden numerals, discussing age and who is ‘the biggest’.

Lily: (Tracing the wooden numeral 5.) *Every time I have a birthday I am one more, now I am 5, but last time I was 4 … next time I will be 6.*

Sophie: (Tracing the wooden numeral 4.) *That is a lot; that is big …*

Lily: *My cousin is 9; she is this big.* (Lily holds her hand to one side, indicating height.) *My sister is 8 and she is this big* (moves her hand slightly higher indicating that 8 is ‘bigger’ than 9). *8 is bigger than 9.*

Lily counts one on and counts one back. She demonstrates logical and complex understandings of the relationships between age, number, quantity, size and measurement. However, while her sister may be bigger (or taller) than her cousin, eight is not more than nine, a teachable moment that the educator could use to clarify the value of each number, given the interactive design of this type of assessment.

Lily continues to share her understanding of ‘how many’ five is, by drawing five unicorns. During this process Lily provides the following narrative:

Lily: *The big one is 25, the small one is one and a half, medium is teenager.* (Lily then appears to note that two unicorns are the same size.) *Two of them are teenager.* (Lily counts up to eleven tapping her pencil on the page for each count.) *Two of these unicorns are eleven, that last one is two … No, no not this one* (pointing to a smaller unicorn on the page) *that one is smaller, that one is two* (points to the unicorn on the left).

Lily’s narrative demonstrates ‘evolving ideas’ (Wright, 2012, p. 18) as she reflects on her understandings of age and size, number and size, comparison and ordering. We observe that Lily understands the cardinality rule, evidenced by her representations of five (drawing and counting five unicorns), and her counting and tapping to 11. Lily assigns ages to the unicorns based upon their size: smaller unicorns are younger. Her graphic representations of quantity thus enable an educator to assess her understandings of height and number sequence.

Through these various representations of number, children’s meaning-making processes are revealed, which illuminate our understandings of the child’s final artefact or product (MacDonald, 2013). Being actively engaged in children’s processes of meaning-making as they emerged provided critical insights into their mathematical knowledge. It also highlights the interconnectedness and parallel acquisition of mathematical concepts.

**Conclusions and implications for practice**

This paper has detailed an early childhood mathematics assessment strategy which provides valuable insight into how children connect numerals and quantity, as well as providing additional insights into their mathematical thinking. The activity provided opportunities for children to demonstrate their knowledge of numerals and quantity in individual, verbal and non-verbal, multifaceted ways (Carruthers & Worthington, 2006). While this was a small study, it adds to a growing body of research into the effectiveness of assessing children’s mathematical reasoning through the processes of mark-making and sustained conversation (Carruthers & Worthington, 2006; MacDonald, 2013; MacDonald & Lowrie, 2011).

Several conclusions may be drawn, each with clear implications for early childhood mathematics pedagogy:

- **Children’s mathematical reasoning is creative and inventive.** Informal, formative assessment is critical if educators are to provide contingent learning experiences that both consolidate children’s current understanding and keep pace with children’s evolving understanding.
- **Providing children with a range of resources with which to explore mathematical concepts supports their learning and encourages the transfer of knowledge from one context to another.**
- **Children’s understandings of numerals and quantity are grounded in real, everyday experiences.** Early childhood
educators should encourage mathematical thinking and language in real, everyday experiences across all aspects of their programs. Formative assessment that takes place during the typical play-based room program provides a familiar setting for children to engage with materials used for assessment. The assessment strategy is developmentally appropriate and enables children to document and communicate their individual mathematical understandings.

- Children’s understandings of number and quantity are interrelated, complex and unique. In order to assess children’s understanding of mathematical concepts, educators need to ask open-ended questions and engage in sustained conversations that provide opportunities for children to take the lead. Interactions of this nature are best suited to small-group activities. By facilitating opportunities to assess children’s knowledge, it becomes possible for educators to identify the mathematical concepts and strategies that children use for their mathematical reasoning. Collaborating with children during mathematical assessment helps educators to identify teachable moments as they emerge (Ginsburg & Ertle, 2008). This further informs intentional teaching strategies and supports ideas for planning effective learning experiences to meet the child’s unique needs, while also building strong foundations for future mathematical learning.

- Small group activities provide opportunities for children to share their knowledge with their peers. Using this assessment strategy with small groups of children facilitated peer learning and the sharing of perspectives, providing insights into the ways in which children co-constructed mathematical learning. This assessment strategy promoted discussion about mathematical concepts and demonstrated that mathematics can be a social and engaging experience for children and educators, with positive assessment and learning outcomes.

- Children’s representations of numerals alone do not always reflect their depth of mathematical knowledge. Evidence provided by children’s narrative in conjunction with their drawings provided greater insights into their existing and emerging mathematical knowledge.

The aim of this assessment approach was to determine the extent to which children recognised the relationship between numerals and quantity as counting and cardinality are one of the first and most fundamental developmental progressions of mathematical learning (Clements & Sarama, 2009). It should however be emphasised that the success of the strategy relied on several key elements: first, the purposeful use of guided questions to engage children’s thinking, sustain their attention, and elicit evidence of their mathematical understandings.

Second, the provisions of wooden numerals provided an unequivocal focus on number. Third, the open-ended nature of the activity enabled children to articulate their individual understandings of quantity rather than requiring them to provide the ‘right’ answer. In this way, the assessment strategy aligns seamlessly with a play-based curriculum and could be implemented by early childhood educators, meeting the requirements of the National Quality Standard (ACECQA, 2011) and identifying children’s progression along the mathematics-learning continuum (Clements & Sarama, 2009).

Assessment that is play based supports the many ways in which children spontaneously flow between their ideas as they emerge, evolve and unfold (Wright, 2012). Children develop confidence in their own learning abilities when they are able to connect their new learning tasks to existing knowledge (Bobis, Mulligan, Lowrie & Taplin, 2009). In the same way that educators strive to provide authentic learning experiences, so too can assessment tools be constructed from the child’s existing and emergent mathematical knowledge.

References


Introduction

Children's perceptions of health and illness allow researchers to gain an insight into which health-promoting programs work well for children when they are actively involved in the decision-making processes (Davo-Blanes & La Parra, 2012; Jensen & Simovska, 2005; Piko & Bak, 2006). However, collecting information from children may pose some difficulties as children may not be able to articulate health issues as well as adults (Fleer, 2014). It is essential to adopt a sensitive and an innovative way that would allow children to be able to talk about their understanding of the issues under investigation (Agbenyega, 2014; Gill & Liamputtong, 2014; Jorgenson & Sullivan, 2009; MacDonald, 2009, 2013; Wright, 2012a). According to MacDonald (2009), McArdle (2012) and Gill and Liamputtong (2014), most children are familiar with drawing activities. Drawings allow young children's ideas to be visible (Agbenyega, 2014; Woleck, 2001) because, through drawing activities, children are able to articulate their ideas about things in detail (McArdle, 2012). Importantly, through drawing activities, children are able to express things which can be difficult to do through other vocal and literal expressions (Agbenyega, 2014; Gill & Liamputtong, 2014; Wright, 2012a). In this paper, we advocate the use of the drawing method in research involving children because it gives the children a creative means to express themselves (Agbenyega, 2014; Gill & Liamputtong, 2014; MacDonald, 2009, 2013; Piko & Bak, 2006; Pridmore & Bendelow, 1995). We will discuss this innovative way when working with refugee children about their understanding of health and illness.

It has been argued that word-based research methods such as in-depth interviews can be insufficient for vulnerable people, such as children (Agbenyega, 2014; Fleer, 2014; Gill & Liamputtong, 2014; Guillemin & Westall, 2008; Liamputtong, 2007; MacDonald, 2013). There may be many situations which make it difficult for participants to express themselves, such as difficulty with expressive language, or having an experience that is too difficult to express in words (Agbenyega, 2014; Gill & Liamputtong, 2014; Wright, 2012a). Therefore, the use of visual-based research methods, such as the drawing method, has become more appropriate (Agbenyega, 2014; Gill & Liamputtong, 2014; Guillemin & Westall, 2008; MacDonald, 2009, 2013; McArdle, 2012; Wright, 2012a). This is specifically useful when working with young people (Agbenyega, 2014; Gill & Liamputtong, 2014), particularly with refugee children whose English is not their first language and who might have difficulties in expressing their understanding and needs (Fernandez, Liamputtong & Wallersheim, 2014; Liamputtong, 2007). In our study, this will not only allow the refugee children to express in a visual form how they see health and illness and their experiences, but it will also add depth to the data, by allowing some themes to emerge that may not come through if an one-on-one interview was used exclusively.
The drawing method and children’s understanding of health and illness

According to Pridmore and Bendelow (1995), the draw-and-write technique is an entry point in involving children in participatory learning, and this has the potential to allow the collection of data that is richer and more insightful than that of drawing alone. According to Agbenyega (2014, p. 160), ‘when children are asked to draw about events, they bring their imagination to play and the drawing itself serve as prompts that augment retrieval of past events’. The use of the draw and write technique allows the children to express themselves in a different way to just writing or talking. It has been shown in past research that the technique works well with children as a powerful method of communication as the act of drawing can help breakdown barriers and allow the expression of powerful emotions (Agbenyega, 2014; Gill & Liamputtong, 2014). Another strength of the draw-and-write technique is that it allows children who are naturally not inclined to verbally express themselves to communicate their perception of health and illness through drawing (Pridmore & Lansdown, 1997). This is particularly true when researching vulnerable groups of people including refugee children.

As in other disciplines (Agbenyega, 2014; MacDonald, 2009; McArdle, 2012), the drawing method is becoming increasingly popular as a tool for communicating health education with children as it enhances participation with children (Agbenyega, 2014; Backett-Milburn & McKie, 1999). As there is now a larger focus on health promotion in schools, it makes sense to involve children in the direct promotion of their own health. With the drawing method, children are able to explore the meanings of health and illness from their own point of view, and it can assist health professionals to devise health-promoting programs based on the knowledge children demonstrate through the use of drawings (Backett-Milburn & McKie, 1999). Backett-Milburn and McKie (1999) note that the drawing method is used in many disciplines including psychology, anthropology, geography and art therapy, and has only recently been adapted to health education research after the development of the Ottawa Charter for Health Promotion in 1986 which suggested that lay people need to be actively involved in health decision making. Drawing is used among children as it is often considered enjoyable and children of all ages can take part (Gill & Liamputtong, 2014). However, Backett-Milburn and McKie (1999) argue that the drawing is open to interpretation by the researcher and during the analysis process research bias can occur due to the complexity of the drawings.

Bradding and Horstman (1999) adopted the draw and write technique in their research with children as they believed that other techniques for data collection such as interviews and questionnaires are adult-based and can potentially be ambiguous for children. They believed that by utilising the draw and write technique, the task is viewed as child friendly, non-threatening and allows the children to express themselves without any persuasion from the researchers. The drawing method is appropriate for children 12 years and under as there is a growing acknowledgement that children’s understanding of health and illness is derived from their experiences rather than age-related cognitive development. Bradding and Horstman’s (1999) research involved 99 sick children who were asked to draw and talk about their perceptions of a sick child and their ideal hospital. This generated rich qualitative data as the researchers were present to clarify the meaning of each drawing produced by the child who may not normally be able to express themselves due to limited verbal communication skills. The researchers found that the children involved were acutely aware of the roles of the health care professionals and recognised the need to have support from family and friends, in particular parents. The children described their ideal hospitals as a ‘home away from home’ with plenty of space and large windows to distract them from the hospital feel. While feelings of joy were presented by the children, they were overshadowed by feelings of sadness, anger, frustration, boredom and loneliness which were both expressed verbally and visually, with many of the drawings depicted with a sad face, particularly after an extended hospital stay (Bradding & Horstman, 1999). After the data was collected, the researchers discovered many benefits of utilising the draw and write technique, including that it was perceived to be ethically sound as it avoided any intrusive interventions and that the child was able to disclose as much or as little information as they decided, helping keep stress and anxiety at a minimum. The research conducted by Bradding and Hortsman (1999) was conducted several years ago when the drawing method was still emerging as a qualitative inquiry. More recent research suggests minor improvements with the method, such as an increase in verbal communication, particularly for younger children and population groups who have limited language skills (Piko & Bak, 2006).

Similarly, the research of Bradding and Horstman (1999) and that of Pridmore and Bendelow (1995) also adopted the use of the draw and write technique for a study they conducted on school-aged children and their perceptions of health. Pridmore and Bendelow (1995) sampled 100 children using group interviews, the draw and write technique and discussions to obtain data about their beliefs of what keeps them healthy, makes them ill and their thoughts and perceptions on cancer. They found that although the majority of the data contained images, articulation in writing appeared to be difficult for the children, especially for those where English was not their first language or those with special needs. Overall, their results demonstrated an accurate knowledge by the children about what keeps them healthy and what makes them sick (Pridmore & Bendelow, 1995).
It is important to remember that the draw-and-write technique involves children writing about their drawings. The writing component of this method can also lead to misinterpretations, especially where young children are involved. A better way of communication could be an individual verbal interview rather than a writing task with the children (Agbenyega, 2014; Gill & Liamputtong, 2014; MacDonald, 2009; Wright, 2012b). Hence, in our study, we adopted the drawing method in conjunction with in-depth interviews with the children.

**Methodological framework: Postmodernism**

In this study, we situate our drawing method within postmodernism. Postmodern research adopts the idea that there are many realities and truths to the individual’s story. Postmodern research deconstructs the meanings of lived experiences of the participants (Grbich, 2004). By deconstructing the meanings of lived experiences, the researcher is able to gain a deeper understanding about the thoughts and perceptions of the participants, and is able to see these meanings within appropriate contexts. Postmodernism emphasises that individuality is important in social and cultural contexts, that realities are constructed and that they can only be understood within this particular context. By utilising postmodernism as a methodological framework, the researcher is able to gain more knowledge about the children's understanding about health and illness.

Postmodernism promotes the use of innovative methods in data collection in order to focus their attention on the smaller details of everyday life provided by the participants (Liamputtong, 2007, 2013). In this particular study, the use of drawing method with the children aims to encourage them to discuss their perceptions of health and illness with the researcher and assist the researcher to focus on the smaller details.

Using postmodernism as a methodology for this research benefits the participants because there is no hierarchical division between the researcher and those being researched (Grbich, 2004). This is particularly important when researching children as it is necessary to break down any authoritative barriers between the children and the researcher. By breaking down these barriers, a comfortable and trusting relationship is created which then in turn will deliver more accurate data from the participants. Postmodern research also emphasises that all stories and expressions given by the participants are valid, that no stories are privileged over others, ensuring that the voices of all the research participants have some credit and are valuable to the findings of the study (Grbich, 2004).

**What makes people sick: Our study with refugee children**

We conducted qualitative research with Burmese refugee children: the Karen, Chin and Zomi. Qualitative research focuses more on the point of view of the people being researched and gives greater understanding and meaning to the lived experience of the individual. The approach is particularly useful when little is known about the topic of investigation (Bryman, 2012; Clark & Braun, 2012; Creswell, 2012). To date, there has been no research exploring the perceptions and experiences of health and illness among Burmese refugee children in Melbourne. Using a qualitative approach in our research allowed us to have a better understanding about the meanings, interpretations and subjective experiences of the children in the study.

**The children**

The children were recruited through the Migrant Information Centre’s homework support group which is run through a primary school in the eastern suburbs of Melbourne. The homework support group has approximately 30 refugee students aged five–12. Refugee children from the Karen, Chin and Zomi ethnic groups living in the eastern suburbs of Melbourne, aged between eight and 12 years old or Years 3 to 6, were included. The Karen and Chin ethnicities are among the largest ethnic groups in Burma. Also, the majority of the children taking part in the homework program are either from Karen or Chin descent, although there are some from smaller ethnic groups such as the Zomi. All participants attend the same primary school and live within the same community groups.

All participants had consent from their parent or guardian before the commencement of the interview. Participants were given a choice whether they wanted to participate or not, even after parental consent was obtained. The study was approved by the La Trobe University Human Ethics Committee.

Saturation theory was used to determine the number of participants. Saturation theory is commonly adopted in qualitative research, where researchers continue to collect data until little new data can be obtained (Bryman, 2012; Padgett, 2012). We followed this theoretical sampling technique in this study. In the end, 12 children were included in the study. The children's socio-demography is presented in Table 1.

**Table 1. Participant characteristics**

<table>
<thead>
<tr>
<th>Participant</th>
<th>Age</th>
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<td>3</td>
<td>Chin</td>
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<tr>
<td>2</td>
<td>9</td>
<td>Male</td>
<td>3</td>
<td>Karen</td>
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<td>Chin</td>
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<td>4</td>
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<td>Karen</td>
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<td>Zomi</td>
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<td>8</td>
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<td>Karen</td>
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<td>Chin</td>
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<td>Karen</td>
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<td>12</td>
<td>12</td>
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</table>
Method

This study involved in-depth interviews and the use of the drawing method. The interviews were informal and took place at the children's school, after hours. In-depth interviews as opposed to a written interview were used with the children for a number of reasons. All the participants had a refugee background, and English was not their first language. Often, they had difficulties with writing and spelling. As a result of this, the children tended to prefer not to read and write. According to Rubin and Rubin (2012), interacting through conversation allows the researcher to expand their knowledge of certain topics and give individuals the chance to express their thoughts, perceptions and feelings in their own words. In-depth interviews permit the researcher to explore the hidden perceptions of their research participants—in this case, refugee children's perceptions of health and illness.

The in-depth interviews were conducted after parental consent was given for the child to participate. The children were asked basic questions about what makes people sick, how they feel and how they get better when they are sick. The interview lasted about 30 minutes to an hour only, as the children seemed to get sidetracked if the session was too long. After some discussion time, we invited the children to draw some pictures and then discuss about the drawings resumed and was interpreted with the child. The use of the drawing method allowed the children to express themselves in a different way to just writing and/or talking. As we have discussed, the method worked well with children in past research and some argue that the draw and talk technique is a powerful method of communication with children as the act of drawing can help break down barriers and allow powerful emotions to be expressed. The drawing method indeed assisted us to gain a deeper insight about the children's perceptions (Agnenyega, 2014; Piko & Bak, 2006).

Each child was given a white A4-size pad of blank paper, with a packet of coloured pencils to use. They were asked to draw a series of images which were predetermined by us. The participants could simply draw images or could add words to accompany the image, which would assist them later in explaining the image to us. We used the following prompts and questions when inviting the children to draw:

Please draw a picture about how you felt when you were last sick.

- When were you last sick?
- What happened?
- How did you get better?
- Draw me something that makes people sick.
- In your own idea, what do you think makes people sick?
- How do you know when you are sick?
- Draw a picture about what keeps you healthy.

In your own opinion, do you think you are healthy? Why?
- What do you do to keep healthy?
  - What do your parents do?
  - What advice do your parents give you when you are sick?
  - Who is the healthiest person in your family?
  - What makes him/her healthy? How can you tell?
- Draw me something that makes people get better.
- What do you do in order for you not to be sick?
- In your view, what would be the worst sickness or illness a person can have?
- When this happens, what do you think people should do?

When the children completed each drawing task, we invited them to describe the drawing. Asking the children to describe their drawing was an essential part of this method, to ensure we fully understood the meanings of their images. At the conclusion of the drawing method, any questions that were left unanswered during the drawing component were then followed up in an individual interview.

Data analysis

To assist with understanding these drawings, a set of questions was developed about the production of the image using a framework of questioning developed by Guillemin (2004) and adopted in Gill and Liamputtong's research (2014). However, in our study, the framework was modified to suit our participants.

- What is being shown? What are the components of the image? How are they arranged?
- What use is made of colour? What colours are used? Is there a reason why certain colours were used?
- What do the different components of the image signify? Are these components related in any way?
- What issues are shown in the image? Is there anything that is being left out?
- Is this a contradictory image (i.e. does the drawing represent themes that are later contradicted in the interview)?

We also employed thematic analysis to examine children's perceptions of health and illness from the conversations we had with them. Thematic analysis is a useful method for 'identifying, analysing, and reporting patterns (themes) within data' (Braun & Clarke, 2006, p. 76). After the interviews were conducted, each one was transcribed. From this, the data were coded, which involves labelling and categorising large portions of the data into more meaningful chunks (Braun & Clarke, 2006). Themes were then derived from this initial coding.
The findings and drawings

As this paper is based on our methodology, in the following sections we present the findings and drawings using the prompts that we asked the children: what makes people sick, feelings about being unwell, how to regain health and maintaining health. Pictures that the children drew helped to explain their conceptualisation of health and illness. These are presented in the following sections. It must be noted that we use fictitious names to represent the participants in order to protect their true identity. As this paper focuses on the methodology, we do not include an extensive discussion about our main findings here. This is the focus of another paper (Fernandez, Liamputtong & Wallersheim, 2014).

What makes people sick

Most children placed a large emphasis on the environment as a potential cause of illness. This was predominantly discussed in relation to the weather, be it hot or cold weather and ways in which the weather can have an adverse effect on our health. The children acknowledged the need for warm clothing in the colder months and the importance of protection against the sun. For example, Hlaing, a Year 6 boy, identified warm weather as a cause of illness, based on his own experiences. He said: ‘it happens to me sometimes, when the sun heats you, your skin, it’s hot to touch and you can get a headache if you stand or swim under, in the sun too long without a hat’.

In Figure 1, Hlaing drew himself swimming and the sun beating down on his skin. Hlaing made it a point to note the importance of using sunscreen, and the adverse effects if one does not use sunscreen.

Figure 1. Swimming under the sun

The children also recognised the adverse health effects that fast food has on the body. They identified fast food chains such as McDonalds and KFC as contributors to sickness, along with the excessive consumption of sweets and lollies as well as too much chocolate.

Emily, a Year 3 girl, remarked that ‘McDonalds, lollies, and food that you’re sometimes allergic to that you don’t know, that can make you really sick’. In Figure 4, Emily drew various foods and fast food chains that she believes causes illness. From left to right there is a plate of lollies, followed by a pizza, McDonalds and Subway. It is interesting to note that although Subway is marketed as a healthy alternative, Emily still classed it as junk and illness-inducing food.

Along with environmental influences, the children also explained the cause of illness basing on a biomedical framework. They identified processes of contagion and contamination as causes of illness. This included the passing of germs through an action such as sneezing or lack of hygiene, in this case not washing hands.
Feelings about being unwell

Most children associated being sick with feelings of sadness and boredom and linked sickness with staying at home and not being able to go to school. Missing school appeared to have a negative impact on the children as there was a strong link between attending school and seeing friends. Being sick seemed to have a strong influence on the social lives of the children who attributed wellness with happiness and a strong social correlation. Essentially, the general consensus of the group was ‘if you’re sad or bored, you’re not happy; if you’re not happy you’re not healthy’.

Lian, Year 4, demonstrated this well by ‘drawing myself in a bed and feeling sad ... Cause I want to go to school and I had to stay in bed cause I got a cold and it was a very hard cold’. In this drawing (Figure 5), Lian drew himself with a sad face to illustrate how he was feeling.

Figure 5. Lian in bed, sick

Similarly, Hla, a Year 4 girl, recalled ‘I wasn’t very happy because I had to stay home from school ... I’m not at school having fun’. The following images (Figure 6) depict six of the children’s feelings of being ill. Eleven out of the 12 participants deliberately drew a sad face when thinking about the last time they were sick. Sad faces were consistent throughout the drawings in the interview when being ill was discussed.

Figure 6. From left to right: Hlaing, Year 6, Mawi, Year 6, Hla, Year 4, Khin, Year 3, Lian, Year 4 and Jon, Year 4

How to regain health

In the context of discussing how they became better the last time they were sick, medicines (Figure 7) appeared to have a vital role in the recovery process.

Figure 7. A drawing of a hospital and a bottle of medicine that assists the children recover when they are sick

Interestingly, Lily, Year 4, was the only child to identify physical aids to help someone regain health: ‘Oh, for the old people, like, crutches and the wheelchairs for their, um, feet to get better’. In Figure 8, Lily drew crutches and a wheelchair—her own idea of what helps people get better when they are sick.

Figure 8. Crutches and a wheelchair
Maintaining health

The children presented a variety of different ways in which they can keep healthy. For example, in Figure 9, Hlaing drew himself happy and healthy under a tree full of apples. Hlaing also noted the importance of being outdoors to keep people healthy.

Figure 9. Happy and healthy under an apple tree

Lian, Year 4, pointed out that ‘vegetables are good for you ... because they are healthy. Some people don’t like vegetables but it’s healthy for you’. On the left, Lian drew a variety of fruits and vegetables that he believes keeps people healthy. The left-hand side of the image was the drawing of Lian, which shows a carrot, tomato, apple, orange and a piece of meat. The right-hand side of the page shows different fruits and vegetables drawn by three different children.

Figure 10. Different representations of fruits and vegetables

In Figure 12, Hla depicted herself running around the house as a way to keep healthy. She specifically indicated in the house as opposed to outside as she mentioned she lived in a unit and there were cars constantly at the front of the house and in the driveway.

Figure 12. Keeping healthy

Mya, a Year 5 girl, also recognised exercise along with vegetables and fruit, as a way to maintain health ‘exercise, sport keeps us healthy by keeping people active. Also running around ... something like tennis’. In Figure 11, Mya drew both a tennis ball and racquet with someone running as a form of exercise. Most of the participants associated running as the form of exercise to keep themselves healthy.

Figure 11. Tennis ball and racquet

Keeping warm was also a recurring sub-theme among the children in relation to maintaining their health. Tun, a Year 3 boy, identified ‘medicines like vitamins, that keeps us healthy. Staying warm in winter, I’ll draw a jumper and a scarf’. So, in Figure 13, he drew a jumper and a scarf as a way of staying warm in winter and preventing himself from getting a cold.

Figure 13. Jumper and scarf
Along with keeping warm in winter by dressing appropriately, some of the children stated that eating warm foods such as soups could potentially help you maintain health. There was a clear distinction between eating warm foods to keep healthy and cold foods such as ice cream which could make people sick. The children made it a point by drawing a bowl of soup, as seen in Figure 14.

**Figure 14. Bowls of soup**

Some of the participants also mentioned medicine or vitamins as a way to maintain health. Most commonly identified was Vitamin C for colds. The children did not specifically identify a certain type of medicine for prevention of sickness, but rather medicine as a general preventative for illness. Mawi, a Year 6 boy, disclosed that vitamins keep us healthy but I think you have to take them a lot. ‘My mum gives me Vitamin C, she says to have it when I am sick.’ In Figure 15, Mawi drew a picture of generic medicines that helped keep him healthy.

**Figure 15. Generic medicines**

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**Discussion**

In this paper, we focus on the method that we adopted in our research with refugee children living in Melbourne, Australia. It has been suggested that allowing the children options on how they wish to share their lived experiences allowed us to explore individual perspectives and insights more accurately and at a deeper level (Agbenyega, 2014; Carruthers & Worthington, 2006; Gill & Liamputtong, 2014; MacDonald, 2013; McArdle, 2012; Wright, 2012a, b). Providing children opportunity to draw, Agbenyega (2014, p. 160) contends, ‘holds some potential for obtaining accurate and complete reports from young children because as children draw they spontaneously talk about what they are drawing’. We found in this study that the drawing method was effective for the children to express their understanding and experiences of health and illness. At the same time, the research was set in a comfortable, relaxed environment, where the children can become empowered through their involvement in the research. It must be noted that while there have been prior research examining children’s perceptions of health and illness, there is very little research specific to refugee children’s perceptions of and experiences of health and illness. Our research has bridged this gap.

We found that the length of the in-depth interviews were quite short—on average approximately 28 minutes, which under normal circumstances would not be lengthy enough to collect adequate data. However, it is important to note that the participants in this research were all under 13 years of age and were undertaking English as a Second Language, so limited communication was expected to a certain extent. However, the addition of the drawing method has provided us an opportunity to overcome the children’s language barriers.

Overall, the research project was extremely enjoyable for the children. The second author who did the data collection was able to spend some quality time with the children and both the researcher and the children had a lot of fun drawing pictures and snacking on sweets and chocolates. Some of the children would tell their friends about their interview and their friends would ask us if they could ‘have a turn’ as well.

As data collection commenced, it appeared that the children had a clear understanding of healthy behaviours as they were easily able to recognise factors that keep them healthy. Fruit and vegetables were acknowledged as the most important things for keeping healthy, closely followed by exercise. According to the children, cold weather was the leading cause of illness, along with the transmission of germs. Eating bad food was labelled as unhealthy and the majority of the participants mentioned their parents as being influential about food choices. Regaining health was identified in several ways. Rest and staying home from school were recognised as the most significant forms of regaining health as was eating soup which was referred to many times throughout the interviews.

However, although this method has many benefits for the researcher and participants, it does come with some limitations. Initially, not all young participants wanted to draw, or initially felt uncomfortable with the idea of drawing, most commonly expressing ‘I can’t draw!’ Other
researchers have also found similarly in their research (Gill & Liamputtong, 2014; Guillemin, 2004; Guillemin & Westall, 2008; Liamputtong, 2007). However, these hesitant children were successfully prompted during the drawing phase. One important question about the drawing method that Backett-Milburn and McKie (1999, p. 387) ask is whether ‘drawing enables children to communicate their thoughts any more than does conversational language’ (see also Agbenyega, 2014; Gill & Liamputtong, 2014). They also point to the instruction given by researchers for the task as without it, participants may feel unsure what to draw. In our study, some children had no idea what to draw at the beginning. But after a few prompts and examples from us, the children eventually could produce some simple images that represented their thoughts. For example, Tun, a Year 3 boy, was going to draw a picture of germs that make people sick. He initially asked us what a germ looks like, but with some encouragement, he developed the idea and made a conscious decision to use the green colour to represent his idea of germs.

In their research with young women, Morgan, Rumbold, McInerney and Liamputtong (2009) contend that asking participants to draw can raise more anxiety and be perceived as demanding and risking more than talking. The process can contact, as well as give an expressive form to, painful and sometimes unexpected feelings. We did not find this in our research, only that many children said they could not draw or did not want to draw. However, we believe that this method needs to be used within a sensitive and respectful manner (Gabhainn & Kelleher, 2002; Gill & Liamputtong, 2014; Guillemin & Westall, 2008), and researchers need to particularly build a good relationship with the participants and have good listening skills (Gill & Liamputtong, 2014).

According to Backett-Milburn and McKie (1999), Gill and Liamputtong (2014), Guillemin (2004), MacDonald (2009) and Wright (2012b), interpretation of images can be subjective and ambiguous, and interpretations can change over time. We therefore recommended that the drawing method be used in conjunction with other qualitative methods, such as an in-depth interviewing technique, to give the children an option with how they wish to tell their story, ensuring a rich analysis of the participants, lived experiences (Fernandez, 2014).

**Implications for health educators and researchers**

In this study, we advocate the use of the drawing method for understanding children’s perceptions of and their experiences of health and illness. Our findings have implications for health educators and researchers. The drawing method is becoming increasingly popular as a tool for communicating health education with children as it enhances their participation (Agbenyega, 2014; Backett-Milburn & McKie, 1999; Gill & Liamputtong, 2014; Liamputtong, 2007). According to Kendrick and McKay (2004), educators need to acknowledge different ways of knowing among children. Health education teachers may be able to explore children’s own ideas about health, illness and wellbeing through the use of drawings/drawing method. As we have suggested, the children in our study found this method enjoyable. Health education teachers may be able to engage children to actively participate in health education programs through drawings/drawing method. As there is now a greater focus on health promotion in schools, it makes sense to involve children in the direct promotion of their own health. Drawings can be used to educate children about health, illness and wellbeing within the school context and beyond.

We also recommend that researchers who work in early childhood areas explore the use of this method, which provides the opportunity for children to express their own thoughts and needs through images, since this can assist researchers to gain access to deeper meanings about the understanding and experiences of children. This method can be applied to vulnerable children in other socio-cultural contexts such as indigenous children and children from poor socioeconomic backgrounds who might find vocal and literal expressions too intimating.

**Conclusion**

Our paper contributes to the limited literature on the health of refugee children and methodology appropriate for research with refugee children. Our results may be used for the implementation of some specific health education programs for refugee children which would fill the gaps in their knowledge. Our findings are also useful for health promotion targeted at children of refugee backgrounds in Australian schools and wider community environments.

**References**


Introduction

Four-year-old Isabella is said to have an understanding of gender constancy when she knows that, irrespective of the situation or superficial changes in appearance, she will always be a girl. Similarly, six-year-old Stefan is regarded as having ethnic constancy by knowing he will always be Belgian, regardless of where he is and what he wears. Notions of both gender identity and ethnic identity involve an understanding that, once established, these categorical memberships are unchangeable. This is consistent with psychological essentialist understandings concerning the 'true essence' of a person or object. In common parlance, ‘You can take the girl out of the country, but you can’t take the country out of the girl’. Or can you? Indeed, can you take the girl out of the girl? Although they may sound frivolous, these are not trivial questions. Rather, they highlight the basic issue addressed in the current research. That is, following biological and environmental changes, is a person perceived by others as retaining an essence of what s/he was before?

Psychological essentialism

Psychological essentialism is the belief that natural kinds and social categories possess (often unseen) defining qualities. It is this ‘essence’ that is shared by category members and gives them their identity (Gelman, 2003). Members of a category are therefore seen as sharing some underlying structure (even when invisible features compete with perceptual similarity); they are thought to have innate properties (that prevail over nurture); and categories are seen to have sharp and immutable boundaries. However, essentialist thinking is not always accurate. Although useful in providing information about groups, it can also serve to encourage and justify stereotyping and discriminatory beliefs by implying that certain properties—and identities—are natural, innate and fixed.

Essentialism in young children

Children as young as two years of age demonstrate essentialist thinking (Gelman & Coley, 1990). They use category membership to make inferences about important properties, such as correctly inferring characteristics from one category member to another even when category members are perceptually dissimilar but labelled as similar. For example, Gelman and Coley found that two-year-olds used the category label ‘bird’ to infer eating habits when shown pictures of a dodo and a bluebird, but did not extend this property to bats, which were more perceptually bird-like than the dodo. Gelman and colleagues’ finding that preschoolers make inferences from non-obvious features, rather than outward appearances, is extremely robust (see Gelman, 1988; Gelman & Coley, 1990; Gelman, Collman & Maccoby, 1986).

EXTENSIVE EVIDENCE OF ESSENTIALIST thinking in children emphasises cognitive processes with little attention paid to social contexts. The experimental study reported in this paper follows a recent trend in social psychology of integrating theories of essentialism and social categorisation by investigating four-year-olds’ (n = 64) responses to novel social stimuli. Biological and environmental/social aspects of essentialism were both manipulated and measured to investigate how contextual changes interact with children’s understanding. Consistent with our predictions, children demonstrated variability in essentialist thinking that was, somewhat surprisingly, stronger on the biological measures. Our results add to a growing body of evidence demonstrating the active role played by young children in interpreting their social world.
Privileging underlying structure over perceptual features is, however, at odds with traditional cognitive theories of categorisation (e.g. Flavell, 1985; Piaget & Inhelder, 1966/1969) that emphasise young children’s reliance on superficial, perceptual cues. In contrast, Gelman (2004) claims that young children find meaning and causal explanations precisely by looking beyond obvious perceptual features. In this way, essentialist thinking incorporates children’s ‘naive theories’ about the world. These are the implicit theories that guide our understanding of the world (Murphy & Medin, 1985) and are often specific to particular domains (Hirschfeld & Gelman, 1994; Keil, 1989; Newman & Keil, 2008) including social groups (Hirschfeld, 1995, 2001). Nonetheless, appearances do provide crucial cues to an object’s underlying essence (Gelman & Medin, 1993) and while perceptual similarity may be used to define category membership (e.g. Oakes, 1987), it is secondary to identifying the category’s underlying essence and providing meaning to that categorisation (Gelman, 2004; Gelman & Markman, 1986).

Medin and Ortony (1989) proposed that one of the functions of essentialist thinking is to serve as a ‘placeholder’. That is, it is possible to believe that a category possesses a meaningful, underlying essence, but not know what that essence is. Young children might know that deep, non-visible differences exist between, for example, lions and tigers, but have no idea as to what these differences are. In this way, essentialist thinking has ‘inductive potential’ in guiding expectations about category members (Gelman & Markman, 1986). This applies not only to physical characteristics and properties, but to beliefs about psychological traits (Heyman & Gelman, 2000).

At around four years of age, children’s essentialist thinking undergoes refinement as their desire to provide meaning becomes integrated with their knowledge and experience. In a study by Gelman and Wellman (1991), four-year-olds maintained that kangaroos raised by goats would grow up to be good at hopping rather than climbing, while Hirschfeld and Gelman’s (1997) preschool participants considered that adopted children would speak the language of their birth parents. Both of these examples reflect children’s essentialist beliefs that certain properties are fixed at birth (innate) and will inevitably be realised, regardless of the environment. Commonly used ‘adoption’ or ‘switched at birth’ tasks (Gelman & Wellman, 1991; Hirschfeld, 1995) are, however, often confounded with the child’s knowledge of categories and category members. To address this, recent studies investigating social essentialism and ethnicity with children as young as five, intentionally utilised self-relevant social categories (Birnbaum, Deeb-Segall, Ben-Eliyahu & Diesendruck, 2010; Deeb, Segall, Birnbaum, Ben-Eliyahu & Diesendruck, 2011). The current study aimed to avoid confounds associated with prior knowledge by employing features and abilities that could not unequivocally be attributed to one group or the other.

**Essentialism and social categorisation**

Despite their similarities however, the psychological processes of essentialism and categorisation are not the same. Importantly, not all categories are essentialised. We divide numerous aspects of the world into categories, but not all these groupings are thought to share underlying similarities, or have essences. Lakoff (1987) distinguished between ‘natural kind’ categories that often occur in nature and possess richly structured meaning, and ‘artifact’ categories that tend to be more arbitrary or artificial (Markman, 1989).

Natural kind categories are more likely to be essentialised (Gelman, 2003); they are treated as if they have some basis in nature rather than being notionally grouped together. Social categories, however, are neither natural kinds nor artifacts. While there is certainly some genetic (‘natural’) basis to gender categories, this is not the case for a social category such as ‘teachers’, nor even for racial categories (see Billinger, 2007 for a review on the social construction of race and ethnicity). Hirschfeld (1996) as well as Rothbart and Taylor (1992) argue that social categories are commonly treated as natural kinds even when better considered as artifacts. Essentialising social categories thus poses problems both for essentialist theorising, and for the actual treatment of social groups in ways that are both demeaning and detrimental.

**Applications of essentialist beliefs**

Indeed, essentialist explanations are often used as a way of explaining, and legitimising, inequalities between social groups (Haslam, Bastian, Bain & Kashima, 2006), and promoting intergroup agendas (see Morton, Haslam, Postmes & Ryan, 2006; Morton, Postmes, Haslam & Hornsey, 2009). This link between essentialist beliefs and prejudice and discrimination has been empirically supported across a variety of social domains including anti-gay attitudes (Haslam, Rothschild & Ernst, 2002), sexism (Haslam, Rothschild & Ernst, 2000; Morton et al., 2009), racism (Keller, 2005) and even occupational groups (Bastian & Haslam, 2006). Essentialist beliefs thus serve as both explanations of the social world and excuses for its inequalities.

**Dimensions of essentialism**

The strategic use of essentialist explanations for different social groups highlights the complex nature of essentialism. Although sometimes treated as a unitary construct (Demoulin, Leyens & Yzerbyt, 2006; Gelman, Heyman & Legare, 2007), distinct dimensions have been identified by a number of researchers. Notably, Haslam et al. (2000, 2002) used participants’ ratings of social groups to distinguish between ‘naturalness’ (or biologically based essentialism) and ‘entitativity’ (the degree to which a category is perceived as uniform and exclusive). These distinctions reflect those found by Yzerbyt and colleagues (Yzerbyt, Corinne & Estrada, 2001; Yzerbyt, Rocher & Schadron, 1997), along with more recent work by Keller:
belief in genetic determinism (BGD; Keller, 2005) and belief in social (environmental) determinism (BSD; Keller, 2008; Rangel & Keller, 2011). Put simply, this research suggests that essentialist beliefs comprise biological concepts (e.g. born, blood) and environmental/social concepts (e.g. preferences). These relate directly to the nature/nurture, or ‘outsides’/‘insides’ aspects of essentialist reasoning.

‘Insides’ and ‘outsides’ is a particularly relevant distinction for work with children in distinguishing between psychological properties such as preferences (e.g. Rhodes & Gelman, 2008) and appearances, and harkens back to early work on essentialism in young children (Gelman & Wellman, 1991). Consequently, the biological/environmental distinction was used in this study. Although commonly used only as measures of essentialist thinking, the current study both measured and manipulated these dimensions to investigate the impact of each.

The present study

This study examined biological and environmental aspects of essentialist thinking among preschool children. Avoiding a clear distinction between people and animals (see Taylor, Rhodes & Gelman, 2009), the study utilised novel toy characters that resembled animals but possessed human characteristics and preferences. These characters were neither members of a natural kind category per se, nor were they from an obviously artifactual category. In this way, they resembled as closely as possible the way social categories are perceived in the world. Members of a social group often exhibit some perceptual similarity, along with behavioural and/or psychological likeness. They can also share cross-category physical and psychological similarities with members of other social groups.

In both manipulating and measuring biological and environmental aspects of essentialism, the current study sought to explore the relative importance of these two dimensions. Specifically, if biological features were more important, stronger essentialist beliefs were expected in conditions where biological features of the target character remained unchanged than when biological features underwent transformations. Similarly, if environmental features were more important, stronger essentialist beliefs would be found in those conditions where environmental features remained constant.

Our aims, therefore, involved a thorough examination of these two major essentialist dimensions. In doing so, we hoped to ascertain whether essentialist thinking in preschool children simply represents their (pre)conceptions of their world or, importantly, whether contextual changes interact with this understanding. In line with the increasing evidence in social psychology, and consistent with theoretical propositions in social-developmental psychology (e.g. Bigler & Liben, 2006), we predicted that, in the current study, this would manifest itself in differential responses by the children consistent with the different (biological and/or social) aspects.

Method

Participants

Forty boys and 24 girls participated in this interactive study (M age = 50.40 months, SD = 7.42). The children were recruited from three university-based childcare centres in Canberra, Australia. The majority of these children, therefore, had at least one parent engaged in work or study at university. Written parental consent was obtained for each participant, which included the opportunity for each parent to provide information on the child’s ethnicity. Forty-seven parents chose to answer this question, with the majority of these (n = 38) self-reporting as ‘Australian’ and the remaining reporting coming from one of six different ethnic backgrounds. All children were able to speak and understand English.

Design

The study involved a 2 (biological consistency: high/low) x 2 (environmental consistency: high/low) x 2 (time of measurement: pre-/post-manipulation) mixed factorial design, with time of measurement the within-participants factor. Participants were randomly assigned to one of the four between-participants experimental conditions.

Materials and procedure

Each child participated individually, and was first introduced to the two female experimenters, asked if s/he would like to participate, and taken to a quiet area in the day-care centre. The child was then seated in front of a felt play-mat that was decorated with two felt trees, one with apples and the other with oranges. Along the centre of the mat, closest to the child, was a pretend day-care centre with a playground, while further away was a forest of trees. Scattered on the play-mat were three large green pipe-cleaner ‘magic worms’, three small green ‘worms’, three large yellow and three small yellow ‘worms’. These were said to represent child and adult worms, respectively, and it was these ‘magic worms’ that served as the social category members about which the children would make their judgements.

Once the child was seated, one of the experimenters sat opposite the child and adult worms, respectively, and it was these ‘magic worms’ that served as the social category members about which the children would make their judgements.

The child was told that s/he was going to play a game and hear a story about the worms, but was first asked to divide the worms into two piles, as the worms had ‘become all mixed up’. The recorder noted whether the child sorted according to colour or size, and whether the child could name the colours when asked. This task also served as a manipulation check, as the study relied on children being able to distinguish between yellow and green.

After the introduction of the yellow/green biological dimension, the storyteller introduced the environmental dimension, informing the child that the yellow worms liked
to eat oranges while the green worms liked to eat apples. Removing all other worms from sight, the storyteller then took one small yellow worm that was to become the focus of the story and gave it a name consistent with the gender of the participant. The child was then asked four baseline biological questions, two referring to current state and two to future states: (1) ‘What colour are Boris’/Belinda’s outsides?’ (2) ‘What colour are Boris’/Belinda’s insides?’ (3) ‘What colour will Boris’/Belinda’s outsides be when s/he is grown up?’ and (4) ‘What colour will Boris’/Belinda’s insides be when s/he is grown up?’ Children’s responses to each of these questions were recorded as ‘yellow’, ‘other’ (e.g. purple, ‘stripy’), and ‘green’. Similar to Gelman and Heyman (1999), these responses were coded, respectively, on a scale from 1 to 3, with a value of 1 representing the most essentialist response and 3 the least essentialist response. Following these questions, children were asked to indicate the colour of the worm on a 10-point colour scale (ranging from bright yellow through to bright green). This task was always administered by the second experimenter and required the child to turn away from the physical stimulus, thereby making his/her judgement from memory. The ‘outsides’ baseline measure and the colour scale also served as manipulation checks to confirm that children understood and remembered the original information provided.

Following these four questions were two baseline environmental questions: (1) ‘What does Boris/ Belinda like to eat?’ and (2) ‘What will Boris/Belinda like to eat when he/she is grown up?’ Responses to these questions were recorded as ‘oranges’, ‘other’ (e.g. lollies), and ‘apples’. As with the biological questions, these responses were coded, respectively, on a scale from 1 to 3.

The next part of the study involved the manipulation of the two independent variables. Each part of the story was simultaneously told and acted out using the props described. Belinda/Boris was first said to travel to the forest (i.e. social/environmental neutral territory) where s/he found some berries. These berries provided the basis for the introduction of the biological consistency manipulation. Toward this end, the worm was said either to: (1) simply count the berries (high biological consistency condition), or (2) eat the berries and turn green (low biological consistency condition). In the latter condition, the original yellow pipe cleaner worm was replaced by a green one; in the former condition, the original ‘worm’ was not replaced.

The story continued with Boris/Belinda being said to get lost on his/her way home. This provided the basis for the introduction of the environmental consistency manipulation. Specifically, the worm was said either to: (1) find his/her way back home to live with the other yellow worms (high environmental consistency condition), or (2) was found, and adopted, by green worms and went to live with them (low environmental consistency condition).

The above questions were then asked a second time, to enable us to observe any changes/consistency in responses as a function of our experimental manipulations. Consistently responding ‘yellow’, for example, even after the worm changed colour would indicate more essentialist-type thinking.

Upon conclusion of the study, each child was thanked for his/her participation, given a sticker to take home, asked what his/her favourite colour was, and returned to the group play area.

### Results

#### Manipulation checks

Approximately half the children immediately sorted the worms by colour, and two children initially sorted by size. All, however, were able to sort by colour with prompting. All children demonstrated a good knowledge of colours and were able to identify and label both green and yellow. Participants’ favourite colours were mostly blue, green, pink, red and yellow, which were found to be evenly distributed across experimental conditions (precluding a potential experimental confound of identification with one of the—yellow or green—social categories).

#### Biological essentialism

A 2 (biological consistency) x 2 (environmental consistency) x 2 (participant gender) x 2 (pre-/post-manipulation) x 2 (current state/future state) x 2 (judgements of insides vs. outsides) mixed analysis of variance (ANOVA) was conducted on participants’ responses to the biological questions. Significant main effects were found for biological consistency (F(1,56) = 43.46, p < 0.001, partial η2 = 0.44), for pre-/post-manipulation (F(1,56) = 43.28, p < 0.001, partial η2 = 0.44), for current/future state (F(1,56) = 25.11, p < 0.001, partial η2 = 0.34), and for judgements of insides and outsides (F(1,56) = 9.33, p < 0.01, partial η2 = 0.14). Although several lower-order interaction effects were found, for ease of interpretation we describe only the higher-order, most inclusive interactions.

Figure 1 shows the interaction between pre-/post-manipulation, biological consistency, and environmental consistency, F(1,56) = 4.44, p < 0.05, partial η2 = 0.07. Whereas high biological consistency led the children to essentialise the target more (at post-manipulation) regardless of environmental consistency, children rationally recognised the worm’s changes under low biological consistency. However, the three-way interaction was clearly driven by the greatest increase in essentialising the target in the high environmental consistency/low biological consistency condition rather than the low environmental consistency/low environmental consistency condition. Possible explanations for this are considered in the discussion.

The interaction between pre-/post-manipulation, environmental consistency and judgements of insides and outsides, F(1,56) = 8.47, p < 0.01, partial η2 = 0.13, is shown in Figure 2. As can be seen, with low environmental consistency (i.e. when the yellow worm was adopted by
green parents), children considered its outsides to have changed colour while its insides remained relatively unchanged. Unexpectedly, with high environmental consistency (when the yellow worm never lived with green worms), children reported changes in both insides and outsides. Again, possible explanations for this are considered in the discussion.

Figure 3 presents the interaction between pre-/post-manipulation, biological consistency, judgements of insides and outsides, and judgements of current/future states, $F(1,56) = 6.53, p < 0.05, \text{partial } \eta^2 = 0.10$. Clearly, under low biological consistency (i.e. when the yellow worm actually became green), children recognised this colour change both in current and future states ($M_{	ext{baseline}} = 1.42, \text{SEM} = 0.11, M_{	ext{post-manipulation}} = 1.96, \text{SEM} = 0.13; M_{	ext{baseline/future state}} = 1.87, \text{SEM} = 0.13; M_{	ext{post-manipulation/future state}} = 1.94, \text{SEM} = 0.12$).

Biological essentialism: Colour scale

A 2 (biological consistency) x 2 (environmental consistency) x 2 (participant gender) x 2 (pre-/post-manipulation) mixed ANOVA was conducted on participants’ responses to the colour-scale questions. Four statistically significant effects emerged from this analysis. Significant main effects for biological consistency ($F(1,56) = 8.70, p < 0.01, \text{partial } \eta^2 = 0.13$) and pre-/post-manipulation ($F(1,56) = 14.36, p < 0.001, \text{partial } \eta^2 = 0.20$) were qualified by a biological consistency by pre-/post-manipulation interaction ($F(1,56) = 22.16, p < 0.001, \text{partial } \eta^2 = 0.28$). Under low biological consistency (i.e. when the worm actually changed from yellow to green), children’s judgements of the worm’s colour changed from pre- ($M = 2.75, \text{SEM} = 0.34$) to post-manipulation measurement ($M = 5.53, \text{SEM} = 0.40$). Under high biological consistency, however, there was a trend toward essentialism from pre- ($M = 3.09, \text{SEM} = 0.34$) to post-manipulation measurement ($M = 2.79, \text{SEM} = 0.40$). This two-way interaction was further qualified by participant gender, $F(1,56) = 5.11, p < 0.05, \text{partial } \eta^2 = 0.08$. That is, the two-way interaction was more pronounced by girls than by boys (see Figure 4).

Environmental essentialism

A 2 (biological consistency) x 2 (environmental consistency) x 2 (participant gender) x 2 (pre-/ post-manipulation) x 2 (current state/future state) mixed ANOVA was conducted on participants’ responses to the environmental questions (there was one missing value in this analysis). Four statistically significant effects emerged.

Main effects for pre-/post-manipulation ($F(1,55) = 6.86, p < 0.05, \text{partial } \eta^2 = 0.11$) and current/future state ($F(1,55) = 4.63, p < 0.05, \text{partial } \eta^2 = 0.09$) were qualified by a pre-/post-manipulation by current/future state interaction ($F(1,55) = 4.68, p < 0.05, \text{partial } \eta^2 = 0.08$). This interaction reflects children’s relatively accurate responses regarding the worm’s current eating preferences at baseline measurement ($M = 1.42, \text{SEM} = 0.11$), but judgements (or expectations) of change in all other conditions ($M_{	ext{post-manipulation/current state}} = 1.96, \text{SEM} = 0.13; M_{	ext{baseline/future state}} = 1.87, \text{SEM} = 0.13; M_{	ext{post-manipulation/future state}} = 1.94, \text{SEM} = 0.12$).
Most relevant to our theoretical analysis, an interaction emerged between biological consistency and pre-/post-manipulation, $F(1,55) = 10.66, p < 0.01, \text{partial } \eta^2 = 0.16$. Whereas children expected a change in preferences from pre- ($M = 1.57$, $SEM = 0.13$) to post-manipulation ($M = 2.25$, $SEM = 0.15$) under low biological consistency, there was a slight trend toward essentialism from pre- ($M = 1.73$, $SEM = 0.13$) to post-manipulation ($M = 1.65$, $SEM = 0.15$) under high biological consistency.

**Discussion**

This study investigated four-year-olds’ understanding of biological and environmental aspects of essentialist thinking by comparing situations where one or both of these dimensions either remained stable or underwent change. Despite the complexity, child participants differed in both their responses to, and their ratings of, biological and environmental dimensions. Importantly, while there was evidence of essentialist thinking, this did not occur uniformly across manipulations or dimensions. This points to the flexibility, and sophistication, of children’s (categorical) understanding (see also Grace, David & Ryan, 2008), along with the success of our experimental manipulations.

All children were clearly able to recognise the external colour of the target character. Consistent with Gelman and colleagues (Gelman & Coley, 1990; Gelman, et al., 1986; Gelman & Wellman, 1991), an external colour change did not automatically lead to a corresponding change in the perceived ‘insides’ of the worm, although there were times when changes in perceived ‘insides’ and ‘outsides’ co-occurred.

**Biological and environmental essentialism**

This study aimed to determine whether changes in biological features would impact more on biological measures and, similarly, if changes in environmental features would be most evident on environmental measures. Somewhat surprisingly, the majority of findings concerned measures of biological, rather than environmental/social essentialism. That is, contextual changes (whether biological or environmental) were more likely to impact upon perceptions of the target character’s internal and/or external
features (i.e. what colour they would appear), than they were to influence the target’s preferences (i.e. what they would like to eat).

Changes in biological features (appearance) did lead to higher levels of essentialising, although this was somewhat dependent upon changes also occurring in the environment (e.g. going to live with a different group). Children exposed to a change in the target’s external appearance demonstrated lower levels of essentialising after the physical change. Although this is not surprising, importantly it decreased further following a subsequent change in the target character’s social environment. In other words, when there were no changes in physical appearance, children considered that the target character would retain his/her essentialist features; when there were changes in physical appearance, this defining ‘essence’ was no longer maintained. Moreover, when a change in external appearance was accompanied by a change in the social environment, the target’s ‘essence’ was even less likely to be maintained. Consistent with our predictions, therefore, contextual changes were reflected in the children’s understanding, or perceptions, of the target category member.

Essentialist expectations

Interestingly, when the target character changed colour, the least essentialising occurred when the target returned to live with his/her original group. It is in this situation, however, that a major anomaly occurs. When a category member changes his/her appearance, yet continues his/her original affiliations, we could expect a level of inconsistency in how s/he is perceived. Conversely, when one’s appearance changes and one’s lifestyle preferences become consistent with the new appearance, this seems to ‘fit’ with the change that occurred (Brown & Turner, 2002; Oakes, 1987). Precisely this situation occurs in the extreme cases of gender reassignment, and other appearance-altering procedures. One very public example was that of Michael Jackson, whose skin colour dramatically changed throughout the course of his life. This appearance change, while maintaining his African–American identity led to much speculation on the reasons why he underwent these physical changes. If adults find difficulty in explaining such a discordant sequence of events, it is not surprising that children might be confused when presented with a somewhat analogous situation (as occurred in the current study). The situation also points to the fact that changes in one domain (e.g. physical appearance) can lead to an expectation of change in other domains (e.g. Rhodes & Gelman, 2008).

It is these expectations that may explain children’s differential perceptions of the current and future states of the target character. In the current study when children were asked about ‘insides’, there was little change between current and future (i.e. when the worm was grown up) states in all conditions (except when the target changed appearance and questions referred to the current state). In contrast, when questions concerned the target’s ‘outsides’, relatively large differences occurred (between current and future) between worms whose appearance did and did not change. Consistent with Gelman (2003), preschoolers use available information to make sense of their world. They do so in the absence of causal understanding or comprehensive explanatory frameworks. Interestingly, the highest levels of essentialism were observed when questions about the future referred to ‘outsides’ and when the external appearance of the character remained the same. Again it is suggested that congruence in contextual features leads to expectations that this will be maintained into the future, whereas incongruence raises questions, and potentially reduces our ability to anticipate future states.

Measuring essentialism

A novel feature of this study involved asking children to indicate the actual colour of the worm on a physical colour scale. While children clearly recognised physical changes when they occurred, the striking finding was that girls, in particular, perceived the worm to become either more yellow or more green following the manipulations than it appeared at baseline measures. Given that the actual colour of the worms (either yellow or green) remained constant, this measure clearly detected the subtleties of their perceptions of intergroup differences. This measure highlights how psychological perceptions of difference can be manifested in physical (and ultimately behavioural) judgements of such differences. In the case of stereotyping and prejudice, for example, we can thus see how contextual changes lead to increased expectations of stereotypical attitudes and, potentially, to the behavioural consequences of prejudice and discrimination (Bigler & Liben, 2006; Tajfel & Turner, 1986). Recent evidence on adoption of ‘colour-blind’ attitudes to racism, for example, are ineffective in reducing racial bias (Pahlke, Bigler & Suizzo, 2012). In the absence of explanations, young children expect and create explanations for difference.

The current study’s findings on environmental measures are consistent with this interpretation. While there was a tendency for children to essentialise from pre- to post-manipulation when there was no change in outward appearance (high biological consistency), there was an expectation of change in the future when the appearance changed (low biological consistency). It is suggested, therefore, that changes in biological features (external appearance) led to expectations of attitudinal (preferences or lifestyle) changes.

Returning to our opening examples of Isabella and Stefan, it may be the case that the development of gender and ethnic constancy (and essentialism) occurs, in part, because of the consistency in these social categories in the children’s social environments. Girls rarely actually become boys, and though people sometimes change residence and citizenship, a full appreciation of the intricacies involved is unlikely before adolescence or adulthood. While beyond the scope of
the present findings, the situation faced by some of the child participants in the current study (especially those in low consistency conditions) can be seen to mirror these complex circumstances. What cannot be denied, however, is that the child participants in the current study did not respond to these situations in simple automatic, or even systematic ways. Rather, their responses can be seen to reflect their developing understanding of the complex nature of intergroup relations. People move towns, cities and even countries. Young children see evidence of this and attempt to make sense of the implications for those involved.

Dimensions of essentialism

The current findings also add to the growing body of evidence regarding the existence of two independent, yet complementary, dimensions of essentialism. Consistent with findings in social psychology (in particular, Keller, 2005, 2008), we suggest that both biological and environmental/social features of categories (and category members) impact upon both biological and environmental/social understandings, but this relationship is not straightforward. More precisely identifying the nature of these relationships is certainly a direction worth pursuing.

Overall, the current study demonstrates essentialist thinking among four-year-olds with an intentionally derived novel category that was neither a natural kind nor an artifact category. Our aim was to experimentally create a category that would resemble a social category, but would not be laden with preconceived notions linked with existing categories. While this was a successful starting point in such an investigation, we acknowledge the need to include a wider variety of categories in order to further substantiate our claims.

Implications for early childhood professionals

An important implication of the current findings is the incorporation of essentialist explanations into understandings of prejudice. The use of essentialist terms such as ‘blood’ and ‘genes’ in perpetuating racial, religious, sexual and other intolerances (Gil-White, 2001) is testament to the power of such beliefs and/or explanations. That such explanations are adopted by both majority (Bastian & Haslam, 2006) and minority (Morton et al., 2009) groups at various times, further suggests that essentialising is not merely a reflection of one’s understanding, but that such understanding (or explanation) can be modified, and mobilised, in accordance with political and other motivators of social change.

Critical for early childhood professionals is that this flexibility is evident in four-year-olds. Undoubtedly children are exposed to a range of views regarding the in/stability of gender, ethnicity and countless other social categories. The current findings suggest that continuing and challenging these assumptions early may provide a key to maintaining flexibility with regard to such categories throughout life.

Acknowledgment

This research was supported in part by an Australian Research Council Grant (DP 0878905).

End notes

Gelman and Heyman (1999) used 0, 0.5 and 1 to represent most to least essentialist. They justified the use of such a continuous scale saying that inferences made from a given property could reasonably be considered essentialist, whereas responses elicited by the alternative category indicate active non-essentialism. Undecided responses fall mid-way between the two as any response (if given) would be invented rather than inferred from the information provided.

References


**Introduction**

Historically, science in early childhood has been supported by the theoretical approaches of Lev Vygotsky; the socio-culturalist and Jean Piaget; the constructivist (Fleer & Robbins, 2003). This research was framed within the context of these two perspectives, the new Australian National Quality Framework, which sets the National Quality Standard for early childhood development in Australia and the Department of Education and Early Childhood Development's (DEECD) (2009), Victorian Early Years Learning and Development Framework (VEYLDF). The VEYLDF advocates an integrated teaching and learning approach which balances child-initiated or directed play; teacher-initiated learning; and teacher-guided play and learning. It aims to advance the learning and development of children and has identified five learning and development outcomes. The focus of this research was the extent to which a teacher’s own pedagogical knowledge; their knowledge and understanding of science and scientific concepts; and the VEYLDF supported early childhood teachers in the development of science education in their curriculum.

The key questions explored were how the early childhood teachers:

- integrated science education in their curriculum
- planned for science
- capitalised on spontaneous teachable moments in science
- felt about their capacity to deliver science education
- used the VEYLDF to support science education in their settings?

**Background**

Early childhood education in Australia has experienced changes with the recent introduction of the National Quality Framework and curriculum frameworks, such as the VEYLDF. Siraj-Blatchford and Sylva (2004) found that the most effective kindergartens are those which have a balance of opportunities for teacher-directed learning and opportunities for learning through play, and it is this balance that underpins the integrated teaching and learning approach of the VEYLDF.

In the past, early childhood teachers have struggled to locate science education in their curriculum, displaying an overall apathy in relation to their own science knowledge (Fleer, 2001). In the early 1990s researchers established the key role played by early childhood teachers in developing children’s scientific thinking, and that a more integrated approach was needed (Fleer, 2001). There has been a shift in pedagogical approaches to science education and these include a discovery approach, a transmission approach and an integrated approach.

Discovery learning is a pedagogical approach applied to science education which, in early childhood settings, may include a science discovery space where children can explore a range of natural and man-made objects which can support the children’s curiosity and learning (Fleer, Jane & Hardy, 2007). Alternatively a transmission approach puts the teacher at the centre of the learning process with the outcomes focused on the acquisition of facts and knowledge (Fleer et al., 2007). An interactive approach is ‘designed to find out what children think and to encourage..."
them to ask questions’ (Fleer, 2007, p. 21). These questions may arise from discussion or observations of children at play (Fleer et al., 2007). Whichever approach, or combination of approaches is taken, their subject knowledge and pedagogical knowledge are both important components.

An individual teacher’s understanding of how or why they teach, what they teach, and the way they teach it is considered their Pedagogical Content Knowledge or PCK. PCK is the combination of knowledge and pedagogy (Shulman, 1987) or the transformation from teachers’ knowledge about a subject into learning opportunities for children (Kind, 2009). The ambiguous nature of PCK as a concept (Hedges, 2012) can often lead to a large amount of teacher knowledge being naturally and implicitly applied to their practice (Kind, 2009), but when teachers become aware of their PCK, potential exists for quality improvement in their practices (Siraj-Blatchford, 2009).

Subject content knowledge was considered central to the development of a teacher’s PCK (Abell, 2008) and when subject content knowledge was combined with appropriate teaching strategies then meaningful learning occurred for children (Hedges & Cullen, 2005). While a teacher’s subject content knowledge supports their capacity to make knowledge accessible to young children (Garbett, 2003), their beliefs and values play a part in the development of their PCK (Shulman, 1987). A teacher who believes they have a subject content deficit has the potential to communicate this negativity to children (Harlan & Rivkin, 2008) and to use ineffective teaching practices (Fleer et al., 2007). This, in turn, can lead to children’s early development of negative views on science. However, since pre-service teachers often had little more than Year 10 secondary science (Fleer et al., 2007), it is not surprising that teachers view science as difficult to teach, leading to a lack of confidence in integrating science into their curriculum (Yoon & Onchwari, 2006), and, therefore limiting science learning. Conversely if a teacher believed they had a sound content knowledge, they were more likely to employ an effective pedagogy in their curriculum (Watters, Diezmann, Grieshaber & Davis, 2001).

There is now a focus on a well-articulated and informed pedagogy that supports the development of knowledge and skills that children need for their future learning (Tayler, Ure, Brown, Deans & Cronin, 2009). However, little research is available about how early childhood teachers in Victoria made use of the VEYLDF in relation to their teaching and learning and how the framework supported early childhood teachers in Victorian kindergartens to develop science education in their curriculum.

Research methodology

A qualitative collective case study model (Punch, 2009) was chosen for this research project because the focus was on the particular issue of developing a deeper understanding of science education in early childhood. The intention was to view each case individually, and then engage in cross-case analysis, making comparisons and highlighting any cross-case similarities or distinctions (Yin, 1981).

Participants

Three early childhood teachers with the Bachelor of Early Childhood Education who were each working in Victorian kindergartens were recruited for this project. Inviting participants from similar settings was a deliberate attempt to gain a deeper understanding of what may constitute science in Victorian kindergartens specifically, as opposed to other early childhood learning environments. Participation in this project was purely voluntary and the three participants all had similar career trajectories. They had all completed their Diploma of Children’s Services, spent some time working in long day care before returning to study for their Bachelor of Early Childhood Education and are now working in Victorian kindergartens.

Research instruments and data collection

Two data collection tools were employed: semi-structured interviews and reflective journals. Data collection began with an initial interview to determine teaching practices of each of the participants, followed by keeping a reflective journal. This reflective journal gave each participant an opportunity to gain a deeper insight into their own knowledge and understanding of their practice. After one week the participants were interviewed again to capture any new insights. All the data collected was analysed individually and treated as a case within itself before any cross-case analysis was applied. All names used are pseudonyms to protect confidentiality.

Cross-case analysis

One clear commonality between the three teachers, Ellen, Louise and Therese, was that their science education experience in secondary school was both negative and unrewarding. Louise said that she ‘hated it, wasn’t very good at it and didn’t really like it’. Ellen similarly said that she ‘hated it, wasn’t smart, wasn’t interested’. While Therese revealed her memory of secondary school science was of ‘Bunsen Burners and not much else’.

The participants conveyed a sense that they were not smart enough for science and they seemed to lack confidence in their own understanding of science concepts. Therese explains that her understanding is ‘basic, I’m not confident of more advanced science concepts’ while Louise lacks the confidence to label science as science in her curriculum and Ellen believes that science is ‘high end’. Interestingly Louise says she would like to learn how ‘... to turn it into something they can understand … you know ways to ensure that it is taught age appropriate’.
She seeks not necessarily to improve her subject content knowledge but rather develop her understanding on how to convert her knowledge into appropriate learning opportunities for the children.

The teachers’ prior experiences may have limited their awareness of opportunities for science learning in their curricula. This is consistent with Campbell and Jobling (2010) who found that a teacher who was confident in their own science understandings was more spontaneous, and prepared to encourage children to think more deeply in those teachable moments, than a teacher who was not as confident. It is therefore important that early childhood teachers not only have the appropriate science knowledge, but also the confidence to transform that knowledge into appropriate learning opportunities for the children, both planned and in those spontaneous teachable moments.

In all three cases the science curriculum was informed and guided by the interests of the children: responsive to children’s questions, interests, prior knowledge and experiences; as well as observing children at play. However, teachers have some responsibility to introduce new and exciting concepts that pique the child’s interest (Campbell & Jobling, 2012) as their limited life experiences prevent them from doing so themselves.

An example in the case studies of an observation leading to an exploration of a science concept being included in the curriculum, was an investigation of the magnetic properties of a variety of objects. The children were interested in ‘seeing what it will stick to’. It is worth considering whether the teacher should have been looking for ways to transform this play-theme into further scientific learning, thus potentially extending their understanding of magnetic force. It could be argued that teacher knowledge, confidence and approach all potentially impact on the children’s development and extensions of scientific concepts.

All participants regarded discussion of science concepts as integral to their curriculum. These shared and sustained discussions are important to contemporary teaching and learning approaches in early childhood education (Siraj-Blatchford & Sylva, 2004) as they allow teachers to gauge and raise the level of understanding of the children, allowing them to clarify thoughts and ideas and provide an opportunity to introduce new scientific words. Therese said that when comfortable, she modeled correct scientific language to the children, for example when the children observed changes in the environment during Autumn she described photosynthesis. She noted in her initial interview that she had recently attended a professional development session which explored the use of the natural environment to investigate science, and that this had given her some ideas on how to use the environment to explore science concepts and the confidence to use correct scientific language.

**Teacher confidence**

All three teachers held negative perceptions of their science knowledge and their capacity to integrate science into their curriculum; however, in contrast to their beliefs there were examples of integration of science in their curricula, such as life cycles, seasons, chemical reactions, magnets, human body, plant growth, colour mixing, reflection and refraction of light and block construction. Even though there were these positive experiences of science exploration in their accounts of their kindergarten settings, the teachers still believed that they were not capable of taking the children’s conceptual understanding to a more scientific level. Louise reported ‘but I still feel that I need to increase my knowledge to teach that basic stuff’, while Ellen commented ‘there is so much more potential, and we are not taught enough’ and Therese observed ‘I’d like to do more training in it … I still get nervous about it [science]’. This lack of self-belief continues to perpetuate a lack of teacher confidence among all three participants and could be impacting on the sort of science they deliver in their curricula.

**Reflective practice**

As a research tool, the reflective journal afforded each of the teachers the opportunity to reflect on science in their curriculum. All three teachers reported improved confidence after reflecting on their practice. Reflective practice is indeed a powerful tool raising teachers’ awareness of their implicit knowledge, of not only science content, but also pedagogical and curriculum knowledge (Holly, 1989). In this study, teachers reported that their reflections had given them greater confidence in their capacity to integrate science in their curriculum. Not only were they buoyed by the surprisingly high instances of science in their curriculum, but also from being able to identify their strengths and those areas which required further development. Therefore reflective practice, which is an essential component of the VEYLDF, was a contributing factor to the increase in teacher confidence.

Findings revealed a relationship between the manner with which teachers used the VEYLDF in their curriculum planning and the degree of science within the curriculum. Therese, for example commented that she ‘finds it a good tool because I’m not confident in science’ while Ellen asserts that she finds the VEYLDF ‘not at all useful’ and Louise thinks ‘if I sat down and looked at it (VEYLDF) I probably would find more science’. The participants demonstrated varying degrees of engagement with, and understanding of, the VEYLDF. Where it had been used to support planning, observations and reflections, teachers were more clearly able to identify science in their curriculum. Therese for example uses the VEYLDF in her curriculum planning and states that ‘my knowledge isn’t extensive enough so I find the words I need [in the VEYLDF] … oh so they’re hypothesising or problem solving
and investigating … the words are written that I can’t think of’. Engagement with the VEYLDF has potential to support teachers in identifying children’s current understandings and skills and assist teachers in extending these in their curriculum. However it is recognised that each individual early childhood teacher needs to be intrinsically motivated to engage more fully with the VEYLDF, and seek out further professional development to build on their confidence and knowledge if they seek to improve their own practice.

Summary

The teachers in this study expressed a lack of confidence in their capacity to deliver science in their curriculum. However, the case studies described a number of instances where the children engaged in science learning, exploration and discovery. There was some evidence of applying the principles of the VEYLDF in practice, though this was sometimes limited. The lack of subject content knowledge influenced the curricula across all the cases and potentially limited the scientific learning of the children in their settings. However, all the teachers demonstrated a capacity to create an atmosphere in their settings which was both accepting and supportive of the interests of the children, and a desire to enhance science education in their curriculum. It was also of interest that while the teachers were working within the context of the VEYLDF and the integrated teaching and learning approach, there seemed to be a more child-led and directed play approach to science. Louise viewed science as ‘providing experiences where the children can explore themselves’ and similarly the science in Ellen’s curriculum was ‘the children exploring how things work’ while Therese was ‘picking up on children’s interests’. The data suggests that while the teachers were responsive to the children’s interests they did not necessarily introduce science concepts themselves.

Familiarity with the VEYLDF may provide more support in science curriculum planning by developing teacher confidence to provoke children’s interests in new science concepts. However, it is important to acknowledge the science that teachers are currently planning for and integrating into their curriculum. Teacher confidence played a significant role in the sort of science education that took place in the kindergarten settings and impacted directly on the teachers’ capacity to integrate science. One teacher, who had attended professional development with a science theme, demonstrated a growing confidence and capacity in her ability. This indicated a relationship between knowledge and increased confidence in developing a more dynamic and engaging curriculum. This has implications for both pre-service and professional development training to present science in a way that develops teacher confidence by building their capacity to deliver science in their curriculum.

This study also showed a relationship between effective engagement with the VEYLDF and the development of a more effective science curriculum. The teachers were all at different stages of familiarity with, and understanding of, the VEYLDF, ranging from effective to limited, and this was reflected in their curriculum. It appeared the VEYLDF supported teachers with the development of their science curriculum when they were receptive to its content and applied it to their practice.

Conclusion

Further research could include investigating the effect of teachers’ increased engagement with the VEYLDF in relation to science and how the children’s understanding of scientific concepts is extended and enhanced, when science is planned within the context of the framework. Also, based on the negative secondary school science experiences of the teachers in this study, it would be interesting to understand how science education in our secondary schools can be of greater benefit to a wider range of students. Further research in these areas will continue to enhance our knowledge of science in early childhood and how practice can be continually improved and built upon.

This study suggests that early childhood teachers ‘do not have to be expert science teachers’ (Yoon & Onchwari, 2006, p. 422) in order to integrate science into their curriculum, but that they do need to be motivated to provide opportunities for exploration, problem solving, hypothesising, researching, experimenting and investigating in order to support children in their scientific discoveries.

References


Introduction

Since the 2007 election of the Labor Government in Australia there has been a significant policy focus on improving early childhood services. Prior to this, Australia had been recognised as having a minimal commitment to, and investment in, early childhood services (OECD, 2006). Now, early childhood educators, who are registered carers in early childhood settings, are required to shape their practice around a new National Quality Framework (Commonwealth of Australia, 2008) which has led to a new national curriculum (DEEWR, 2009) and National Quality Standards (Commonwealth of Australia, 2010). As a result of these national changes, early childhood professionals face a multitude of changes in their practice, not only in the way they conceptualise and report their work but in the training needed to support them.

Family day care

In Australia, family day care (FDC) is a formal childcare system operated by registered educators who provide care in their own homes under the management of a local coordination scheme (Davis et al., 2012). Schemes are staffed by qualified coordinators who oversee the program and regularly visit educators’ homes. In Australia, minimum formal qualifications (Certificate III in Children’s Services) and adherence to the Early Years Learning Framework (EYLF) are now required. The EYLF demands an explicit focus on children’s social and emotional wellbeing, as well as on education of children in child care (DEEWR, 2009). Despite these changes, no studies have assessed whether FDC educators are ready for changing their practice in terms of promoting children’s social and emotional wellbeing.

Building capacity for managing change and developing new ways of working in regard to promoting children’s social and emotional wellbeing, they were juggling many demands. The stages of change model was useful in providing an understanding of the processes and principles for progressing through stages, essential for organisational capacity building.

Organisational capacity building: Readiness for change in Australian child care

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THIS STUDY ASSESSES FAMILY day care educators’ readiness for increasing their knowledge and skills in promoting children’s social and emotional wellbeing by applying the Transtheoretical Model of Change conceptual framework. Forty-eight educators in one family day care scheme, in a low socioeconomic area of Victoria, Australia participated in telephone interviews. Their readiness to improve children’s social and emotional wellbeing was classified according to the stages of change model. A high proportion of educators were classified into the action or maintenance stage. Educators reported a range of activities that they were undertaking such as attending professional development sessions and studying formal early childhood qualifications. While educators were open to increasing their knowledge and skills in promoting children’s social and emotional wellbeing, they were juggling many demands. The stages of change model was useful in providing an understanding of the processes and principles for progressing through stages, essential for organisational capacity building.
are more influential than a one-size-fits-all strategy as these interventions are tailored to employees’ readiness to change, thereby reducing resistance, stress and time and improving staff’s participation, including those not ready for a change (Levesque et al., 2001; Prochaska, 2000; Prochaska et al., 2001). Indeed, a survey by Deloitte and Touche (1996) identified employees’ resistance to change as a main contributing factor for organisational change failure.

The Transtheoretical Model of change

An appropriate theoretical model that can assess the readiness to change is the Transtheoretical Model (TTM; Prochaska & DiClemente, 1983, 1984), which is a stage of change model often referred to as the Transtheoretical Model of Behaviour Change. The TTM is a commonly used model to understand health behaviour change (Glanz & Bishop, 2010; Glanz, Lewis & Rimer, 1996; Glanz, Rimer & Lewis, 2002; Glanz, Rimer & Vishwanath, 2008; Painter, Borber, Hynes, Mays & Glanz, 2008). Originally developed by Prochaska and DiClemente (1982), the TTM has been widely used to understand and develop effective interventions for a range of problem behaviours including improved dietary consumption (Berry, Plotnikoff, Raine, Anderson & Naylor, 2007), adherence to mental health treatments (Fung, Tsang & Chan, 2010) and behaviour change from addictions to professionals (Corden & Somerton, 2004; DiClemente & Hughes, 1990; Levesque et al., 2001; Prochaska & DiClemente, 1983; Prochaska, Redding, Harlow, Rossi & Velicer, 1994).

Relevant to the current paper is that the TTM has also been applied to address organisational changes (Berry et al., 2007; Clark, 2013; Glanz & Bishop, 2010; Tyler & Tyler, 2006). Clark (2013) described how the comprehensive framework of the TTM can provide key multidimensional information that is essential to facilitate and maintain organisational change. Tyler and Tyler (2006) also recommend using the theoretical framework to increase the effectiveness of interventions at the organisational level, to bring a universal change and to inform and evaluate training structures/curriculum. Findings from Prochaska et al. (2001) illustrate the applicability of TTM to domains of organisational change such as: readiness for a merger/acquisition; readiness to participate in high-performance teams; readiness for managed care; readiness to purchase software; readiness to use a stage approach to organisational change; and readiness to apply continuous quality improvement, reinforcing the application of the model at an organisational level.

Stages of change and relevance to family day care

Central to the TTM is the stages of change approach. The TTM proposes that behaviour change occurs through five discrete stages that have temporal properties. The first stage is the precontemplation stage. People in this stage have no desire to change (within the next six months) and/or are unaware that change is required. Those in the contemplation stage acknowledge the issue and intend to change within the next six months. These individuals, although aware of the positive outcomes that change can bring, are also aware of the costs involved with change. This awareness can keep these individuals in an ambivalent state of mind. In the third stage, preparation, there is a desire to take action in the near future and individuals have usually already taken some steps. In the fourth stage, action, individuals have acted within the last six months to accomplish the desired change. In the fifth stage, maintenance, individuals are working to maintain the changes they have made and prevent relapsing.

Cognitive and behavioural processes or factors underpin the stages of change and facilitate movement between stages (Berry et al., 2007). Some of these processes include consciousness raising (increasing awareness about the problem); dramatic relief (change techniques that are emotive); counter-conditioning (positive substitute behaviour); contingency management (consequences for taking steps in a particular direction); stimulus control (removing unwanted habits); and social liberation (increasing opportunities/alternatives) (Prochaska, Redding & Evers, 1997).

In the current context of FDC, the stages of change approach within the conceptual framework of the TTM is highly relevant. With recent changes to the qualifications required by educators (i.e. Certificate III in Children’s Services) and an adherence to the EYLF which demands an explicit focus on children’s social and emotional wellbeing, as well as on education of the children in child care, it will be important to assess how ready educators feel to adapt to these changes. Furthermore, assessing educators’ willingness to engage with change will be an essential pre-requisite for designing appropriate interventions, such as capacity-building programs, to support FDC workers through change. Capacity-building programs can be matched to educators’ readiness to change stage, thereby reducing resistance and the time required to respond to change.

Following previous studies of organisational change, in this study we have applied the TTM to address organisational change at the FDC scheme level and individual (i.e. educator) change. Using this model is important because it can lead to recommendations on the factors needed to facilitate movement to different stages more proximal to change. The aim of this study is to investigate and classify FDC educators’ readiness to change using the stages of change theory within the TTM.
Methods

Setting and participants
This study was conducted with one FDC scheme, based in a low socioeconomic area of Victoria, Australia. An administrator from the scheme telephoned all FDC educators to seek consent for researchers to contact them. Out of the 70 educators, 48 agreed to be contacted by the researchers and participated in interviews (68 per cent). All educators were female and had, on average, been working in FDC for eight years (this ranged from less than one to 25 years of experience). Ethics approval was obtained from the University of Melbourne.

Figure 1. Assessing family day care workers’ readiness to change

Interview questions and data analysis
Interview questions were designed to determine how ready FDC educators were to promote children’s social and emotional wellbeing. Participants were asked about whether they ever had thoughts about further improving their knowledge and skills in promoting children’s social and emotional wellbeing and whether they currently do anything to improve their knowledge and skills in promoting children’s social and emotional wellbeing.

Participants were informed that these interviews would take 10–30 minutes and they would receive $20.00 for their participation. The interviews were conducted over the telephone and tape-recorded. Interview questions...
were based on a study by Berry et al. (2007) that asked individuals about the stages of change for three types of physical health promotion. Questions for FDC educators are shown in Figure 1, which also illustrates how responses were categorised into various stages of change. To classify educators into the various stages of change content, analysis (Ryan & Bernard, 2000) was conducted to identify the reasons for the categorisations.

Results

The majority of educators were classified into the maintenance stage, meaning that they reported undertaking ongoing actions to increase their knowledge and skills to promote children’s social and emotional wellbeing and had been doing so for at least six months (Table 1).

Table 1. FDC educator readiness to change (n = 48)

<table>
<thead>
<tr>
<th>Category</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-contemplation</td>
<td>3 (7.8%)</td>
</tr>
<tr>
<td>Contemplation</td>
<td>0</td>
</tr>
<tr>
<td>Preparation</td>
<td>2 (4.2%)</td>
</tr>
<tr>
<td>Action</td>
<td>2 (4.2%)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>38 (79%)</td>
</tr>
<tr>
<td>Relapse</td>
<td>3 (7.8%)</td>
</tr>
</tbody>
</table>

Precontemplation

Almost all educators indicated that they had thought about increasing their knowledge and skills in promoting children’s social and emotional wellbeing. Only three educators felt that they did not need to increase their skills or knowledge to promote children’s social and emotional wellbeing. One educator felt that it was not her skills that she needed to increase, but rather it was how much information she knew about the child and family that would help her promote the child’s wellbeing. Another educator indicated that she could cope with the children she cared for and had enough support from her managers, while an educator who had completed a diploma felt she knew enough.

Not my own skills. Whether I need to improve is whether I know about the family and that’s the case of getting beyond the privacy business, because until you know what the child’s coping with, you can’t really help them really in ways that you’d want to. (Record 37)

I think I’m quite able to cope with any children that struggle in that area. I’ve got a good backup in the office staff. (Record 12)

Preparation

Two educators did not report doing anything to increase their knowledge and confidence in promoting children’s social and emotional wellbeing, but indicated that they would be taking action in the future, including completing a diploma and a toilet training course.

... I’m certainly on the lookout for a toilet training course that might be running some time soon, but nothing else at the moment. Certainly if I see something in a child that I don’t yet understand then I keep an eye out for training sessions on that, but nothing at the moment. (Record 23)

Action and maintenance

Forty educators indicated that they were working to improve their knowledge and skills in promoting children’s social and emotional wellbeing. Two educators, who had just started their Certificate III in Children’s Services were classified into the action group, while the remainder were classified into the maintenance group. Educators in the action and maintenance groups indicated that they needed to increase their skills and knowledge in promoting children’s social and emotional wellbeing and the benefits of doing so.

Yes, I do believe I have [felt that I needed to increase my skills and knowledge] and I think sometimes you get bogged down in what you do and having in-service trainings and group discussions with other people helps you look at things differently. (Record 6)

Definitely. It’s like when I went on to study further. Children coming in to care I just felt like I could be giving them more, and really helping develop them I guess holistically so social, emotional, as well as the other areas, yeah, that’s why I study. (Record 20)

Educators identified a range of extra activities, including formal and informal activities that they were currently engaged in. Ten educators indicated that they were completing their Diploma in Children’s Services and three were completing their Certificate III.

Yeah, I’m doing a Certificate at the moment. (Record 19)

Well that’s why I’m doing my diploma, because I’ve done it for so long, a lot of things with the regulations have changed and the kids are different to what they were 10 years ago. With the Certificate III, we didn’t have a choice, but the Diploma I thought well we’ll have a go because it’s a challenge ... to give me the confidence, yes I don’t sit at home and drink coffee and eat doughnuts. (Record 17)

Well I’m just starting my diploma. So that’s a big thing. That’s a lot of work. (Record 9)

In addition, 13 educators referred to their in-services, although a requirement of their job, as extra activities. Educators can choose from a list of topics covering all aspects of child care, including hygiene and food preparation through to behavioural problems.

We have a range of in-services that we can do which could be, we’ve had psychologists come in and talk. We do courses on learning through play. We can do
natural resources or learning through music. There’s a whole range of them offered. (Record 9)

Basically, we try and do as many in-services that we can find because I think that’s almost like the most important part. I mean health and safety of course is very important as well, but their wellbeing is crucial to them. (Record 43)

Well we do at least three a year depending on what we’re doing them on, but usually the majority, in the long run, are to do with children’s social and emotional wellbeing. (Record 45)

In-service training when they come up always help. That’s probably about it really at this stage. (Record 6)

Several educators indicated that they read books about children in their own time or use the internet.

I read anything that comes out in the newspaper or anything going on television or anything like [FDC] magazine and the [regional child-focused magazine] and a lot of things I try to know and when I’ve got the time I read through, and some books also, development books. I always try to know more. (Record 51)

Yeah I read a lot of books about children. (Record 39)

I look up things on the internet regularly … I’ve been doing online training. (Record 11)

I don’t mind doing internet searches and researching. If I’m having a particular concern, I’ll yeah, quite happily look into researching it myself from home. (Record 20)

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<td>13</td>
</tr>
<tr>
<td>Diploma in Children’s Services</td>
<td>10</td>
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<tr>
<td>Books</td>
<td>7</td>
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<tr>
<td>Internet research</td>
<td>4</td>
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<td>Certificate III in Children’s Services</td>
<td>3</td>
</tr>
<tr>
<td>Online training</td>
<td>2</td>
</tr>
<tr>
<td>Reading articles</td>
<td>1</td>
</tr>
<tr>
<td>Extra course</td>
<td>1</td>
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<tr>
<td>Advanced Diploma in Children’s Services</td>
<td>1</td>
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<tr>
<td>Observing children</td>
<td>1</td>
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<td>Brochures</td>
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<td>Playgroups</td>
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<tr>
<td>Self-learning package</td>
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Table 2. Activities to increase educators’ knowledge and skills in promoting children’s social and emotional wellbeing

Three educators indicated that they were not currently doing anything extra to increase their knowledge and skills in promoting children’s social and emotional wellbeing but that they had done so in the past. The activities that they were involved with in the past included completing Certificate III in Children’s Services, a parenting course and reading books. They indicated that they completed the courses.

I did complete my Certificate III in Children’s Services so at the moment I’m not doing any study but of course Certificate III did include units on social and emotional wellbeing and providing for the needs of the children. (Record 23)

Discussion

The results from this study, one of the first to apply the TTM to capacity building in mental health promotion, demonstrate that educators are doing several activities to increase their knowledge and skills in promoting children’s social and emotional wellbeing. It was encouraging that almost all educators had thought about increasing their knowledge and skills in promoting children’s social and emotional wellbeing. This is likely to be due primarily to the roll-out of the EYLF. Social and emotional wellbeing is fundamental to all of the five outcomes outlined in the EYLF and is highlighted in Outcome three: Children have a strong sense of wellbeing (COAG, 2009). The training and reflective practice that has been made available and encouraged by government and FDC schemes is likely to have triggered educators to think more carefully about children’s social and emotional wellbeing. There were also a range of responses regarding the types of professional learning that educators undertook, for which future research could examine the effectiveness of such courses for bringing about measurable changes to practice and outcomes for children.

A few educators felt that they did not need to increase their knowledge or skills in promoting children’s social and emotional wellbeing. The stages of change theory is particularly useful in these cases as it has developed an evidence base to assist individuals and organisations to move from precontemplation to further stages that can be used by management or researchers. According to Prochaska et al. (1997), educators classified as being in the precontemplation stage may benefit from particular intervention strategies including consciousness raising (i.e. increasing awareness about prevalence of child mental health problems and its long-lasting consequences) and dramatic relief (i.e. personal testimonies from families). It is possible that educators’ increasing familiarity with the EYLF may prompt them to progress to the next stage.

While the majority of FDC educators were open to increasing their knowledge and skills in promoting children’s social and emotional wellbeing, it was obvious
that they were juggling many demands. As mentioned, minimum formal qualifications are now required of educators. This is consistent with our sample where 14 educators were currently studying for their Certificate III, Diploma or Advanced Diploma in Children’s Services. Despite now being a requirement of the job, the results demonstrated that educators considered undertaking study was an activity that improved their knowledge and skills for promoting children’s wellbeing. While the curriculum of the Certificate III covers a range of topics in relation to caring and educating children (e.g. ‘Support the development of children’ and ‘Interact with children effectively’), it does not explicitly address the promotion of children’s mental health/social and emotional wellbeing and so further training specifically in mental health and wellbeing may still be needed. 

As with the formal qualifications, it was interesting that 13 educators mentioned attending in-services as an ‘extra’ activity. Although educators are required to attend three in-services (professional development sessions) per year as part of their job, these in-services are generally held on evenings or weekends, and thus are often considered ‘extra’, given they are outside working hours and unpaid. These in-services also cover a range of topics, such as anaphylaxis and asthma management, not just social and emotional wellbeing.

Based on the stages of change theory, people in the action stage may benefit from different strategies than those in the earlier stages to prevent relapse. These include counter conditioning (learning of healthy behaviours that can substitute for problem behaviours), contingency management (i.e. rewards for change), and stimulus control (removes cues for unhealthy habits and adds prompts for healthier alternatives). These strategies may be useful to explore in an organisational capacity-building program. In FDC, strategies may include workshops and educator mentoring, rewarding educators through highlighting their work in newsletters or through awards and prizes or distributing posters, activity ideas and resources that prompt beneficial interactions with children.

There is a growing body of literature investigating the implementation and impact of the National Quality Framework in Australia. The Department of Education, Employment and Workplace Relations (2011, 2012) undertook early work to develop a baseline of practice before the EYLF was in the very early stages of adoption. This work found that educators were inclined to hold positive attitudes towards the EYLF but needed support in order to implement it. Later research, focusing on regulatory burden (ACECQA, 2013) found that the transition to the new system was very stressful for educators and that they needed a significant amount of support to make this transition effective. These early evaluations of the new regulatory system suggest that understanding how best to support educators through change is extremely important. Those who offer in-service training and those researching the impact of the changes could benefit from using the stages of changes approach used in this study.

**Limitations**

Based on Berry and colleagues’ (2007) study, new items were developed for this study to make it relevant to mental health promotion, and these may be limited. Given that it is an educator’s role to promote children’s social and emotional wellbeing, educators may have felt the need to give a socially desirable response to the item ‘Have you ever thought about improving the knowledge and skills that you have in promoting children’s social and emotional wellbeing?’. Despite this, a few educators did not answer ‘yes’. Additionally, any new information that educators learnt, even if not directly related to social and emotional wellbeing, may be beneficial for children’s wellbeing. For example, the Certificate III in Children’s Services does not include mental health promotion as a Competency, however if educators learn to provide better quality care, then they may be increasing their knowledge or skills in promoting children’s social and emotional wellbeing.

**Conclusion**

An important first step in organisational capacity building is to assess workers’ readiness to change. This step is useful to gain insight into whether workers’ feel a need to change and any actions they have already taken. The resulting stages may be useful for setting up focus groups to identify the barriers to change experienced by workers in various stages, as well as for informing specific strategies. This application of the TTM to child mental health promotion in FDC provides a useful snapshot of the individual and group landscape and highlights that, while educators are open to learning more, current demands due to reform of the early childhood sector may impact on their ability to take up additional health promotion programs.

**References**


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Within a hotly debated political context, national statistics indicate an increase in the number of humanitarian entrants residing in Australia in recent times (DIC, 2011). Humanitarian entrants are people who have been granted refugee status, or have been formally recognised as requiring protection from persecution (DIC, 2011). Between 2010 and 2011, 13,799 humanitarian visas were approved, of which 5998 were refugees (DIC, 2011). A refugee is defined under the 1951 Convention Relating to the Status of Refugees as an individual who is outside of their country of origin, and is unable or unwilling to return there due to substantial fear of persecution on the grounds of religion, race, nationality, political position, or membership of specific social groups (Australian Human Rights Commission, 2012).

Refugee parents encounter a range of difficulties in their attempts to resettle and acculturate in their new societies (Murray, Davidson & Schweitzer, 2008). The turbulent and often traumatic pre-migration experiences of refugees position them in a psychologically vulnerable position upon arrival. Compounded by additional post-migration stressors, such as difficulties in adjusting to a new culture, navigating parenting issues can be particularly stressful for refugees. Renzaho and Vignjevic (2011) assert that African refugees in Australia face many challenges in relation to parenting. Family values and parenting practices are highly diverse, culturally bound, and are typically a reflection of the broader social context of one’s environment (Renzaho & Vignjevic, 2011). Difficulties arise, therefore, when refugees enter new social contexts in which parenting goals, styles and practices are starkly different to those which they know and uphold (Renzaho, Green, Mellor & Swinburn, 2011; Schweitzer et al., 2006).

African refugees for example, typically originate from collectivist cultures, in which extended family and community are perceived as the foundation of a society (Schweitzer, Melville, Steel & Lacherez, 2006; Zervides & Knowles, 2007). Family loyalty, maintenance of group harmony and norms, and an authoritarian parenting style (characterised by the enforcement of strict rules and low warmth) are foundational to this type of culture (Zervides & Knowles, 2007). The shift to a new culture which supports an individualistic parenting ideal can position refugee parents in deep conflict, and can affect their psychological adjustment in new environments (Renzaho, Green, Mellor & Swinburn, 2011; Schweitzer et al., 2006).

Many refugee families in Australia have identified education for children as a strong priority (Sidu & Taylor, 2009); however, research has highlighted that supporting

**Children’s school readiness:**
The experiences of African refugee women in a supported playgroup

Rebecca New
Andrew Guilfoyle
Bronwyn Harman
Edith Cowan University

AN EMERGING PRESSURE FOR refugee parents in Australia relates to children’s ‘school readiness’. Existing research on mainstream, ethnic and migrant parents has highlighted that preparing children for school can be stressful; however, current literature has not considered this phenomenon for refugees in Australia. Social support is important for parents as they navigate school-related problems, and supported playgroups can potentially play an important role here for refugees. However, existing research has not yet examined the ways such programs can support these individuals in dealing with school readiness issues. Therefore, the aim of this study was to explore the experiences of African refugee mothers in relation to their children’s school readiness and transitions to school, and the ways one supported playgroup assisted them in this context. A focus group and interviews were conducted with a sample of 11 women. Using an interpretive phenomenological approach, four main themes were identified: preparing for school; mothers’ experiences of children’s transitions to school; perceived supports; and playgroup support. It was found that women’s experiences were fraught with underlying tensions and conflicts influenced by social and cultural factors, and assistance provided through the supported playgroup was highly important to the women in this context.
children while at school can be a difficult and stressful task. An emerging pressure for refugee parents in this context has resulted from an increased focus by the Australian Government on ‘school readiness’ (CCYPCG, 2004; Mustard, 2008). This refers to children’s preparedness for starting school, and is related to their overall transition into formal education. Acknowledging the role of family and other social factors in children being optimally ready for school, the government has recently drawn its attention to school readiness issues in ‘at risk populations’ (Dockett, Perry & Kearney, 2010; McTurk, Lea, Robinson, Nutton & Carapetis, 2011). To date, however, little attention has been paid to the school readiness experiences of refugee families—an at-risk population which encounters significant economic, cultural and social disadvantages.

School is often viewed by the families as a primary point of interaction between themselves and their new communities, and an opportunity for them to learn about, and participate in, new cultures (Tadesse, Hoot & Watson-Thompson, 2009). It has been found that although schooling is a strongly desired and positive experience for some refugee families, many others encounter significant challenges when children begin formal education (Atwell, Gifford & McDonald-Wilmsen, 2009; Lewig, Arney & Salveron, 2010; McBrien, 2011; Tadesse et al., 2009; Walker-Dalhouse & Dalhouse, 2009). More generally, social support has been found to be an important resource for many parents in regard to school-related issues (Lewig et al., 2010; McAllister, Wilson, Green & Baldwin, 2005). In McAllister and colleagues’ (2005) research, parents from different ethnic backgrounds described the importance of the practical and emotional support they received from family and friends in preparing children for school. Furthermore, refugees in Lewig et al.’s (2010) study described their need for additional support as they helped children with schooling.

Supported playgroups are based on a dual-focused model, functioning to assist both children and parents (Jackson, 2011). They service both mainstream and marginalised, hard-to-reach families, and are continually funded on the premise that supporting families during critical periods in children’s development will result in long-term benefits for children (Jackson, 2011). In these playgroups, facilitators educated and skilled in the area of early childhood development implement play-based programs in which children and their parents participate. Additionally, family support staff and bilingual cultural workers are available to help engage families and assist them in dealing with a diverse range of issues impacting on their wellbeing (Boddy & Cartmel, 2011).

Research has shown that supported playgroups can provide valuable assistance to refugee families in Australia (Boddy & Cartmel, 2011; Jackson, 2011). Such programs can be a strong source of social support for otherwise isolated women and their children, and present opportunities for the development of important social networks (Boddy & Cartmel, 2011; Jackson, 2011). Given the benefits of supported playgroups, and the government’s focus on school readiness, it is important that research is conducted to enable better understanding of the ways in which these programs can assist refugee mothers in the context of their children’s school readiness.

Recent research (Boddy & Cartmel, 2011; Jackson, 2011; Targowska, Guilfoyle, Teather & Fernandez, 2011) emphasises the benefits of supported playgroups for children as well as parents. Supported playgroups help to increase the social, emotional and academic skills of children at a critical stage in their development, and contribute to successful transitions to school (Targowska et al., 2011). Jackson’s (2011) study on three supported playgroups in Australia highlighted the additional benefits of these programs for parents. Through the playgroup, important friendships with other parents and staff were established. These relationships helped to meet their emotional needs and reduce social isolation. Parents also developed their parenting knowledge, skills and confidence through peer support offered at the playgroup. Furthermore, they felt supported in their roles as parents, and appreciated practical assistance through the provision of information and other resources.

In light of these considerations, the purpose of this study was to explore the meanings refugee mothers in a supported playgroup ascribe to their experiences of children’s school readiness. The study examined the women's understanding of this topical concept, and the issues they experience in relation to school readiness and their children's overall transition to school.

Research design

Methodology

The chosen methodology for the present study is interpretive phenomenology, which explores how a person makes sense of their individual and social worlds, and the meanings a person ascribes to particular experiences (Smith & Osborn, 2008). Interpretive phenomenology draws on a range of theoretical frameworks including phenomenology, hermeneutics and social interactionism. This methodology is phenomenological in that it aims to examine human experience, and focuses on one’s descriptions, perceptions and explanations of phenomena, such as school readiness (Smith & Osborn, 2008; Spiegelberg, 1982). However, interpretive phenomenology is also based on hermeneutic principles, whereby it is assumed that depictions and explanations of particular phenomena are inextricably influenced by the participant and researcher’s own experiences and context (Heidegger, 1962). Last, interpretive phenomenology is informed by symbolic interactionism, which is based on the understanding that the meaning individuals attribute to phenomena such as school.
readiness, are influenced by interaction with others (Smith & Osborn, 2008). Symbolic interactionism suggests that through this interaction with others in their environment, people create shared meanings (Patton, 2002).

Participants

A purposive sample of eight informants was recruited from a pool of mothers attending ‘It Takes a Village’ (ITaV) supported playgroup. This playgroup is an early learning program managed by the Save the Children organisation, and operates in Perth’s southern metropolitan area for parents and their children aged up to five years. Furthermore, ITaV is predominantly attended by migrant and humanitarian entrant families who are newly arrived in Australia. The mothers were all refugees originating from war-torn Burundi in East Africa. Informants had lived in Australia for 18 months to seven years, and spoke minimal English. All informants had at least one child who had begun primary school in Australia; some had a second child in school; and others had a second child who was starting the following year. Two ITaV staff members and a teacher of the first year of school (kindergarten) were also interviewed as informants to validate the women’s experiences.

Procedures

Prior to commencing the research, approval was granted by Edith Cowan University’s Human Research Ethics Committee. We liaised with ITaV staff to organise the recruitment of participants and the involvement of the program’s bilingual cultural worker. Establishing a trusting relationship with participants is crucial to conducting ethical research on refugee populations (Halabi, 2005; Spring et al., 2003) and was thus afforded much attention throughout the study. Implementing measures to ensure the research was conducted in an ethical and culturally sensitive manner created evaluative and procedural rigour.

Prior to data collection, the principal researcher attended a teacher of the first year of school (kindergarten) were also interviewed as informants to validate the women’s experiences.

Preparing for school

For the mothers, what school readiness meant depended on how they valued education generally, including its role in shaping future outcomes. Education was found to be valued as a means of bringing future wellbeing and prosperity for the wider family. For example:

- It is important because, when I see the children are studying, it’s very important to me and them as well. So in the future, they may have good life if they start first. So if they have a good life, I may have a good life as well... So I think it’s important for them—to see them get ready for school, I think it’s very important.

Some women indicated prior knowledge of school readiness and its importance. They identified elements of readiness, such as children’s proficiency in speaking English, interest in going to school, children’s confidence, the ability to follow instructions and children’s ability to share with others. The mothers explained how their understanding of school readiness was developed through a teacher of the first year of school (kindergarten) were also interviewed as informants to validate the women’s experiences.
their experiences at playgroup. For example, one of the mothers described how she had learnt additional ways that she could prepare her child for school, such as teaching them how to follow routines, and reading stories together at home.

Other women reported having little knowledge of schooling processes and expectations in Australia prior to their involvement in the ITaV program. Only subsequent to starting at the playgroup could they reflect on, and confidently evaluate, their children's readiness for starting school. Interestingly, through their awareness of school readiness and its importance, some mothers experienced increased conflict in wanting to be more involved in preparing their children for school, but they felt as though they did not have the personal abilities and resources to do so:

*I myself as a mother, I’ve never went to school. How can someone expect me to make my child ready for school, because I don’t really even know how to be ready to go to school … I don’t even know how to hold pen!*

The mothers with school-aged children had become more aware of the importance of school readiness, but now realised that they lacked confidence in their personal ability to facilitate this. Thus they talked about largely relying on the support of the playgroup in facilitating children’s preparedness for kindergarten. For example:

*There’s no way I can help him and teach him to be ready for school, so that’s why I come to the playgroup. I know they can help get him ready for school.*

The women talked about the concerns they experienced prior to the start of school in relation to culture. They feared that their children would adopt Australian norms that may be considered offensive in the family’s culture of origin. There was fear attributed to getting children ready for school, as the women were concerned that they would be reprimanded by others in their community if children were not raised according to their original culture:

*And I would be blamed. They would blame me for that. Because, for us, the child doesn’t just belong to you, it belongs to the whole family, especially if it’s a daughter. So you have to be very careful. She belongs to the father’s family, so if anything happens, they’ll—they’ll blame me for it.*

This woman talked about her huge sense of responsibility to her husband’s family in raising her daughter according to traditional values, and her desire to evade chastisement from them. Findings in the present study are similar to existing research on migrants (Sanagavarapu, 2010; Sanagavarapu & Perry, 2005) which found that these parents were concerned over children losing their original culture upon exposure to western values in the school environment.

Talking about their concerns of not being able to adequately prepare their children for school, the women discussed the importance of playgroup assistance in the pre-school period. Similar to Jackson’s (2011) study, the mothers perceived the playgroup to have a dual function in assisting both their children and themselves prior to starting kindergarten: ‘playgroup help myself, and my child as well!’ By helping prepare children for kindergarten, the playgroup was found to benefit the mothers. One mother described the playgroup as a valuable resource which she utilised at this time.

**Mothers’ experiences of children’s transitions to school**

In discussing children’s transitions to kindergarten, some mothers reflected on the anxiety they experienced when they first separated from them. Contributing to the women’s anxiety was the perception of school as foreign and the fact that teachers were unknown ‘strangers’ to the mothers and their children. One woman reported:

*And also building trust between you and the teacher in the first week … The first time—you just feel (pause). I remember when I first take my son, and I stay a while—I stay almost 2 hours, 3 hours, before I go, just to make sure everything is fine. Because I felt like, you know, I wasn’t supposed to go. And that also, you know, the culture and all the barriers. Leaving him with a stranger—person I didn’t know, and [child’s name] is going to be with them all day and I remember thinking, ‘I never even talked to them’.*

This quote highlights the deep hesitations of the participant in entrusting the care of her child to a stranger, which is common to most mothers. For the refugee mothers, however, there was an additional cultural element. These women described deeper concerns relating to their lack of trust of teachers and other school staff in caring for their children.

Within the literature, it has been acknowledged that refugees often struggle to trust authority figures upon arrival in their new society, and under the rule of former repressive governments, refugees typically learn not to trust people in authority as a means of survival (Hynes, 2003; McBrien, 2011). McBrien (2011) asserts that this mistrust can extend to school officials when education services are first accessed.

A compounding of cultural factors was extended through language difficulties. In addition to issues of trust and worry over relationships, the inability to proficiently communicate in English was found to be a major problem for all the mothers. As found in previous research on refugees and their children’s schooling, the implications of not being able to speak to others were significant and pervasive for the women when their children began kindergarten (Atwell et al., 2009). The playgroup staff confirmed that the women often did not feel comfortable engaging with others at the school:
... that ability to interact and engage with others at the school. I think it would be great if that was happening more, and unfortunately it's their lack of confidence in their English that's restricting that ... they don't feel comfortable in that environment, and I'd say a lot of that is due to the fact that they don't speak much English.

Staff discussed how the women felt unable to help their children with practical tasks such as reading notes from school, and associated it with a deep sense of letting their children down, making it harder for them to adjust to their new environment. In this context, the playgroup was found to play an important role in increasing the English skills of the mothers. The importance of developing English proficiency for culturally and linguistically diverse parents has been previously highlighted as a valued aspect of supported playgroups in Boddy and Cartmel's (2011) research. Here it was also found that developing English skills increased confidence for playgroup attendees.

The women in the present study felt they were missing out by not being able to actively involve themselves in their children's school communities. Many of the mothers conveyed a strong sense of disconnectedness between themselves and the other parents and teachers, and talked about feelings of isolation from social support in this environment. In considering their relationships with other parents, the women reported limited contact and communication with them:

*I just take my child and leave at the class and I come and pick him up in the afternoon. So maybe the other parent talk—I see they talk and smiling, but not me, because I can't ask anything, so that was very difficult and lonely for me.*

There was a perceived disconnect between herself and the other parents, and the mothers were highly aware of this in comparing their situations with mainstream mothers. As a consequence, the woman described a relative sense of disadvantage in considering her inability to form relationships with other parents.

In addition to language issues however, there were differences in cultural norms which contributed to the women's lack of involvement with others. It was found that cultural factors interacted with the willingness of the women to engage with others in the school community. One mother explained that in her culture of origin, it was considered inappropriate for women to speak with people who they did not know very well. Therefore, she felt uncomfortable talking with the other parents at her son's school. This mother described that in the three years her child had attended school, she had not made one friend there. She felt uncomfortable talking with the other parents at her son's school, and the isolation she experienced when her child began kindergarten extended into subsequent years of her child's schooling.

Linked to the above factors of communication and culture, the period in which children began school was characterised by a range of adverse practical issues for the mothers. These included difficulties in organising stationery, arranging transport to and from school and packing appropriate lunches for the children. The women's experiences were further confounded by language problems and a limited understanding of the school's expectations of children and their parents. Some of the practical issues discussed are not uncommon amongst mainstream populations (Dockett & Perry, 2004); however, the refugee women's experiences of practical difficulties were compounded by additional stressors such as language barriers.

**Perceived supports**

In the context of the above, support became a central topic of discussion for the women in most interviews. The support they felt, or did not feel, was attached to the meaning of the women's experiences of their children's school readiness and transitions to kindergarten. With the exception of playgroup, most of the women believed they had minimal other supports assisting them prior and subsequent to their children starting kindergarten. The mothers did not find school staff very helpful when their children began kindergarten. One mother stated: *'... and the teachers are not helpful. They just give you the piece of paper and all that.' *Considering the pertinent language difficulties experienced by the women, these notes from teachers were found to be an ineffective means of communication between the mothers and school staff.

In discussing the lack of support they experienced from the school, many of the mothers believed that a bilingual cultural worker should be employed to facilitate better communication between teachers and parents. They suggested this would help teachers to understand different cultures and allow the mothers to learn more about the school system. This finding reflects the views of migrant parents in Sanagavarapu's (2010) study, which also talked about the importance of increased communication and cultural awareness at children's schools.

Beyond the ITaV program, the women described limited support as they negotiated issues relating to their children's school readiness and their early experiences of schooling. This discussion led to wider concerns about their tensions in adjustment, especially their isolation at this time. In African collectivist cultures, a person's meaning and purpose in life is typically grounded in the relationships and interactions they share with informal cultural and familial systems (Schweitzer et al., 2006). Moreover, their identity is deeply influenced by their sense of belonging to these networks (Stewart et al., 2008). Schweitzer and colleagues (2006) suggest that the loss of such important social connections can be an ongoing trauma experienced during reintegration. In the present study, there is evidence that the women's experiences of minimal support when their children began school further compounded these broader contextual factors relating to separation from the support of extended family and friends.
Playgroup support

It was found that the ITaV supported playgroup provided a strong source of social support for all the mothers before and after their children started kindergarten. Prior to their involvement in the playgroup, the women commonly reported feelings of stress, anxiety and loneliness. Playgroup staff were portrayed as available, approachable and trustworthy, and their assistance with emotional and practical difficulties was profound and greatly appreciated by the mothers. In terms of the emotional support provided by playgroup staff, one woman commented:

And with the school things ... [playgroup staff] used to understand my problem, and they the one people I trust and I can come and tell them my problem and they can sit down with me and say that it's ok. So if I come inside and I not happy and crying, they just say, 'come and sit down' and then I was happy to go home again.

The types of support provided through the ITaV program reflect and expand upon current literature exploring the ways supported playgroups can assist refugee families in the context of parenting. For example, the mothers talked about experiencing emotional support, similar to that described by participants in Jackson’s (2011) study. Here, the women discussed the importance of the meaningful connections they had developed with other mothers and staff at the playgroup. This support was highly valued by the refugee women, who felt that the friendships they had made through playgroup helped to reduce feelings of isolation.

The refugee women in the present study were strongly connected through the sharing of broader social factors such as their culture and history of being a refugee, as well as difficulties relating to their children’s school readiness and transitions to kindergarten. Through opportunities provided by the ITaV program, the women were able to engage with others they perceived as similar to them, and this resulted in a strong sense of community. The mothers also experienced a sense of community through their involvement with the ITaV playgroup. In contrast to the isolation they experienced in school communities, the women felt they could easily communicate and engage with other mothers at the playgroup. The women discussed the commonalities between themselves and other mothers at the playgroup, and felt they related to each other through similar experiences of the difficulties faced in regard to their children’s school readiness and transitions to kindergarten. Furthermore, they shared in the desire to see their children successfully adapt to school, and they exchanged valuable advice in collectively striving to achieve this common goal. These observations are supported in the following quote:

It helps because I can meet other people and talk to other mums who are from the same country, or others who are experiencing the same difficulty, and so I don’t feel alone, and I can see what all they do to solve problems with the child at school ... we share advice. ... here I really get benefit, because I can talk to the other people and I am happy. I am interesting to hear what people are doing and all that, because everyone has same problem as me.

The women spoke about how the program provides regular opportunities for the development of meaningful connections with other refugee mothers from Burundi as well as other countries. They valued these relationships, and felt they had an established social network through the program.

Conclusion

The purpose of this study was to explore the experiences of African refugee mothers in relation to their children’s school readiness and transitions to kindergarten. This phenomenon was further explored among attendees of a supported playgroup, to investigate how the program assisted the women in this context. The study exposed the deep conflicts and tensions the mothers experienced prior, and subsequent to, their children starting kindergarten. These occurred at a time when the women were likely to be psychologically vulnerable, having recently fled war-torn Burundi, arriving in a new and foreign environment. Some of the difficulties and concerns they discussed were found to be similar to those of mainstream parents; however, the refugee women's experiences were compounded by additional stressors relating to their social context. These included significant language barriers, and issues relating to conflicting norms and values between their collectivist African culture and those of their new individualist society. Importantly, these factors were found to exacerbate anxiety and other emotions encountered at this time, and in the context of these experiences, support was a central topic of discussion for these African refugee women.

Much of the meaning surrounding school readiness was related to whether the mothers felt supported or not, and playgroup was found to be a highly valued, ‘saving’ space for the refugee women. Although the mothers reported difficulties surrounding their children's school readiness and transitions to school, the support they received from the playgroup was found to be a buffer against some of the stress and isolation they experienced at this time.

The study is potentially limited in the way it considered the views of only one kindergarten teacher as an allied stakeholder. This individual was included for the purpose of validating the mothers’ experiences; however, it may be useful to consider in more depth, the personal views and experiences of several kindergarten teachers. Dockett and Perry (2004) suggest that including the views of teachers in discussions of school readiness can provide a more complete picture of what is happening in this area.

The present study builds on existing literature exploring the experiences of resettling refugee parents in Australia.
Specifically, it helps to address the paucity in current literature examining the experiences of this population in relation to children's school readiness and transitions to school. This is particularly important, considering the lack of current evidence supporting government policy in this area.

The research also highlights the ways in which experiences of school readiness are shaped by contextual factors, such as being of refugee background, and originating from a collectivist culture. Therefore, the study provides support for further examination of the specific parenting experiences of refugee populations, and in particular, those from African cultures, in which values and norms are suggested to be vastly different to those endorsed in Australia (Schweitzer et al., 2006). The current study also demonstrates the importance of supporting refugee mothers as they navigate parenting issues prior, and subsequent to, their children's transition to school. Moreover, it expands upon existing research in highlighting ways these programs can meet the emotional and practical needs of refugee families in the context of school readiness.

Additional research is required to further understand refugee mothers' experiences of their children's school readiness, and the full meaning of these experiences. This includes additional studies examining the types of issues refugee mothers face in this context, and the kinds of support they need to deal with these. Research could also consider how this support can best be implemented, be it through supported playgroups, or other targeted interventions which consider the unique needs of refugee families. Overall, further research is considered essential in building a stronger evidence base which can inform government policy in this area.

In conclusion, the present study has aimed to ‘give voice’ to the school readiness experiences of an extremely vulnerable and marginalised group in Australian society. It is important that researchers continue to investigate parenting experiences from the refugees' own perspectives (McAllister et al., 2005). This will provide opportunities for policy-developers to learn from the ‘voices’ of such groups, and develop culturally sensitive and effective means to support them in our community.

References


Introduction

New Zealand has seen an influx of children of minority cultures in early childhood settings in recent years. Researchers and teachers have become increasingly interested in how curriculum incorporates and implements multicultural beliefs and values. This paper addresses multicultural programs as they are explored in an early childhood centre. Through teacher interviews and a case study with a child and his parents, the paper seeks to explore two key questions: 1) What characterises the programs offered to children of minority cultures? 2) How are the interests and needs of children of minority cultures understood and responded to? Concepts associated with the critical social constructivist framework will help explore the research questions.

Early childhood multicultural programs in New Zealand

Program development appears to be one of the most important aspects of early childhood teachers’ work. In New Zealand early childhood centres, the main approaches to program planning are: 1) learning stories, or the narrative accounts through which teachers document and analyse children's learning and plan learning experiences to further enhance children's current abilities and dispositions; 2) the emergent approach that teachers use to identify children’s emergent interests and needs and facilitate them through relevant activities; 3) project-oriented learning where teachers and children work together on a project for a short or long time. Despite differences in the operations of these approaches, a devotion to children's interests and needs is their common focus. The attainment of knowledge, skills and attitudes aligned with children's interests and needs is the central focus of child development (MoE NZ, 1996).

Regardless of this inspiration, the problem of pedagogical response to children's interests and needs was illustrated by White (2009) in her research with toddlers in New Zealand early childhood centres. White was concerned about “the extent to which adults can legitimately claim to notice and recognise learning in very young children, and the extent to which, based on this “knowledge,” claims can or should be made about what is being learnt and what should be “taught” accordingly” (p. 5). Identifying and understanding children's espoused interests and needs proved to be one of the most challenging issues in teachers’ practice (White, 2009).

Multicultural programs also suffered from teachers’ subjective and unreflective knowledge about children. An earlier study by Gorski (2006) indicates that the concrete problem facing early childhood teachers is how to put aside their own cultural groundings and come to grips with the needs and interests

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Teacher knowledge, child interest and parent expectation: Factors influencing multicultural programs in an early childhood setting

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Deakin University

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of children of diverse cultures. Research has reported early childhood teachers’ one-size-for-all practice in multicultural education (Bentley, 2012; Guo, 2014) and that early childhood teachers essentialised culture (Chan, 2011).

Children’s individual needs and interests are important in multicultural education but they are not enough. From the perspective of critical multiculturalism, multicultural education is not only about creating learners of different needs and interests but also the development of a socially equitable space that produces the ethics of cultural inclusiveness. According to May (2003), critical multicultural education calls for a move away from viewing education as only serving the ideal of children’s learning to a more complex and critical interpretation that reconstructs education as a social agent that challenges the social structures which produce inequities.

A discrepancy has been identified between multicultural early childhood programs and perspectives of multicultural education. Previous research pointed out that early childhood programs and perspectives of multicultural education as a social agent that challenges the social structures which produce inequities. According to May (2003), critical multicultural education calls for a move away from viewing education as only serving the ideal of children’s learning to a more complex and critical interpretation that reconstructs education as a social agent that challenges the social structures which produce inequities.

The emphasis on teacher learning subscribes to the idea of teacher–parent partnership by asserting that parents do is in line with their learning about children and their awareness, giving rise to a practice that what teachers must incorporate both [a] strong ethic of care and the importance of culture as a blended foundation for an education orientation’ (Lin, 2001, p. 107).

In multicultural education, teacher knowledge is conceptualised as race-consciousness and teacher reflection (Ullucci, 2010), with the emphasis on self-awareness, giving rise to a practice that what teachers do is in line with their learning about children and their races. The process of learning from children and their families is valued over teachers’ subjective knowledge. The emphasis on teacher learning subscribes to the idea of teacher–parent partnership by asserting that parents provide appropriate knowledge about children (Guo, 2014).

Critical social constructivism

In exploring and examining multicultural programs, Hopf’s (1998) concept of critical social constructivism is particularly useful. Critical social constructivism comes into being with the extension of Vygotsky’s conventional social constructivism and the post-structural perspective. The main difference between conventional and critical social constructivism is different understandings of identity and a different emphasis on the role of self versus social factors in the production of that identity’ (Devine, 2008, p. 465). Critical social constructivism elaborates on the person-in-environment focus of its conventional counterpart by discovering how a person forms the identity in an environment (Hopf, 1998). It also draws upon the concepts of instability and complexities in human sciences located within the broader theoretical approach put forward by post-structuralism. Critical social constructivism is concerned with studying the process and consequence of a shift in identity as a result of the shift in power and agency. According to Devine (2008), critical constructivists seek to understand not only the origins of identity, but also how it is formed.

The term identity is discussed differently between the critical social constructivists and their more conventional counterparts (Hopf, 1998). In the critical form, the theorisation of identity is centred on the notion of change. Identity is contextual by virtue of its particular character: that is, ‘identity implies a particular set of interests or preferences with respect to choices of actions in particular domains, and with respect to particular actors’ (p. 184). According to Hopf, ‘critical theory aims at exploring the myths associated with identity formation, whereas conventional constructivists wish to treat those identities as possible causes of action. Critical theory thus claims an interest in change, and a capacity to foster change, that no conventional constructivist could make’ (p. 184). In relation to children in early childhood years, this is a matter of creating and re-creating selfhood (Carr & Lee, 2012).

Critical social constructivists seek to unmask and examine power relations. They recognise the complexity of power structures and of the relationships between actors and these structures. Critical social constructivists draw attention to the social and cultural constraints to power balance. They attempt to destabilise prevailing structures of dominance in order to bring about emancipation.

In a study of multicultural curriculum, critical social constructivism is helpful. Conventional analyses which conceptualise learning at the cultural level but do not address the asymmetrical power relationships in identity formation cannot help researchers understand the actual factors influencing learning in multicultural levels. In their conceptualisation of multicultural education, Grant and Sleeter (2006) also used the concept of social constructivism to talk about the construction of ‘a world without oppression; a world that meets the needs of
the full diversity of humanity’ (p. 163). The current study explores the features of a multicultural curriculum in an attempt to understand whether it forms a socially equitable space that produces the ethics of cultural inclusiveness and meets children’s needs to create and re-create selfhood.

I take the view that children’s needs and interests do not usually arise in a way that can be understood only through child observations. Children’s needs and interests can arise when they experience a shift in identities, power relationships and agencies. The unmasking of these elements is the focus of the current study. Instead of seeing the environment as ‘natural’ and ‘given’, the study views the environment as dynamic and changeable. Curriculum, which occurs in the environment, is developed by people and it in turn shapes people’s identity, power and agency.

Based on Te Whāriki, the study gives the following definition to ‘curriculum’:

The term ‘curriculum’ is used … to describe the sum total of the experiences, activities and events, whether direct or indirect, which occur within an environment designed to foster children’s learning and development (MoE NZ, 1996, p. 10).

**Research methods**

This research sought to investigate multicultural programs in early childhood education. It addressed the following questions:

1. What characterises the programs offered to children of minority cultures?
2. How are the interests and needs of children of minority cultures understood and responded to?

The research relied on a qualitative methodology. The data presented in this paper are drawn from a larger study of several early childhood settings. The current paper uses data gathered in one early childhood centre through a semi-structured focus group interview with three early childhood teachers; two hours of video recording of a child of minority cultural background during his free play in the centre; individual interviews with each of the three teachers after they watched the recording of the child; and a semi-structured interview with the child and his parents after they watched the video recording.

The centre was chosen because of its ongoing work for children of minority cultures. There had been an increasing enrolment of children from a range of cultural backgrounds. The centre director was keen on knowing the effectiveness of their multicultural efforts. During the time of the study, 45 per cent of the children came from non-Pākehā cultural communities.

The teaching group was diverse in their ethnicities. Participants in the study were given pseudonyms. Jane was Chinese, Mayada was from a Somali background and Lyn was Pākehā. Kira and Ayson were both Indian immigrants. The centre director Hannah was Pākehā. All the teachers were female and aged from their 30s to late 50s.

The selection of the teaching participants followed two main criteria. First, they were qualified early childhood teachers. Second, they actively participated in the program planning in the centre. Lyn, Kira and Ayson were involved in the study.

The child and parents were recommended by the teachers using the following criteria: they came from a minority cultural community, namely non-Pākehā; the child attended the centre regularly; the parents could communicate in English. As a result of these selection criteria, Dupa, a boy of three years and three months participated in the study. He and his parents were originally from Sri Lanka. At the time of the study, they had been in New Zealand for four months and the boy had been in the centre for two months. The mother was studying for her PhD. The father was looking for work. Both parents were professionals in Sri Lanka. Dupa was the only child in the family.

In the focus group interview with the teachers, they were invited to discuss their approaches to program planning, how they identify and understand the interests and needs of children of minority cultures, how they incorporate this understanding in their programs, and the prospects and complexities associated with the multicultural program implementation. They were also asked to provide documents of their general program planning and those they kept for the case study child.

The case study child wore a wireless microphone for two hours during his free play. This was video recorded. The video recording of the child was shown to the child, his parents and his three teachers. The teachers were asked to identify and analyse the needs and interests of the child as they saw them. The child, with the support of his parents, talked about what he was doing and why he was doing so. After watching their child’s video recording, the parents gave their opinions of what they saw as learning and what they hope to happen next. Table 1 outlines the sources of data.

The focus of data analysis was a model developed in critical social constructivism that invited consideration of the agency, identity and power of Dupa and his parents within the centre environment. The analysis was underpinned by such an understanding of ‘constructed realities that individuals put together in order to make sense of what was going on around them’ (Barclay-Mclaughlin & Hatch, 2005, p. 219). For this reason, the study allowed for the exploration of values, beliefs and practices of all the people taking part in the study.
Table 1. Sources of data

<table>
<thead>
<tr>
<th>Number</th>
<th>People</th>
<th>Sources of data</th>
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<tbody>
<tr>
<td>1</td>
<td>Three early childhood teachers, Lyn, Kira and Ayson</td>
<td>Focus group interview</td>
</tr>
<tr>
<td>2</td>
<td>A Sri Lanka boy, Dupa, aged three years and three months</td>
<td>Video recording of his free play</td>
</tr>
<tr>
<td>3</td>
<td>Three early childhood teachers, Lyn, Kira and Ayson</td>
<td>Individual interview with each teacher after they watched the video recording of Dupa</td>
</tr>
<tr>
<td>4</td>
<td>Dupa, and Dupa’s parents, Pra and Rexp</td>
<td>Focus group interview after they watched Dupa’s video recording</td>
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Multicultural curriculum: Care, child and teacher knowledge

Three main themes related to the questions emerged from the data. The research highlighted the features of multicultural programs as care-oriented, child-focused and reliant on teachers’ knowledge and experiences about children of minority cultures.

Care

Care is a repetitive word in all the teachers’ viewpoints and it was an identifiable feature of learning programs in Dupa’s video recording. Lyn stated that:

*We take good care of the children of minority cultures. Care is important. We care about how they feel. Like babies, they don’t speak so we need to take extra care of them to know what they want.*

Ayson was quick to point out that central to her work with children of minority cultures was the development of close relationships with them and these relationships came from her care about the children.

As a person from a cultural minority herself, Ayson shared with us her son’s experience in an early childhood centre and how this raised the importance for her of teachers’ care of children of minority cultures:

*When my son started his kindy, he was three. He didn’t know any English. He had a hard time. He just screamed. I thought if someone cared about him that would help.*

The teachers understood care as mindfulness and physical closeness. They all believed that teachers’ care was demonstrated through their close interactions with children of minority cultures and their awareness of the vulnerability of these children. Kira responded warmly to the cuddles of children of minority cultures because ‘this gives them a message that they are loved and cared for’. Kira could speak Hindi and Dupa understood a little Hindi, so she voluntarily took up the role of Dupa’s primary caregiving during the first weeks of Dupa’s settlement. ‘Dupa knew that I was there to care about him, so he came to me often. This helped a lot’. Similarly, Ayson was the voluntary primary carer of Indian children as she spoke Hindi and was able to relate to the children easily.

Teachers’ care was also identified in Dupa’s video recording as in the following data excerpt:

*Dupa was playing a card game with five peers and Ayson. Dupa was slow in his turns. At each of Dupa’s turn, Ayson turned her face to him, smiled and talked slowly to Dupa, asking questions or showing what Dupa needed to do. During the 13 minutes of play, Ayson spent 5.5 minutes with Dupa. She used a range of body language, smiling, handing out cards, eye contact, a gentle cuddling, nodding and clapping. Ayson was seen to have purposefully leaned herself towards Dupa each time she interacted with him.*

It is apparent from these data that all the teachers gave importance to care in their work with children of minority cultures and care was a strong feature in their teaching programs.

Child centredness

Closely related to the teachers’ care was the attention they paid to Dupa. I saw the teachers’ interactions with Dupa as having purposeful attempts to communicate effectively with Dupa. For example:

*Dupa was walking around with hands in the pocket, appearing bored. Lyn walked over, kneeling down to Dupa, watching his eyes and said slowly, ‘Dupa, are you okay?’ Dupa stopped to Lyn, watching her but giving no response. Lyn stretched her hand to Dupa and said again ‘you need something?’ Dupa reached Lyn’s hand, pointing outside. Lyn stood up and walked outside with Dupa.*

Ten minutes after this scenario, Lyn approached Kira about what Dupa did with her. Kira talked to Dupa in Hindi about what he wanted to do outside.

Through the interviews, it was evident that the teachers strove to understand children of minority cultures through close child observations and interactions with them. They minimised the use of dominant culture in their work with children of minority groups and believed that ‘understanding each child’s cultural and individual needs is important’ (Kira). The teachers all adopted a particular speaking approach, such as talking slowly, employing examples and using body language to communicate with the children who had not yet developed competence with English. Ayson and Kira spent much time with Indian and Sri Lankan children. Teachers kept learning stories for each child that included examples of the child’s
learning experiences and teachers’ narrative reports. All the teachers implied that they observed children both informally and formally on an ongoing basis to uncover children’s interests and needs. An emergent approach to curriculum was also adopted in the centre, which Lyn explained as requiring teachers’ sound knowledge about children’s emergent needs and interests. She described their focus on children as being essential in developing emergent programs in a multicultural setting.

**Teacher knowledge**

The three teachers’ responses to my question of ‘how do you understand what you have seen or heard from a child who has not yet developed competence with English?’ demonstrated a modest implementation of multicultural practice. Ayson stated that ‘I use my intuitions. As a mother and teacher, I know what they want’. Teachers’ own experiences and their accumulated knowledge about children of minority cultures were viewed as useful for their understanding about these children. Kira said:

> I am Indian and so is Ayson. I believe that we understand Indian children well because we know their language. I can speak Hindi and that helps my work with children like Dupa. We always work with children of minority cultures and these experiences have taught us well what these children want. The main thing is English, and then friends.

Quite interestingly, the teachers all agreed that the appointment of teachers of minority cultures was not for the reason of serving children of minority cultures but to model a multicultural environment. Lyn told me:

> Last year, Kira was a student. She was doing her placement. When the job came out, she was just there to get it. We did not do it on purpose but we wanted to enrich our team diversity. I know some people are uncomfortable with other nationalities. We like the differences and want to model this.

Even so, she said the teachers of minority cultures were great support in their multicultural practice. ‘We draw on their knowledge.’

Lyn talked about the portfolios they keep for children which were used to elicit parents’ knowledge about children, ‘like portfolios, they go out. Parents fill out. This is how we know that a child likes numbers’. However, it did not take long for her to realise that very few parents gave their feedback to children’s portfolios and ‘many parents are not bothered’. As a result, teachers had to rely on their own knowledge about children.

**Children and parents of minority cultural backgrounds: Visible identity and silenced agency**

The main themes emerging from the data of Dupa and his parents are: a cared for and included child who was not understood; content parents who silenced their opinions.

**A cared for and included child who was not understood**

Dupa’s recording gave evidence of a cared for and included child. As said above, the teachers gave Dupa much attention and strove to communicate with him in order to understand his needs and interests. In the video shown, Dupa had sustained interactions with Hin, a peer of Cambodian background. They played alongside each other on and off for 69 minutes. Dupa appeared happy most of the time and he experienced some activities both indoors and outdoors, with teachers, peers or alone.

In our interview on Dupa’s video recording, he commented on a few scenarios and told his parents and me what he was doing and why. Dupa laughed loudly at a scene in which he was running around in the playground with Hin. Dupa said ‘lion and tiger’, pointing to himself and Hin. With his parents’ help, Dupa explained that Hin and him had been engaged in a socio-dramatic play of lion and tiger for some days and their running around was a continuation of the play. We could see in the video that the boys were roaring.

In answering my question, about whether he liked the card game with Ayson, because he stayed at the table for over 10 minutes, Dupa said that he did not like it so he was slow in his turns. Dupa said, ‘It’s a baby game’.

Teachers’ perspectives on Dupa’s video recording were elicited too. Lyn and Ayson also commented on Dupa’s play with Hin and Dupa’s participation in the card game. They were all positive about Dupa’s interactions with Hin but did not identify the reason why Dupa and Hin ran around and played together. None of teachers noticed Dupa’s interest in socio-dramatic play. When commenting on Dupa’s involvement in the card game, Ayson gave thoughts on Dupa’s slow moves but explained that in terms of Dupa’s needs for help. The teachers did not realise that Dupa was bored or disinterested.

**Contented parents who silenced their opinions**

Overall, Dupa’s parents were positive about the support and care Dupa received from his teachers. His mother Pra said, ‘I am happy about the way that Dupa behaves in the centre and happy that the teachers care about him’. The parents also agreed that the teachers were available when they needed to talk and the teachers showed respect for her family. ‘Dupa loves coming to Kindy. I’m pleased about this’ Pra was particularly positive about Dupa’s play on the swing in the video. ‘I’m amazed that he pushed himself.
He always had to ask us to push him. It’s new. Maybe he was watching other kids doing that and he learned.’

However, the parents were critical of the ways that the teachers interacted with Dupa in terms of the types of learning that Dupa experienced from these interactions. Dupa’s father Rexp stated:

* Dupa is treated like a baby. He needs to be challenged. At home, I play hard with him to make him think. He loves challenges. He is passive here. I don’t know why. The teachers follow Dupa but do not try to teach him much.

Pra also expressed her frustration at how few opportunities there were to draw on Dupa’s personal needs and interests, one small exception being getting him to freely choose what to do:

* One hundred per cent difference between home and here. At home, lots of books, arts, language, everyday changes. Dupa has the freedom to do much in the centre but as a child, he cannot make the right decisions.

Pra’s other criticism of her son’s learning was that the teachers did not seem to teach her son English. She maintained that ‘we want Dupa to learn English here’. Pra was unhappy that Dupa was not purposefully taught English.

Both the parents acknowledged that time pressures and their lack of understanding about the new culture made it difficult for them to give their ‘not positive’ opinions:

* We talk to the teachers good things or ask some harmless questions. They are friendly but we have never opened ourselves to them so there is no trouble. We are happy about Dupa’s days here. He’s happy so we are fine.

### Difference between the teachers, parents and children in terms of children’s needs and interests: What are the educational implications?

The research provides evidence that the multicultural program in the centre of study is characterised by teachers’ care about children of minority cultures, teachers’ close attention to them, and teachers’ use of subjective knowledge about these children’s needs and interests.

The findings illustrate that the parents, teachers and Dupa had different perceptions about Dupa’s needs and interests. For the parents, Dupa was interested in more challenging activities. Dupa indicated his interest in socio-dramatic play with his peers. According to the teachers, Dupa needed more teacher attention and care. The study thus shows that teachers responded to Dupa’s needs and interests based on teachers’ own knowledge but not what Dupa had in mind or what Dupa’s parents expected.

If the teachers focused their programs on children’s needs and interests, the difference between their understanding of what children wanted and that of parents and children was concerning. There is much controversy over the nature of teacher attention to children that underlies their work with them. According to Burman (1994), the child-focused pedagogy is an approach that teachers use to separate children from their social relationships, particularly those with their families. In this approach, the goals are couched in terms of what children do with them. In relation to working with children of minority cultures, Keats (1997, p. 56) reported that ‘many [teachers] prefer to be able to deal only with the child, finding the parent from another culture difficult to understand’.

The teachers’ attention to children needed to be accompanied by other means of teaching practice, particularly their relationships with parents. For one reason, attention was an intentional perception. Teachers could choose to attend to some things and not to others in ways that were directly related to the pursuit of their own goals. Another reason is that teachers could not pay all their attention to any individual children, therefore, they missed out on aspects of children’s learning. This explained why the teachers did not recognise Dupa’s interest in the socio-dramatic play. Burman (1994) and Keats (1997) both have conveyed a message that teachers needed to work with parents and children but not just rely on their own knowledge and experience.

From a critical social constructivist perspective, the gap in understanding children’s needs between teachers and children and their parents is an important issue. The teachers’ knowledge and their confidence in the effectiveness of this knowledge is a matter of concern. Without parents’ input, it appeared that teachers could not build appropriate knowledge about children of minority cultural background. Critical social constructivism emphasises the ‘intersubjective context within which deeds of one kind or another appear to be reasonable and therefore justifiable’ (Devine, 2008, p. 468). The question thus arises: in the absence of an intersubjective context, how can teachers justify their knowledge about children? Numerous studies provided evidence that children form their original identity or selfhood in the families (Guo, 2010; King, 2004). The question that arises is how children can be supported to create identities in a non-home environment if their original identity is not understood. Interacting with children on an on-off basis is by no means a sufficient means for teachers to understand children as who they are and who they want to be.

Critical social constructivists define identity as a self-referential term used to characterise something important in people’s own way. It is neither observable nor easily understood. Identity has a sociocultural origin but it is contextually constructed. Actions of teachers to use their own subjectivity to understand children are inappropriate.
The teachers in this study acknowledged Dupa's identity; they did not understand it.

Apparently, the teachers have created an equitable and socially just learning environment for Dupa and perhaps all the other children of minority cultures because these children looked engaged in learning. However, with reference to the critical social constructivist viewpoint, equity and social justice entail teachers' responsibilities for empowering children and families and giving them a sense of agency. Dupa and his parents were not seen to have shared power with the teachers and they were not actively acting on their own ways of early childhood education.

The teachers' actions might have been driven by a hegemonic motive to go beyond the specificities of children and their families' values and practices. Family origins constitute children's initial identity and they are part of children's being and becoming. Critical social constructivists have highlighted the importance of seeing things not only as they are, but as they have come to be that way. In the case of the present study, Dupa was acknowledged as a child of minority ethnicity but not one with distinctive and complex identities.

Providing care and attention to children cannot be the only means of addressing inequity and social injustice. The multicultural program in the centre of the study was characterised by a practice of celebrating diversity. It was not a commitment to educational equity. Children and their families were treated as passive recipients of the learning programs but not given opportunities to actively contribute. Dupa's parents were content with Dupa's experience but they were not satisfied. The parents were silent but they were not without opinions. It is clearly not enough simply to acknowledge and make visible children of minority cultures. Even with their close focus on the children, teachers could not meet children's choices of actions derived from who they were and who they wanted to be.

The study implies that children and creating educational equity can give rise to a new, perhaps a revolutionary insight. The consideration of these relations takes on some urgency in evaluating learning programs provided to children of minority cultures. In some much deeper sense, this consideration is a start towards appreciating the fact that care and knowledge of teachers are not enough in multicultural education unless they are supported by teachers' commitment to attaining a state of inclusivity by empowering children and their families and encouraging their agential actions to form an identity in their ways.

A consideration of the relations between attending to children and creating educational equity can occur. The aim of this study is to use critical social constructivism to dovetail these two elements.

Conclusion

The critical social constructivist approach to multicultural education has led to the view that learning programs provided to children of minority cultures should be characterised by equity, inclusivity and justice. Children and families are empowered and they actively act on the construction of their identities.

However, it is never easy to apply theoretical insights to practical issues. In the current research, although some clustering around teachers' work towards including children of minority cultures could be found, which included teachers' attention and care of children and the celebration of ethnicities, there was practically little attempt made by the teachers to assist the children and families with their use of power and agency. The study child was supported to settle in a program created for him but not one created by him and his parents.

In short, multicultural education in the centre of the study was faced with both practical and value questions. How teachers' care and attention could be balanced up with their acknowledgement of children's differences and families' values and practices. Family origins constitute children's initial identity and they are part of children's being and becoming. Critical social constructivist viewpoint, equity and social justice entail teachers' responsibilities for empowering children and families and giving them a sense of agency. Dupa and his parents were not seen to have shared power with the teachers and they were not actively acting on their own ways of early childhood education.

The teachers had thought hard about issues of multicultural education in relation to program planning. They emphasised the importance of knowing the needs and interests of the children and saw this knowledge as having a valuable effect on the learning experiences of children of minority cultures. The teachers rejected dominant-cultural discourses of multicultural education but were inevitably caught up in a child-centred regime which was underpinned by these discourses.

There are reasons why the teachers had to focus on children and their own knowledge. Attending to children was a practice grounded in the child-centred teaching philosophy of the centre. In New Zealand early childhood education, this has a professional orientation and according to Corrie (1995), it is 'a deeply rooted implicit pedagogical knowledge' (p. 4). Thus the teachers' practice demonstrates their absorption into a working tradition. The teachers believed that holding a child at the centre of their attention enabled them to work effectively with the child. Evidence for the difficulties of identifying and understanding young children's needs was also apparent in White's research (2009).

The view that multicultural education should focus on equity and justice does not abandon care and attention of teachers to children. Rather, teachers' relationships with children and their acknowledgement of children's differences contribute to children's individualised involvement in the programs and this care and attention can be the precursor that is necessary before an educational transformation can occur. The aim of this study is to use critical social constructivism to dovetail these two elements.
There were clearly signs of inclusion of diverse ethnicities in the early childhood setting but also growing challenges to learning programs, including a break away from teachers’ subjective knowledge, and a move towards more open styles in program planning and implementation.

The implementation of a socially and culturally equitable space of learning requires thinking critically about a key element of the critical social constructivist approach: transformation. In early childhood education, transformation of teaching and learning programs needs to be put at the centre of discussions about multicultural education. The very idea of identity, agency and power carries with it significant implications concerning a shift in teaching pedagogies from a child-centred approach to the attainment of a state of equity and justice which genuinely incorporates the needs and interests of children and families of minority cultures. In this process of change, agential actions of children and families play a key role.

References
**Introduction**

The Whitlam government first introduced policy on multiculturalism in the 1970s. By 2000, however, Australians had only ‘practical tolerance’ and ambivalence to the value of multiculturalism for Australia (Ang, Brand, Noble & Sternberg, 2006; Ang, Brand, Noble & Wilding, 2002). Recently, the Scanlon Mapping Social Cohesion Surveys (Markus, 2013) reported that, despite 80 per cent support for a policy of multiculturalism, there was less confidence in responses and lower levels of support if such support entailed Australian Government funding. Dandy and Pe-Pua (2010) reported Australians as focused on the negative consequences of cultural diversity and fear of minority groups such as Muslims and Arabs.

Children from immigrant families, Indigenous Australians and those from low socioeconomic groups have faced discrimination, inequity and social injustice in schools (Mansouri & Kamp, 2007; Robinson & Jones Diaz, 2006). Moreover, refugees from Asia and the Middle East often fail to achieve at the same educational level as the rest of the Australian population (Cahill, 1996; Mansouri & Trembath, 2005).

In 2011 the Gillard Labor Government presided over a new multiculturalism policy designed to work in combination with a national anti-racism partnership and strategy. The policy stated that:

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**Diversity in teaching and learning:**

**Practitioners’ perspectives in a multicultural early childhood setting in Australia**

Sylvia Buchori  
Toni Dobinson  
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ENCOUNTERS WITH DOMINANT sociocultural values begin with the early childhood classroom setting. This qualitative study reported the perceptions that early childhood educators in an Australian setting had of their culturally diverse classrooms and the pedagogic practices they implemented to address the needs of the children from diverse cultural backgrounds in their care. Findings highlighted the dilemmas that teachers face in trying to value and preserve children’s background cultures while at the same time enabling transition into the new dominant culture. Teachers in the study sometimes viewed children’s previous cultural backgrounds as a burden, being preoccupied with conformity into the dominant culture. At the same time, they were concerned for students who were not performing to curriculum standards and fearful of not meeting their own expectations, those of the system and those of the children’s parents.

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Australians from all backgrounds will be given every opportunity to participate in and contribute to Australia and its social, economic and cultural life. Australians from all backgrounds are also entitled to receive equitable access to government services. The Government will strengthen its access and equity policies to ensure that government programs and services are responsive to the needs of Australia’s culturally and linguistically diverse communities (DIAC, 2011, p. 5).

Such policies have implications for early childhood education in Australia, the history of which is outlined briefly below in order to set the backdrop for the research reported here.

**Early childhood education in Australia**

Early childhood classrooms and settings in Australia cater for children from ages six weeks to eight years and can include public and private providers. Originating out of philanthropy, early childhood education providers turned their focus to the rights of the child (United Nations, 1959; United Nations International Children's Emergency Fund [UNICEF], 2013). They considered doctrines of social transformation and critical pedagogy (MacNaughton, 2003) in an effort to generate new and innovative ways to involve
and empower children (Fleet, 2006; New & Cochran, 2007). Curricula were conceptualised from the child’s multiple perspectives, with an understanding of the interrelated nature of the child’s learning and individual development (Pigozzi, 1999). UNICEF (2011) advocated that children be given the opportunity to express their views, thoughts and ideas; to actively participate, associate freely and be comfortable within themselves.

In 2009, the Early Years Learning Framework for Australia (EYLF) was validated by the Council of Australian Governments to support educators in their quest to provide effective learning environments (DEEWR, 2009). Five principles formed the basis for the framework. The fourth principle was ‘Respect for diversity’. Although the EYLF does not use the term Multicultural Education (ME), respect for diversity is at the heart of ME. The latter encourages inclusive curriculum and aims to transform the wider society by providing students with educational experiences that are socially and culturally relevant (Keengwe, 2010). However, interpretations of ME can be focused on teaching children about other cultures in a tokenistic and superficial way that has been labelled a ‘tourist approach’ to teaching and learning (Schoorman, 2011).

Dealing with diversity in early childhood settings

Early research into teacher attitudes (McInerney, 1987) found that many educators felt their only role was to teach children the English language and immerse them in the dominant culture. More recently, immigrant children experience an informal socialisation process into Australian culture and the English language in early childhood contexts (Amigo, 2012) but are not encouraged to keep their cultural and linguistic background. This may be due to different understandings of central concepts such as culture, ethnicity, equity and participation as outlined in government policy and the lack of a standardised approach to ME (McInerney, 2003).

Studies have indicated a need for improving educators’ abilities to understand, respect and respond to diverse situations in the early childhood classroom (Han & Thomas, 2010; Montgomery, 2001; Robinson & Jones Diaz, 2006; Souto-Manning & Mitchell, 2009). Educators sometimes socialise young children into their own cultural contexts (Fleet, 2006; Souto-Manning & Mitchell, 2009) sending the message that familial culture and language are unimportant or inferior.

Montgomery (2001) suggested that it was essential for teachers to establish partnerships with families and community resources in order to ensure a culturally responsive classroom. Collaboration and communication are also an important principle of best practice in early childhood education (Rice, Shortland-Jones & Meney, 2006). Most recently, Long, Volk, Baines and Tisdale (2013) have advocated that learning is only effective when it is ‘grounded in children’s existing knowledge, experience, perspectives and ways of knowing’ (p. 423), including knowledge of home, community and heritage. Other recent studies have suggested that educators take a critically syncretic approach to teaching in which they ‘privilege traditions and practices typically marginalized in schools’ in order to broaden worldviews (p. 418). Unlike a hybrid view of teaching, a syncretic view emphasises the creative or transformative process (Volk, 2013) rather than the product or new forms that are created.

To date there have been very few studies investigating the impact of early childhood educators’ perspectives of diversity and difference upon their pedagogy. Equally, there has been little reported on the effect of institutional policies and practices on the perpetuation or disruption of social inequalities (Robinson & Jones Diaz, 2006, p. 2). This article reports on a study which attempted to fill this gap.

Research design

Qualitative data was collected via ethnographic observation and in-depth interviews. A social anthropological approach to data analysis was adopted within an interpretivist paradigm. The following research question was the driver for the overall study:

How do early childhood educators perceive and respond to cultural differences in multicultural classrooms in Australia?

Profile of the researcher

The researcher was both ethnographer and interviewer in the study, spending time in the school context as an Educator Assistant (EA) during 2011 while also formally observing the interactions between teachers and students and speaking to the teachers. This dual role was made explicit in the ethics application. As an EA, the researcher was able to participate fully within the school context as a member of the group. Her identity as a researcher was known to the teachers and students and the dual role allowed for firsthand observation of participants and students in their lessons. It was explained to the participants that the purpose of the research project was to assess their relationships with students, their understanding of students’ cultures and their need to make critical decisions about how they embrace diversity in their classrooms and respond to the needs of their students.

Profile of the participants

A purposive sample of four early childhood teachers from the same educational institution was chosen for the research. This specific group was chosen because the teachers had experience of teaching multicultural groups from low socioeconomic backgrounds in a school where 90 per cent of the children come from cultural minorities and 40 per cent were born outside Australia. At the time of
the research, the school was in transition from the West Australian Curriculum Framework to the EYLF. Two out of the four teachers in the study were born in Australia. Of these, one had an Indian background and one had a British background. The other two were born in China and Bangladesh but had resided in Australia for a considerable amount of time. Teaching experience ranged from three to eight years with the mode being three to four years. Table 1 gives more detail.

**Data collection**

Teachers in the study were interviewed individually on one occasion for a period of 30–45 minutes, face to face, using semi-structured, open-ended interview questions. Prolonged, in-depth conversation provided rich data. Guiding interview questions have been listed in Appendix 1. It is acknowledged that questions 5 and 9 may be seen as perpetuating notions of the ‘Other’ but a decision was made to make questions accessible to the participants (and get rich data) by wording them simplistically. Similarly, questions 6 and 7 might appear to be leading questions but they were sufficiently open and loosely structured to encourage differences of opinion. The semi-structured nature of questions also allowed the interviewer to modify questions as she went along. Field notes were written up over the duration of the study; these described and reflected upon lessons observed.

**Data analysis**

Data was analysed using a Miles and Huberman (1994) thematic approach. Findings were documented as thick descriptions (Miles & Huberman, 1994). Analysis was authenticated by extensive participant quotation, the goal being to build an in-depth picture of participants’ understandings of, and responses to, cultural diversity. All data were received through the cultural lens of the researcher’s beliefs and experiences as a Muslim, Indonesian–Australian woman in her early 20s who has undertaken all of her schooling and tertiary education in Australia (Fraenkel & Wallen, 2003) and read literature in the field.

**Findings and discussion**

**Teachers’ conceptions of cultural diversity**

Each of the four teachers had a different understanding of cultural diversity. T2 and T3 saw cultural diversity as centred on issues of racial identity and religious beliefs. Their responses mirrored the Australian Government’s narrow definition of multiculturalism as ‘... the cultural and ethnic diversity of contemporary Australia’ (DIAC, 2006). T2 defined cultural diversity as ‘people having different ethnic backgrounds … different religions and … different ways of life’. T3 saw cultural diversity as ‘differences in culture and in religion’. Both of these perspectives emphasised ‘tolerance and acceptance’ (Robinson & Jones Diaz, 2006, p. 72). T1 and T4, however, expanded their definition of cultural diversity to include differences in social structures, gender roles, economic status and political beliefs, resonating with views of cultural diversity as ‘linked to broader societal process, policies and practices’ but still falling short of recognising the impact of racism, discrimination and inequality (Robinson & Jones Diaz, 2006, p. 72). T1 further recognised the significance of culture and religion in determining ‘... values, family size and structure, child-rearing practices, gender roles, role of educators, recreational activities, food and festivals’. T4 saw cultural diversity as a phenomenon that ‘allows for people to interact with each other but at the same time not losing their mother tongue’.

The participants were positive about multiculturalism. They believed, however, that, as in McInerney’s study (1987), effective multiculturalism was reliant upon appropriate regulation and assimilation into the dominant culture. This drive for conformity and maintenance of the status quo are embedded in cultural practices and beliefs put into place by bureaucracies and socialising agents like school (Keeffe & Carrington, 2008). When asked about her views on assimilation T4 replied:

<table>
<thead>
<tr>
<th>School—Independent K–12</th>
<th>Teachers</th>
<th>Gender</th>
<th>Age</th>
<th>Ethnic background</th>
<th>Time in Australia</th>
<th>Qualification/ years of teaching experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kindergarten</td>
<td>T1</td>
<td>Female</td>
<td>32</td>
<td>Indian–Australian</td>
<td>Born in Australia</td>
<td>Bachelor of Primary Education/ 3 years</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>Female</td>
<td>35</td>
<td>Anglo-Saxon</td>
<td>Born in Australia</td>
<td>Bachelor of Early Childhood Education/ 8 years</td>
</tr>
<tr>
<td>Year 1</td>
<td>T3</td>
<td>Female</td>
<td>26</td>
<td>Chinese–Australian</td>
<td>24 years</td>
<td>Bachelor of Primary Education/ 3 years</td>
</tr>
<tr>
<td>Year 2</td>
<td>T4</td>
<td>Female</td>
<td>35</td>
<td>Bengali–Australian</td>
<td>31 years</td>
<td>Bachelor of Primary Education/ 4 years</td>
</tr>
</tbody>
</table>
Anyone who comes into Australia should share the same values as shared by all Australians and to abide by and fulfil their obligations within a democracy.

T2 reiterated this view by stating:

Multiculturalism is the greatest thing in this country but anyone who comes into this country needs to at least understand and in some aspects live the Australian way of life but then again, not lose their own culture in the process.

T3 shared the same perspective as the other participants:

You should be willing to learn about the Australian culture, its values, beliefs and traditions and by this I don’t mean you have to go to the beach and you have to have a barbeque every weekend. You need to be part of the wider community and not isolate yourself among your own kind of people.

**Teachers’ beliefs about the shaping of cultural conceptions**

Teachers’ unquestioned responses to cultural diversity had generally been shaped by family, friends, the media and interaction with people from other cultures. Perceptions about cultural or ethno-linguistic groups were generalised. For example T2 described how her conceptions of cultural diversity were formed:

I have learnt about my personal identity through my family but the messages from the larger society soon filtered through and became another critical influence. These messages were explicit and I guess in other ways I was brainwashed ... they mainly came from other family members, friends, movies and television and from books and advertising. I was so dependent on others telling me who I was but as I grew I started to search and find out who I was, and then I could start to learn about others.

T2 believed that the flip-side of social identity could be stereotyping, prejudice and discrimination. She felt that social reality was a media creation which could undermine access that immigrants have to opportunities and resources in society. She reflected, ‘Try being Muslim in today’s society, it’s not easy’. As a born and bred Australian she would have few real insights into what it would be like to be Muslim in today’s Australia but close personal contact with her Muslim students had probably led her to feel that life was not always easy for them.

T1 and T3 shared similar experiences. They admitted being unaware of their own prejudices and cultural biases, despite being members of minority groups themselves. As T3 explained:

I came to this country when I was around two years old and I had a very cultural upbringing ... the white kids at school would call me all sorts of names, my parents called them racists. We would always talk bad about the white people at home and how bad they treated us at school and at work and it all seemed ok to talk about them in that way, after all they didn’t treat us very nice. I guess hearing all this stuff at home about white people helped build this picture that all white people are racist ... I was so caught up in the hype I didn’t even realise what I was doing ... I was being racist myself.

T3’s reference to her ‘cultural upbringing’ is somewhat ambiguous. It could be interpreted as either an upbringing steeped in what might be seen as ‘high’ culture (i.e. literature, art, classical music) or an upbringing which was very intercultural in nature.

T1 said:

It’s weird, like when I go to the GP I will always go for a white Anglo-Saxon doctor because I’ve heard that the Asian doctors are dodgy, watching A Current Affair you know ... I’ve always heard how Arab and Muslim men keep their women at home and make them look after the babies and slave away over the stove and it always made me angry but when I walk out I actually noticed a lot of Arab women walking around and shopping with or without their husbands ... my Arab friend explained that it’s not like that at all you know? Sometimes once you hear something you just accept it without question and take it as like gospel truth.

T2 also suggested that positive and negative attitudes towards differences are formed early in life, a view in line with that of Derman-Sparks and Edwards (2010). She understood it was essential to examine ‘Self’ in order to be able to teach and nurture all children fully and equally. T1 implicated the media in her images of non-Anglos. These images changed once she had had close personal contact with people from non-Anglo backgrounds, she said.

**Teachers’ attitudes towards cultural diversity in the classroom**

Participants held positive attitudes towards cultural diversity in the classroom. They acknowledged and valued identity recognition, suggesting that their attitudes had been shaped by family, friends, the media and interaction with people from other cultures. They identified what was important to them in terms of values and beliefs and recognised the need for reflection on ‘Self’ and ‘Other’.

T3 expanded on T2’s point in the previous section about the need for a critical cultural self-assessment:

If we want the children to be accepting of differences, then we need to look at our own beliefs and practices because surely they influence our behaviour and the way in which we interact with the children and their families ...
T4 added, ‘We need to provide positive experiences related to diversity and we can’t do this if we have not addressed our own feelings about differences’. Like Montgomery (2010), participants recognised the need to understand one’s own history, beliefs, values and culture. Furthermore, they realised that culturally responsive education is reliant upon acknowledgement of and respect for the diversity that exists within the classroom (Keeffe & Carrington, 2006) as seen in T3’s account below:

It’s the most amazing thing to have to come to every morning ... they all have different personalities, different views on life and different aspirations ... no doubt we have our problems sometimes but what classroom doesn’t?

T2 added to this impression:

On Harmony Day when the kids come in to school with their cultural dress you feel like you are no longer in Australia, somehow you are transported to a different country every time you see a different child and the cultural baggage they bring with them is suddenly meaningful and you truly begin to appreciate each atom of diversity that exists within our class.

T2’s reference to Harmony Day highlights the point made by Schoorman (2011) and others (Derman-Sparks and Edwards, 2010), that cultural diversity is often packaged up neatly into artefacts, food, costumes and ‘special days’ in schools while cultural examination remains at a superficial level. The expression ‘cultural baggage’ brings with it deficit connotations but once dressed up in colourful costumes the children and their ‘baggage’ become more palatable.

Teachers’ ways of dealing with cultural diversity in the multicultural classroom

Participants framed their responses to culturally responsive education in two ways: lack of attention to English language development; and immersion of young children into the dominant culture. The perspective on linguistic problems is a major focus of its own and is dealt with in another paper. Immersion of the children into the dominant culture, however, is a theme central to this paper.

Teachers expressed progressive, culturally sensitive and reflective views during interview but often adopted a teaching style designed to meet the expectations of significant others. Despite recognising the need to acknowledge and honour cultural differences in the classroom, participants adopted a ‘one-size-fits-all’ approach. There was also a sense that teachers felt students and their families were ignorant of how to integrate into Australian society. As in other studies (Derman-Sparks & Edwards, 2010; Keeffe & Carrington, 2006), teachers believed it their duty to help the children in their charge develop the skills, values and attitudes necessary for survival in the dominant culture.

During interview, T4 talked about helping the children with ‘openness in communication, a tolerance for other cultures, independence, individual rights’ and democracy. T1 explained ‘I’m not trying to assimilate the children into the Australian culture but as teachers we have a responsibility to teach the children the values, beliefs and attitudes we share as a nation’. T2 added:

I’m really for gender equality … sometimes with the families that come here you’ll come face to face with attitudes that are just so backwards and I feel if you want to come here [Australia] then you will definitely need to change your views on gender roles etcetera because I believe women and men are equal.

T3 shared the views of the other participants and stated:

I want my kids to leave my classroom with a sense of independence, respect and justice. I don’t mind what the children and their families do at home but sometimes you need to leave some things at home and be a part of the dominant culture to fit in and succeed.

Such views fall short of acknowledgement of the social and cultural contexts of individual children and their families (Banks, 2007; Keeffe & Carrington, 2006). In another lesson a student approached T4 to ask a question while looking at his book and fiddling with his pencil. T4 urged the student to repeat his question and make direct eye contact. He repeated his question but continued to look down at his book and was once again urged to look at the teacher. His eyes moved around the classroom while he was speaking. T4 gently took his face and directed it towards hers. The student tried to move his head out of T4’s grip. T4 explained to him that she refused to answer his question because it was bad manners not to look at a person to whom you were speaking. T4’s actions seemed to be uninformed by cross-cultural pragmatics and the rules governing direct eye contact in different cultures, a phenomenon also observed by Keeffe & Carrington in their studies (2006).

A further example of cross-cultural insensitivity arose during lunch break when T2 was monitoring a Singaporean student:

T2: Natassa your noodles look so yum ...

T2: … It smells really good but maybe next time you can bring something like a sandwich for lunch.

T2: (Walks around the classroom.) See Jay has some egg and lettuce in his sandwich (continues walking around) Maryam has ... (looks at Maryam’s sandwich) some tuna, mayonnaise and some lettuce in hers. (Addresses whole class) Who else has a sandwich?

(Students call out and raise their hands to show they have a sandwich.)


T2: (Addresses Natassa) You can eat your yummy noodles at home because I know how yummy they are. I love my noodles but when you come to school maybe bring a healthy sandwich.

Educators sometimes use their own realities of the dominant culture to determine what belongs and what does not belong. They may unintentionally forget to acknowledge, value and respect the cultures and traditions of different children and different families (Banks, 2007; Derman-Sparks & Edwards, 2010).

T4 justified her efforts to encourage students to adopt certain values and attitudes as follows:

Many lack awareness of how to function in the Australian culture or environment especially at this school; many families are completely stuck in their own cultures and traditions ... sometimes these kids lack self-confidence and often you have to pose a problem to them to know they are socially and morally capable.

Teacher behaviour seemed to be governed by a sense of anxiety about parents’ or principals’ expectations and a fear of students falling below the standards. This is illustrated in the following exchanges between teachers and individual students as well as the class as a whole:

T4: Don’t worry we’ll keep practising but you need to try and say it right because the principal will be watching you and everyone else.

T3: Hmm someone hasn’t been practising at home have they? I may need to talk to your mother this afternoon.

T4: (Addresses student) so now do you see we use division and not multiplication. You are in Year 2 now, you should know this; (addresses whole class) in fact all of you should know this.

Teachers’ understandings of the goals of multicultural education

Participants agreed on two things. First, it was important to teach children about different cultures and, second, the most effective way to do this was to emphasise points of comparison between cultures. In doing so, the participants sometimes unwittingly accentuated stereotypes and highlighted their limited metacultural awareness. In her response to the idea of preserving cultural, linguistic and religious differences T1 said:

I think the easiest way to help children learn more about their culture is to talk about what makes that culture special ... I usually borrow books that contain facts about a particular culture and we sort of learn from the facts because I have my own culture and I don’t understand much about other people’s culture so the internet and books are a big help.

T3 told her story:

We were learning about Aboriginal culture ... we did dot paintings and we looked at pictures of Aboriginal people living in the bush ... It was funny because one of the kids seemed confused; he told me that he had a neighbour who was Aboriginal ... and did not look like the Aboriginals shown in the picture and he asked me ‘does my neighbour really eat bugs and insects?’ I was just lost for words ... I didn’t know what to say ... I didn’t realise I was stereotyping a particular group of people ... that wasn’t the message I was trying to portray.

Such an approach risks focusing on the exotic and failing to provide children with up-to-date information or insights about how people in different cultures live their daily lives. Commercial material can be useful but, as suggested by Pelo (2006) and Robinson and Jones Diaz (2006), and made evident in the questions asked by the student above, there is no substitute for active investigation, reflection and dialogue between students or students and teachers.

Teachers’ beliefs about the role of the family in culturally responsive curriculum

Freire and Macedo (1999) suggested that interactions with families should embrace respect, reciprocity and responsiveness. The teachers in this study all recognised the need for close partnerships with families. They identified families as valuable and indispensable members of the early childhood setting who need to be involved and engaged in the planning process for their children. Despite this belief, the participants shared the view that it was ‘too hard’ to work with the immigrant families in this particular setting because parents did not show enough interest and language barriers were insurmountable. T2 explained:

Sometimes you try to talk to them and ask them how their day has been and they just smile at you because they have no idea what you’re on about ... some of the families don’t even turn up for parent-teacher interviews and it makes me annoyed because we spend so much time preparing all this stuff on their child and they just don’t bother ... it must be because they can’t speak English ...

Kiriakou (2001) has warned that with changing demographics, teachers in Australia can no longer afford to place issues of cross-cultural communication in the ‘too-hard basket’.

Propositions

Three propositions emerged from the findings of the study. They pertained to teachers’ views about ‘cultural baggage’, teachers’ preoccupation with conformity and teachers’ fears of failure.
Culture and language seen as cultural baggage

Despite positive teacher attitudes towards multiculturalism, there was a feeling that learners were trapped or ‘stuck in their cultures’. This created a tension between the celebration of ‘cultural baggage’ (T3) as ‘amazing’ and the perception of cultural baggage as a burden. Teachers saw cultural baggage as ‘an encumbrance’ or a restriction rather than a ‘safety net’ which can prevent students from falling into insecurity (Louie, 2005, p. 23). There seemed to be recurrent Othering and an emphasis on ‘us’ and ‘them’ which resulted in a tokenistic, superficial, ‘tourist approach’ to teaching and learning (Schoorman, 2011). The children's experiences and cultural knowledge were not always recognised as a resource (Keengwe, 2010).

Conformity overrides diversity

Participants often took on parent roles and there was an underlying sentiment that in order to survive the children need to be ‘like us’. The dominant culture was used as a tool by which to measure the value of other peoples’ culture. This sends a ‘West and the Rest’ message that any culture which is not Western is regressive and ‘backward’. Such practice does not resound with pedagogies designed to empower children (Fleet, 2006; New & Cochran, 2007) and allow for freedom of expression and comfortableness (UNICEF, 2013).

Fear of failure

The commitment to preparation and education of children within the spectrum of the dominant culture could be attributed, in part, to the participants’ fear of failing not only the students but also their line managers and the students’ parents. The teachers seemed to share an overall anxiety about meeting ‘standards’. Any faltering in this aim might reflect badly on them as teachers and migrants or children of migrants. Such a stance is in conflict with the idea of Developmentally Appropriate Practice (DAP) (NAEYC, 2009) and, therefore, needs to be challenged or become better informed.

Recommendations

In light of the findings from this small ethnographic study, the following recommendations are made:

In-service and pre-service practitioner education courses would benefit from core course content on social, political, historical, religious and cultural issues pertaining to the regions from which students originate. The new National Curriculum in Australia recognises the need for intercultural competence in graduates and dictates that explicit attention be given to this endeavour. The challenge now is to make sure that units dedicated to raising cross-cultural awareness do not resort to a ‘tourist’ or Othering approach. They need to emphasise the dynamic nature of culture.

Practitioner advice on how to deal and engage with cross-cultural diversity needs to be embedded in all pre-service and in-service teacher education units and courses.

Pre-service educators need opportunities to engage firsthand with culturally diverse groups of children during teacher education practicums.

Skills for critical reflection need to be refined in pre-service and in-service practitioner education with examination of Self and Other, personal identity, values and the social, theoretical and educational discourses that have helped shape Australian practitioners.

Government and private education providers need to support teachers dealing with refugee and immigrant children. Teachers in this present study were making the best of limited resources but on many occasions this proved to be inadequate and stressful for both teachers and children. Multilingual translator services, specialised English as an Additional Language/Dialect teachers, professional support and community support networks that can help immigrant families settle into their communities would benefit these teachers. Such resources are expensive, and this would not be the first piece of research to advocate greater spending, but it is necessary to reiterate this stand.

Opportunities for better informed practitioners to engage in dialogue with students and their families about teacher and learner expectations need to be formally established. One way to achieve this might be through learning journals where students, teachers and parents record their questions, impressions and anxieties with the aid of a translator. Alternatively, regular face-to-face meetings between the three parties may be effective.

Conclusion

The study reported in this article highlights instances in which children from culturally diverse backgrounds were Othered. Attempts were made by well-intentioned teachers, who were migrants themselves in some cases, to integrate the children into the dominant culture in order that they might succeed. Despite the best intentions of teachers, cultural diversity was celebrated in a perfunctory manner. Comments from teachers revealed their lack of confidence and knowledge in this area.

Building an inclusive culture in a school is paramount. This can only occur if teachers are informed, willing and confident to question and critique their own personal and collective beliefs and the values and practices underpinning their teaching. Increased metacultural sensitivity and awareness on the part of early childhood teachers could facilitate confidence and a more symmetrical dialogue between families and educators. Australia has a culturally diverse population and intercultural competence is not a luxury but a necessity. The need to look outwards rather
than inwards and have ‘a more general understanding of the region’ underlies the recommendations put forward by the latest White Paper—Australia in the Asian century (Australian Government, 2012). More dialogue, and an increased government or school response to the resourcing of schools, could lead to a greater connection between teachers and the children of culturally diverse families. In this way, wider perspectives and context-appropriate practices could be fostered. As Kofi Annan said, ‘Diversity is not only the basis for the dialogue among civilizations, but also the reality that makes dialogue necessary’ (Annan, 2000).

References


Appendix 1—Interview questions

1. What does cultural diversity mean to you?
2. How have you built up your knowledge/perceptions of cultural diversity in society? What are the sources of these perceptions?
3. How do you feel about the culturally diverse children in your classroom?
4. How have your feelings influenced the way you respond to your students?
5. What do culturally diverse students bring with them into your classroom?
6. What do you believe culturally diverse children need to have/be equipped with before they enter formal schooling?
7. What do you believe are some of the ‘issues’ you encounter teaching in a multicultural classroom?
8. How do you respond to these ‘issues’?
9. How do you believe culturally diverse students learn best?
As part of our commitment to advancing reconciliation in the early years, ECA will be hosting a national symposium at the Stamford Grand Adelaide, 8–9 May 2015 to explore reconciliation within the sector.

This will be a unique opportunity for leaders (organisational, operational and pedagogical) within the sector to:

- explore the nature of reconciliation in the early childhood context
- understand how educators can implement exemplary practice in their daily interactions with children and families
- contribute to the broader discussion about how we all actively demonstrate our appreciation of Aboriginal and Torres Strait Islander cultures.

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Artwork: The Seven Sisters, acrylic on canvas by Joyce Mclean
Children's use of the internet

The internet has become pervasive in children’s lives, through home or school computers with internet access, or through mobile devices, such as smartphones or tablets, granting children easy access not only to internet web browsers but also to various apps and online games at any time, from anywhere, for any age. The National Centre for Educational Statistics (2003) in the United States found that 23 per cent of children in preschool (aged three to five years) have started to use the internet and that there is increased use in the kindergarten years (age six). The trend of using the internet has greatly increased in the past few years. In 2011, Dodge et al. found that 84 per cent of kindergarteners to second-grade (K–2) children use the internet at home or at the library. Worthen’s (2012) study reported that children's iPad™ use starts as early as age two years in the United States. In Singapore, 65 per cent of children aged three years have access to various online technologies, including smartphones and tablets (Teng, 2013). Furthermore, in a country like Singapore, online technology has become integrated into early school learning activities to promote children’s access to knowledge and information beyond the classroom, and for greater flexibility and mobility in learning (Ng, 2008). However, how online technologies influence children’s development and how children should use them are still contentious issues (Yelland & Kilderry, 2010).

Theories and studies show that the internet is beneficial to children’s development

Various theories and studies (e.g. Downing, 2001; Johnson, 2010) have elaborated on and proven that internet access is beneficial to young children’s development and learning. Based on cognitive constructivist theories that emphasise that learning is the result of a child’s maturation and his or her interactions with the environment, the internet provides an environment for children to assimilate and accommodate their prior knowledge and new information (Downling). Even preschoolers and kindergartners who do not have a large vocabulary can combine their current knowledge and the new knowledge gained from the multiple ways of presentation, through the images, symbols, text, audio and video that the internet provides (Johnson). In addition, some early childhood educators even use a special application to generate human speech to read text word by word that is displayed on a web page to ease concerns about children’s limited vocabulary (Loo, 2013).

Conversely, social constructivist theories emphasise that children’s learning relies on their participation in various social activities, and through participation and the communication of language, individuals’ thinking can be scaffolded and advanced (Vygotsky, 1986). From this perspective, the internet provides numerous social activities, such as messaging, emailing and
social networking, to expedite the various ways of communication with a growing number of types of scaffolding for thinking and learning (Johnson, 2010). Furthermore, Bronfenbrenner’s (1979) ecological theory, which identifies the layers of the environmental systems embedded within the various social activities that influence a child’s development and learning, can also shed light on the effects of the internet on children. For the internet, Johnson and Puplampu (2008) proposed the ecological techno-subsystem as a dimension of the microsystem to interpret children’s direct interactions with non-living (hardware) tools such as information, communication and recreation technology. Complex tools enable the complex cognitive system to use these tools and accommodate information to scaffold children’s cognitive development further (Johnson, 2006; Nickerson, 2005).

Moreover, studies have proven that internet access is beneficial to young children’s cognitive development (Fish et al., 2008; Johnson, 2006), reading skills (Jackson et al., 2006), and school readiness (Li & Atkins, 2004). Fish et al. (2008) found that preschool children who have internet access at home perform better cognitively than children who have no or limited access. Furthermore, the factor of internet access at home showed even stronger correlations to children’s cognitive abilities than the factor of parents’ socioeconomic status (SES) (Johnson & Puplampu, 2008). These findings are similar to the earlier finding by Fuchs and Wossmann (2005) that children’s access to the internet is positively related to their school academic achievement. Johnson (2006) further interpreted that ‘from a developmental perspective, internet use stimulates the cognitive process involved in interpreting text and images; metacognitive processes such as planning, search strategies, and evaluation of information are exercised when navigating websites’ (p. 177). In terms of children’s reading abilities, Jackson et al. (2008) also found that children who use the internet for six months score higher on reading tests because the digital literacy environment promotes early literacy development. For school readiness, Li and Atkins (2004) found that internet access in the preschool years is related to elementary (primary) school readiness and later school achievement. Therefore, in a country like the United States, social policy initiatives support children’s use of the internet as being developmentally appropriate and as having benefits for children’s development (Sandvig, 2003).

In short, (cognitive and social) constructivists and various studies have elaborated on and validated that the internet can benefit children’s development. However, the ways to use it and the factors which influence its use, particularly in the early childhood context, are not well understood and should be further studied. Therefore, the purpose of this study is to explore how the internet can be used in early childhood settings by studying preschool teachers’ views and whether their technology-related capacities play a role in predicting their views.

### The frameworks of the study:

#### A Constructivist Internet-Based Environment (CIBE) and early childhood teachers’ technology-related knowledge (ECTTK) in teaching

To understand teachers’ views on the ways to use the internet to facilitate learning, and their technology-related capacities, our study uses two theoretical frameworks: CIBE and ECTTK.

#### A Constructivist Internet-Based Environment (CIBE)

The benefits of the internet to education have been addressed by cognitive constructivists and social constructivists, as mentioned previously, who affirm that it facilitates the automatic and collaborative learning which is believed to be important to early learners (Wen et al., 2004). Further, Chuang and Tsai (2002) elaborated on how the internet can facilitate constructive learning by specifying the functions it provides to make it a CIBE, including: (1) providences of multiple sources; (2) relevant information; (3) opportunities for students’ inquiry-based learning; (4) negotiations; and (5) apprenticeship, as a theoretical framework for our study of teachers’ preferences. These functions are derived from both the exterior and interior dimensions of CIBE. The exterior dimension denotes the person–machine interaction that defines the functions provided when a person interacts with the technology system and content, while the interior dimension denotes the person–activity interaction which includes other functions accessed when a person interacts with the internet-based learning activity. The functions provided by the exterior dimension indicate the content aspect, which refers to the information and multiple sources contained in the internet and their relevance to various learning contexts. With mounting resources and multiple modes of presentation (by symbols, games, audio and video), the internet learning environment offers flexibility and alternatives of instruction that can centre on a child’s needs and facilitate autonomy in learning (Wen et al., 2004). The functions provided by the interior dimension include the cognitive aspect, which addresses how cognitive activities and strategies, particularly opportunities for in-depth inquiry into a topic, students’ negotiation skills and cognitive apprenticeship, are facilitated by the internet. For inquiry into a topic, the wide variety of information displayed in internet-based learning can not only match children’s different levels of knowing, but also assist their in-depth inquiry into a topic. For students’ negotiation skills, email, social media and other online technology that facilitates online communications and conversations provide another possibility for peer-to-peer negotiation and collaboration by using varied expressions such as words, symbols and photos. For cognitive apprenticeship, multiple presentations and interpretations of knowledge can challenge children’s past knowing by constructing new
Early childhood teachers’ technology-related knowledge (ECTTK)

Moreover, we also adopt a number of scholars’ elaborations (i.e. Angeli & Valanides, 2006; Koehler & Mishra, 2009) on technology-related knowledge in teaching as another theoretical framework to study ECTTK and investigate whether it can predict teachers’ preferences for using a CIBE. ECTTK includes: (1) technological knowledge (TK); technological content knowledge (TCK); technological pedagogical knowledge (TPK); and technological pedagogical content knowledge (TPCK). TK means ‘the knowledge of the operation of technology and the application of software’; TCK indicates ‘the knowledge of using technology to teach subject content’; TPK refers to ‘the knowledge of using technology to assist the desired teaching approaches’; and TPCK specifies ‘the knowledge of integrating technology into teaching’.

Research objectives and questions

The primary purpose of this study is to explore early childhood teachers’ preferences for the various functions of a CIBE by adopting Chuang and Tsai’s (2002) work (as explained previously). These functions include multiple resources, relevance to the topic, inquiry, student negotiation, and cognitive apprenticeship. Second, we are interested in whether teachers’ technology-related capacities can predict their preferences.

The particular research questions are as follows:

1. What are early childhood teachers’ preferences for using the various functions of a CIBE in classroom teaching and learning?
2. What do these various functions of a CIBE mean to early childhood classroom activities for early childhood teachers?
3. Are teachers’ technology-related capacities able to predict their preferences for a CIBE?

Research methods

This study adopts a mixed-methods approach with a quantitative-led concurrent nested design by referring to Hansen et al.’s (2004) and Tashakkori and Teddlie’s (2003) framework. The purpose of qualitative data is to explain quantitative findings. In our study, the quantitative data was collected by using the CIBE and ECTTK instruments, while the qualitative data was collected by interviewing teachers (elaborated further in the next section).

A total of 155 participants from 35 government-funded and 59 private childcare centres and kindergartens, which are believed to be representative of the types of early childhood schools in Singapore, volunteered to participate in this part of the study and complete the questionnaires.

Instruments

Early childhood teachers’ preferences for a CIBE

A self-reported 7-point rating scale questionnaire ranging from 1 (strongly disagree) to 7 (strongly agree) with 25 items of five scales was developed to explore early childhood teachers’ preferences among the various functions of CIBE by adopting and adapting the Constructivist Internet-Based Learning Environment Survey—Improvement (CILESIs) developed by Lee and Tsai (2005). The scale has been shown to have good reliability with an overall alpha of 0.97. A brief description of the five scales of the CIBE is presented below (and in Table 1) to measure early childhood teachers’ preferences for using an internet-based learning environment:

1. Relevance scale: presents the information that is related to children’s learning
2. Multiple sources scale: contains various information sources and interpretations to facilitate children’s learning
3. Student negotiation scale: provides opportunities to let children share and discuss ideas with each other
4. Inquiry learning scale: gives opportunities to let children carry out their own investigations
5. Cognitive apprenticeship scale: provides guidance and feedback to promote children’s learning.

Early childhood teachers’ technology-related knowledge (ECTTK) in teaching

To understand if ECTTK in teaching is able to predict their preferences for a CIBE, we developed a new questionnaire called the Early Childhood Teachers’ Technology-related Knowledge (ECTTK) questionnaire by adopting some parts of the TPACK (technological, pedagogical and content knowledge) questionnaire developed by Chai (2010). The ECTTK is a self-reported 7-point rating scale questionnaire ranging from 1 (strongly disagree) to 7 (strongly agree), with four scales (24 items). The scale has been shown to have good reliability with an overall alpha of 0.97. These four scales (also see Table 2) evaluate early childhood teachers’ knowledge of the following:

1. Technological knowledge (TK): technological knowledge
2. Technological pedagogical knowledge (TPK): using technology to teach
3. Technological content knowledge (TCK): using technological knowledge to teach content knowledge
4. Technological pedagogical content knowledge (TPCK): ICT integrated knowledge.

Qualitative interviews
To supplement and expand the quantitative findings from the questionnaire, interviews were conducted with another 13 self-nominating teachers, including three from government-funded and 10 from private childcare centres. These teachers volunteered to take part in an interview to explain their views concerning the meanings of using the five functions of a CIBE in the early childhood classroom. The interviews adopted a face-to-face semi-structured format. Each interview took about one hour and was audio recorded and transcribed by the research team.

Data analysis procedures
The research was conducted from January to November 2012 for the entire process of data collection and analysis. Before the commencement of the study, the data collection and analysis procedures obtained the ethics approval of the university Institutional Research Board (IRB) to make sure the study was volunteer based and did not intrude upon the participants. Both quantitative (the CIBE instrument) and qualitative data (interviews) were collected and analysed simultaneously by the researchers. For the quantitative data, first exploratory factor analysis was utilised to clarify the scales of the two instruments we adopted in the study. As each scale for both instruments included three to five items, mean scores were also utilised to present each scale. In addition, through a stepwise multiple regression analysis, ECTTK in teaching was viewed as predictors to explain their preferences for a CIBE.

The interview qualitative data was analysed with a series of three steps. First, the researchers transcribed the interview data. Second, a topic coding strategy was used to pick up the lines, where the interviewees elaborated on their ideas related to ‘the respective functions of internet means to teaching and children’s learning’, grouping them into various descriptive topics (Richards, 2009). Third, we aggregated the descriptive topics among 13 participants into categories (Hatch, 2007). Fourth, we compared the categories among 13 participants to identify similar or consistent categories for reporting purposes.

Results
Exploratory factor analysis of the CIBE and ECTTK
The results of the exploratory factor analysis of the CIBE questionnaire are shown in Table 1. In this study, principal component analysis was adopted as the extraction method, and the rotation method of varimax with Kaiser normalisation was used as well. The factor loading of each item weighted greater than 0.4 on the relevant scales and less than 0.4 on the non-relevant scales in the CIBE. Consequently, five scales with a total of 23 items were kept in the final version of the CIBE. These scales accounted for 82.56 per cent of the variance. The eigenvalues of the five scales were all larger than 1, and the reliability (alpha) coefficients for these scales were 0.92, 0.95, 0.90, 0.95 and 0.93, respectively, with the overall alpha being 0.97. Hence, the CIBE, with five scales, was deemed to be adequately reliable for measuring early childhood teachers’ preferences for a constructivist internet-based environment.

Table 2 shows the exploratory factor analysis results for the ECTTK. Similar to the CIBE, the ECTTK used a factor loading greater than 0.4 for retaining the items. Therefore, five scales with 16 items were kept in the final version of the ECTTK, and the total variance explained was 90.74 per cent. The alpha coefficients of each scale were 0.90, 0.93, 0.97, 0.95 and 0.97, respectively, and the overall alpha coefficient was 0.97. Hence, the ECTTK, with five scales, was deemed to be sufficiently reliable for assessing early childhood teachers’ technological knowledge of teaching. It is worth mentioning that the original technological knowledge (TK) construct is divided into two constructs in this study: general technological knowledge (TK-general) and communicative technological knowledge (TK-communicative) in the results of our exploratory factor analysis.

The early childhood teachers’ mean scores on the scales
Table 3 shows that the teachers’ mean score results on these two instruments were all over 5 points on a 7-point Likert scale (except for the TPCK scale of ECTTK). For the CIBE, the teachers scored highest on the ‘Multiple sources’ scale (an average of 6.00 per item), followed by the ‘Cognitive apprenticeship’ scale (an average of 5.94 per item), the ‘Relevance’ scale (an average of 5.92 per item), and the ‘Inquiry learning’ scale (an average of 5.82 per item), while the lowest was the ‘Student negotiation’ scale (an average of 5.94 per item). The results imply that the early childhood teachers tended to show high preference for adopting a CIBE.

Of the scales of the ECTTK, the teachers attained the highest scores on the TK-communicative scale (an average of 5.61 per item), followed by the TK-general scale (an average of 5.30 per item), the TCK scale (an average of 5.15 per item), and the TPK scale (an average of 5.13 per item), and the lowest on the TPCK scale (an average of 4.96 per item). Although the teachers scored relatively low on the TPCK scale, the scale average score was still somewhat higher than the theoretical mean of the 7-point Likert scale (i.e., 4). The results revealed that the teachers in this study tended to express a variety of technology-related knowledge in teaching.

Stepwise multiple regression analysis for predicting teachers’ preferences for a CIBE
Table 1. Scales of items for questionnaire on teachers’ preferences for using the various functions of CIBE

<table>
<thead>
<tr>
<th>Scales</th>
<th>Factor loadings</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Relevance (Cronbach’s alpha 0.92)</td>
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<tr>
<td>I prefer to use online technology in order to:</td>
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<tr>
<td>1. show how complex real-life environments are for my students</td>
<td></td>
<td>0.69</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2. present data in meaningful ways for my students</td>
<td></td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. present information that is relevant to my students</td>
<td></td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. present realistic tasks for my students</td>
<td></td>
<td>0.64</td>
<td></td>
<td></td>
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<tr>
<td>5. have a wide range of information for my students.</td>
<td></td>
<td>0.66</td>
<td></td>
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<td></td>
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<tr>
<td>2. Multiple sources (Cronbach’s alpha 0.95)</td>
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<tr>
<td>I prefer to use online technology in order to:</td>
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<tr>
<td>1. provide a variety of relevant content</td>
<td></td>
<td>0.79</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. discuss a learning topic though various perspectives</td>
<td></td>
<td>0.80</td>
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<tr>
<td>3. present a learning topic by different methods</td>
<td></td>
<td>0.83</td>
<td></td>
<td></td>
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<tr>
<td>4. offer various information sources to explore a learning topic</td>
<td></td>
<td>0.83</td>
<td></td>
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<tr>
<td>5. connect to rich relevant digital resources.</td>
<td></td>
<td>0.81</td>
<td></td>
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<tr>
<td>3. Student negotiation (Cronbach’s alpha 0.90)</td>
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<tr>
<td>I prefer to use online technology in order to facilitate:</td>
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</tr>
<tr>
<td>1. my students to talk to other students</td>
<td></td>
<td>0.81</td>
<td></td>
<td></td>
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<tr>
<td>2. my students to discuss with other students how to conduct investigations</td>
<td></td>
<td>0.79</td>
<td></td>
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<tr>
<td>3. my students to ask other students to explain their ideas</td>
<td></td>
<td>0.74</td>
<td></td>
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<tr>
<td>4. my students to ask me to explain my ideas.</td>
<td></td>
<td>0.53</td>
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<tr>
<td>4. Inquiry learning (Cronbach’s alpha 0.95)</td>
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<td></td>
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<tr>
<td>I prefer to use online technology in order to facilitate:</td>
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<td></td>
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</tr>
<tr>
<td>1. my students to carry out investigations to test their own ideas</td>
<td></td>
<td>0.70</td>
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<tr>
<td>2. my students to conduct follow-up investigations to answer their new questions</td>
<td></td>
<td>0.72</td>
<td></td>
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</tr>
<tr>
<td>3. my students to design their own ways of investigating the topic</td>
<td></td>
<td>0.78</td>
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<tr>
<td>4. my students to approach a topic from more than one perspective.</td>
<td></td>
<td>0.73</td>
<td></td>
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<tr>
<td>5. Cognitive apprenticeship (Cronbach’s alpha 0.93)</td>
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<td></td>
</tr>
<tr>
<td>I prefer to use online technology in order to:</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. offer timely guidance to my students</td>
<td></td>
<td>0.73</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. provide useful feedback to guide my students’ learning</td>
<td></td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. inspire valuable questions to provoke my students’ thinking</td>
<td></td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. provide expert guidance to facilitate my students’ advanced learning</td>
<td></td>
<td>0.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. design interactive content to assist my students’ learning.</td>
<td></td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: Relevance—Cronbach’s alpha: 0.92; Multiple source—Cronbach’s alpha: 0.95; Students negotiation—Cronbach’s alpha: 0.90; Learning inquiry—Cronbach’s alpha: 0.95; Cognitive apprenticeship—Cronbach’s alpha: 0.93. Overall alpha: 0.97, Total variance explained: 82.56 per cent.

The stepwise multiple regression was applied to predict teachers’ preferences for a CIBE. The teachers’ general technology knowledge (i.e. TK-general, TK-communicative, TPK, TCK, and TPCK) was processed as the predictors, and their preferences for a CIBE were taken as outcome variables (i.e. Relevance, Multiple sources, Student negotiation, Inquiry learning, and Cognitive apprenticeship), as shown in Table 4.

The results indicated that TK-general is the sole predictor of teachers’ preferences for a CIBE. In addition, only TK-general could predict teachers’ inquiry learning ($T = 5.50, p < 0.001$) and cognitive apprenticeship ($T = 4.00, p < 0.001$) preferences for a CIBE; this predictor could explain 17 per cent of teachers’ inquiry learning preferences and 10 per cent of their cognitive apprenticeship preferences for a CIBE, separately. This result shows that the teachers’ general technological knowledge in teaching played a very influential role in their preferences for a CIBE. This result also implies that having only general technological knowledge may be sufficient to lead early childhood teachers to show greater preferences for inquiry learning and cognitive apprenticeship on the internet.

Both TCK ($T = 2.50, p < 0.05$; $T = 2.17, p < 0.05$) and TK-general ($T = 2.32, p < 0.05$; $T = 3.27, p < 0.01$) were
Table 2. Scales of items for questionnaire on teachers' technological capacities for teaching

<table>
<thead>
<tr>
<th>Factor structures</th>
<th>Factor loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Technological knowledge (TK)—General (Cronbach’s alpha 0.90)</strong></td>
<td></td>
</tr>
<tr>
<td>1. I can learn technology easily.</td>
<td>0.74</td>
</tr>
<tr>
<td>2. I know how to solve my own technical problems when using technology.</td>
<td>0.84</td>
</tr>
<tr>
<td>3. I keep up with important new technologies.</td>
<td>0.77</td>
</tr>
<tr>
<td><strong>2. Technological knowledge (TK)—Communicative (Cronbach’s alpha 0.93)</strong></td>
<td></td>
</tr>
<tr>
<td>1. I am able to use social media (e.g. Blogs, Wikis, Facebook).</td>
<td>0.86</td>
</tr>
<tr>
<td>2. I am able to use communication tools (Yahoo, IM, Skype, etc.).</td>
<td>0.87</td>
</tr>
<tr>
<td>3. I am able to use collaboration tools (e.g. Google Sites, Google Doc).</td>
<td>0.74</td>
</tr>
<tr>
<td><strong>3. Technological pedagogy knowledge (TPK) (Cronbach’s alpha 0.97)</strong></td>
<td></td>
</tr>
<tr>
<td>1. I am able to facilitate my students to use technology to plan and monitor their own learning.</td>
<td>0.79</td>
</tr>
<tr>
<td>2. I am able to facilitate my students to use technology to construct different forms of knowledge representation.</td>
<td>0.75</td>
</tr>
<tr>
<td>3. I am able to facilitate my students to collaborate with each other using technology.</td>
<td>0.78</td>
</tr>
<tr>
<td><strong>4. Technological content knowledge (TCK) (Cronbach’s alpha 0.95)</strong></td>
<td></td>
</tr>
<tr>
<td>1. I can use the software that is created specifically for my teaching subject (e.g. e-dictionary/corpus for language; Geometric sketchpad for maths; Data loggers for science).</td>
<td>0.61</td>
</tr>
<tr>
<td>2. I know about the technologies that I have to use for the research of content of my teaching subject.</td>
<td>0.75</td>
</tr>
<tr>
<td>3. I can use appropriate technologies (e.g. multimedia resources, simulation) to represent the content of my teaching subject.</td>
<td>0.72</td>
</tr>
<tr>
<td>4. I can use specialised software to perform inquiries about my teaching subject.</td>
<td>0.63</td>
</tr>
<tr>
<td><strong>5. Technological pedagogical content knowledge (TPCK) (Cronbach’s alpha 0.97)</strong></td>
<td></td>
</tr>
<tr>
<td>1. I can structure activities to help students to construct different representations of the content knowledge using appropriate ICT tools (e.g. Webspiration, Mindmaps, Wikis).</td>
<td>0.79</td>
</tr>
<tr>
<td>2. I can create self-directed learning activities of the content knowledge with appropriate ICT tools (e.g. Blogs, Webquest).</td>
<td>0.82</td>
</tr>
<tr>
<td>3. I can design inquiry activities to guide students to make sense of the content knowledge with appropriate ICT tools (e.g. simulations, web-based materials).</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Note: TK-general—Cronbach's alpha: 0.90; TK-practical—Cronbach's alpha: 0.93; TPK—Cronbach’s alpha: 0.97; TCK—Cronbach’s alpha: 0.95; TPCK—Cronbach's alpha: 0.97. Overall alpha: 0.97, Total variance explained: 90.74 per cent.

significant predictors for the ‘Relevance’ and ‘Multiple sources’ scales of the CIBE. The results showed that early childhood teachers with more technological content knowledge and general technological knowledge in teaching would tend to have more relevance and multiple source preferences for a CIBE, such as preferring to show how complex real-life environments are and to provide a variety of relevant content for their students online. Both TPK ($t = 2.85, p < 0.01$) and TK-general ($t = 2.55, p < 0.05$) were significant predictors for the ‘Student negotiation’ scale of a CIBE. The results showed that early childhood teachers with more technological pedagogical knowledge and general technological knowledge in teaching tended to have a stronger student negotiation preference, such as using online technology to facilitate their students to discuss with and talk to others.

However, the regression analysis also revealed that early childhood teachers’ communicative technology (TK-communicative) and technological pedagogical content knowledge (TPCK) in teaching were not significant predictors of their preferences for a CIBE.
Table 3. The teachers’ scores on each scale of the CIBE and ECTTK

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean (per item)</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CIBE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relevance</td>
<td>5.92</td>
<td>0.91</td>
<td>3.0–7.0</td>
</tr>
<tr>
<td>Multiple source</td>
<td>6.00</td>
<td>0.95</td>
<td>1.0–7.0</td>
</tr>
<tr>
<td>Student negotiation</td>
<td>5.73</td>
<td>0.93</td>
<td>3.5–7.0</td>
</tr>
<tr>
<td>Inquiry learning</td>
<td>5.82</td>
<td>1.02</td>
<td>2.0–7.0</td>
</tr>
<tr>
<td>Cognitive apprenticeship</td>
<td>5.94</td>
<td>0.82</td>
<td>4.0–7.0</td>
</tr>
<tr>
<td><strong>ECTTK</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TK-general</td>
<td>5.30</td>
<td>1.20</td>
<td>1.3–7.0</td>
</tr>
<tr>
<td>TK-communication</td>
<td>5.61</td>
<td>1.32</td>
<td>1.3–7.0</td>
</tr>
<tr>
<td>TPK</td>
<td>5.13</td>
<td>1.37</td>
<td>2.0–7.0</td>
</tr>
<tr>
<td>TCK</td>
<td>5.15</td>
<td>1.28</td>
<td>1.5–7.0</td>
</tr>
<tr>
<td>TPCK</td>
<td>4.96</td>
<td>1.38</td>
<td>1.0–7.0</td>
</tr>
</tbody>
</table>

Broadening views from qualitative findings about the meanings of using a CIBE in classroom activities

To broaden our understanding of the practical implications of using the various functions of a CIBE in classroom settings, we interviewed 13 in-service teachers who had from five to 25 years of teaching experience, and summarise our findings as follows.

Multiple sources: For teachers’ multimodal presentation of content knowledge to children

In that this function was rated as a top preference by our teacher participants (mean score 6.00), our qualitative data triangulated and explained this finding. All of our teacher interviewees expressed strong support for using the internet with the function of the multiple sources it provides. Furthermore, the interview data disclosed that 12 out of 13 participants (92 per cent) indicated that the multiple sources embedded in the internet can be used to assist teachers’ preparation and presentation of content knowledge to children by retrieving up-to-date information about the related content knowledge and locating the various resources for their teaching or for multimodal presentation to children. Following is an excerpt from our teacher interviews:

Table 4. Stepwise regression model for predicting early childhood teachers’ internet-based learning environment preference

<table>
<thead>
<tr>
<th>Online medical information referencing</th>
<th>Predictors</th>
<th>B</th>
<th>S.E.</th>
<th>Beta</th>
<th>T</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>TCK</td>
<td>0.18</td>
<td>0.07</td>
<td>0.25</td>
<td>2.50*</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>TK-general</td>
<td>0.18</td>
<td>0.08</td>
<td>0.23</td>
<td>2.32*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>4.06</td>
<td>0.32</td>
<td></td>
<td>12.60***</td>
<td></td>
</tr>
<tr>
<td>Multiple source</td>
<td>TK-general</td>
<td>0.26</td>
<td>0.08</td>
<td>0.32</td>
<td>3.27**</td>
<td>0.24</td>
</tr>
<tr>
<td></td>
<td>TCK</td>
<td>0.16</td>
<td>0.07</td>
<td>0.21</td>
<td>2.17*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>3.83</td>
<td>0.33</td>
<td></td>
<td>11.68***</td>
<td></td>
</tr>
<tr>
<td>Student negotiation</td>
<td>TPK</td>
<td>0.18</td>
<td>0.06</td>
<td>0.27</td>
<td>2.85**</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>TK-general</td>
<td>0.19</td>
<td>0.07</td>
<td>0.24</td>
<td>2.55*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>3.78</td>
<td>0.32</td>
<td></td>
<td>11.91***</td>
<td></td>
</tr>
<tr>
<td>Inquiry learning</td>
<td>TK-general</td>
<td>0.35</td>
<td>0.06</td>
<td>0.41</td>
<td>5.50***</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>3.93</td>
<td>0.35</td>
<td></td>
<td>11.27***</td>
<td></td>
</tr>
<tr>
<td>Cognitive apprenticeship</td>
<td>TK-general</td>
<td>0.22</td>
<td>0.05</td>
<td>0.31</td>
<td>4.00***</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>Constant</td>
<td>4.78</td>
<td>0.29</td>
<td></td>
<td>16.25***</td>
<td></td>
</tr>
</tbody>
</table>

Notes: *p < 0.05, **p < 0.01, ***p < 0.001
The internet is able to meet their learning needs, provide wide content knowledge and be used to illustrate some of the teaching concepts. (Teacher 2, 29 years old, six years teaching experience)

Relevance: For thematic-based teaching by providing the life-related application of knowledge

This function was ranked third by our teacher participants (mean score 5.92), and our qualitative data explained the practical implications of this function. Eight out of 13 teachers (62 per cent) mentioned that the value of incorporating the internet into early childhood classrooms is in providing real-life-related knowledge, and that it is able to cater to thematic teaching that requires materials concerning real-life scenarios of applications of a topic of knowledge. This is shown in the following excerpt from our teacher interviews:

We enhanced children’s knowledge of the topic, particularly in thematic teaching, through videos to help children be as ‘close’ to the actual information as possible. (Teacher 13, 27 years old, six years teaching experience)

Student negotiation: For facilitating group project work by sharing information, building up ideas, and problem solving

Our teacher participants continually rated the function of a CIBE as promoting students’ negotiation lowest among all five (mean score 5.73). Similarly, our qualitative data also indicated that fewer teacher interviewees (only three out of 13, 23 per cent) mentioned using this function. Furthermore, those who mentioned this particular function believed that it is especially good for promoting group project work by enhancing children’s sharing of information they find from the web, discussion and communication. Following is an excerpt from teachers’ comments:

The use of iPads and the internet, especially to help them think creatively and collaboratively, is good for doing project work, by collaborating with students of different abilities. (Teacher 6, 32 years old, 11 years teaching experience)

Inquiry learning: For assisting children’s free play

The quantitative data indicated that the function of ‘inquiry learning’ was the second least preferred by our teacher participants (mean score 5.82). Similarly, our qualitative data indicated that fewer teachers (only five out of 13, 38 per cent) mentioned this function. However, those who mentioned it manifested that the merit of the internet is that children can perform independent investigation during free play time by themselves without much teacher help. They believe children can explore, seek out new information and acquire new knowledge independently because of the ease of grouping and connecting the related information, no matter whether from single or multiple websites as in the following exemplary excerpt from our interviews:

I like to have the internet in our classroom and use it in teaching as children can engage in self-exploration and discovery of information during learning centre free play time. (Teacher 12, 47 years old, nine years teaching experience)

Cognitive apprenticeship: For promoting science learning by engaging children’s thinking

This function was the second most preferred by our teacher participants (5.94). Our qualitative data from six teacher interviewees (46 per cent) gave positive explanations of how this function can be translated into and assist in teaching practices. They explained that the presentation of rich information with the various instructional designs of interactive activities and guidance can promote children’s thinking. These teacher interviewees believed that this function is best for children to perform on-the-spot research in science. An exemplary excerpt from the interviews described:

… the ability to use it to help to do ‘on-the-spot’ scientific research on topics discussed, such as animals. (Teacher 11, 29 years old, eight years teaching experience)

Discussion and implications

There are two major findings from this mixed-methods study. We now discuss these findings and point out the practical implications.

Finding 1

All teachers agreed that the various functions of a CIBE, even rated with different degrees of preference, can be incorporated into classroom activities due to the various usages. Our study discovers that the various functions of a CIBE can be implemented differently to cater to the different learning activities in early childhood settings, as our qualitative findings revealed earlier. We interpret that such employment is either to supplement the teaching resources (for the function of relevance and multiple resources) or to complement the teacher’s role of facilitating students’ group project work (the function of student negotiation), independent inquiry-based learning (the function of inquiry) during free play, and on-the-spot scientific research and thinking (the function of cognitive apprenticeship).
Furthermore, even though the teachers agreed upon using each function, multiple resources and cognitive apprenticeship were still mostly preferred by our teacher participants. The function of multiple resources was rated highest for the purpose of teaching content knowledge with multiple ways of presentation. The function of cognitive apprenticeship was ranked second for mentoring children’s thinking and finding answers during scientific learning. We interpret that these results align with the most challenging teaching aspects of early childhood education: the abilities to cater to individual children’s needs and to promote children’s thinking. Numerous studies (e.g., Wen et al., 2004) have indicated the practical difficulties of accommodating each child’s learning needs and enhancing children’s thinking abilities in various ways when handling a group of children. Therefore, the multiple resources provided by a CIBE can assist teachers in overcoming such difficulties by the variety of resources provided to present knowledge multi-modally to engage children of different learning needs and interests. Similarly, the cognitive apprenticeship provided by a CIBE can serve as a useful automated tool to guide children’s thinking without much teacher preparation.

On the basis of these findings, we advise school curriculum developers and online program designers to optimise the usage of a CIBE in early childhood settings by distinguishing among the types of functions and by aligning them with the kinds of curriculum activities that can be enhanced by referring to our findings.

Finding 2

Early childhood teachers’ general technological knowledge (TK-general) was able to predict their overall preferences for a CIBE, whereas TK-general and TCK were able to predict their preferences for using a CIBE for the functions of relevance and multiple sources. In addition, TK-general and TPK were able to predict teachers’ preferences for the function of student negotiation.

Moreover, our stepwise multiple regression analysis findings also revealed that teachers’ general technological knowledge (TK-general) plays a more critical role in predicting their overall preferences for a CIBE. Both teachers’ general technological knowledge and their technological content knowledge (TCK) were able to predict their preferences for functions of relevance and multiple sources. In addition, teachers’ general technological knowledge (TK-general) and technological pedagogical knowledge (TPK) can predict the preferences for using the function of student negotiation. However, other types of technology-related knowledge, including communicative technological knowledge (TK-communicative) and technological pedagogical content knowledge (TPCK), were not prerequisites of the supportive attitudes of using a CIBE. These findings are significant in two ways. First, they are able to add to and expand the understandings from previous studies. Liang and Tsai (2008) found that general internet self-efficacy is a prerequisite to teachers’ overall preferences for CIBE. Our study extends their finding further in that it finds that general technological knowledge is also a prerequisite. Second, the previous study placed more emphasis on TPK for the successful implementation of a CIBE in primary and secondary classroom settings (Smeets, Gennip & Rens, 2009). Our study not only confirms that TPK is important for predicting teachers’ preferences for using the function of student negotiation provided by a CIBE, but also addresses that both teachers’ TK-general (general technological knowledge) and TCK (technological content knowledge) have an influence on their preferences, particularly the usage of relevant and multiple resources in early childhood settings.

On the basis of these findings, we make an argument for the assumption that teachers should have all kinds of technological knowledge to support using a CIBE for learning (Chai, 2010). Our study indicates that as long as teachers have general technological knowledge and have sufficient technological content and pedagogical knowledge, it should be enough to support the employment of a CIBE in early childhood settings.

Conclusion

Given the reality that more and more children from a young age are accessing the internet in this era, and the varied scholarly work (i.e., Fish et al., 2008; Johnson, 2006; Li & Atkins, 2004) on encouraging the use of the internet to facilitate learning, the nature and ways of applying it in early childhood settings are still not well known. This study has investigated early childhood teachers’ views on and preferences for using the various functions of a CIBE in classroom activities, and whether their technological teaching knowledge can predict their preferences. On the basis of the findings, we also offer suggestions for ways to adopt a CIBE in early childhood classroom settings and the types of technological knowledge that matter to predict early childhood teachers’ preferences. We suggest that future studies should continue to study teaching practices that incorporate a CIBE to promote children’s learning by understanding the successes and challenges of such incorporation.

References


Learning from early childhood philosophy, theory and pedagogy: 
Inspiring effective art education

Wendy Boyd
Lexi Cutcher
Southern Cross University

As children grow older, they seem to lose their uninhibited enthusiasm for painting and drawing, and leave behind what is perhaps the best art-making of their lives. What can educators learn from the art-making of young children in early childhood settings? Can this learning be transferred to other educational settings, such as the primary school, to support children’s ongoing art-making and creativity? This paper reports on an intensive art-making project in an early childhood setting, recognised for supporting children’s creative art-making in an authentic and continuous manner. The philosophy, theories and pedagogical approaches used in this centre and in the project are reported and analysed with a view to developing deeper understanding of application of effective art education in primary schools. Specifically, the authors contend that best practice in early childhood education theory, philosophy and pedagogy can inspire effective art education in other educational settings.

Background

When my daughter was about seven years old, she asked me one day what I did at work. I told her I worked at the college—that my job was to teach people how to draw. She stared back at me, incredulous, and said ‘You mean they forget?’ (Ikemoto in Weiler, 2011, p. 1).

In the early years of life, art-making is characteristic to childhood. Children do not question whether their work is of quality, whether they are good at it, or whether they can actually draw; this is of no concern. It is play, it is fun and it is a language of learning. As parents and adults, we celebrate the art of our children. It papers the walls, the fridge and the screensaver, and yet as children grow, they lose their confidence and motivation. Could it be that we educate it out of them?

The significance of a strong arts education has been highlighted in recent years (Ewing, 2013) with the importance of the arts as a mandatory learning area addressed in recent national and state curriculum documents (see for example, ACARA, 2013; NSW Board of Studies, n.d.). Art plays a ‘significant role in how meaning is made in people’s lives and provides an opportunity to explore social and cultural values and different forms of communication’ (p. 6). Further, research mainly originating from North America substantiates the benefits of an arts-rich education (Catterall, 2009; Davis, 2008, 2012; Eisner, 2006, 2011; Ewing, 2011; Gibson & Ewing, 2011). Students who have strong arts engagement in educational settings experience advantages over time and the positive effects of such learning lasts long after the student has left formal schooling (Rabkin in Catterall, 2009).

That said, research reports that teachers in primary school lack confidence in teaching the arts (Alter, Hays & O’Hara, 2009) and feel they do not have time to teach the arts in an already crowded curriculum (Garvis, 2012). Art-making in this context is considered to be teacher-directed, product-oriented and lacking in artistic merit (Schirrmacher, 2002), as Eckhoff (2013) states ‘primary school art is often shallow, linear explorations of art media and methods culminating in a pre-determined model’ (p. 365).

This inquiry explores effective art education in an early childhood setting and reports the theory, philosophy and pedagogies used to inspire educators from both early childhood and primary settings to support educators to become confident in their arts teaching.

The arts in early childhood education

Educators’ pedagogical decisions are crucial to understanding the provision of an exemplary arts-enriched program. The pedagogical approaches in any
educational environment, whether that environment be early childhood, primary or secondary, influences learning outcomes. Thus, the decisions made by educators directly influence children's opportunities for art-making and learning. The way the educator sets up the learning environment, the types of art-making experiences, the repeated opportunities and the educator's interactions with the children influence learning outcomes. If the educator provides activities that have predetermined visual outcomes, what will the children learn? If, on the other hand, the educator provides opportunities for children to paint every day with good quality art materials, with an educator who raises the child’s awareness about their art-making, what are they likely to learn? These questions are critical.

Within Australian early childhood settings, where the curriculum is less explicit and less content-oriented than in primary schools, the authors are aware of many examples of outstanding art programs. Critically, there are few examples of these programs documented, nor is there analysis as to how these programs are developed and implemented. In situations where there are a lack of resources to guide educators and their preparation, teachers may feel inadequately prepared to deliver a quality arts education (Alter et al., 2009). The *Early Years Learning Framework* (EYLF) identifies that the arts assist children becoming and being effective communicators, and children are intrinsically motivated to ‘express themselves, connect with others and extend their learning’ (DEEWR, 2009, p. 38). Learning to be an effective communicator through art-making is associated with a child's capabilities, disposition and learning preferences. Furthermore, the educator’s practices, the learning environment, and the partnership with the child’s family influence the child’s communication skills (DEEWR, 2009, p. 19). This study investigated the role of the early childhood educator in providing an environment that supported children's art-making, and the children's perspectives, in an early childhood centre where art-making opportunities with good quality materials were provided every day. The principle aim of the research was to document and report an exemplar of high-quality arts delivery with a view for dissemination, to support educators in their practice and preparation.

**Early childhood art, the child and the family**

Children's awareness of art-making is likely to be enhanced by adults and educators who discuss artwork with the child. Such dialogue can occur during the child's exploration of the media, and is a process known as ‘conversational pedagogy’ (Eckhoff, 2013, p. 366)—the educator engages with the child at work in the pedagogical approaches of listening, interacting, sharing and modelling, as required. These pedagogical approaches support children's art-making—their visual and cognitive learning are enhanced during this process (Lanzi & Orlandi, 2013). Observing and engaging with the child during art-making, and having an end-product, or ‘visual narrative’ (Wright, 2012, p. 18), provides educators with an insight into children's learning, problem solving, competencies and capabilities. It is not sufficient to provide art materials and leave children to create; this is a *laissez-faire* approach to art-making (McArdle, 2012, p. 36). Instead, educators must work with the children, learning about children's thinking, feelings and interests, and interacting and supporting their developing artistic abilities, as they would in any other curriculum area.

As the child's family is viewed as the child's first and most influential teacher (Vecchi, 2010) it is important for early childhood educators to develop partnerships with families to support children's learning and development (DEEWR, 2009). Art-making processes and products should be shared with the family, with the educator sharing the value of the art-making. It should be the child's decision whether the end-product is important (Edwards & Nabors, 1993), and if parents do not value children's artwork this sends very clear messages to their children of the value (or not) of their art-making. This is likely to influence the child's motivation and their developing identity as a competent artist.

**Early childhood art in the community**

How is children's learning supported by sharing art in the community? The ways the community perceives children's art can influence educational approaches. Mounting an exhibition is one way of demonstrating valuing children's artwork. Children's artwork makes children's learning and education visible in the community (Malaguzzi, 1993). Indeed, Malaguzzi argued that children should be a visible part of the community, as should their artwork (1993). Exhibitions of children's work engage community in positive ways and enhance recognition of children's authority. For example, Gibson and McAllister (2005) described an exhibition of children's artwork at Campus Kindergarten, University of Queensland, and found that it supported children's learning by validating and legitimising their artwork, resulting in children feeling empowered. The children benefited, as did the educators, who were affirmed in their beliefs about children.

**Focus of this project**

This inquiry investigated art-making through arts-based action research (Eisner, 2006, 2011) in an early childhood centre that offered an authentic early childhood arts program where children were given ongoing, sustained opportunities for art-making and creating in an arts-rich environment supported by motivated educators. The researchers aimed to identify the theories staff had about children's art-making, and how educators made decisions about arts-based and pedagogical approaches (McArdle, 2012). The researchers also investigated how the children perceived their artwork. With these findings from both
educators and children the researchers were interested in whether the approach used in this centre could be applied in other educational settings, such as primary schools. The two researchers were involved in teacher education which spanned early childhood, through primary to secondary education. One had an arts education background (Cutcher), the other an early childhood education background (Boyd). This range of expertise combined to enable a research approach that presented multiple perspectives.

Method

The setting and participants

The paper reports on an art project, which investigated the art-making of the four- to five-year-old children in an early childhood centre renowned in the community for consistent quality and range of the children's artwork, and located in regional New South Wales, Australia. The childcare centre catered for 79 children per day, aged from six weeks to six years. The centre had four rooms of children; this study focused on the four- to five-year-old room; that is children who were in the year before primary school. This room had 25 children and three staff per day, including a university-trained teacher, and two staff with Diploma qualifications. The trained teacher was also the educational leader of the centre. All staff had been teaching for at least five years.

The data was from interviews with the two educators (one the Director and one the trained teacher in the preschool room), reviewing the centre's published philosophy and the art-making experiences of two children in the art-making project—Sam and Millie (pseudonyms). These two children were purposively chosen (Cresswell, 2014) to highlight how children practise art, including their theories and decision making regarding their art-making. They were also chosen to illustrate how the well-resourced environment, and the pedagogical approach by the educator, supported the children to be successful in their art-making. Sam was highly motivated to engage in art-making and typically stayed with the researchers for the full hour of art-making. Sam's knowledge of the art materials at the centre enabled him to make informed choices. Millie also knew what she wanted to achieve but lacked confidence. The scenario with Millie highlights the educator's role in supporting Millie's success in achieving her desired artistic outcome.

The four- to five-year-olds were given art-making opportunities every day. There was always a collage table and a trolley laden with interesting materials (recycled material and items gathered from the environment); and easels, paper, paint, drawing materials (textas, permanent markers, pens, crayons). Of particular note is that this centre mounts a well-attended, annual exhibition of the children's art in the community. This exhibition incorporates the artwork of children from each room (from infants to five-year-olds), in a local community space. It is a popular event on the community calendar.

Methodology

Prior to the commencement of the art project, the Director and the teacher in the four- to five-year-olds room were formally interviewed to establish understanding of the philosophical and pedagogical approaches to art-making. These interviews were conducted individually allowing for lengthy discussion and probing and were of approximately 20 minutes duration. For the duration of the project the researchers visited the centre at the same time each week for eight weeks for approximately two hours, including preparation and discussion time with the staff. The art-making was documented through video, photographs and field notes/reflections. A collaborative, large-scale canvas painting (1.5 x 4 metres) was completed by the children using a range of materials initiated by the researchers. The researchers wanted to investigate how the children perceived their artwork with an intention of understanding whether findings from this project could be applied in other educational settings.

Over the first few weeks of the research project, as relationships were developed with the children and educators, the children's interests led the decision making for art-making ideas. The researchers worked as participant observers throughout each session. Sometimes one or both would work with the children on the large canvas, at other times one or both would sit and engage with the children while the children completed drawings and sketches, and at other times both worked alongside the educators. This enabled the researchers to develop insight into the children's behaviour—their decision making and their theorisation about art-making. A professional filmmaker filmed each session. After each session the researchers and the educators met to discuss and reflect on the filmed process. Additionally the researchers reviewed each session both together and apart prior to the next session, and came to an agreed understanding about the future week's direction for art-making, demonstrating the action research component of the project.

Theoretical framework and analysis

The theoretical framework brought to the analysis was a sociocultural lens. The researchers were immersed into the art-making culture of this childcare centre, known for its strengths in supporting children's art-making. The researchers worked with the children and the educators to support children's art-making, with the processes documented on video. In this way the researchers developed relationships with the children, and were privy to the relationships between the children, and between the educators and the children. These relationships were analysed from the perspective of scaffolding children's learning by a more learned mentor (Vygotsky, 1978). By being immersed in the environment it was possible to view how the children were supported and were able to access arts resources, both the art materials and human input.
The data from the interviews was cross-checked with the centre's philosophy, and with the pedagogical practices by the educator and director. The weekly videos of the art-making were viewed by the researchers, together and apart, drawing out key themes that related to the role(s) of the early childhood educators and researchers in the art-making, observing the children’s practices and decisions, and how they perceived their artwork. In this way it was possible to theorise about the children's learning and art-making decisions. The systematic analysis of the data, by viewing and reviewing of the video, and discussing theoretical implications, revealed shared themes through this deep content analysis (Krippendorff, 2012). Flick, von Kardoff and Steinke (2004) stress the importance of re-reading and reviewing data so that the researchers' theoretical prior knowledge and the research questions can guide the reading of the transcript. These themes emerged from the project and were related to the philosophy, the theories by the adults and the children, and the pedagogical approaches taken by the adults to children's art-making. This revealed a highly integrated approach within the centre to arts education. The findings are discussed under the three themes of philosophy, theories and pedagogical approaches.

Ethical issues
Ethical clearance to conduct the project was received from the authors’ university ethics committee. Informed consent was obtained from all adults, including parents and staff prior to the commencement of the project. Assent was obtained from the children in the child care centre. Children could come and go as they pleased during the project.

Philosophy, theories, and pedagogical approaches
According to the centre’s philosophy, children were viewed as capable and competent, and as active contributors to their own and others’ learning. The centre's philosophical approach to the way children are viewed as capable and competent aligns with the EYLF (DEEWR, 2009), and that of early childhood educators in Reggio Emilia (Vecchi, 2010). The centre’s philosophy included the theoretical approaches of development, socio-cultural and critical theory (DEEWR, 2009). The researchers felt that the environment of the centre was welcoming. The centre recognised in its philosophy that engaging in community activities enhances respectful relationships between stakeholders. These ideas framed the approaches for the educators’ practices within the centre.

Art-making with children
During the formal interviews with the Director (D) and the university trained Teacher (T) theoretical approaches to art-making were apparent. They both expressed a theoretical understanding that children learn about the world through their art-making, not just about the art materials, as D said:

Art-making is a lot of experimentation and children value the colours and effects—it has a lot of scientific value. It doesn’t just come from art but from exploring who they are and what direction they want to take that ... A lot of art-making is about their understanding of their world and reflects what they are learning about at the moment ... in the playground, what books they are reading ...

T had expertise in visual arts and believed children were innately creative, and would create anything given the opportunity, with any material in the absence of formal equipment. This aligns with Dissanayake’s position that children are inherently creative and expressive (2007). Children were always given quality art materials, to support their art-making and drawing, and through art-making they learned the technical aspects of art and properties of materials. She explained:

We give children technical support: practise with materials ... we help children to understand water colour. For example if you wipe your brush then you get less paint, and if you keep painting on the one spot then bits of paper come off. We help children to notice these things ... It is good to just value art-making—having it always available ... We help children to draw—say a horse—we don’t draw it, we find pictures and talk them through it. We tell the children if we draw it then it will be our horse, not theirs. We also tell children that it is not easy.

This approach is informed by theory that children learn best by ongoing experiences and interactions with educators who are intentional in their teaching (DEEWR, 2009). Such an approach speaks to a high-quality art education, and one which current theory asserts is best practice (McArdle, 2012, 2010).

Issues with art-making
Both T and D agreed that approaches to children’s art were frequently problematic and discussions among the educators and parents were common. T’s pedagogical approach to art-making was that children learn mastery by ongoing exposure and practice, rather than different, novel art-making each day, which many educators are seduced into delivering. T explained:

People often think ‘Oh what else can we do?’ I keep reminding people that we don’t have to have special bits for collage. They think that’s providing more, whereas I think it’s providing less. The catalogues are full of bling, glitter and I suppose the children are attracted to that. Collage used to be about reusing things, whereas now it is quite wasteful.

Other issues regarding children’s art included children’s criticism of peers’ artwork and parents’ misunderstanding of the value of their child’s artwork.
Students' voices: learning from the children of a kindergarten and primary school partnership

T encouraged children to always be respectful of peers’ artwork and their individual practices, providing an opportunity to discuss diversity and respect, and also to teach critique and appreciation. In this way, critical practice was intentionally taught and reinforced. T explained:

Sometimes children critique others’ work—denigrating it ... We tell children everyone paints differently; we look at different artists too, and point out how they’re not the same. And we tell the children that’s the beauty of art: it’s your interpretation of the world.

T also indicated that the ‘teaching’ of critical practice extended to some parents who did not demonstrate interest in their child’s artwork by encouraging involvement. She had also been delighted that it was the children who encouraged feedback and involvement from parents, through the power of their child’s enthusiasm about their art-making. It had ignited interest in the parents as she said:

Sometimes the parents have been surprised by what the children can produce—but we have to be careful not to force it, nor push it especially for the art show.

Both D and T valued the centre’s annual art exhibition, seeing it as not only to empower the children and their learning, but also as an effective way to educate parents about the value of children’s art-making and sharing the centre’s philosophy regarding the children being capable and competent (DEEWR, 2009). D had seen the direct benefits of the art show as she explains:

It’s important to create importance around the art show so the community is aware of the importance of children’s artwork. We have a well-renowned artist, who says he comes to the art show each year to get inspiration for his own work ... Part of doing the exhibition has helped to educate parents to understand children’s art.

Like D, T was also aware of the community value of the art show and how it supported the children to value their creativity. As she said:

The exhibition is a great community event. We enjoy children’s art, and it’s worth celebrating. It’s really nice for the children to see their pieces beautifully framed. It’s just the time it takes really. One parent initially thought it was for a fundraiser, but I told her ‘It’s not about the money’.

Feedback from families is that when children leave here they have had beautiful expressive art experiences. When children go to school suddenly it goes back to no individuality. The schools use stencils, and templates which tell children how to draw.

Such an approach may be due to lack of knowledge, confidence and expertise in the arts that many primary teachers possess (Alter et al., 2009); in other words a lack of pedagogical content knowledge (Shulman, 1987). It may also be due to a culture of educational standardisation that is prevalent in Australia and many other first world nations with the concomitant narrowing of the curriculum (Gibson & Ewing, 2011). Or it may be that primary school teachers value stencils and worksheets. The pedagogical approach to stencils and worksheets enables the teachers to intentionally teach specific concepts and skills, and the end-products explicitly demonstrate children’s learning. This was supported by T when she stated:

Children lose confidence at primary school because they don’t keep that free drawing going. They have templates and stencils so many of the kindy walls are covered with the same things. You could imagine what they could do if they kept drawing.

The views of the two educators indicated they felt they had a different philosophical approach to many primary school teachers. Their theoretical approach demonstrated they believed children’s art-making reflected children’s learning of their world. This philosophical approach to teaching is powerful as children’s active engagement is at the forefront of learning. Art-making is seen as a meaningful opportunity for learning, not just about art, but also about connecting learning to children’s worlds. The next section explores the children’s viewpoints.

The children’s art-making and learning

One of the research aims was to discover how children perceived their art-making and artwork in an environment where art-making was supported by educators’ pedagogical approaches. The following experiences and conversations demonstrate the deep engagement in art-making and learning by the children. The children’s enthusiasm for art-making was apparent, one child even pronouncing that the paint made her feel hungry.

On the first day of the project the researchers invited the children to be part of the art-making project and there was a sense of excitement in the air. When children were asked if they liked to paint they all exclaimed ‘Yes!’, eagerly, and when asked why they like to paint two children said ‘Because it’s fun!’ and ‘Because we can paint flowers!’ Indeed flowers, rainbows, people, hearts, spirals and castles were common themes of the children’s painting and drawing that arose throughout the project.

Views of art-making in formal schooling

Both educators acknowledged that art-making in some primary schools was very good, but on the whole it was disappointing to them. This reflects the literature in primary arts education, specifically that arts education in this cohort is often standardised and of poor quality (McArdle, 2010). The lack of creativity, use of worksheets and pedagogical approach taken by teachers, rather than children, were of key concern as D said:

Sometimes children critique others’ work—denigrating it ... We tell children everyone paints differently; we look at different artists too, and point out how they’re not the same. And we tell the children that’s the beauty of art: it’s your interpretation of the world.
The children's enthusiasm was present each week as the children greeted the researchers and were motivated and keen. Usually six to eight children, of the 25 in the room, greeted the researchers and were motivated and keen to begin art-making. It was intended to work collaboratively on the large canvas, and to also provide opportunities to draw and make art at tables with various materials including permanent markers, paint, paint markers and textas.

The researchers wanted to investigate how the children approached and engaged in their artwork, by working with both the educators and the researchers. The canvas was developed each week as a collaborative project; and initially all of the children worked together to eliminate the white background. The tools provided for this included large and small paint brushes, rollers, spatulas, sponges and scrapers. It was not unusual to see a child with a tool in each hand, which was the children's enthusiasm to paint. At other times the children abandoned the tools provided and used their hands making patterns and covering the canvas with layers of swirling paint. The children observed their peers and sometimes copied or commented on what they were doing. When given tissue paper for collage, they again worked it into the surface, at one point it dissolved into the surface completely, having been massaged into oblivion. Such responses were a constant theme throughout the project; children explored the sensory qualities of the materials, and the possibilities the media offered.

Once the canvas's white background was covered the children painted their own ideas onto the canvas. Initially the children sketched their ideas on paper using textas, and then reworked the image onto the canvas using paint. In this way, the children were working in quite conventional ways regarding traditional art-making practice—sketching in preparation before embarking on the more ambitious piece. This presented some challenges as the textas were easier to use than the large round brushes used for painting. However, the children quickly understood the capabilities of the tools, and requested finer brushes to solve this problem. The children were required to adjust their competency with one material (the textas) and master another tool (paintbrushes) given the differing conditions for art-making. In this way, students were engaging in creative and critical thinking in their problem solving and would often request different-sized brushes as they tested the materials. Such thinking was very visible throughout the processes of the project.

Children’s engagement, perseverance and evaluation: Sam

Children’s engagement in creating and evaluating their art-making was present when Sam asked if he could paint after working on the canvas. He was purposeful in his approach, choosing tools and art paper, and asked for specific paint colours and quantity of paint. His interest was sustained and purposeful. Initially Sam painted an outline of a rectangle that took up two thirds of the page, and then filled it in. He filled in the rest of the page with a different colour. In this initial painting he demonstrated good understanding of space, line and colour. The second painting was of a monkey. He wanted brown paint, but as there were the three primary colours available he understood he needed to mix colours to make brown. This mixing process took 20 minutes as he experimented to make the desired colour: he would add colour, test it on the paper, add more colour, think about and discuss what colour would be best until he finally had the colour he needed. He then proceeded to paint the trunk of a tree, and a complex arrangement of branches with this colour. He used green to represent leaves on the ends of the branches, and then began a line of blue sky. Deciding he needed clouds, he cut out two small cloud stencils, stuck them on the painting and painted around them with the blue paint, later removing the clouds. This left the negative shape of the white clouds, clearly a technique he already knew; it was a confident and authoritative act. Drawing the monkey with a permanent black marker, he was not satisfied and covered it. One of the educators accessed images of a monkey on an iPad™. Together they found various pictures, thereby raising awareness of the visual characteristics of a monkey. This learning event, both independently and in conversation with an educator, highlighted Eckhoff's (2013) notion of conversational pedagogy.

Sam approached his art-making with purpose and authority, supported by the educator’s pedagogical approaches. He knew many painting techniques and drew on his knowledge as he worked. He demonstrated awareness of art-making elements, and chose materials thoughtfully to achieve his goals. He evaluated his work, and discussed it with educators. He was dissatisfied with his first drawing, but was encouraged to persevere. The visual narrative (Wright, 2012) produced by Sam provided the researchers with an insight into his learning, theories, problem solving, competencies and capabilities in art-making and the pedagogical approaches of the educators. This was made possible by the educator’s view of children as capable and competent, and learning was enhanced through life-relevant experiences, which supported the child’s identity, creativity and critical thinking.

Encouraging art-making with children low in confidence: Millie

In week four the researchers provided images of castles to work from in direct response to children's interest in castles and castle-making. The researchers led a discussion with eight children about what they knew about castles, shared the images and asked the children if they would like to choose one of the pictures to draw a castle, which they did enthusiastically. One child, Millie, chose a photo of a castle that she wanted to draw but was unconfident in beginning this task. What follows is the exchange between T and Millie:
The role of the educator

To provide an effective art education, educators need to be committed to, and understand the value of an effective arts program. Pedagogical approaches within the learning environment must provide opportunities for children to engage in art-making daily, with good quality art materials (McArdle, 2012, 2010). The pedagogical approaches identified in this project that supported art-making included encouragement, modelling, meaningful and attentive conversation, and emotional support. The educator must provide and understand art materials’ possibilities, and ensure materials are accessible and suitable for the children to investigate and practise skills in art-making, enabling mastery of these materials. Educators’ knowledge of art materials can be learned through effective pre-service and professional development. In this research it was apparent the educators intentionally set up the learning environment, and the materials, so that they aligned with their philosophical approach to the way children learn.

The educator must be present, physically and emotionally, with children in their art-making, developing trusting relationships with each child to engage in meaningful dialogue to support art-making and learning. Educators who practise conversational pedagogy (Eckhoff, 2013) connect with children’s interests and learning dispositions, as evidenced when T was intentionally teaching Millie to draw. T raised her awareness by encouraging her to look closely at the stimulus image and acknowledging it was difficult. T successfully applied theories about how children learn about art-making: engaging in pedagogical processes of listening, interacting, sharing and modelling. Children’s art-making was socially supported when they observed others, shared or rehearsed another person’s idea, judged, experimented and modelled. These strategies are identified in Vygotsky’s socio-cultural theory of learning from more knowledgeable others (DEEWR, 2009).

The annual art exhibition was important for partnerships with families and the community, raising awareness of the capability of children as artists (Gibson & McAllister, 2005), and as a way to understand the educational value of children’s art-making. This exhibition was even reported to change families’ perspectives, from viewing the art show as a ‘fundraiser’ to advocating for creative art-making at primary school.

The children’s learning

Children approached their art-making with enthusiasm in this setting, and were highly motivated to begin, continue and resolve their artworks. They were, at times, enthusiastic about their end-products, at times dissatisfied with these products, or not interested in the end-products at all but more interested in the processes. We propose that educators value and respect children’s agency for their art-making decisions. Children had consistent opportunities to explore art-making with educators who understood the possibilities of the media and who built relationships with the children to enable deep learning (Eckhoff, 2013). Colour choice, brush thickness, exploring the touch of the paint and expressing meaning through media were some examples of their understanding.

The children’s interest in learning about and being connected to their world was brought to the children’s art-making, making their learning visible (Malaguzzi, 1993). The key outcomes in art-making were grounded in the children’s learning environment, and the materials, so that they aligned with their philosophical approach to the way children learn. Such pedagogical approaches are common in early childhood settings and it is argued these approaches could be applied in primary schools. As children develop their art-making skills educators can raise awareness about the techniques the child has used, and the overall aesthetic.
appeal of the painting that cues into the child’s thinking and meaning-making. Children will also be influenced by their peers and significant others, such as parents, in their decision making about their artwork and about its value. This is highly complex and should be considered in his/her social context as part of the child’s art and learning experiences.

Conclusions

One of the most significant issues that arose from this project was whether the theories, philosophies and pedagogies that were practised in this setting could be transferred to other contexts. It is asserted that indeed they can, and further that primary teachers could learn much from the early childhood theory and pedagogical approaches. In practice this means providing good-quality art materials on a daily basis with adequate time for art-making. While primary school teachers state lack of time in the already crowded curriculum (Alter et al., 2009), by connecting with and valuing children’s enthusiasm in art-making supports children’s learning in multiple ways across the curriculum. Further research is required to investigate implementing such a program to support children continuing to develop, and retaining their strong sense of inquiry through art-making into primary school and beyond. This intensive art-making project recognised that supporting children’s creative art-making in an authentic and continuous manner provided a valuable theoretical and pedagogical framework for children’s ongoing learning and development.

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References


When discussing the ‘space’ of educational settings there is a temptation to think in terms of indoor spaces, of the buildings and their contents. However, outdoor spaces are also part of educational environments, and research indicates that experiences outside not only improve academic performance, but also physical activity levels, social interactions and emotional wellbeing (Malone, 2008; Nicol, Higgins, Ross, & Mannion, 2007; Rickinson et al., 2004; Waite, 2011). But as Malone (2008) notes, much research focuses on school-aged children and there have been few investigations of outdoor spaces for younger children in settings such as kindergartens and child care, particularly in Australian contexts.

Despite a lack of research, the Australian Government has made a clear statement of the role of outdoor spaces in its nationally mandated document, Belonging, being and becoming: The Early Years Learning Framework for Australia (DEEWR, 2009) for all young children (birth to five) who attend early childhood educational settings. It states: ‘Outdoor learning spaces are a feature of Australian learning environments. They offer a vast array of possibilities not available indoors’ (DEEWR, 2009, pp. 15–16). Given this statement, researching outdoor spaces in educational settings for young children is a pressing need in Australia, and as children are the main users of such spaces, their perspectives are a logical starting point for the research effort. However, research including young children’s perspectives is uncommon, not just with respect to the outdoors, but in general (Clark, 2005; Lansdown, 2005; Smith, 2011). Therefore, the goals of this study were not only to investigate children’s perspectives of the outdoor spaces in their early learning setting, but also to investigate methods for doing this. Findings relating to the children’s perspectives are the focus of this article; research methods findings are described elsewhere (Merewether & Fleet, 2014).

Valuing children’s perspectives

Smith (2011) points out that the world abounds with research on children, but the body of research with children that has found ways to make children’s voices visible is limited, although this has been changing over the last two decades. A significant catalyst is the United Nations Convention on the Rights of the Child (UN, 1989), which recognises children as active citizens with rights to participate in matters affecting them, including research. A second contributor to changing perspectives is the field of Childhood Studies (James & James, 2008; Kehily, 2009; Qvortrup, Corsaro & Honig, 2009), which focuses on children’s rights, voices and participation. By conceptualising children as social actors and capable holders of opinions and ideas, Childhood Studies presents...
school children have investigated children’s preferences for outdoor over indoor spaces. For example, research with school-aged children in England (Burke, 2005; Titman, 1994) and younger children in Canada and New Zealand (Blanchet-Cohen & Elliot, 2011; Stephenson, 2002) note children’s preferences for outdoor over indoor spaces in educational settings. Stephenson (2002) postulates that children preferred the outdoor environment in the case she studied as it was more ‘open’ in terms of space, educator attitudes, routines and equipment, and Titman’s (1994, p. 27) study of school-aged children led her to conclude the outdoors ‘signified opportunities for a range of the things children wanted and needed to do which were not possible indoors’. Rogers and Evans (2007, p. 164), in a study of young children’s role-play, note outdoor contexts enable children to ‘exercise greater choice over materials, location and playmates’. Australian studies involving school children have investigated children’s preferences for certain outdoor equipment and materials (Bundy et al., 2008; Lucas & Dyment, 2010) and similar constructs have been investigated for younger children in the United States (Cosco, Moore & Islam, 2010; Holmes & Procaccino, 2009) and Norway (Storli & Hagen, 2010). These studies suggest that if outdoor environments are to appeal to children, equipment and materials must be open-ended, and facilitate challenge and social engagement.

It is important to acknowledge that while research suggests the outdoors is popular with most children, a few prefer the indoors (Einarsdottir, 2011). Perhaps outdoor time is not as relevant for some children due to increased opportunities indoors (Waller, Sandseter, Wyver, Årlemalm-Hagsér & Maynard, 2010). Agency, choice and opportunities to socialise appear to be central to children’s preference for outside spaces, but these elements are not necessarily unique to the outdoors. When some Australian school children were asked to recall a special place in their kindergarten, the outdoors featured in their memories; however, their choices were not so much grounded in ‘outdoorsiness’, but in the opportunity to have ‘creative agency and relationships’ (Fleet & Britt, 2011, p. 159). The mere fact of being outside, or the amount of physical space available, does not necessarily lead to positive outcomes. Some outdoor play environments with large amounts of space but a lack of equipment and materials lead to an increase in school-aged children’s boredom and aggression, along with lower levels of social, physical and cognitive development (Evans, 2001; Moore & Wong, 1997). Little (2010) suggests that in some Australian early childhood settings, in an attempt to remove risk, ‘outdoor play experiences have become so sterile that the thrill and exhilaration that provide a perception of risk have also been removed’ (p. 16). These ‘risk-free’ outdoor environments are unlikely to be favoured by children.

### Methods

The following is an overview of the methods used in this study. Methods are more fully described in Merewether and Fleet (2014). The research took place over two months in a Perth early childhood learning setting. Within this centre, two classes of three- and four-year-old children, each welcoming 25 children, and each with a university-qualified early childhood lead educator, participated in the study. These two classes shared one outdoor space. In consultation with the educators and children, eight children—four boys and four girls—were chosen as key informants. This subset consisted of five three-year-olds and three four-year-olds; three were from homes where a language other than English was spoken. For the research to proceed, it was also important to select children who demonstrated willingness to articulate or draw their points of view. Before commencing the study, ethical approval was granted by the Macquarie University Human Research Ethics Committee. In accordance with this approval,
pseudonyms are used in this article and photos do not reveal children's identity.

Data generation involved observations, along with child-led photography, conversations and drawing. The research activities in this study were designed to be part of the everyday pedagogical activities in the classroom and were grounded in a desire to: a) avoid undue intrusion; b) be non-confrontational and participatory; and c) encourage children to be a part of the interpretation process (Morrow & Richards, 1996, p. 100).

The study began with three full-day rapport-building visits in which the project was discussed with the children and they were familiarised with the methods and equipment, including the cameras and audio-recorders. Informal observations of children's use of the outdoor spaces were also made during this time, and throughout the study. Then, in pairs at a time, the eight children took me on guided 'tours' of the outdoor space at the setting, pointing out and photographing places they found 'interesting', 'special' or 'important'. Conversations during these tours were audio-recorded. The following visit, the photos were used as the focus of an informal conversation with each pair. During these conversations, each child was invited to identify three photos showing the most important places he or she had photographed. The selected photos were added to a documentation book (see below) that progressively told the story of the research.

To provide another context for conversation, the three photos selected by each child were added to a PowerPoint slideshow that was shown to the eight children on my next visit. Also, because children had frequently mentioned lighthouses, steps, and being 'up', photos of other spaces containing these elements were also included. The slideshow was set as a continuous loop in a storeroom opening onto the outdoor environment and children in the subset were invited to join me to view it at their leisure. On another visit, children were invited to draw their ideas about outdoor spaces and to provide narrations of these drawings.

**Documentation book**

The research was narrated in a documentation book that included conversation snippets, children's photographs and drawings, and my interpretations. The book was displayed at the setting in a prominent position accessible to children, educators and families. It was compiled collaboratively by the children and me to provide an opportunity for 'visible listening' (Rinaldi, 2006, p. 68), allowing all participants—children, educators, families and me—to listen to each other. This feedback was crucial to the research design and allowed me to constantly check that the children agreed with what was being said about them.

**Findings**

Data analysis began at the outset of data generation. Initially, observations, photos and conversation transcripts were analysed using open coding (Corbin & Strauss, 2008). Open coding involves identifying and naming all potentially relevant pieces of data, in response to the questions, 'What is this? What does it represent?' (Strauss & Corbin, 1990, p. 63). These codes were later axially coded (Corbin & Strauss, 2008) into broader categories, or themes. Four themes ultimately emerged from this process: *places for socialising; places for pretending; places for observing; and places for moving.* As a means of illustrating some of the findings of this study, examples from each of these themes will be presented below.

**Places for socialising**

Despite repeated reminders that I wanted to know what children thought were the most interesting or special places at the centre, they were keen to include people in their photographs, conversations and drawings. None did this more overtly than Layla who managed to resist my prompting while we were on tour:

Jane: [emphasising the words 'place' and 'where']

*Places. Where's that? Remember, you are showing me the important places. Okay, so where's the next important place?*

Layla: *They have to be persons, I think.*

When I later asked Layla to select three photos of the most important places, even though she had taken some photos that did not have people in them, she chose one I had taken of her and two of other children. It could be tempting, perhaps, to believe that a three-year-old may not have a clear notion of 'place', however Layla demonstrated she indeed understood the notion in this encounter:

Child: *Take a picture of me!*

Layla: *No, I'm not taking a picture of you. I'm taking a picture of the places. Jane said.*

Children did not directly make statements like, 'I like this place because I can play with others in it.' Rather, this was inferred from their choices of place, other conversations, and observations. For example, during the photo-elicitation, I noticed Thierry looking closely at a photo he had taken of the swings. I asked him if he played on the swings and he replied:

Thierry: *Yes I do. Look, one, two. So two people.*

It may be that Thierry was demonstrating his counting prowess, or indeed, something completely different. Nonetheless, I interpreted this as demonstrating his desire to be with others, in the light of the other pieces of the mosaic, most particularly my observations on every visit to the site of Thierry actively initiating and maintaining social interactions with both children and adults.
On the tour, Travis frequently took several photos from a range of angles of his nominated important places, but when it came to selecting one from his series of ‘lighthouse’ (the children’s name for two one-metre-high platforms) photos for inclusion in the documentation book, he was definite about his choice:

Jane: The lighthouse—okay. Is that the best photo of the lighthouse that you took? I think there are some over there as well.

Travis: This one with Ryan [Travis’s friend].

Jane: That one with Ryan in it? What’s special about that one?

Travis: Ryan is there. (Figure 1)

By choosing this photo, I inferred that this place was important for Travis for the potential it afforded to be with his friends.

Figure 1. Travis’s photograph of the ‘lighthouse’

Often, as if to affirm their relationship, each child in the pair took photos of the same thing, celebrating the act with an excited gesture or statement, frequently using the plural pronoun:

Travis: We both take photos of the swings!

In another gesture of solidarity, children often also took photos of each other, as in the photos by Travis and Thierry taken from opposite ends of what they called the ‘dark tunnel’ (Figure 2).

Figure 2. Travis and Thierry’s photographs of each other in the ‘dark tunnel’

Places for pretending

On the tours, all eight children photographed the playhouse (which children referred to as the ‘hut’ or the ‘cubby’) and the raised play structure (which children called the ‘bridge’), often several times. When I asked the children what they did in these places, they frequently said, in a tone that suggested they thought I was asking a ridiculous question, that they ‘played’. When I asked them what they played, the possibilities seemed endless:

Ashlee: Baby games, dog games, and cat games, and mummy and daddies games, and I like playing gramma games.

Alternatively, my ‘what do you play?’ question triggered stories that sounded like they had been imagined many times:

Charlie: A three-hour tour.

Jane: A three-hour tour?

Charlie: Yeah. On Gilligan’s Island* I had a three-hour tour. They crashed on the island because there was some storm.

Levi: I’m going to take a picture of the storm things in here!

Charlie: Me too! I’m going to take a picture of the river starting getting rough!

Jane: So you play in here sometimes?

Levi: Yep, we do. Because we take holidays to go over to this house. This is in holidays.

Charlie: That’s important. That’s important, yes.

* 1960s sitcom being re-run on Australian TV at the time of this study.

Pretending was often given as the reason for preferring other places as well. For example, Travis photographed a semicircular seating arrangement (Figure 3) and named it ‘the train. We sit on the seat and then we go. I can drive’. He mentioned this train on a number of subsequent occasions. When I asked him if there was anything in the outdoor area that he thought should be changed, he told me an elaborate story about turning the train into a flying train that picked up and dropped off children all around the centre … and the world.

Figure 3. The train
During the course of the research, the children constantly regaled me with imaginative tales. For these children, the outdoors provided many possibilities for imagining and pretending.

Places for observing (the near and the far)

Children’s propensity for observation of their surroundings was very apparent in their photographs (Figure 4). They paid attention to close-up details, as well as those that were far away.

Figure 4. Thierry’s photos of the near and the far

Many of the photographs were taken at very close range, to the point of being out of focus, even with an automatically-focusing camera (Figure 5). At first, I thought this was due to inexperience with the camera and I tried to give guidance:

Jane: Sometimes when you are trying to take a photo you sometimes need to stand back from it.

Travis: Maybe.

However, as Travis’s demurrer helped me realise, it was the children’s intention to get in close—it was the detail they were interested in.

Figure 5. Examples of children’s photos of detail

On the other hand, the importance of having a vista was repeatedly reiterated and, of the four most frequently photographed places (the bridge, the swings and the lighthouses), three provided an opportunity to watch the goings-on of the outside area (Figure 6). Many photos were taken of the view from these vantage points, often through railings and past other obstacles. Tara said that the lighthouses were the best places to play at the centre:

Tara: I always play in them. We like it.

Jane: Why’s that?

Tara: Because we can look out.

The bridge was also valued for its height and potential to watch the surroundings. Travis, who took a total of 87 photos, identified the bridge and the lighthouse as two of the three most special/interesting places. I asked him what he did on the bridge:

Travis: We just climb on it so people don’t catch us. We look at people walking under the bridge.

Jane: So it’s a good place for looking?

Travis: Yep, and this one (handing me a picture of lighthouse).

But it wasn’t only the high places from which children surveyed the terrain. The swings provided this opportunity as well; on each visit I observed children using the swings as a vantage point. Ashlee, who I often observed on the swings, told me: ‘I look at the grass and the sandpit and I look at the grass’. Although she did not specifically mention the people on the grass and in the sandpit, my observations suggested she was a very keen people-watcher from her position on the swings.

Figure 6. Examples of children’s photos taken from vantage points

Places for moving

‘Moving’ was another theme revealed by this study. It featured in all of my encounters with the children. They led the tours at a brisk pace, sometimes at a gallop, as we went across, into, up, down, in and through various locations in the outdoor area. On several occasions I had to ask them to wait for me as I caught up. Even the interviews were conducted on the move, either with me sitting still while the children moved about me, or while we both walked and climbed about the outdoor area. All of the children used words that described movement—both on the tours, and in subsequent conversations—words such as up, down, run(ning), jump(ing), ride(ing), swing(ing), slide(ing), came up repeatedly.
For example, in describing a drawing (Figure 7) showing important places outside, Levi said:

I like running around, playing chasey, hide and seek, going in the tunnel and going on the bridge. I like playing chasey with my friend Charlie. I like running on grass the best 'cause I can run faster.

Figure 7. Levi’s drawing of important places outside

All eight children took a photo of the swings. This concurs with Holmes & Procaccino’s (2009) study which found swings to be the most popular playground choice of girls, and the second most popular playground choice of boys. For some children the swings were a place for observing, as already discussed, but for others, swings were mentioned in association with other elements that involved movement:

Jane: The swings are the best place to go?
Thierry: Yep, I fly. And the slide.
Jane: Oh, and the slide? So, the swings and the slide?
Thierry: And the jumping mats.

The movement aspect was also articulated by Tara as she took a photo (Figure 8) of one of the jumping mats:

Tara: Jumpy, jumpy, jumpy, jumpy.

Figure 8. Tara’s photo of the jumping mat

Discussion

The outdoors is important

It was clear the outdoors was important for these children. In fact, during a camera familiarisation session at the outset of the study when the children were invited to take photos of the important places inside, three of the children took photos through the door to the outside. Clark (2007b) had a similar experience in England when a four-year-old child also took a photo of the outside through a door, so this is not an isolated event. This study has also found that the outdoors, in this setting at least, offers places for socialising, pretending, observing and moving, and these are much valued by the children. Other outdoor settings may not offer these possibilities. Nonetheless, the study has implications for those who are responsible for designing outdoor spaces and curriculum for young children and these will now be discussed.

Places for socialising

In UK and Scandinavian studies that have examined young children’s perspectives about the educational spaces they inhabit, places to be social have been identified as being important (Clark, 2005, 2007a; Clark & Moss, 2001; Einarsdottir, 2005). In these studies, many of the social spaces were outside. The importance of social spaces was also one of the major findings in research undertaken in Australia by Fleet and Britt (2011) in their investigation of children’s memories of their first year of primary school, and, like the other studies, many of these social spaces were also outdoors. The study reported here only investigated outdoor spaces; therefore, it makes a further contribution through its finding that within an outdoor space, places to be social are highly valued by the children.

For educational institutions, this is an important finding. Vygotsky (1978, p. 88) states that ‘human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them’. Bruner (1986) too has proposed that learning is not merely a solo pursuit, but is also a communal activity: ‘It is not just that the child must make his knowledge his own, but that he must make it his own in a community of those who share his sense of belonging to a culture’ (p. 127).

Given that the outdoor spaces are integral to early childhood educational settings, it would therefore seem to be paramount that these environments enable the communal making of knowledge. Outdoor spaces in such settings are not just places to let off steam or relax, they are places for learning, so the need for these environments to facilitate learning is vital. In this study, places for being social were intimate and partially enclosed. Enclosure may not be the only way spaces can facilitate being social, but those responsible for designing outdoor spaces need to consider ways for children to be together in outdoor spaces. This is not just a matter of physical design but is also a consideration of curriculum, the provision of equipment and materials, and pedagogical approaches.
Places for pretending

In his poem, No way. the hundred is there, Malaguzzi (as cited in Edwards et al., 2012, p. 3) laments that ‘the school and the culture ... tell the child that ... reality and fantasy ... do not belong together’. Malaguzzi would have been encouraged to see this was not the case at the site where this study was conducted. As Malaguzzi (1993, p. 12) states:

... we should not forget the relevant role of make-believe play. This type of symbolic play is pervasive in young children's experience and has an important role in the social development of intelligence, development of skills needed for reciprocity among children, the potential for children to persist in activity and conversation together and the development of the ability to create symbols.

Paley (1990, 2004b), who developed a teaching approach fostering play and children's storytelling, also argues strongly for pretend play in early childhood educational settings. However, Paley (2004a) notes that, in recent years, time available for pretend play has been reduced to make way for academic instruction. This is ultimately counterproductive as pretending plays a significant role in children's construction of knowledge (1990, 1997, 2004b). As Paley (2004a, p. 92) notes: ‘Pretending is the most open-ended of all activities, providing the opportunity to escape the limitations of established rituals. Pretending [original emphasis] enables us to ask “What if?”’

Providing places for children's pretend play is a challenge for educators whether children are inside or outside (Rogers & Evans, 2007). Outdoor environments do not inherently provide places to pretend and have the potential to be just as limiting as those indoors. For example, Clark (2010, pp. 74–75) describes a playground which consisted of a ‘sea of bark chippings with isolated play equipment’ where the only place that had a story associated with it was a muddy pit at the edge of the space. On the other hand, in Moore and Wong's (1997) 10-year study of the transformation of a school yard from barren asphalt to a lush, naturalised environment, imaginary play featured very strongly, although seeing the outdoors as being purely for active play overlooks the vast number of other possibilities the outdoors offer (Maynard & Waters, 2007; Robertson, 2009). Nonetheless, the children in this study were constantly on the move and greatly valued the opportunities to observe their surroundings from a distance. At the site studied in this research, these spaces were often elevated; however, other spaces, such as the swings, were also favoured places from which to watch goings on both within and outside centre grounds.

Places for observing

Children's eye for detail has also been documented in studies of school-aged children in the outdoors (Hart, 1979; Moore & Wong, 1997; Titman, 1994). Moore and Wong (1997) documented the children's use of ‘microsettings’ (p. 10) such as benches and ledges, the tops of fence posts and the forks of bushes and trees, in which the smallest of materials, even pollen, were used by the children. In studies of younger children, Clark and Moss (2005) noted a number of instances of children taking close-up photographs of toys, fixtures and items such as pebbles. However, children observe the bigger picture too. The importance of places that provide opportunity to observe have been identified by studies of children's use of play environments (Hart, 1979; Moore & Wong, 1997). In these studies, lookouts were often hidden places where children could watch the surroundings without being seen: ‘Children liked to perch above their surroundings in such a way that they could survey the whole scene yet at the same time remain separate—having the ability to see while not being seen’ (Moore & Wong, 1997, p. 73). The desirability of high places is also identified by children in Fleet and Britt's (2011) study of first grade primary school students. A wall at this site provided a valued place to watch from, as one of the children explained: 'And we can see better on it. We like the wall because it's nice and warm ... and you can see better on it’ (p. 155).

Children's penchant for taking photos of both the very near and the very far has also been recorded by Clark (2010) who suggests that children's capacity to seek security in what is intimately known while also re-lishing the wide blue sky has been overlooked by designers of spaces for young children. This suggests that in designing outdoor spaces for children, consideration needs to be given to not only to enclosed spaces that encourage observation at close range, but also to other spaces that afford the opportunity to observe their surroundings from a distance. At the site studied in this research, these spaces were often elevated; however, other spaces, such as the swings, were also favoured places from which to watch goings on both within and outside centre grounds.

Places for moving

Early childhood settings have an important role to play in providing opportunities for children to be physically active, although seeing the outdoors as being purely for active play overlooks the vast number of other possibilities the outdoors offer (Maynard & Waters, 2007; Robertson, 2009). Nonetheless, the children in this study were constantly on the move and greatly valued the opportunities to be physically active that this particular space afforded them. This may not be the finding in other settings. Indeed, studies of US and European early learning settings have found levels of physical activity are typically very low, while levels of sedentary behaviour are typically high (Reilly, 2010). Simply having an outdoor space does not mean it facilitates children's desire to move. Rather, it is the policies, practices, attitudes and culture of the setting that determine the amount of physical activity that children undertake (Emilsen & Koch, 2010; Moser & Martinson, 2010; Pate, Pfeiffer, Trost, Ziegler & Dowda, 2004). In addition, the physical features of the outdoor environment, such as the amount of space per child and the presence of vegetation, appear to be important influences on physical
activity (Trost, Ward & Senso, 2010). Furthermore, the addition of loose unstructured materials increases playfulness (Bundy et al., 2008), variety of activity (Moore & Wong, 1997), and activity levels (Bundy et al., 2009) among children in the early school years.

**Interdependence of themes**

It is important to note that although the four themes of places to be social, pretend, observe and move have been isolated here for the purposes of discussion, in reality they nearly always coexisted. For example, moving involved pretending, pretending involved being social—and so on. This example from my notes while ‘on tour’ illustrates this interdependence:

*Travis: [said while running around the grassed area—me in pursuit] When I was playing with Ryan and Layla we gotta some sprinkly things [plastic stepping ‘stones’] and the monsters would die. We’re getting sprinkly things [demonstrates]. Scuse me, Lucy [educator], we’re getting all the sprinkly things so we can kill all the monsters.*

Travis is being social, pretending, observing and moving all at the same time. Each is dependent on the other, and speaking about each theme separately masks the complexity of the way that the children were experiencing the outdoor space.

It is also important to note that this study was a single case in which eight children's perspectives were sought. The themes that emerged are not finite and may have been observed and interpreted differently by another researcher. Nonetheless, readers may be able to draw parallels with other early childhood contexts and thus the findings from this study may open a dialogue for possibilities in the outdoor spaces in other settings.

**Conclusion**

The Early Years Learning Framework (DEEWR, 2009) suggests outdoor environments are integral to young children’s learning environments; however, space can enhance or inhibit children’s competence by the way it stimulates their curiosity, skills, actions and communication (Rinaldi, 2006). As children are the actual users of outdoor space in educational settings, understanding what children think is important in these spaces and is vital if children's competencies are to be enhanced rather than limited. This study, by seeking to give voice to children’s knowledge, insights and emotions regarding the outdoor space they encountered, revealed that in this particular setting, children value the opportunity to move, pretend, observe, and do these things in a social context. Such insights will be crucial to future decision making regarding outdoor provision and use at this particular site, but they also offer a provocation for those responsible for the design of curriculum and outdoor spaces at other learning settings for young children.

**Figure 9. Drawing by Travis: ‘Travis, Thierry and Jane standing on the bridge’**

**References**


What works and why?

Early childhood professionals’ perspectives on effective early childhood education and care services for Indigenous families

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INVESTMENT IN EARLY CHILDHOOD education and care (ECEC) programs is a cornerstone policy of the Australian Government directed towards increasing the educational opportunities and life chances made available to Australian Aboriginal and Torres Strait Islander (Indigenous) children. Yet, ECEC programs are not always effective in supporting sustained attendance of Indigenous families. A site-case analysis of Mount Isa, Queensland was conducted to identify program features that engage and support attendance of Indigenous families. This first study reports the perspectives of early childhood professionals from across the entire range of group-based licensed (kindergarten and long day care) and non-licensed (playgroups, parent–child education) programs (n = 19). Early childhood professionals reported that Indigenous families preferred non-licensed over licensed programs. Reasons suggested for this choice were that non-licensed services provided integration with family supports, were responsive to family circumstance and had a stronger focus on relationship building. Implications for policy and service provision are discussed.

Note on use of the term Indigenous: There is not one cultural model that fits all Aboriginal and Torres Strait Islander peoples. In the current paper, for brevity, the term Indigenous is used to refer to the diverse groups of people who identify as Australian Aborigine and/or Torres Strait Islander but we acknowledge their distinct cultures.

Introduction

A strong body of evidence attests to the significance of children’s experiences, across the period from conception to five years, in shaping life (Schweinhart, Montie, Xiang, Barnett, Belfield & Nores 2004). While experiences within the family remain the most significant developmental influence at this time, the potential of early childhood education and care (ECEC) programs to facilitate positive social, economic and health trajectories has been demonstrated with strongest effect among families living in circumstances of disadvantage (Burchinal, Roberts, Zeisel, Hennon & Hooper 2003; Schweinhart, Montie, Xiang, Barnett, Belfield & Nores, 2004). In the Australian context, this body of evidence has been the catalyst for increased investment in ECEC programs and a strategy directed towards closing the equity gap between Indigenous and non-Indigenous Australians (COAG, 2009a, 2009b). Yet, uptake of ECEC by Indigenous families has remained lower than that for non-Indigenous Australians (Taylor, 2010) and enrolments in programs by Indigenous families have not been matched by continuity of attendance (Sims et al., 2008). For many, access to ECEC programs is obstructed by a complexity of personal and cultural factors and systemic constraints (Jackiewicz, Sagers & Francis, 2011; Trudgett & Grace, 2011). The challenge presented by these circumstances is to identify ECEC provisions, and their component parts, that can overcome obstructions to access and effectively promote positive and sustained ECEC experiences for Indigenous Australian children and their families.

The current study was undertaken in response to this challenge and was driven by two key objectives: (1) to interrogate currently held conceptualisations of ‘effective
ECEC’ from practitioners in the field (the what); and (2) to identify the underlying success factors in existing ECEC programs that sustain attendance and deliver positive learning experiences for Indigenous children and families (the why). This investigation is the first in a series analysing multiple perspectives on ECEC effectiveness using a site-case approach. The focus site is Mount Isa in remote far North Queensland. Mount Isa presents a valuable site-case in which there is a significant number and diversity of Indigenous families (34.9 per cent of the Mount Isa population, AEDI, 2011) and a range of ECEC programs, both licensed and non-licensed, operating within a well-defined remote location. This study examines the views of early childhood professionals, both Indigenous and non-Indigenous. We commenced by reviewing the current literature that positions ECEC programs as a strategy for improving educational opportunities for Indigenous children and consider ECEC effectiveness in this context.

**ECEC programs as a strategy in ‘Closing the gap’**

Indigenous Australians have been identified, using a range of indices, as substantially disadvantaged compared to non-Indigenous Australians (HREOC, 2009). Alongside, ECEC programs have been identified as among the most successful early childhood interventions to redress this equity gap (Wise et al., 2005). However, Indigenous families are under-represented in uptake of ECEC services (Bowes et al., 2011). Low access and attendance in ECEC have been suggested as being among the factors that account for poorer levels of attainment and adjustment at entry to school (Harrison et al., 2012). Data from the Australian Early Development Index (AEDI) indicate that even at school entry there are significant inequities in learning and communication skills that raise concern for Indigenous children’s onward educational trajectories (AEDI, 2009).

The Council of Australian Governments (COAG) has endorsed significant policy reforms, to improve universal access to, and participation in, ‘quality’ ECEC programs for Indigenous children, families and communities (DEEWR, 2011). The definition and operationalisation of ‘quality’ however is not well specified and the conceptualisation of the way in which a ‘quality’ program translates into a program that effectively yields outcomes for Indigenous children and families is neither detailed nor problematised.

**Conceptualising quality and effectiveness in ECEC programs**

Current conceptualisations of ‘quality’ and ‘effectiveness’ of ECEC have focused on long day care (LDC) and kindergarten programs and have, at best, only partially defined quality (Harrison et al., 2012). Most evaluations of ECEC have focused on the what; they describe quality in terms of quantifiable structural resource such as the physical space of the ECEC environment, child–staff ratios, group or class size, pedagogical materials, working conditions for staff and level of training for early educators (OECD 2006; Tayler et al., 2013). A smaller number of studies have focused on the interactional (or process) quality. This approach observes relationships between children and early educators, children and their peers and families and early educators in programs and focuses on the early educator’s pedagogical skills (Ishimine, Tayler & Thorpe, 2009). One key problem of current approaches is that high levels of structural resourcing and even highly responsive interactions within the class setting do not necessarily translate to positive and mutually trusting relationships with parents that support attendance (Thorpe, Cloney & Tayler, 2010). In the context of culturally diverse groups, this is a significant consideration (Kitson & Bowes, 2010).

Little attention has been given in evaluations of program effectiveness to factors that affect accessibility of the program (Thorpe, Cloney & Tayler, 2010). Yet, regardless of the quality of human and material resource, if families do not access the program, or do so only intermittently, the potential for positive effects cannot be realised. This is an international problem. Findings from longitudinal, randomised control studies in the United States (Highscope Perry Preschool study, Schweinhart, Montie, Xiang, Barnett, Belfield & Nores, 2004) and longitudinal effectiveness studies in the United Kingdom (The Effective Provision of Pre-school Education, Sylva et al., 2004) report that while children living in more complex and disadvantaged circumstances are more likely to benefit from an ECEC program, these children are less likely to attend ECEC and, when they do, this is for shorter periods of time (Sylva et al., 2004). It is notable however, that the focus of these studies is licensed ECEC services such as LDC and kindergarten programs, and not alternative, non-licensed, services. The consequence may be an under-estimate of service usage and, more importantly, a missed opportunity to understand attendance rates and identify factors in alternative services that might succeed in supporting the engagement of families.

There are a small number of recent studies that have sought to understand the reasons underlying lower attendance rates of Indigenous families at ECEC programs (Trugett & Grace, 2011). These identify two broad categories of explanatory factors: equity of access and equity of relationship.

First, equity of access has been related to a range of factors external to the program (Jackiewicz et al., 2011; Thorpe, Vromans & Bell-Booth, 2010; Trugett & Grace, 2011). These include structural barriers (e.g. cost, transport, and availability) (SNAICC, 2012a); procedural barriers (e.g. misunderstanding or fearing the process of enrolment); cultural barriers (e.g. feelings of discomfort, fear of racism) (Guilfoyle et al., 2010; Kitson & Bowes, 2010); history of mistrust and negative associations with government services (e.g. ‘white fella’ places) (Kitson & Bowes, 2010); lack of support for extended family, and surrounding family...
stressors (e.g. poor mental health, violence and instability of housing and domestic arrangements) (Jackiewicz et al., 2011). The available evidence, both from Australian (Guilfoyle et al., 2010; Hutchins et al., 2007) and comparable international studies, indicates that programs that attend to cultural identity and cultural safety are those more likely to achieve sustained program attendance. Culturally strong and safe programs respect and celebrate Indigenous cultures (Trudgett & Grace, 2011), and cultivate respectful and supportive relationships (Ball, 2005; Guilfoyle et al., 2010; Mitchell et al., 2006).

Second, equity of relationship relates to the philosophical approach regarding ownership in the development of an ECEC program and, once established, the ongoing relational characteristics within the program (Guilfoyle et al., 2010). The leadership and involvement of the local community, at all levels of program operation, has been reported to be a central component of an effective and acceptable service for Aboriginal families and communities in Australia (Hutchins et al., 2007; Sims et al., 2008). Similarly, in New Zealand amongst Maori (Mitchell et al., 2006) and Canada amongst First Nation peoples, community leadership and ownership of programs have been identified as central to effectiveness (Ball, 2005). Only when the values, knowledge and experience of community members are represented can ECEC programs be tailored to cultural priorities (Ball, 2005; Mitchell et al., 2006) that emphasise the importance of family and community in child learning (SNAICC, 2011). The provision of integrated and holistic models offering broader services around early education programs, and within the control of communities, have been advocated and trialled in Multifunctional Aboriginal Children’s Services (MACS) in Australia (SNAICC, 2012a, 2012b). The available evaluation data on the effectiveness of MACS, though positive, is limited. Moreover, recent funding constraints have reduced their capacity to run integrated services (SNAICC, 2012b). Current evidence on features within a program that sustain family access and achieve equity of relationship overwhelmingly highlight the identity of staff and training in cultural awareness, knowledge of Aboriginal ways of child rearing, ways of being and knowing as strategies (Grace & Trugett, 2012; Kitson & Bowes, 2010).

The current Australian educational policy identifies ‘quality’ provision in the year prior to school entry as a kindergarten program that is led by a four-year qualified teacher for a minimum of 15 hours per week. A target of 95 per cent attendance at kindergarten programs was set for the end of 2013 (DEEWR, 2011). However, in practice, there are many forms of provision other than the kindergarten model that provide ECEC. In the current study, we include these services alongside licensed kindergarten and LDC provisions in our examination of effective ECEC services for Indigenous families.

Method

Data collection

The first author, a female PhD student, recruited and conducted all the interviews between March and June 2013. She had an established five-year history of engagement with the Mount Isa community and had developed close working relationships with a panel of Indigenous and non-Indigenous child and family professionals who formed the Community Consultative Committee. This committee guided and supported all aspects of the researcher’s work.

The researcher approached staff across the range of ECEC services in Mount Isa to participate in the study (Figure 1). Services were initially contacted by telephone and were subsequently provided with written information about the study. With the exception of one conducted by phone, all participants were interviewed at their place of work.

Figure 1. ECEC services in Mount Isa at the time of data collection

- ECEC services in Mount Isa at the time of data collection
  - Licensed services:
    - 5 Government supported Kindergartens
    - 1 Privately operated Kindergarten
    - 4 Long day care centres
    - 1 Family Day Care
  - Non-licensed services:
    - 6 playgroups
      - located in different settings: parks, school, playgroup centre, neighbourhood centre
    - 2 Parenting programs
  - Additional services:
    - Parent support groups
    - Inclusion support services
    - Family support services
    - Health and social support services (adapted from Community information flyer, A. Pursche, 2012)

The study was conducted in accordance with the National Health and Medical Research Council’s (NHMRC) (2003) Guidelines for ethical conduct in Aboriginal and Torres Strait Islander health research. Ethical approval was obtained from the Queensland University of Technology’s ethics committee (approval number: 100000172).

Data were collected in 12 informal, semi-structured interview sessions: eight individual interviews and four small group interviews. Figure 2 summarises the research design.
Participants

Participants included early childhood professionals, both Indigenous and non-Indigenous; those employed in licensed and non-licensed ECEC services; and those employed in services for general populations or targeted Indigenous populations. With the exception of the one private kindergarten, all group-based licensed services were approached. Participants represented 50 per cent of LDC and 80 per cent of kindergartens. Staff from the participating non-licensed services included those working in parenting programs, a range of playgroup models and family support programs. Additionally, family and inclusion support workers, and a program manager from an early years support agency participated. The reported rates of attendance by Indigenous families were higher in non-licensed services. Targeted Indigenous services, including the majority of non-licensed services, had higher rates of attendance. One targeted licensed service had a 58 per cent attendance rate from Indigenous children. One general population parenting program had an enrolment of 33 per cent Indigenous families. A total of 19 early childhood professionals from these services participated in the study. The range of qualifications held by the participants ranged from no formal qualification through to a four-year university degree. The length of time they have lived and worked in the community ranged from one to 30 years.

Analysis

All interviews were transcribed verbatim and de-identified. Interview summaries and full transcripts were sent back to participants to allow participants the opportunity to confirm accuracy of reporting or amend. Data analysis followed an inductive thematic approach outlined by Braun and Clarke (2006). This involved a process of immersion within the data, progressive connection of coded ideas across the
data and the refinement of emerging themes. All authors contributed to analysis of data with codes and themes triangulated between all four authors. All aspects of the research process, including the dissemination of research findings, were shared and discussed with the Mount Isa community consultative committee.

**Results**

Three key themes pertaining to effectiveness of ECEC programs emerged from the interviews:

1. understandings of the purpose of ECEC
2. the meaning of family choice
3. the centrality of relationships.

These themes were common across the participating Indigenous and non-Indigenous early childhood professionals’ reports and across the representation of licensed and non-licensed services. Perspectives within each theme were affected by the context of the service type (non-licensed and licensed) in which the early childhood professional worked. In presenting the data participants are given pseudonyms to maintain anonymity.

**Understandings of the purpose of ECEC**

The philosophical and structural features of the program models in which the early childhood professionals worked influenced their understanding of the purpose of ECEC (Figure 3).

Figure 3. Purpose of ECEC

[Diagram showing the relationship between choice of ECEC service, accessibility, and perceived benefits]

The philosophy of the program in which respondents worked directed their focus in defining ECEC effectiveness. Those employed in licensed programs focused on the child’s learning and acquisition of skills in preparation for school; they defined effectiveness in terms of ‘school readiness’. Evidence of program effectiveness was described in terms of the alignment of child learning with a specific curriculum framework and philosophy (e.g. Early Years Learning Framework [EYLF], play-based learning). As evidenced in the following extract, the lens of effectiveness was most often directed towards the content of the program:

... But that’s what I think ... Someone’s gotta walk in a (sic) [and] see what you are doing and why you are doing it ... Yeah there’s a connection to a curriculum. So it’s not being done for the sake of it. There is a reason behind it ... (Deb, non-Indigenous, licensed program)

In contrast, the philosophy reported by early childhood professionals working in non-licensed programs was focused on the delivery of a service for families. While child learning was identified as a significant component of these professionals’ work, there was greater emphasis placed on positive experiences and opportunities for parents:

We’ve noticed that not only are we catering for the children but we’re catering a lot for the parents as well. They’ll get in and they’ll get their hands dirty in the paint and they will do everything. (Claire, non-Indigenous, non-licensed program)

... When the mums have brought their kids here (sic) [ECEC program], we go off and do things with the kids and then the mums go off and do their own little bit of training for one hour. So it’s a service that the mums are getting too, that they have asked to do ... So the ladies (sic) [parent learning program staff] have gone out and modified a program for those parents to gain some skills and some learning of their own ... (Sandy, Indigenous, non-licensed program)

Commensurate with variation in philosophy, and focus on child versus family learning, the level of flexibility of the program structure emerged as a subtheme in defining ECEC effectiveness.

For early childhood professionals working in non-licensed settings, flexibility of program structure was almost exclusively the focus. Here, providers described an effective program as responsive and adaptable to supporting diverse family circumstances and preferences. The freedom to operate a program with flexibility was arguably influenced by the unique nature of non-licensed services. Such services are largely accountable directly to the families, and less constrained by licensing standards and regulations. They have the freedom to offer increased flexibility in the operation of the program because they are less bound by external regulations in their everyday operations. An awareness of these constraints for licensed programs can be seen in the response of one ECEC worker from a non-licensed program:

So how are they (sic) [parents] getting on with the kids going to mainstream (sic)[ECEC]—because I’m just thinking the rules are so strict and—you have to get your child there on time and you have to pick them up on time. There’s—you have to make sure when you take them they’ve got their piece of fruit and you’ve got their little sandwich. So I wonder how the families are getting on with that. (Sally, Indigenous, non-licensed program)
In sum, while both licensed and non-licensed services aimed to support children’s preparation for school, each had differing underlying philosophies and structures that influenced definitions of ‘effectiveness’. Those working in licensed services focused on delivery of a purposeful curriculum while non-licensed services focused on responsiveness to dynamic family circumstances to support education.

The meaning of family choice

Attendance at ECEC programs is not compulsory and, consequently, family agency emerged as a central theme. ECEC professionals’ understandings of the rationale for the choices related to two key subthemes: accessibility and perceived benefit (Figure 4).

Figure 4. Family choice of service

Across the range of respondents, program accessibility was described as an issue that affected family choice and ability to attend ECEC. While many raised concerns about barriers to access for families, their individual conceptualisations and understanding of their role in overcoming these barriers diverged across respondents working in licensed and non-licensed services. Often, early childhood processional from licensed services reported that there were structural barriers to attendance but did not view overcoming these barriers as within the remit of their program. This view is exemplified by Sonya:

We don’t have a bus yeah, transport (sic) [perceived barrier to attendance] is another one for here. (Sonya, non-Indigenous, licensed program)

Underlying beliefs held about the purpose of an ECEC program might explain this perspective. The belief that an ECEC program provides a service for the child only upon arrival implies that transportation, even if an acknowledged barrier, is not conceptualised as part of the program.

Non-licensed services in Mount Isa are funded by government and non-government agencies and are offered free of charge. Early childhood professionals from non-licensed programs defined effectiveness in terms of enabling access and providing structural supports. In the context of Mount Isa where there is no public transport and many Indigenous families do not own a car, provision of transport was described as integral to program success:

But the hardest thing too is transport. We lack—we always struggle with transport and trying to get them (sic) [Parents] there (sic) [ECEC service]. (Joan, Indigenous, non-licensed program)

Similarly, geographical location was included within definitions of program effectiveness. Program location was variously articulated as being important for access:

You really have to consider who you’re targeting. When you look at Sandy’s program, she’s really targeting the families who aren’t engaged with the school. So she has her little classroom, they pick the families up, the families come. It’s connecting them physically with the school, so that the little people will transition in to the school a lot more easily. (Naomi, non-Indigenous, non-licensed program)

Culturally and physically safe and stable program environments were reported as central to program success also:

That’s why we get a lot of people off the street who come through the door—because they feel comfortable ... (Sally, Indigenous, non-licensed program)

Indigenous-specific services were described as places where parents typically felt more comfortable:

... I think if [Donna] and [Lou] weren’t there from the beginning, if it wasn’t something that they were involved in, no one would come. I would say 97 per cent, 98 per cent sure that there’s no way we would have put that bridge down if it was just a couple of white women there all the time, setting it up. I really believe that they have such a huge role in making families feel safe and encouraging them to come. Yeah, couldn’t have done that one without them at all. (Claire, non-Indigenous, non-licensed program)

Cost-free programs were described as important for overcoming the financial barriers experienced by many families. An associated advantage was that non-attendance was not met with questioning or penalty. Across the non-licensed services, provision of food for families within the program was a contentious but significant concern.
One Indigenous ECEC professional described unstable financial circumstances as a reason for non-attendance. She described the ‘shame factor’, for example when parents are unable to bring a snack for their child, as a barrier to attendance. Though provision of food was not part of the program her solution to this barrier was discreet provision of a facility to prepare food if required.

Early education professionals working in non-licensed services viewed the provision of holistic programs that link families to integrated support services as important to the operation of their program and families’ ability to attend: [Support service] can do that in all sorts of ways, apart from this program it offers all the other support so they have the connection. (Naomi, non-Indigenous, non-licensed program)

Positive child outcomes, both the development of school readiness skills and enjoyment, were reported by all early childhood professionals as important for family choice of program. Respondents from non-licensed services focused on the importance of parents learning alongside their children to support positive outcomes:

Yep. The kids going over there to prep it’s just really good to know that they are going to be able to float along with the—they’ll swim along basically with the other kids that have got all those skills. Yeah and that makes good sense for the parents too. They can see the learning they’re getting out of (sic)[ECEC program], so that makes them feel very comfortable when they have to leave them for prep. They know that they can stand alone and work out things and they can mix it with the best of them over there. (Sandy, Indigenous, non-licensed program)

In summary, family agency is critical. A difference in the locus of responsibility for overcoming barriers to access was evident across licensed and non-licensed services. ECEC professionals from non-licensed services were more likely to see access as the program’s responsibility. Further, family education was conceptualised as integral to school readiness. Emphasis on child versus family education across the two forms of provision translated into different views on their role in overcoming barriers.

The centrality of relationships

Building relationships with families, children and community were viewed as critical in definitions of effectiveness in ECEC programs. As depicted in Figure 5, effective relationship was reported to be founded on reputation. Once the family entered a service, relationship between child, family and community were central.

Figure 5. The centrality of relationships

Given the centrality of family choice, positive reputation of programs was a necessary condition for effectively engaging families. Early childhood professionals reported varying perspectives of the reputation of their own and other services operating in the community. Reputation of the service through word of mouth was reported to be important for families making judgements about whether to initially connect with a service and was the first step in family engagement and relationship building:

Because um, I think we have an effective program because we have been here for six years and we’ve built relationships with the families and that’s what makes it effective ... But I think yeah its just time because we’ve found that we’ve built, Mandy and me have built our reputation just from being here for that long and building those relationships with the families. (Deb, non-Indigenous, licensed program)

At a community level, early childhood professionals shared their perspectives on how highly they regarded different ECEC programs in Mount Isa. A common tendency across non-licensed services was to comment on their perceptions of the success of other programs that provided services for both general populations and Indigenous families. This form of commentary was also evident, but to a lesser extent, among those working in licensed services. Generally, early childhood professionals reported Indigenous-specific programs, both licensed and non-licensed, as being more valued among Indigenous families. In particular, individuals and programs that had a long, established history with the community had high credibility.

Non-licensed early educational professionals described the importance of knowing and being aware of what is going on in the community, as well as knowing what services are available to families:
It’s just knowing your community and what services are there. (Jenny, Indigenous, non-licensed program)

The value of developing connections across different services to include health, social support agencies, government agencies, training and learning institutions and schools were highlighted:

Different agencies come in, yeah … So we’ve had health in, we’ve had domestic violence in and this is all being guided by the parents; they’ve said that they wanted all these services. Who else have we had in? Yeah health—when I say health, diabetes clinic came to talk to the parents. Dental guys have come in. We’ve had teachers talk to our parents about support a [reader-writer], maths, any new reading programs that the kids have got. We’ve had admin people come in to talk about the enrolments of kids … (Sandy, Indigenous, non-licensed program)

Both Indigenous and non-Indigenous early educational professionals stressed the importance placed on building relationships with families. A determining factor in these relationships was described as the ‘ease’ or comfort with ‘who’ is running the program. Families feeling ‘welcome’, ‘respected’, ‘safe’, ‘accepted’, and ‘not judged’ were described as essential in the development of service family relationships. Trust of the service provider was reported to underpin ongoing relationship development:

You’ve got to have the trust of the people for a start. They’ve got to trust you. The big thing in ours (sic) [Program] is respect. (Jenny, Indigenous, non-licensed program)

Early childhood professionals working in non-licensed services highlighted awareness and responsiveness to dynamic family circumstances as a significant part of relationship building. They further described the formation of deeper connections between the family and the service that culminated in a sense of belonging and ownership of the program across time:

I think for the parents and their carers just to be at ease with who’s running it, and they have a sense that they do have some say in it. Having the ownership of it too to a certain extent, that they’ve got an idea. It always—if they come along and they see it, then they’ll feel comfortable. Well there’s—they’ve got that sense of belonging to keep coming back. They just keep coming back … (Sandy, Indigenous, non-licensed program)

The development of service–family relationships here is described as an active and reciprocal process between the early childhood professional and parents that forms across time.

A notable feature of the corpus of interview data was that there was limited focus on relationships with the children attending services. Though the importance of children feeling welcome, safe, belonging and having positive interactions with staff were identified overwhelmingly, the issues of access and program effectiveness centred on the family. The centrality of relationship with family over individual child may be explained in two ways. First as program effectiveness was dependent on family choice to attend, it is not surprising that the family as gate keeper was central. Second, if the attendees at non-licensed programs were not the child as an individual but the child with family, it is not surprising that respondents from non-licensed programs rarely separated the child from the family.

ECEC services’ role in building relationships with families, children and the community were described as critical to program success, whether services were licensed or non-licensed. These relationships were founded on a history of reputation built through ‘word of mouth’ and longevity of commitment to the community. The effectiveness of the program was reported to be sustained through the building of individual relationships that feed back to community reputation.

Discussion and conclusion

Central to the Australian Government’s strategy to increase educational opportunity for Indigenous Australian children is the provision of ECEC programs (COAG, 2009a). Yet, poorer enrolment and attendance rates suggest that the programs provided may not be effective in realising their potential (Sims et al., 2008). This paper utilised a site-case design in the study of the community, Mount Isa, to identify effective programs and program components that engage and sustain family participation. The study captured the perspectives of early childhood professionals from a representation of all services providing group-based programs, both licensed and non-licensed, and included social support agencies that were connected to ECEC programs. Findings revealed that early childhood professionals’ perspectives of effective ECEC provision were influenced by: 1) their beliefs about the purpose of the ECEC program; 2) their understanding of family agency and responsibility; and 3) their reputation and ongoing relationship with families and community. The findings provide comment on the ‘what’ of effective service provision and have implications for policy and practice.

What is effective?

Three key points of effective ECEC provision emerge from the findings:

1. Effective programs provide for families not just children.

The success of non-licensed services in achieving high levels of attendance by Indigenous families was attributed to two key features of a program’s philosophy and structure: family involvement and program flexibility.
Effective programs were described as those that actively involved families in the learning process. In these programs, the model is one of dual-generational learning in which both parent and child participate (Thorpe, Vromans & Bell-Booth, 2010). The approach aligns with Indigenous understandings of learning (SNAICC, 2011). Further, some services also provided opportunities for parent learning apart from their child. Flexibility in the non-licensed services allowed responsive provision for dynamic family circumstances (DEEWR, 2011).

2. Effective programs are physically and culturally accessible.

The interviews clearly describe effective programs as those that
to overcome structural and cultural barriers to access. Provision of structural supports (e.g. transport, food and cost) alone is not always enough to promote sustained attendance. Overcoming cultural barriers (SNAICC, 2012a) by providing culturally safe programs that respect dynamic family, community and cultural circumstances were reported to enhance program access, a finding previously reported (Ball, 2005; Grace & Trudgett, 2012; Guilfoyle et al., 2010; Mitchell et al., 2006). Indigenous early childhood professionals, who are connected with the community, act as a bridge between non-Indigenous staff and Indigenous families by bringing cultural knowledge into the program (Sims et al., 2008).

3. Effective programs are relationship focused.

Effective programs build relationships of trust over time and allow for increasing family ownership of the program (Sims et al., 2008). The relationships between the ECEC service, family, community and child emerged as critical to initial engagement with the ECEC program and ongoing participation in it. These strong relationships in turn empower families as collaborative educators.

What does this mean for policy?

Two key implications for policy emerge from the findings reported in this paper:

1. Enhancing current ECEC models.

The current study identified lessons to be learned from the success of non-licensed services. While ability to adjust the program ‘in the moment’ is more difficult within licensed service models, non-licensed alternatives present some alternative components that might be included in licensed programs. The inclusion of parents and opportunities for dual-generational learning is one clear possibility. Such an approach supports and recognises families as the educators of their children and aligns with Indigenous ways of understanding childhood (SNAICC, 2011). Provision of opportunity for parent-led learning and support of parent learning, apart from the child but within the same building and time, are also features of successful non-licensed services that might be considered for licensed services. Greater flexibility and provision of integrated social supports were also identified as success factors in non-licensed programs. The integration of health and social support within licensed services is a possibility that is clearly suggested by our data and one previously advocated (SNAICC, 2012a).

2. Stability and support for non-licensed programs.

The reported success of the non-licensed services in providing ECEC to the most marginalised families draws attention to the significant place of these. By virtue of their flexibility, they are able to be more immediately responsive to families. Yet non-licensed services are typically dependent on short-term funding from government and non-government sources (SNAICC, 2012b). As a result the services operate in an insecure space with threats to sustainability and ongoing employment of staff being a continual problem. This context works against the maintenance of long-term relationships, which are so important to their success. Effective ECEC programs require continuity of support that includes stable funding models that facilitate integrated and holistic service provision. The example of MACS attests to this problem. Operation of the integrated service model provided by MACS was obstructed by the funding constraints (SNAICC, 2012b).

Our data indicate an imperative for more research on the success of non-licensed ECEC models and sustainability of their funding models. While the Australian Government’s move to provide kindergarten programs for all children is commendable, one model does not fit all children and families.

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Patterns of parent involvement: A longitudinal analysis of family–school partnerships in the early years of school in Australia

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Parent involvement in family–school partnerships is widely accepted as supporting improved student outcomes. International research indicates that the formation of these partnerships varies across family sociocultural backgrounds, and over time. Analysing longitudinal data, this paper examines patterns of parent involvement in family-school partnerships in the early years of formal schooling in Australia. Similar to experiences in other national contexts, parent involvement in home-, school- and community-based family-school partnership activities reduced as children moved through the school grades. Parent involvement also differed with family socioeconomic and cultural background. The implications of these differences in children's experiences of parent involvement for family–school partnership theory and pedagogical practice are considered.

Introduction

Parent involvement, defined as representing a parent’s ‘active commitment to spend time to assist in the academic and general development of their children’ (Borgonovi & Montt, 2012, p. 20), has been widely acknowledged as promoting children’s educational and developmental outcomes (Emerson, Fear, Fox & Sanders, 2012). This involvement includes activities in the home, at school and in the community (Epstein, 1986; 1995). Encompassing these activities, the concept of family–school partnerships emphasises the formation of supportive ongoing relationships between families and schools ‘... based on mutual trust and respect, and shared responsibility ... ’ (DEEWR, 2008, p. 2). In recent times there has been a renewed interest in strengthening family–school partnerships, as governments and educators seek to improve schooling outcomes (Borgonovi & Montt, 2012; Jeynes, 2011). In establishing the foundations of effective parent involvement policy and practice, the Organisation for Economic Co-operation and Development (OECD) asserts that a sound understanding of different patterns in the ways families and schools form partnerships, based on research within the context in which family–school partnerships policies and practices are to be implemented, is essential (Borgonovi & Montt, 2012).

Parental involvement in family–school partnerships has been widely established as supporting and improving students’ social, emotional and academic outcomes (Avvisati, Besbas & Guyon, 2010; Avvisati, Gurgand, Guyon & Maurin, 2010; Emerson, Fear, Fox & Sanders, 2012; Fan & Williams, 2010). This involvement offers both immediate support, such as in supporting children’s literacy and numeracy development, and as having long-term emotional, social and academic benefits (Avvisati, Besbas & Guyon, 2010; Borgonovi & Montt, 2012; Emerson et al., 2012; Fan & Williams, 2010). Although early involvement appears to be more important, parent involvement offers ongoing support throughout children’s education (Borgonovi & Montt, 2012; Cheadle, 2009; Kreider, Caspe, Kennedy & Weiss, 2007; OECD, 2011; Pomeranz, Moorman & Litwack, 2007).

Based on Epstein’s (1986) notion that increasing the overlap between the three spheres of home, school and community provides a more supportive developmental environment for children, Epstein (1995) proposed that parent involvement in their children’s educational development is represented through: Parenting, where families establish supportive home environments for children as learners; Communicating, between home and school about the child; Volunteering, where parents assist in school and classroom activities; Learning at home,
assisting in ways that relate to the school curriculum; Decision making, such as on councils; and Collaborating with the community, drawing on local resources and services. Epstein's typology emphasises the role of schools in facilitating parent involvement, and continues to form the foundation of current family–school partnership policies and practices (Baker & Soden, 2006; DEEWR, 2008; Emerson et al., 2012; McConchie, 2004).

Parent involvement theories such as Epstein's have, however, been critiqued as privileging middle-class values, parenting styles and ways of being, and thus as representing a restricted view that fails to account for diversity in parent involvement practices (Avvisati et al., 2010; Borgonovi & Montt, 2012; Emerson et al., 2012; Gertler, Patrinos & Rubio-Codina, 2007). The OECD argues that a greater understanding of different patterns of parent involvement, in different sociocultural contexts, can support the development of family–school partnership practices that better respond to the diverse needs and interests of families (Borgonovi & Montt, 2012). In particular, the OECD identified the need for research to investigate 'the extent and forms of parental involvement in children's education according to gender, socioeconomic and ethnic background' in different sociocultural contexts (Borgonovi & Montt, 2012, p. 30).

In response to this need for a more nuanced understanding of differentiated patterns of family–school partnerships practices, the OECD studied parent involvement in 14 countries as part of the 2009 Programme for International Student Assessment (PISA) (OECD, 2010; OECD, 2011). As well as establishing the relationship between particular strategies and student outcomes across different national contexts, the OECD identified varying patterns of parent involvement relating to different socioeconomic and cultural background, with these patterns also varying between the countries surveyed (Borgonovi & Montt, 2012). Patterns of parent involvement were not surveyed as part of the 2009 PISA testing in Australia.

**Patterns of parent involvement in family–school partnerships**

International research has identified that parent involvement is usually highest in the early years of schooling and reduces over time (Borgonovi & Montt, 2012; Pomeranz, Moorman & Litwack, 2007). The reduction in parent involvement as children grow has been linked to children's increasing independence, changing needs as children move into higher school grades, and parental perceptions of reduced ability to provide support as the curriculum becomes more complex and specialised (Avvisati et al., 2010; Bakker & Denessen, 2007; Bouffard & Weiss, 2008; Green et al., 2007). Parent involvement is also linked to child and teacher invitation, which itself reduces as children move through the grades (Daniel, in press; Green et al., 2007).

Though parental involvement in family–school partnerships reduces as children move through the school grades, families may also experience social, economic, personal and practical barriers that limit parent involvement in family–school partnerships (Borgonovi & Montt, 2012; Guo, 2013; Hornby & Lafaele, 2011; Kim, 2009; Yanghee, 2009). These barriers are more commonly experienced by families from minority and disadvantaged backgrounds, reducing their participation in family–school partnership activities, particularly activities occurring on the school site (Hornby & Lafaele, 2011; Williams & Sanchez, 2013). International research has identified a relationship between lower involvement in family–school partnerships and minority sociocultural background (Guo, 2013; Turney & Kao, 2009; Yanghee, 2009), and with lower socioeconomic status (Borgonovi & Montt, 2012; Guryan, Hurst & Kearney, 2008).

An alternative perspective proposes that rather than parent involvement being lower, differences between groups may also be the result of different patterns of involvement that are not recognised, and thus not measured, by current frameworks. Rather than participation in more visible school-based involvement practices, these different patterns of involvement may focus on less visible home- or community-based activities. The National Household Education Survey in the United States, for example, found families from western and Asian backgrounds were more likely to be involved in visible school-based activities such as attending school events, volunteering in school or serving on school committees; while families from Hispanic and African–American backgrounds were more likely to be involved in the home-based activity of checking homework (NCES, 2009).

Investigating the efficacy of alternative or less visible strategies may help in identifying a broader range of ways of engaging families in family–school partnerships. The OECD identified the efficacy of a number of parent involvement strategies not normally emphasised in current family–school partnership frameworks in supporting students' literacy and numeracy outcomes. These strategies included discussing books and media experiences with their children, discussing political and social events and issues, and eating meals together (Borgonovi & Montt, 2012).

Programs based on alternative parent involvement strategies have been successful in building family–school partnerships with families from minority and disadvantaged backgrounds. Bouffard and Weiss (2008) refer to these as 'complementary strategies', and advocate the investigation of these strategies, and particularly families' out-of-school time involvement practice, in building a new framework for family involvement to inform policy, practice and research (p. 3). In Australia, community-based models, for example, have been engaged to build successful partnerships with families from Aboriginal and Torres Strait Islander (Harslett et al., 1999; Muller, 2012; Yunkaporta, 2009), and culturally and linguistically diverse backgrounds (De Gaetano, 2007; Lewis, Kim & Bey, 2011; Woestehoff & Neill, 2006).
Though patterns of parent involvement differ across family sociocultural and socioeconomic background, there is almost universal agreement that levels of parent involvement do not differ in relation to the child’s gender (Borgenovi & Montt, 2012). The types of involvement parents engage in with boys and girls, however, may vary. The OECD found engagement of parents in school-based activities to be similar for boys and girls (Borgenovi & Montt, 2012). For home-based activities, there were differences in the types of involvement. Parents were more likely to sing to girls than boys in all 13 survey countries, and more likely to have talked to teachers about their son’s progress or behaviour in school.

**Parent involvement in Australia**

With its own policy environment, highly culturally diverse population (Hugo, 2004) and history of limited parental involvement opportunity in schools (Goos et al., 2004), understanding patterns of parent involvement in the Australian context is important in informing the development of family–school partnership policy and practice. There have been few large-scale studies of family–school partnerships in Australia. Recent nationally based research was conducted by Berthelsen and Walker (2008) and Walker and Berthelsen (2010). These authors analysed data from the Growing up in Australia: The Longitudinal Study of Australian Children and confirmed a relationship between parent involvement and children’s literacy and numeracy development. These studies also identified lower parent involvement in families from lower socioeconomic backgrounds in the Australian context.

Another recent national study investigated 61 family-school partnership projects as part of the trial of the draft Australian Family-School Partnerships Framework (Saulwick-Muller, 2006). The review concluded that family–school partnerships offer improvements in student outcomes, build social capital in the school community and school culture, provide opportunities for parents’ self-growth and provide professional rewards for staff (Saulwick-Muller, 2006, p. 14). The project also developed 12 in-depth qualitative case studies illustrating features of best practice.

In an earlier study, Goos et al. (2004) surveyed 606 numeracy programs involving parents and schools in partnerships across Australia. The research aimed to describe current practices and identify effective programs as models for practice. Similar to the Saulwick-Muller (2006) survey, the study provided seven case studies of effective programs as exemplars of best parent involvement programs in mathematics.

One area where there has been a focus on family–school partnerships in Australia is in the field of Indigenous education (Dockett, Mason & Perry, 2006; Dwyer, 2002; Yunkaporta, 2009). A history of marginalisation, negative experiences with governmental agencies and unresponsive school practices have been cited as leading to lower participation in family–school partnerships for families from Aboriginal and Torres Strait Islander (ATSI) backgrounds, particularly within the school site (Harslett et al., 1999; Muller, 2012). Muller (2012) conducted a case study of nine family–school partnership programs across Australia that were successful in building partnerships between schools and families from ATSI backgrounds. In this context, the role of community was identified as an important aspect of successful programs, representing a more culturally sensitive and responsive approach.

The Longitudinal Study of Australian Children (LSAC) (FaHCSIA, 2012) provides nationally representative data from which analyses of patterns of parent involvement in the contemporary Australian context can be developed. Responding to the OECD identification of the need for context-based research describing patterns of parent involvement in different national contexts, this research analysed patterns of parent involvement for 2296 families from the K-Cohort of LSAC in Year 1 and again in Year 3. Building on the findings of Berthelsen and Walker, this research investigates changes and differences in parent involvement practice across the three spheres of home-, school- and community-based involvement in the early years of formal schooling. Variations in these patterns based on children’s gender, ATSI and culturally and linguistically diverse (CALD) backgrounds, and family socioeconomic status are investigated. The implications of findings for policy and practice are considered.

**Method**

**The LSAC project**

Growing up in Australia: The Longitudinal Study of Australian Children (LSAC) provides the opportunity to analyse large-scale data on parent involvement, in a nationally representative sample of Australian families. The LSAC study is conducted by the Australian Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). LSAC is based on a randomly selected sample of children, stratified on state or territory of residence, and broadly representative of the Australian population for sex, cultural background and socioeconomic status for children of a similar age (Gray & Smart, 2008).

Commencing with Wave 1 in 2004, LSAC gathers data from a B-Cohort of children aged three to 15 months (n = 5112), and a K-Cohort aged between four and a half and five years of age (n = 4991). Interview and questionnaire data for LSAC are gathered by trained employees of the Federal Government Australian Bureau of Statistics. The data is released without personally identifying information to approved research applicants for analysis. Further
Participants

This study draws from the 2006 Wave 2 and 2008 Wave 3 data for the LSAC K-Cohort. Retention of participants from Wave 1 was 89.4 per cent in Wave Two and 86.8 per cent in Wave Three (AIFS, 2012). Participants represented families of children who were in Year 1 in Wave 2 (average age = six years, nine months) and Year 3 in Wave 3 (average age = eight years, nine months), who had completed parent involvement measures in both waves (n = 2296). Data was provided by the nominated primary parent, 96.5 per cent of whom were the child’s biological mother.

The research sample was similar in gender composition to the K-Cohort in Wave 3, with 51.8 per cent male (n = 1189) and 48.2 per cent female (n = 1107) children. A one-way chi square confirmed this did not differ significantly from the overall K-Cohort (c2 = 0.620, p = 0.43). The sample was under-representative of children from ATSI (2.5 per cent), (c2 = 9.639, p = 0.002). There were no significant differences for participants from CALD backgrounds (11.7 per cent), (c2 = 0.002, p = 0.96). The standardised socioeconomic score of the sample (M = 0.0409), recorded by socioeconomic position (SEP) (see description in measures), was slightly higher than that of the LSAC population (M = ±0.0446), with an ANOVA showing this difference was significant, F(1,2296) = 7.864, p = 0.005.

Missing data related to the withholding of demographic details in the released data for individuals in smaller communities, or where questions were refused or not answered. There were 24 families in the sample who were not asked about the language mothers spoke at home and 34 where the respondent did not know. Two participants did not answer the question on Aboriginal or Torres Strait Islander background. Where demographic details were missing, these cases were excluded for that particular analysis only.

Measures

Reflecting Epstein’s original classifications of home-, school- and community-based involvement, the study investigates family-school partnerships using measures these three forms of involvement provided within the LSAC data. The LSAC measures were derived from similar indexes in international studies including: the National Household Education Survey (NCES, 1996–2007), the Early Childhood Longitudinal Study (NCES, 1998–99), and the Head Start Family and Child Experiences Survey (US Department of Health and Human Services, 1997–2009) in the United States; and the National Longitudinal Survey of Children and Youth (Statistics Canada, 2000).

Home-based parent involvement index

The home-based parent involvement measure identifies a number of parent–child activities in the home that might promote learning and development. Questions asked how often each week parents: read to the child from a book; involved the child in everyday activities, such as cooking and pet care; and played games outdoors or exercise activities (0 = None; 1 = 1 or 2 days; 2 = 3–5 days; and 3 = 6–7 days).

School-based parent involvement index

The school-based parent involvement index represents parent involvement within the school and school community. Parents were asked whether during the current or previous school terms they had: visited their child’s class; contacted the teacher; talked to other school parents; attended a school event; or volunteered in class or on a school excursion (yes/no). The school-based parent involvement index represents the number of yes responses (0 to 5).

Community-based parent involvement index

The community-based parent involvement index represents parental activity with their child outside the home. Parents were asked if they had, during the previous month, attended: a movie; a sporting event as spectators; a concert, play, museum, art gallery or community or school event; a religious service, church, temple, synagogue or mosque; or visited a library with the child (yes/no). The community-based parent involvement index is calculated as the number of yes answers (0 to 5).

Socioeconomic position (SEP)

Family socioeconomic status was measured using the Socio-Economic Position scale (SEP). The SEP is a standardised index based on parents’ income, education and occupational prestige. The SEP scale represents a family’s access to ‘social and economic resources’ (Blakemore, Gibbings & Strazdins, 2006, p. 3), and was developed for the LSAC project applying methods used to derive the same measure for the Canadian Longitudinal Study of Children and Youth (NLSCY) (Willms & Shields, 1996). Applying the same definition used by Berthelsen and Walker (2008), low socioeconomic background in this study includes families from the lowest SEP quintile.

Cultural background

Parent involvement in families from ATSI (n = 57), CALD (n = 275), and low socioeconomic (n = 459) backgrounds were investigated. Families from ATSI backgrounds were identified through parental nomination of the child’s background. Families from CALD backgrounds were identified using the mother’s nomination of speaking a language other than English when at home, a classification from LSAC applied by Berthelsen and Walker (2008).
Analyses

Paired samples t-tests were conducted to analyse overall changes in home-, school- and community-based parent involvement between Year 1 to Year 3. A repeated measures ANOVA was then used to analyse demographic patterns in the experiences of families based on the child's gender, ATSI, CALD and socioeconomic backgrounds at and between Year 1 and Year 3. To account for this multiple testing, a Bonferroni adjustment to p < 0.001 for significance was applied to all tests. Effect sizes were calculated using Cohen's $d$.

Results

Home-, school- and community-based involvement Years 1–3

In Year 1, 96 per cent of participants had some activity in all three spheres, and 91 per cent in Year 3. Zero participants reported not having participated in any parent involvement activity from any of the three spheres. Involvement across all spheres was reported by zero participants in Year 1, and by two participants in Year 3. No home-based involvement was reported by 0.9 per cent of families in Year 1, and 1.8 per cent in Year 3. No school-based involvement was reported by 1 per cent of families in Year 1, and 3.5 per cent in Year 3, and no community-based involvement by 2.7 per cent in Year 1 and 5 per cent in Year 3.

The reduction in home-based parent involvement from Year 1 to Year 3 was significant, $t(2295) = 17.70$, $p < 0.001$, with a medium effect size ($d = 0.54$). The reduction in school-based involvement was significant, $t(2295) = 12.39$, $p < 0.001$, with a small effect size ($d = 0.37$). The reduction in community-based parent involvement was significant, $t(2295) = 5.43$, $p < 0.001$, with a small effect size ($d = 0.17$). Sample means and standard deviations are reported in Table 1.

Repeated measures ANOVA tests were then used to investigate differences in parent involvement between demographic groups and the remainder of the sample. Means and standard deviations are reported in Table 1, and graphed against overall sample means in Figure 1.

Families from Aboriginal and Torres Strait Islander backgrounds

Involvement in home-based activities for families from ATSI backgrounds did not change significantly between Year 1 and Year 3, $F(1,56) = 0.14$, $p = 0.72$. Home-based parent involvement was close to significance in difference to other families in Year 1, $F(1, 2292) = 7.30$, $p = 0.007$.

Table 1. Mean parent involvement scores Years 1 and 3

<table>
<thead>
<tr>
<th></th>
<th>Home (/3)</th>
<th>School (/5)</th>
<th>Community (/5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yr1</td>
<td>Yr3</td>
<td>Yr1</td>
</tr>
<tr>
<td>Overall mean</td>
<td>1.78 (0.66)</td>
<td>1.43 (0.64)</td>
<td>3.78 (1.17)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.77 (0.67)</td>
<td>1.44 (0.65)</td>
<td>3.81 (1.16)</td>
</tr>
<tr>
<td>Female</td>
<td>1.79 (0.65)</td>
<td>1.42 (0.65)</td>
<td>3.75 (1.12)</td>
</tr>
<tr>
<td>ATSI</td>
<td>1.54 (0.73)</td>
<td>1.50 (0.67)</td>
<td>2.97 (1.36)</td>
</tr>
<tr>
<td>Other</td>
<td>1.78 (0.66)</td>
<td>1.43 (0.65)</td>
<td>3.80 (1.16)</td>
</tr>
<tr>
<td>CALD</td>
<td>1.80 (0.64)</td>
<td>1.21 (0.68)</td>
<td>3.82 (1.14)</td>
</tr>
<tr>
<td>Other</td>
<td>1.78 (0.66)</td>
<td>1.47 (0.63)</td>
<td>3.78 (1.18)</td>
</tr>
<tr>
<td>Low SEP</td>
<td>1.74 (0.67)</td>
<td>1.27 (0.63)</td>
<td>3.87 (1.13)</td>
</tr>
<tr>
<td>Other</td>
<td>1.78 (0.66)</td>
<td>1.43 (0.65)</td>
<td>3.78 (1.17)</td>
</tr>
</tbody>
</table>

Note: Means and standard deviations reported
being lower with a medium effect size \((d = 0.35)\), but was similar to families from other backgrounds in Year 3, \(F(1, 2292) = 0.60, p = 0.44\) \((d = 0.11)\).

Involvement in school-based activities also remained similar between Year 1 and Year 3, \(F(1, 56) = 0.085, p = 0.77\). This involvement was lower than other families in Year 1 \(F(1, 2292) = 28.71, p < 0.001\), with a large effect size \((d = 0.66)\), but similar in Year 3, \(F(1, 2292) = 5.648, p = 0.02\), though with a medium effect size \((d = 0.31)\).

Involvement in community-based activities increased between Year 1 and Year 3 with a medium effect size \((d = 0.47)\), though this increase was not statistically significant within the requirements of this study, \(F(1,56) = 5.76, p = 0.02\). Involvement in community-based activities was lower than for other families in Year 1, \(F(1, 2292) = 12.05, p < 0.001\), with a large effect size \((d = 0.66)\), but similar in Year 3, \(F(1, 2292) = 1.97, p = 0.16\), with a negligible effect size.

Families from culturally and linguistically diverse backgrounds

Parent involvement in home-based activities reduced for families from CALD backgrounds between Year 1 and Year 3, \(F(1, 275) = 99.89, p < 0.001\), with a large effect size \((d = 0.89)\). In Year 1, home-based parent involvement scores did not differ from other families \(F(1, 2236) = 0.22, p = 0.64\), with a negligible effect size. By Year 3 there was lower participation in this form of involvement than in other families, \(F(1, 2236) = 41.15, p < 0.001\), with a medium effect size \((d = 0.40)\).

School-based parent involvement also declined significantly from Year 1 to Year 3, \(F(1, 275) = 65.71, p < 0.001\), with a large effect size \((d = 0.69)\). Though starting at similar levels in Year 1, \(F(1, 2236) = 0.38, p = 0.54\), with a negligible effect size in the difference from other families, participation in school-based involvement activities was lower than for other families in Year 3, \(F(1, 2236) = 30.59, p < 0.001\), with a medium effect size \((d = 0.35)\).

The change in parent involvement in community-based activities between Year 1 and Year 3 was not significant, \(F(1, 275) = 4.45, p = 0.036\), with a small effect size \((d = 0.18)\). In Year 1, involvement in community-based activities was similar to that in other families, \(F(1, 2236) = 6.09 p = 0.01\), with a small effect size \((d = 0.16)\), and also in Year 3, \(F(1, 2236) = 4.48, p = 0.034\), again with a small effect size \((d = 0.14)\).

Families from lower socioeconomic backgrounds

The reduction in involvement in home-based activities from Year 1 to Year 3 for families from lower SEP backgrounds was significant, \(F(1, 458) = 119.72, p < 0.001\), with a large effect size \((d = 0.72)\). In Year 1, home-based parent involvement scores did not differ significantly from other families, \(F(1, 2292) = 2.13, p = 0.15\), with a negligible effect size. In Year 3 there was a significant difference, \(F(1, 2292) = 38.30, p < 0.001\), with a medium effect size \((d = 0.33)\).

The reduction in school-based parental involvement from Year 1 to Year 3 was significant, \(F(1, 458) = 141.17, p < 0.001\), with Cohen's \(d = 0.81\) indicating a large effect size. School-based involvement was not significantly different to other families in Year 1, \(F(1, 2292) = 3.45, p = 0.06\), with a negligible effect size, but was different to other families in Year 3, \(F(1, 2292) = 93.06, p < 0.001\), with Cohen's a medium effect size \((d = 0.48)\).

The change in community-based parent involvement activity from Year 1 to Year 3 was also significant, \(F(1, 458) = 105.36, p < 0.001\), with a large effect size \((d = 0.66)\).

Community-based activities were similar in families from lower SEP backgrounds to other backgrounds in Year 1, \(F(1, 2292) = 2.09, p = 0.15\), with a negligible effect size, but lower than other families, \(F(1, 2292) = 110.61, p < 0.001\) in Year 3, with medium effect size \((d = 0.54)\).

Gender

There were no significant differences in parent involvement for boys and girls in any of the three spheres in either grade. ANOVA results for Year 1 were: home-based \(F(1, 2294) = 0.63, p = 0.43\); school-based \(F(1, 2294) = 0.23, p = 1.48\); and community-based \(F(1, 2294) = 0.85, p = 0.36\). And in Year 3, home-based \(F(1, 2294) = 0.99, p = 0.32\); school-based \(F(1, 2294) = 0.02, p = 0.88\); and community-based \(F(1, 2294) = 0.01, p = 0.92\). All reported negligible effect sizes.

Discussion

Responding to the need identified by the OECD for research to investigate patterns of parent involvement in different national settings, this research investigated patterns of parental involvement in family–school partnerships in Australia. Drawing on data from the LSAC K-Cohort, the findings of this research confirmed reductions in home-, school- and community-based parent involvement as children move through the early years of schooling. Despite these overall reductions, 90 per cent of children in the research sample continued to experience family–school partnerships in all three spheres in Year 3, their fourth year of formal (primary) schooling, indicating ongoing parental involvement at some level.

The LSAC questionnaire does not explore reasons for reductions in parent involvement. These declines may be related to similar reasons identified in international research, such as the changing needs of children, changing roles of parents and changes in teacher outreach as children grow and progress through school (Avvisati et al., 2010; Green et al., 2007; Patriakakou & Weissberg, 2000). The decline may also reflect modern family and work lives. Contemporary Australian parents are more likely to be in
paid work than 10 years ago, with family time in paid work increasing as children get older and carers return to the workforce (Weston, Qu & Baxter, 2013).

The results also indicated differences in the experiences of family–school partnership related to family socioeconomic and cultural background in the Australian context. Families from lower socioeconomic backgrounds experienced lower involvement in Year 3 in all three areas of home-, school-, and community-based activities. However, in Year 1 there were no significant differences in involvement in any form of parent involvement. These results extend Berthelsen and Walker’s identification of lower participation in these activities for the overall K-Cohort in Wave 2 (Berthelsen & Walker, 2008; Walker & Berthelsen, 2010), to identify that these differences emerge as children move through the early years of schooling. That these differences are not evident earlier in children’s schooling indicates an opportunity for building stronger relationships that might maintain ongoing partnerships. These results also identify an area for further investigation to identify the factors that influence the withdrawal of families from these backgrounds from involvement in family–school partnerships.

Similar to the experiences of families from lower socioeconomic backgrounds, families from CALD backgrounds also had comparable levels of involvement to other families in home- and school-based activities in Year 1. Like families from lower socioeconomic backgrounds, lower participation in home- and school-based involvement levels emerged by Year 3. However, higher involvement in community-based activities was reported. This higher involvement was evident with a small effect size, and very close to statistical significance (p = 0.01). Community-based involvement in families from CALD backgrounds also remained higher in Year 3, with a small effect size, though the level of significance had moved beyond the parameters required in this study (p = 0.034).

As well as language differences that might present barriers to the engagement in family–school partnership activities for families from CALD backgrounds, an increasingly complex curriculum as children move into higher grades in school, and the possibility of content and expectations that are unfamiliar to parents educated in other schooling systems, have been identified as reasons for the withdrawal of families from CALD backgrounds from these forms of partnership activity (Hornby & Lafaele, 2011; Turney & Kao, 2009; Yanghee, 2009). The maintenance of involvement in community-based forms of partnership emphasises forms of involvement that are more familiar and accessible to families from middle-class and professional backgrounds, some authors suggest a need to investigate alternative forms of partnerships that better meet the needs and interests of families from a greater diversity of backgrounds (Daniel, 2011; Gertler, Patrinos & Rubio-Codina, 2007; World Bank, 2008). The role of the school in understanding and responding to the diverse needs and interests of families has been identified as critical in increasing the engagement of families and schools in partnership to support student outcomes (Hornby & Lafaele, 2011; Jeynes, 2011).

The engagement of alternative strategies not necessarily emphasised in traditional family–school partnership frameworks may also improve participation in family–school partnerships, and the efficacy of this involvement. The findings of the OECD identifying the efficacy of everyday discussions about books, media experiences,
social and political issues, and just spending time talking with children in supporting literacy and numeracy outcomes at age 15 years, indicate the potential value in investigating alternative involvement strategies (Borgonovi & Montt, 2012). These alternative forms of partnership may also identify more sustainable practices that better meet the needs and interests of families from diverse backgrounds, and as children move through the school grades.

With parent involvement in the early years being potentially more important in supporting children's schooling outcomes; these results present a particular challenge for Australian educators and education systems. The emergence of these differences for families from lower socioeconomic and CALD backgrounds, and the lower involvement in family–school partnerships in families from ATSI backgrounds noted in Year 1, also present ethical issues of equity and social justice. The increasing emphasis on including family–school partnerships as part of a strategy for improving schooling outcomes presents the potential for increased disparity in the learning experience and student outcomes. This potential for disadvantage adds further urgency to the need to identify effective ways of building early family–school partnership relationships with families from diverse socioeconomic and cultural backgrounds.

Limitations

Like the larger LSAC K-Cohort, the research sample was similar to the national population in representation of families based on socioeconomic position. The sample was, however, under-representative of families from ATSI and CALD backgrounds. The findings for families from ATSI backgrounds in this study in particular need to be considered cautiously due to the low number of participants from these backgrounds in this study (n = 47), and the geographical and cultural diversity of participants in terms of the representation of different (urban, rural and isolated) contexts.

There were also limitations in relation to the measures used within the LSAC study. The restriction of the home-based involvement to three repeated questions provides a less comprehensive indication of home-based involvement than might have been afforded by a more complex measurement instrument. In addition, the use of yes/no questions in the school and community-based measures provide a measure of variety in activity, but not of the intensity or regularity of involvement in the activities. While participation across several or all of the different types of activity provides one measure of the degree to which parents are involved with their children, parents may be highly involved in only one or two forms of activity, but register as low in involvement overall. The measures also reflect current constructions of parent involvement, which have been critiqued as privileging middle-class values and parenting styles (Gertler, Patrinos & Rubio-Codina, 2007; World Bank, 2008). As a consequence, rather than representing lower parental involvement in their children's lives, results may be an artefact of the embedding of these constructs within the measurement instruments.

Whether the differences identified in this research indicate an ongoing divergence in patterns of parent involvement in family–school partnerships, and the implications of these differences in terms of children's outcomes, will require ongoing research. The potential benefits of parent involvement and family–school partnerships are being widely accepted, with a key focus on maintaining and increasing participation in family–school partnerships and addressing disparities in the experiences of students and their families from diverse backgrounds. This presents an ongoing practical and ethical challenge for policy-makers and practitioners, in an area of increasing emphasis in the field of education. The importance of parent involvement in the early years of education gives a particular urgency to addressing these challenges.

Conclusion

The importance of parent involvement during the early years of schooling in supporting children's outcomes means the facilitation and maintenance of family–school partnerships is an important element of educational policy and practice. The findings of this research identify a decline in partnership activities in Australia in home-, school- and community-based activities as children moved through their early years of schooling. With the link between parent involvement and student outcomes well established in research in a number of national contexts, family–school partnerships offer a way of enhancing schooling outcomes. These findings therefore indicate potential areas of focus in supporting improved student outcomes by maintaining and increasing engagement in family–school partnerships.

The differences in the levels of parent involvement relating to family socioeconomic and cultural backgrounds identified by this research also present a challenge for schools in facilitating more equitable family–school partnership experiences for children. With these differences present in Year 1 for families from ATSI backgrounds, and emerging by Year 3 for families from lower socioeconomic and CALD backgrounds, research into alternative strategies that better meet the needs and interests of families from diverse backgrounds as their children mature offers a potential strategy in increasing participation in these partnerships.

An increasing emphasis on family–school partnerships in improving schooling outcomes gives urgency to the need for investigations in addressing these issues. Increased capacity building at the school level and in teacher education programs also offers a way to improve the facilitation of these partnerships. Further research and increased capacity provide a way forward in supporting schools to meet the
challenge of increasing parental and school engagement in partnerships in the early years, and mainlining this involvement as children move through their schooling.

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References


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